Mile-High RETAC

Regional Emergency Medical & Trauma Services Systems Development Biennial Plan

V8.0

Mile-High RETAC

Plan Cycle
July 1, 2019 – June 30, 2021

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Section 1: RETAC Overview:

Mission Statement:

To develop a coordinated and quality emergency medical and trauma service system that focuses on the care of the patient as its priority in all decision making.

Description:

- **Participating Counties**

  Mile-High Regional Emergency Medical and Trauma Advisory Council (MHRETAC) consists of Adams, Arapahoe, Douglas and Elbert Counties and the Cities and Counties of Broomfield and Denver.

  See Appendix A: Maps:
  Colorado RETAC's
  MHRETAC
  North Central Region and Urban Area Securities Initiative

- **Total population, Square Mileage and Population Density**

  Total 2018 Colorado census population is 5,695,564 which is a 155,019 increase over 2016. The MHRETAC has had an increase of 69,193 from 2016 and 2018. The United States population has increased from 323,127,513 in 2016 to 325,719,178 in 2018 which is an increase of 2,591,665.

2018 Population Estimates

County	2018 Estimated Population	2016 Estimated Population	Population Increased 2016 - 2018	Total Square Miles	Persons Per Square Miles
Adams	511,868	498,187	13,681	1,167.65	438.38
Arapahoe	651,215	637,068	14,147	798.10	815.96
Broomfield	69,267	66,529	2,738	33.03	2097.10
Denver	716,492	693,060	23,432	153	4682.96
Douglas	342,776	328,632	14,144	840.25	407.95
Elbert	26,282	25,231	1,051	1,850.85	14.2
MHRETAC	2,317,900	2,248,707	69,193	4,842.88	478.62
MHRETAC % of Colorado	41%			5%	
Colorado	5,695,564	5,540,545	155,019	103,641.89	54.96
United States	325,719,178	323,127,513	2,591,665	3,531,905.43	92.23

Source: www.census.gov

- ***Urban centers***

  The major portions of the MHRETAC are considered urban with Denver as the center. There is an amazing amount of major attractions in Denver including but are not limited to: The Pepsi Center, Colorado Convention Center, Sports Authority Bronco Stadium and hundreds more including zoos, art, aquariums, Gaylord Rockies Resort and Convention Center, 4/20 Pot Smoking and DIA.

- ***Major geographic features and barriers***

  The majority of the MHRETAC is considered urban and major metropolitan. Elbert County is the most rural county within the MHRETAC, and it is not considered rural for some grants with Colorado Rural Health.

  The geographic features would include the major highways for travel, I-25, E-470, C-470 and 36. The geographic barriers would be the traffic on the major highways with ambulances trying to reach patients and returning them timely to a hospital. Most of this region contains major highways. The new RTD Light Rail now extends from south Denver to north Denver and out west to Golden, from downtown Denver to Denver International Airport. With the increase in population, ambulances need to be strategically positioned to handle the 911 calls in a timely manner.

- ***Major economic activities (i.e. agriculture, tourism etc.)***

  One of the major economic activities within the MHRETAC would be tourism. Colorado welcomed an unprecedented 84.7 million visitors in 2017 of which Denver had 31.7 million visitors with 17.4 million overnight stays.

  This annual increase in tourism continues to have a direct impact on the EMTS systems and the overall healthcare system in the MHRETAC. This region has the highest population to begin with and then with the tourist the population more than doubles.

  Denver's annual 4/20 marijuana rally has grown over the years. Denver hosts this event to over 50,000 people with live concerts, food and entertainment at downtown Denver Civic Center.

  There are large convention centers in Denver and Broomfield which hosts major conferences and entertainment. The National Western Stock Show is held at the Denver Coliseum, another large venue for events. The downtown area is the major site for sports, theater, schools, restaurants, political conventions and parades. The Pepsi Center downtown draws major musicians with very large attendance.

  Denver International Airport (DIA) continues to be among the top airports in the country. With three major hubs, United, Southwest and Frontier. The airport is undergoing major reconstruction that with a $1.5 Billion dollars and an additional 39 new gates. DIA had 61.4 million visitors in 2017.

The Gaylord Rockies Resort and Convention Center has been built just west of DIA. This is a large national attraction and will continue to increase the flights into Denver and impact tourism and the EMTS system.

Agriculture is prevalent in Elbert and some areas in Adams and Arapahoe with less remaining in Douglas due to the growth in population.

- ***Significant demographic trends***

The downtown area in Denver is continuously building new restaurants and amusement areas. Denver, Douglas and Arapahoe Counties had the highest numbers of increased population followed closely by Adams County.

Cherry Creek area continues to build high rises of apartments, so it looks like downtown Denver. The other trend is that areas build businesses with living quarters on top of the businesses. Old homes in old neighborhoods are being replaced by duplexes and condos. There are many areas that resemble small towns with businesses, shopping and living quarters all together. There are numerous large apartment buildings going up in all parts of the MHRETAC.

With the increase in population per square mile, there is an increase in housing needs to accommodate everyone.

- ***Major transportation routes***

The major routes through the MHRETAC are I-25 from north and south, I-70 from east and west, Highway 36 from Denver to Boulder, C-470 from south and north on the west side of town and E-470 traveling south and north on the east side of town. E-470 runs close to DIA. The RTD Light Rail, T-REX, system has now expanded from the southern part of Denver, the Denver Tech Center to the northern part of Golden.

- ***Number of emergency communications centers***

MHRETAC has 17 communication centers plus 7 other communication centers dispatch to Broomfield.

Adams County Communications Center (Adcom911)
Aurora Dispatch
Arapahoe County Dispatch
Broomfield Dispatch
Buckley Air Force Base (Fire only)
Castle Rock Dispatch
Colorado State Patrol Dispatch
Denver Dispatch
DIA Dispatch (they are 2 separate centers)
Douglas County Regional 911
Federal Heights Dispatch
Glendale PD Dispatch
Greenwood Village PD Dispatch
Littleton PD Dispatch

Parker-Lone Tree Communications (PD only)
MetCom (Fire/EMS only)
Thornton Dispatch

- ***Number of ground ambulance providers***

  Transport agencies-41
  Non-transport agencies- 7

  Recently, South Metro Fire has taken over Cunningham Fire and Littleton Fire

- ***Number of air ambulance providers***

  4 Flight for Life, AirLife, Air Ambulance Specialists (AMR) and Air Methods

- ***Number of acute care and critical access hospitals***

  19- Acute Care Hospitals
  18- Licensed Community Clinics with Emergency Care (CCEC)
  2- Specialty Hospitals

- ***Number and levels of designated trauma centers***

  5- Level I Trauma Centers with 1 as a Regional Pediatric Trauma Center
  4- Level II Trauma Centers
  5- Level III Trauma Centers
  5- Level IV Trauma Centers
  13- Non-Designated Centers
  2- Specialty Hospitals
  18- Free Standing Emergency Rooms (CCEC- Licensed Community Clinics with Emergency Care)

  See Appendix B: MHRETAC Hospitals June 2019

- ***Major EMTS patient destinations outside of your region***

  There are no major EMTS patient destination for MHRETAC to transport out of the MHRETAC. The MHRETAC hospitals serve as the major EMTS patient destinations for patients from all parts of Colorado as well as surrounding states. The trauma centers in MHRETAC send the patients back to their home-based hospitals when the patient's condition warrants. These home-based hospitals may be outside the MHRETAC region.

- ***Other pertinent information to help understand your region***

  The MHRETAC is in the metropolitan and central part of Colorado and is the most urban and highly populated portion of Colorado. Most of the Level I Trauma Centers are in this region and hospitals from around Colorado and surrounding states send patients to the MHRETAC hospitals. St. Anthony Hospital functions as part of the MHRETAC as well as the FRETAC.

  The Regional Pediatric Trauma Center, Children's Hospital Colorado, is the only one in Colorado. Children's Hospital Colorado has established pediatric trauma

centers at various hospitals and locations in the region to provide pediatric care more locally. This region has the highest population of any portion of Colorado.

The trend continues to open free standing ED's within the metropolitan region. Centura Health and HealthOne have all opened several new free standings ED's with a hospital base. UC Health has purchased numerous hospital based free standing ED's all around the metro area. In addition, UC Health has purchased several hospitals around Colorado. Medical Directors determine which free standing ED's can and cannot accept ambulances.

St. Anthony Hospital and Swedish Medical Center continue to be recognized as Comprehensive Stroke Centers.

With the increase in tourism and population in the metro area, one must realize that this impacts all health care providers, hospitals, public heath, emergency managers and transportation units in the downtown area. This increases the potential for a mass casualty event to occur.

Ongoing Organization and Planning Process:

Organization:

The basic structure and function of the MHRETAC's organization is as follows:

- ***Legal structure of the RETAC (i.e. non-profit corporation)***

  Mile-High RETAC is a Government 115 and non-profit corporation which is governed by a six county IGA and Bylaws.

  See Appendix C: MHRETAC Authority Documents
  1. Intergovernmental Agreement
  2. Bylaws (2018 and 2019- Signatures Needed to be Re-signed)

- ***Membership of the RETAC council by position***

  Adams County Representatives

  Michael Bean - Adams County OEM, Coordinator, Representing Government
  Dave Baldwin, Paramedic, EMS Chief, Adams County Fire Rescue District, Representing Pre-hospital
  Charles Little, DO, UC Health, Representing Facility

  Arapahoe County Representatives

  Ralph Vickrey, Paramedic, Action Care Ambulance, Representing Government
  Dylan Luyten, MD, Medical Director EMS, HealthOne Swedish Medical Center, Representing Facility
  Rich Solomon, Paramedic, Captain, EMS Coordinator, Sable Altura Fire, Representing Pre-hospital

Broomfield City and County Representatives

Lenzi McGee, Emergency Preparedness Coordinator, Broomfield Public Health and Environment, Representing Government
Ross Riley, Paramedic, Captain, EMS Coordinator, North Metro Fire Rescue District, Representing Pre-hospital
Charles Mains, MD, Medical Director, Centura Health Trauma System, Representing Facility

Denver City and County Representatives

Ryan Broughton, Executive Director, Mayor's Office of Emergency Management, Representing Government
Kevin McVaney, MD, Medical Director, Denver Paramedics, Denver Fire, Denver 911, Representing Pre-hospital
Kathryn Beauchamp, MD, Director of Neurosurgery, Denver Health Medical Center, Representing Facility

Douglas County Representatives

Michael Moore, Lieutenant, Castle Rock Fire, Representing Pre-hospital
Burt Katubig, MD, Trauma Surgeon, Sky Ridge Medical Center, Representing Facility
Janice Michael, EMT, Volunteer Douglas County Rescue, Representing Government

Elbert County Representatives

Cass Kilduff, Paramedic, Chief Operations, Fire-EMS Rattlesnake Fire Protection District, Representing Pre-hospital
Danny Willcox, Elbert County Commissioner District 2, Representing Government
Caroline Dullien, NREMT, EMS Liaison, Sky Ridge Medical Center & Rocky Mountain Hospital for Children, Representing Facility

MHRETAC Executive Council Members:

Chair- Charles Mains, MD
Vice Chair- Dylan Luyten, MD
Secretary- Kathryn Beauchamp, MD
Treasurer- Ross Riley

- ***Distribution of the council members among participating counties***

Each county has three representatives; one from pre-hospital, one from facility and one from government. All six counties and cities and counties have representatives.

- ***Council members from outside the region if applicable***

Currently there are no Council Members from outside the MHRETAC region.

- ***Frequency of RETAC meetings***

The MHRETAC meets every other month, during the odd months, on the 3rd Thursdays from 11am-1pm at Swedish Medical Center, Ponderosa Room. The meetings are posted on the Mile-High RETAC website.

- ***How the RETAC utilizes contracted services if applicable***

  Currently MHRETAC has two contracted personnel:
  - Executive Director
  - Regional EMS Coordinator for Regional Medical Direction

  These contracted personnel assist in carrying out the deliverables for the Regional Medical Direction grants awarded to the MHRETAC and the MHRETAC.

- ***RETAC staff member(s) and staff role descriptions***

  Shirley Terry, BSN, RN serves as the Executive Director for the MHRETAC.

  Mile-High RETAC Executive Director Role Description:

  The Executive Director for the MHRETAC is responsible for carrying out the goals of the Board of Directors.

  The overall responsibilities include and may not be limited to:
  - Developing and submitting all the state deliverables as outlined in the state contract
  - Assisting with all MHRETAC related business
  - Providing quarterly reports to the State regarding MHRETAC activities
  - Coordinating and integrating services for the medical community
  - Disseminating information from one committee to another and to stakeholders
  - Communicating with all the hospitals, pre-hospital agencies and local governments regarding pending rule changes, legislation or other activities that may impact them
  - Working with the MHRETAC Treasurer to provide financial reports and developing yearly budgets
  - Representing the MHRETAC and participating in all the various SEMTAC Committees, SEMTAC and disseminating information accordingly
  - Collaborating and networking for opportunities for the medical community to participate in regional planning with the various entities such as North Central Region, (NCR), Urban Area Securities Initiative (UASI), Hospital Preparedness Program (HPP), and Healthcare Coalitions
  - Educating the general public regarding the statewide emergency medical and trauma system
  - Attending and participating in the Statewide RETAC Forums that are held quarterly at various locations around Colorado
  - Writing grants to provide additional income for the MHRETAC to carry out specific activities for the MHRETAC
  - Developing Scope of Work, Request for Payment and Progress Reports for all grants awarded to MHRETAC by Colorado Department of Public Health and Environment (CDPHE), EMTS Section
  - Attend nationally recognized conferences such as EMS World, EMS Today, National Healthcare Coalitions and Pinnacle to contact various vendors and participants for the National EMS Safety Summit.

- Provide a booth representing the MHRETAC at the EMSAC Conference in Keystone to market the various activities of the MHRETAC such as the Annual Golf Tournament to raise funds to purchase CPR equipment and AED's, the Annual EMS Financial Symposium and the National EMS Safety Summit
- Chair the National EMS Management Association Committee (NEMSMA) to develop the National EMS Safety Officer competencies, validation exam and credentials
- Chair the National EMS Safety Summit National Planning Committee

The Executive Director has duties similar to the other RETAC Coordinators and Executive Directors but is in a unique situation due to the number of trauma centers, pre-hospital agencies and providers and the volume of patients that are seen in this region. Many patients are transferred from around the state into this region for care at the higher-level trauma centers. This region contains most of the Level I trauma centers in Colorado, burn specialty hospitals, transplant hospitals and rehabilitation hospitals and the only Regional Pediatric Trauma Center.

- ***Committees of the RETAC council***

The current active committees for the MHRETAC include:

- Clinical Care Committee
- MCI/Cache Committee
- Multi-County Ambulance Licensing Committee
- Grants Committee
- Save a Life Committee
- Regional Medical Direction
- Strategic Planning Committee
- National EMS Safety Summit Planning Committee

Active and coordinated with MHRETAC and Foothills RETAC (FRETAC)

- Regional Medical Direction with Denver Metro EMS Medical Directors and Regional Medical Liaisons
- EMS Planning and Preparedness Committee

- ***Integration with county councils if applicable***

Adams County EMS Council and Denver EMS Council are the only two active county councils. The other counties do not have formal EMS Councils. Denver EMS Council meets quarterly and Adams County EMS Council is more ad hoc.

Needs Assessment and Planning Process:

- ***Region-wide or significant barriers to patient care***

Since the MHRETAC is in the metropolitan area of Colorado there are limited barriers to patient care. Travel within the MHRETAC can be difficult due to traffic on the major highways at times. The more rural areas that are less populated have longer distances to obtain medical care. Although the region has a large number of

paramedics, there has been some conversation of a possible shortage of paramedics.

There are numerous hospitals in the MHRETAC with additional urgent care clinics and free standing ED's throughout the region. Denver Health Medical Center receives some subsidy funds from the City of Denver to provide care for the poor. Other large hospital systems also provide care to the uninsured. Those individuals needing medical care may have a resource to receive it.

Psychiatric patients will always continue to be a challenge to the medical community with limited in-patient beds and the inability to always transport them from one facility to another. Many times, these patients are held in emergency departments awaiting beds in another facility.

- ***Significant region-wide challenges***
  Due to the wealth of resources in the MHREATC, significant region-wide challenges do not exist unless having a large population base is considered a region-wide challenge. The large hospital systems conduct planning within their systems which may limit their ability to participate in more regional planning efforts due to time constraints. In the MHRETAC the major large hospital systems include UC Health, Centura, HealthOne, SCL Health and Kaiser.

- ***Ongoing process used to assess RETAC needs***
  MHRETAC Committees often identify a need which is then presented to the MHRETAC Board of Directors for discussion. Once the Board determines that the need warrants being addressed, the group identifies the process required to address the situation.

- ***Specific RETAC needs identified through an assessment process***
  Currently, the MHRETAC does not have a formal assessment process. Usually issues are brought to the Executive Director or to the Board of Directors as areas of concern often through committee conversations. The idea of a formal assessment has been discussed over the years but with the large health care systems such as Centura Health, HealthOne, SCL/Exempla, Kaiser and large EMS agencies like Denver Health, AMR, Rural Metro, South Metro Fire who all conduct internal system assessments, it was felt that it would be a duplication of effort to conduct a formal assessment.

- ***Process used to develop Biennial Plan***
  The Executive Director developed some goals and objectives and provided them to the MHRETAC Board of Directors based on discussions that occurred at previous meetings. The committees also developed some goals that are incorporated into this planning document. The MHRETAC Board of Directors approved the goals and objectives of this Biennial Plan.

- ***Process used to communicate, implement and measure Biennial Plan goals***

The MHRETAC Biennial Plan is sent via e-mail to all stakeholders in the MHRETAC and is posted on the MHRETAC website. The implementation and measurement of this plan will be the responsibility of the Executive Director and MHRETAC Council Members with participation from all the stakeholders in the MHRETAC. Committees are established with hospitals, EMS, public health, emergency managers and other interested parties to accomplish the MHRETAC goals.

The measurement and accomplishment of the goals in this plan are outlined in the biennial plans, biennial progress reports and quarterly reports to CDPHE which are also posted on the MHRETAC website.

Section 2: Accomplishments:

Goal #1 A culture of safety will be developed during the Annual National EMS Safety Summit which will provide education regarding safety issues for pre-hospital providers in Colorado and nationally.

The National EMS Safety Summit did not receive funding from CDPHE for a conference that was to be held in August 2018. However, MHRETAC was able to obtain funding from other sources and held the conference on March 27-29, 2019 at the Embassy Suites Downtown Denver. There was an EMS Financial Symposium hosted by MHRETAC and Plains to Peak RETAC during September of 2018. In addition, there was an EMS Financial Symposium as a pre-conference to the National EMS Safety Summit that was held on March 26, 2019 also at the Embassy Suites Downtown Denver. The focus of this conference is on personnel, patient and community safety and financial stability for EMS agencies.

This goal was accomplished.

See Appendix D: EMS Financial Symposium and National EMS Safety Summit Agenda- March 26-29, 2019

Goal #2 MHRETAC and FRETAC will have a coordinated and effective Regional Medical Direction Program

The combined Regional Medical Direction (RMD) Program with FRETAC and MHRETAC has proven to be very effective. The Regional Medical Liaisons (RML) that represent both RETACs continue to meet every other month with the Executive Directors from both RETACs. This group also participates with the Denver Metro EMS MD Group that also meets every other month. The Regional EMS Coordinator has focused on projects such as the use of tourniquets, time to ED and Ketamine protocols. Denver Metro Protocols continue to be updated every January and July. Data Compliance reports are being sent to each EMS agency to improve the quality of data from those agencies to CDPHE.

The RML's would like to see the outcomes from a Cardiac Arrest Registry to Enhance Survival (CARES) Program. Therefore, plans are in process to develop a regional program for MHRETAC and FRETAC with the Reginal EMS Coordinator taking the lead on this project.

The webmaster continues to update the website with the updated Denver Metro protocols.

Both RETACs maintain financial control over the RMD grants respectively and deliver all grant requirements as outlined in the grant deliverables. Acid Remap continues to provide the Denver Metro protocols on the mobile devices for all the agencies within both RETACs as part of the grant deliverables.

This goal was accomplished.

Goal #3 Citizens will be trained, equipped and empowered in the use of tourniquets and how to stop bleeding prior to EMS arrival as part of an injury prevention program

MHRETAC supported the National Stop the Bleed day on March 31, 2018 with participating hospitals in the region providing training to the general public on how to apply a tourniquet and to control bleeding. Community training events were held at Mile-High Karate, Swedish Medical Center, North Suburban Medical Center, Centennial Medical Center with Littleton Hospital and University of Colorado at various sites.

MHRETAC wrote a grant with the North Central Region to obtain funds to develop stop the bleed and CPR caches. Various EMS agencies and hospitals have checked out these caches to provide training in their communities. North Metro Fire and North Suburban Medical Center provide so many community trainings that the MHRETAC provided them with their own cache supplies. University of Colorado is extremely busy in providing these community training efforts. Stop the bleed kits are also being dispensed in the communities were training has occurred.

This goal was accomplished.

Goal #4 The MHRETAC Mass Casualty Incident (MCI) planning efforts will correlate with FRETAC MCI planning to provide a regional approach for managing an MCI and Multiple-Person Injury (MPI) event

MHRETAC and FRETAC MCI plans continue to mirror each other since our regions are combined in so many other ways with EMS working together more closely with the EMS Planning and Preparedness Committee, which is a joint committee of both RETACs, HCCs, UASI and North Central Region. This committee has improved communication and working efforts to form a more regionalized planning effort. The MHRETAC MCI plan was updated November 2018.

Some agencies have disbanded their MCI/ Med Surge trailers while others have completed recent inventories and have purchased more equipment for their trailers.

This goal has been accomplished.

Goal #5 Healthcare providers in EMS and hospitals will be informed of current legislation and legal issues provided at the MHRETAC Annual Medical Legal Forum

The grant for this project was not funded by CDPHE and therefore did not take place. Some legal issues were presented at the National EMS Safety Summit.

This goal was not accomplished due to lack of funding sources.

Goal #6 CPR and AED training will be provided in middle and high schools in the MHRETAC through the Student Medical and Responder Training (SMART) program and Hands-Only CPR Training for community events.

CPR and AED training continues in the schools within the MHRETAC. The most active schools are the Adams 12 Schools in Adams County. MHRETAC recognized that school system with a plaque thanking them for continuing the CPR and AED training in the schools for the past ten years. In turn, the school district recognized Dave Baldwin from Adams County Fire for initially starting the school program for them. Training at other schools has been accomplished through Thornton Fire District, North Metro Fire, North Suburban Medical Center and University of Colorado.

The last of the AED's were distributed to local schools, businesses and churches. One AED that had English and Spanish instructions was provided to Servicio De LaRaza for the Mexican Consulate. Additional CPR and Stop the Bleed training will be provided at this location for staff and clients.

CPR Caches are available to agencies and hospitals to check out and use for community training efforts.

This goal was accomplished.

Goal #7 MHRETAC will support CDPHEs efforts to have valid and reliable EMS and hospital data to correlate projects relating to the clinical care in the region

The CDPHE Data task force started, met a couple times and then stopped. Since then, data compliance reports have been sent to each RETAC. Our Regional EMS Coordinator receives these reports, contacts the EMS agencies and helps guide them into improved quality data. He also works closely with the Data Department at CDPHE.

This goal was accomplished.

Goal #8 The National EMS Safety Officer Credentials will be developed through the leadership of the MHRETAC working with national organizations such as NEMSMA and IAEMSC.

The Executive Director of the MHRETAC served as the chairperson for the national committee to develop the National EMS Safety Officer Credentials. The committee met for a year and a half and completed the task of identifying the components of this type of position. The components were accepted by NEMSMA and forwarded on to Avista to develop the exam. This committee is on hold pending the testing of the exam.

This goal was accomplished.

- ***Measurable impact of goals accomplished***

Goal #1-National EMS Safety Summit
The measurable impact of this goal is that the National EMS Safety Summit was held and provided education to EMS agencies on safety measures relating to themselves, their patients and their communities. Topics presented included preparedness for and response to urban mass casualty incidents, active shooter scenarios and wound patterns and implementing NRPF 3000. Other topics were quality improvement, how to create a culture of safety in your organization, lightning strikes and patient and EMS safety, managing fatigue, physical abilities test for EMS, fire fighter fitness for duty, ambulance safety, safe transport of children and much more. All these topics were provided by nationally recognized speakers which gave the attendees sound information and training to take back to their organizations.

The attendance was up for attendees and vendors which indicates that this conference continues to be a high quality and valuable conference.

In addition, the pre-conference was an EMS Financial Symposium also provided by nationally recognized speakers. The financial symposium dealt with topics such as understanding payor mix and why it is important to ambulance reimbursement, EMS financial management and national trends in EMS and the future.

Evaluations for both conferences were rated very high and remarks to make sure the conferences are held next year.

Goal #2- Regional Medical Direction
The measurable impact of this goal is that MHRETAC and FRETAC have a very active RMD program that meets on a regular basis with medical directors clearly involved in the process. The RMD program has provided support to the Denver Metro EMS MD Group with the website updates, Denver Metro protocol updates, benchmarking and data collection and improving quality of data for EMS agencies. The EMS agencies will work together to provide CARES data for this region which will help to improve outcomes for patients. The Denver Metro protocols are updated by Acid Remap for the mobile devices.

EMS agencies benefit from these efforts by having updated protocols on their mobile devices, access to protocols on the website, collaboration among EMS agencies for the CARES data and improved quality of data to CDPHE.

Goal #3-Tourniquet and Stop the Bleed Community Training
The measurable impact of this goal is not measurable. The training will empower people, but we will never know if they used this training to save a life. We do know that after the training, people commented on feeling empowered and competent to save lives. Hundred of people have been trained within the MHRETAC.

Goal #4 MCI Planning
The measurable impact of this goal is that more agencies are attending the joint

EMS Planning and Preparedness Committee and providing input into what needs to be done regionally to provide a cohesive planned approach to MCI events. Having the HCC, NCR and UASI present with more emergency managers also has impacted what can be accomplished. Grants have been written to provide equipment for EMS agencies that relate to MCI events. This committee has been discussing mutual aid and how that can be more solidified.

Goal # 5- Annual Medical Legal Forum
CDPHE is not fund this project and therefore, this conference did not take place. Some legal issues were provided at the National EMS Safety Summit.

Goal # 6-CPR and AED Training
The measurable impact of this goal is that CPR and AED training did occur at schools and communities empowering them to help each other before professional help arrives. Hundreds of people were trained over the past two years in hands only CPR and AED's. Events such as the AirLife Memorial Run, Operation FreeBird, Ace on the Fax and Mile High Karate all provided community training. Adams 12 Schools have trained thousands of students over the past ten years in CPR and AED's. They have also begun Stop the Bleed training.

Goal #7-CDPHE Data
The measurable impact of this goal is that EMS agencies are now more aware of the need to have valid data and what they need to do to make it valid. Receiving the compliance reports from CDPHE data department with the RMD Regional EMS Coordinator providing guidance on how to correct the issues, has made the agencies more aware and more eager to provide clean data.

Goal #8- National EMS Safety Officer
The measurable impact of this goal is not yet reached. The components have been written, approved and submitted to NEMSMA but the exam is not yet written by Avista. The exam may not be available for another year. Once the exam is available, having people take the exam and receiving this national credential will have a profound impact on the quality of EMS Safety Officers and their identified role within EMS agencies nationally.

- ***Accomplishments directly resulting from the SNAP***

The MHRETAC reviewed but did not utilize the information from the SNAP project. The SNAP report identified the same things that the MHRETAC had identified as needing to be accomplished. Therefore, the above accomplishments were not directly as a result of the SNAP.

- ***Major new activities undertaken since the last Biennial Plan***

BNICE Online Education with International Association of EMS Chiefs (IAEMSC)
The MHRETAC wrote and submitted a grant to NCR to develop an online training education on Biological, Nuclear, Incendiary, Chemical, Explosives (BNICE) with collaboration with the IAEMSC members. With this funding, this online training will

be available to the MHRETAC members and NCR HCC members. The training will be free of charge and they will receive CEU's through St. Anthony EMS.

Stop the Bleed Kits

The MHRETAC wrote another grant to NCR to purchase Stop the Bleed kits to add to our north and south caches and to provide them to all the sites that we provided AEDs. These additional kits are single kits and five pack kits that all say MHRETAC on them. They have been distributed to all AED donation sites, some schools and businesses.

Save a Life Banners

Save a Life Banners were purchased through NCR to bring attention to attendees at community events that training was taking place at these events. These banners are part of the Save a Life caches that can be checked out for use at schools, business and community events.

Mile-High RETAC Foundation

The Mile-High RETAC hired an attorney and has formed a Mile-High RETAC Foundation to enable donations and funds raised from various events to remain separate from the MHRETAC statutory and grant funds.

EMS Financial Symposium

The MHRETAC and Plains to Peaks RETAC organized the EMS Financial Symposium that took place in September of 2018 in Colorado Springs. It was also a pre-conference at the National EMS Safety Summit in March of 2019.

EAP Project

MHRETAC wrote a system improvement grant to survey EMS agencies to determine the needs and use of Employee Assistance Programs (EAP). A second grant was written to determine what EMS agencies would like an EAP program to offer. Both these were accomplished through a survey. A list of EAP's was developed and contacted to determine what services the EAP's offered. Another grant was written to bring EMS agencies, fire and first responders together with EAPs to educate each other on the unique needs of first responders and challenges when they seek EAP assistance.

- ***Significant ongoing activities***

These activities and projects are not listed in any order but are provided to identify ongoing activities of the MHRETAC.

1. CDPHE Contract Deliverables
2. CDPHE Quarterly Progress Reports
3. CDPHE Financial Reports
    a. Financial Reports for previous year
    b. Financial Reviews
    c. Quarterly Financial Reports

d. Regional Funding Overview
e. Annual Budgets

4. System Improvement Grant Requests
    a. Develop Scope of Work for each grant
5. Regional Medical Direction
6. Save a Life Program
    a. Save a Life Event Spreadsheet
    b. AED Donations to the Community with Proper Documentation and Oversight
    c. CPR, AED, Stop the Bleed Cache Inventory
    d. Stop the Bleed Kits
7. Administrative Filings
8. Annual Report to Secretary of State
9. Exemption from Audit Report and Submission to the State
10. Annual National EMS Safety Summit with the EMS Financial Symposium
11. Ambulance Inspection Grant
12. MCI Plan
13. Medical Resource Guide
14. MCI Cache and Inventory Project
15. Annual Biennial Plans and Progress Reports
16. Trauma Triage Algorithm
17. Website Updates
    a. Mile-High RETAC
    b. National EMS Safety Summit/ MHRETAC Foundation
18. Policies and Procedures Updates
19. Grants Committee
20. Strategic Planning
21. EMTS Day at Capitol
22. CPR Equipment and Training Fund Raiser, Annual Golf Tournament
23. RETAC Forums
24. EAP Project

- ***Goals not accomplished in the last cycle***

The MHRETAC goals were accomplished as outlined above. Most of the goals are considered on-going. The Annual Medical Legal Forum did not take place due to lack of funding sources. Some legal topics were provided at the National EMS Safety Summit.

Section 3: EMTS System Components:

- **Integration of Health Services**

  - ***Leadership***

    Currently the lead agency for integrating health services would be the healthcare coalitions (HCC) under the direction of the Colorado Department of Public Health and Environment, Office of Emergency Preparedness and Response. Funding from the federal government will pass through the state office directly to the healthcare coalitions. Each healthcare coalition will determine how the allocated funds will be spent.

    There are two healthcare coalitions that the MHRETAC participates as a member, the Metro-Foothills HCC and the Tri-County HCC both of which are now under the umbrella of the North Central Region. HCC representatives attend the MHRETAC Board of Directors meetings on a regular basis.

    The systems cross political boundaries by including private and public entities in their planning efforts. There are major hospital systems within the MHRETAC which have their own leadership for healthcare in those systems. Those systems include Centura Health, UC Health, SCL Health and HealthOne.

  - ***Describe how counties work together within the region on EMTS issues***

    One of the major examples of counties working together on EMTS issues is the EMS Planning and Preparedness Committee. The major participants include MHRETAC, FRETAC, UASI, NCR and RMD. These 11 counties are starting to work together for the good of the entire region and not just one county. This committee consists of emergency managers, RETACs, EMS representatives, hospital and public health representatives. The RMD Program and the Multi-County Ambulance Licensing Committee are other examples of the counties working together.

  - ***Describe how EMS providers and facilities cooperate within the region***

    The EMS providers and facilities cooperate well together and attend the MHRETAC Board of Directors meetings as their schedule allows. Council Members are representatives from EMS providers and facilities. Both groups work on injury prevention projects. Both also actively attend SEMTAC and SEMTAC Committees.

    The Denver Metro EMS Medical Directors (DMEMSMD) group consists of EMS providers, physicians and EMS educators from facilities. This is a group that has cooperated to develop protocols and provide educational information for over 29 years. Agencies representing private and public entities, urban and rural, participate in this group.

The Regional Medical Direction program is a combined cooperative effort between FRETAC and MHRETAC utilizing EMS agencies and Medical Directors from both RETACs working together for the good of the entire region.

Some EMS agencies are now working with hospitals in conducting MCI drills together to demonstrate the need for cooperation and education. South Metro Fire and Sky Ridge Medical Center are having joint MCI drills. EMS providers and facilities also work together with the HCC's.

- ***Describe the involvement of local health departments within the region***

The MHRETAC has 5 public health agencies that serve the six county regions. These include Tri- County Health for Adams, Arapahoe and Douglas Counties. The Broomfield Public Health and Environment covers Broomfield County. Denver Public Health and Denver Environmental Health are both for Denver County. Elbert County Public Health covers only Elbert County. Broomfield Public Health and Environment Department has a representative who is a Council Member of the MHRETAC Board of Directors.

The Tri-County Healthcare Coalitions covers the counties of Adams, Arapahoe, Douglas and Elbert. The Metro Foothills HCC was combined with Jefferson County, Denver County and more recently Broomfield.

- ***Describe the role of other organizations (i.e. MMRS, All-Hazard Regions) within the region and how they interact with the RETAC***

MMRS no longer exists since 2014. NCR and UASI are all within the MHRETAC. Due to workload and schedule conflicts, the Executive Director's participation with the NCR has been very limited. However, attending the HCC's have become a priority.

- ***Discuss the role of key resource facilities***

Most of the Level I Trauma Centers and the Regional Pediatric Trauma Center provide ongoing education for other hospitals and EMS agencies around Colorado and neighboring states. There are several major healthcare systems within the MHRETAC: Centura Health, HealthONE, SCL, University Hospital and Kaiser. Centura Health, HealthOne and Denver Health have outreach activities provided to other RETACs and hospitals.

Some examples of key resource facilities activities are providing education, consultation, sharing document templates, organizational policies, mentoring of new staff and facilities. The trauma coordinators from the MHRETAC hospitals serve as a resource for other trauma coordinators and are highly involved in the Colorado Trauma Network (CTN) Committee.

- **EMTS Research**

  - ***Leadership***

    Each EMS agency and facility serves as a lead with EMTS research as they work within their healthcare systems. EMS agencies such as AMR conduct internal EMTS research as part of their business plans. Each EMS agency and facility conducts CQI programs, trauma case reviews and EMS chart reviews to determine compliance with benchmark entities and how they can improve patient care. The RMD program will be key in developing more leadership with EMTS research.

  - ***Describe the role of designated trauma centers or key resource facilities in EMTS research***

    The Level I trauma centers are required to participate in research as part of their hospital criteria for designation. Many efforts are limited due to privacy/confidentiality and HIPAA concerns which are barriers to EMTS system research.

    Swedish Medical Center and St. Anthony Hospital continue to fund a joint research department and do clinical research that includes patients from both hospitals. In July 2007, St. Anthony Hospital partnered with Dr. David Bar-Or, Trauma Research LLC, an independent research lab to expand their research capabilities which is still active.

    Denver Health Medical Center continues its history of research working with the Denver Health Paramedic Division on a research study to see if giving plasma to trauma patients during ambulance transport versus arrival at the hospital will help reduce bleeding. This study is sponsored by the Department of Defense's Telemedicine and Advanced Technology Research Center and is an on-going project.

- **Legislation and Regulation**

  - ***Leadership***

    The lead agency for legislation and regulation would be the leaders of EMSAC and local EMS agencies to promote legislative issues and regulations that support EMS efforts. These leaders are active with the legislators, bill updates and sharing the information with stakeholders. MHRETAC shares information with stakeholders.

  - ***Describe the RETAC's involvement in the legislative process related to EMTS system development, funding system designs, research and EMTS credentialing and scope of practice.***

Various members of the MHRETAC have participated in all the committees related to EMTS system development, funding system designs, research and EMTS credentialing and scope of practice through the Emergency Medical Practice Advisory Council (EMPAC) meetings. The topic dictates who attends what meetings. The Executive Director attends the SEMTAC meetings and committees and forwards information out via e-mail to stakeholders within the MHRETAC. Since CDPHE has started utilizing telephone conferencing, more people can participate in these meetings. The physicians in the DMEMSMD group conduct research and report back to that group. The RMD program discusses the scope of practice and relays the information to the DMEMSMD group which consists of EMS agencies and the MHRETAC.

- ***Identify any needs around regulation of the EMTS system within the RETAC.***

  MHRETAC is not aware of any needs around regulation of the EMTS system within the MHRETAC. EMS agencies and hospitals are very much into regulating themselves along with the regulations of CDPHE. The Multi-County Ambulance Licensing Committee developed IGA's and Ordinances for the counties to adopt that provided some regulations for EMS agencies.

- **System Finance**

  - ***Discuss how RETAC funds are used for regional EMTS system development***

    MHRETAC funds are used to pay for ambulance inspections for any agency within the MHRETAC once they complete the requested document, prove payment and provide the passing ambulance inspection documents.

    MHRETAC organized a Grants Committee and a Request for Funding Scholarship document. MHRETAC funds have been provided for educational scholarships to attend various educational offerings such as the National EMS Safety Summit.

  - ***What in-kind resources are provided to the RETAC?***

    The following list of stakeholders provides expertise, time and energy towards the MHRETAC to enable the goals to be accomplished. These are all in-kind resources provided to the MHRETAC:
    - Council Members
    - Trauma Coordinators and Registrars
    - Medical Directors who work with the Regional Medical Direction Program and participate in the Denver Metro EMS Medical Directors group
    - EMS educators
    - Stakeholders
    - Meeting space for meetings to be held

- ***Describe outside funding sources used by the RETAC***

  CDPHE also provided funding through the system improvement grant process to initiate the Regional Medical Direction program and hire a Regional EMS Coordinator to carry out the goals and objectives of that program. The MHRETAC has developed a fund-raiser activity with an annual golf tournament to purchase AED's to give to various community agencies.

- **Human Resources**

  - ***Discuss the number of EMS providers in the RETAC***

    According to the MHRETAC agency profiles for 2018, there are 1,931 EMT's, 30 AEMTs, 5 I's and 685 Paramedics for a total of 2,651 EMS providers.

  - ***Discuss the use of volunteer EMS providers within the RETAC***

    The majority of EMTs in the MHRETAC are paid EMS providers. The rural areas in Elbert County have the most volunteers with a few in the rural areas of Adams and Arapahoe County. Approximately 33 percent of the agencies in MHRETAC are staffed with some volunteers.

  - ***Highlight pertinent shortages of EMTS providers***

    The MHRETAC doesn't have the pertinent EMTS provider shortages that some more rural areas. Also, the MHRETAC is a desirable place to live with adequate wages so pertinent shortages are decreased.

- **Education Systems**

  - ***Highlight EMTS training opportunities and providers within the RETAC***

    With the large number of designated training centers in the MHRETAC, EMTS training opportunities are numerous. Most of the trauma designated centers provide in house training for nursing staff as well as pre-hospital providers.

    The major healthcare systems provide training to EMS, nurses and physicians. These systems include Centura Health, HealthOne, Denver Health, UC Health. SCL, Cascade Training Center, Community Colleges, Children's Hospital Colorado and the MHRETAC with the Annual National EMS Safety Summit and the Annual EMS Financial Symposium. HealthOne, Denver Health and Centura provided educational offerings in the rural communities.

  - ***Highlight pertinent education needs in the RETAC***

    There is not a shortage of educational needs within the MHRETAC as outlined above. Most of the education is offered free of charge. When a need for a specific educational offering is identified, the Medical Directors and Trauma Directors work with the hospitals and EMS agencies to provide that requested education.

- **Public Access**

  - ***Discuss public access to the 9-1-1 system and the level of pre-arrival medical instructions (EMD) normally available to 9-1-1 callers***

    Access to the 9-1-1 system is not a problem within the MHRETAC. Most areas also have reversed 9-1-1 systems. EMD is offered at many of the dispatch centers.

- **Evaluation**

  - ***Highlight methods currently in use by the RETAC to evaluate the EMTS system***

    Discussions among health care providers offer much insight into identified and potential problems within the EMTS system. Potential concerns within the EMTS are usually sent to the Executive Director, Council Members or Medical Directors to forward on to the MHRETAC Board of Directors meeting for discussion and plan implementation. Many EMTS system issues are dealt with in the large healthcare systems within the MHRETAC.

  - ***Describe any data regularly used across the region for evaluation purposes.***

    At the present time, there are no data requests regularly used across the region for evaluation purposes by the MHRETAC, except for RMD program with specific data points. Each major facility or EMS agency conducts their own system wide data collection to evaluate their specific system and how it relates to the region.

  - ***Describe any quality improvement projects planned, underway or completed within the region***

    Due to a lack of personnel, the CQI projects for the MHRETAC have been as a result of the RMD program. The RMD has focused on a continuous quality improvement project with the cardiac benchmarking project, transport times, pain control, use of Ketamine and now the CARES project and data compliance.

- **Communications Systems**

  - ***State the participation in statewide DTR system within the RETAC***

    The DTR system is widely used within the MHRETAC.

  - ***Describe how EMS dispatch services are provided***

    There are 17 communication centers within the MHRETAC that offer dispatch services to the EMS agencies. Each county provides services within their county except for Elbert who receives this service from Douglas County.

- ***Describe how EMS – hospital communications are provided***

  The EMS agencies communicate with the hospitals utilizing cell phones and radios. Hospitals have bio-phones which are used on a limited basis.

- ***Describe how facilities communicate with each other***

  Hospitals communicate with each other using land lines, EMSystems, cell phones and 800 MHz radios. The Bio-phones are available but not all facilities have the bio-phones programed the same way. The difficulty with the radios is that the hospitals do not use the radios frequently enough to remember how to use them properly.

- ***Methods used for routine mutual aid between providers***

  Radios and cell phones are used by EMS agencies requesting mutual aid. Land lines are used when available.

- ***Describe communications methods or plans specific to mass casualty events***

  Cell phones and 800 MHz radios are used during mass casualty events. The dispatch centers provide information on the EMSystems and act as a conduit of information for hospitals and EMS agencies regarding transporting of patients and hospital bed availability. There is a process in place whereby dispatch centers can send an MCI event to another dispatch center to they can handle the routine calls, this is referred to as Communication Surge Network and will function through the EMSystem. Facilities should have Government Emergency Telecommunications Service (GETS) cards available to key personnel.

- **Medical Direction**

  - ***Describe the medical community's involvement in maintaining or enhancing the quality of EMTS care***

    The Denver Metro EMS Medical Directors group has been involved with EMS issues for over 29 years. This group of Medical Directors has developed the Denver Metro Protocols which has been adopted by many agencies around Colorado and provide guidance on projects for the EMTS community. Many EMS agencies, EMS educators, RETACs and physicians attend this meeting which is held every other month. The Medical Directors meet separately to discuss protocol and medical issues. The EMS educators also meet separately to discuss EMS specific issues which may include educational needs.

    Many hospitals and hospital systems provide ongoing education to EMS on a regular basis. The agency Medical Directors are active with quality improvement efforts and education within their own agencies.

  - ***Describe any regional activity to coordinate prehospital medical direction activities***

The FRETAC and the MHRETAC have written grants for RMD combining the efforts of both RETACs and have hired a Regional EMS Coordinator to carry out the functions of the program. The plan involves Regional Medical Liaisons representing both RETACs that serve as an advisory group for the RMD program and Regional EMS Coordinator. The two RETACs and RMD work with the DMEMSMD Group to coordinate the regional medical direction activities. The major focus has been updating of the Denver Metro Protocols every six months.

- **Clinical Care**

  - ***Describe access to community health services within the RETAC***

    MHRETAC has a wealth of community health services with all the health care facilities that includes hospitals, free standing ED's and specialty hospitals within this region. Denver Health Medical Center, HealthONE, Children's Hospital Colorado and Centura Health all have satellite clinics available to the public throughout the entire region. Elbert County is the only county without a hospital. Parker Adventist is the closest hospital to them and serves Elbert County citizens well. There are also privately-owned urgent care clinics and more recently free standing ED's that provide medical care for the community and visitors to Colorado. Children's Hospital has 10 different sites for children throughout the metro area.

  - ***Describe how the RETAC ensures patients are transported to the most appropriate facility***

    MHRETAC has not conducted another transport study for a few years. The previous study indicated that patients were being transported to the appropriate facility. The major hospital systems track these types of issues relating to inappropriate transfers. The RMD program did a transport study that determined patients were going to the most appropriate facilities.

    See Appendix E: MHRETAC Trauma Triage Algorithm for Adults and Pediatrics

  - ***Describe the role of facility-established triage and transport plans or inter-facility transfer agreements***

    Most of the hospitals within the MHRETAC are Level I-IV with written facility established triage and transport plans. These facilities all have written inter-facility transfer agreements as per the trauma designation rules.

    MHRETAC developed a MHRETAC Inter-Facility Transfer Algorithm and Guidelines in 2011 which will need to be reviewed and updated with the surge of free standing ED's and the revisions of the trauma chapters.

    See Appendix F: Inter-facility Transfer Guidelines and Algorithm

- ***Highlight any trauma center accessibility issues***

  There are no identified problems within the MHRETAC for accessing trauma centers.

- ***Discuss access to specialized rescue services***

  The large EMS agencies have the equipment and capability along with the fire departments to provide specialized rescue services. There are three search and rescue teams in the MHRETAC; Rampart Search and Rescue in Adams County, Arapahoe Rescue Patrol in Littleton and Douglas Search and Rescue in Douglas County which also serves Elbert County.

- **Mass Casualty**

  - ***Discuss EMS and facility surge capacity within the region***

    Over the past thirteen years, the MCI trailers within the MHRETAC have gone through several changes. Surge trailers that were provided to Adams, Arapahoe and Denver county for caches of 500 people have been moved to other counties or re-allocated. MHRETAC in collaboration with the EMS Planning and Preparedness Committee, are in the process of reviewing these trailers and perhaps moving them to more strategic area. Since the EMS and facilities surge capacity is based on the fact that within the metro area, supplies and personnel can be obtained from other sources within the region. Therefore, it is felt that large trailers may not be the answer to responding to MCI's.

    Hospitals and large EMS agencies have developed their own caches within their agencies. Some agencies have planned with vendors to furnish extra supplies when needed during a mass casualty event. Swedish Medical Center and Littleton Hospital continue to house some MCI caches.

    MHRETAC and FRETAC developed a minimum inventory list for MCI supplies. This will assist in keeping supplies consistent between all the agencies.

    See Appendix G: MHRETAC MCI Minimum Inventory List

  - ***Indicate RETAC-based mass casualty planning efforts***

    The MHRETAC updated the Mass Casualty Plan (MCI) Plan in December 2018. The major focus of MCI planning has been on the caches, trailers, inventories and location of these items. Currently there is another effort to conduct inventories of caches and perhaps move more trailers due to changes within the EMS agencies and their capabilities.

  - ***Describe how EMTS organization contact information is maintained, updated and tested on a regular basis***

    Due to the large number of organizations within the MHRETAC, it is difficult to keep up with changes within facilities and EMS agencies. As the MHRETAC is

made aware of changes, e-mail contacts are updated. The intent of the MHRETAC web site is to have access to web sites for facilities and agencies. With the limited resources within the MHRETAC, and given the number of EMTS related personnel, it is impossible for the MHRETAC to maintain an updated contact list. The testing occurs when e-mails are returned.

- ***Describe mass casualty planning assistance provided by the RETAC***

  The MHRETAC has taken the lead in developing a regional MCI plan. This plan was provided to the individual agencies to develop their own MCI plans. The EMS Planning and Preparedness Committee is working on a system to determine what agencies have current agency MCI plans and will review plans on a regular basis.

- ***Describe National Incident Management System (NIMS) compliance within the region***

  March 1, 2004 the MHRETAC adopted a resolution that all agencies and facilities within the MHRETAC should be NIMS compliant. This includes the appropriate people obtaining the appropriate educational certificates of compliance. This resolution is still in effect.

- ***Describe the RETAC's role, if any, in ensuring stockpiles of personal protective equipment or pharmaceuticals for use in a pandemic***

  Within the MHRETAC, UASI and the North Central Region all hazards group have taken the lead in obtaining personal protective equipment. The pharmaceuticals are purchased and dispensed by UASI and the hospital preparedness program with CDPHE.

- ***Describe the RETAC's role, if any, in mobilizing additional health care providers in the event of an emergency.***

  At this point, the MHRETAC does not have a role in mobilizing additional health care providers in the event of an emergency.

- **Public Education**

- ***Describe activities by the RETAC to educate the public on EMTS issues***

  MHRETAC has participated in the annual EMTS Day at the Capitol and the EMSAC Conference providing educational materials on EMS issues at both locations. During the Annual MHRETAC Golf Tournament, there is a presentation on the various activities of the MHRETAC and EMTS issues. During community save a life events, educational materials are distributed to the general public that include CPR, AED, Stop the Bleed, Heatstroke, Lightning and the MHRETAC Brochure on the statewide trauma system.

See Appendix H: MHRETAC Brochure 2016

- **Prevention**

  - ***Describe RETAC-based public education programs to prevent illness and injury***

    The MHRETAC is very active in providing several save a life projects that include hands only CPR and AED training, tourniquet application, stop the bleed, heatstrokes and lightning strikes. These are provided to the general public at various community locations and events. CPR and stop the bleed equipment caches are available for agencies to borrow to provide trainings by their agencies.

  - ***Describe any collaborative efforts between the RETAC and state or local health departments on prevention activities***

    The trauma centers within the MHRETAC are all actively involved in injury prevention activities and is supported by the staff at CDPHE. The Stepping on Projects continue with Swedish Medical Center, Centura Health Systems and Littleton Hospital on behalf of the MHRETAC.

  - ***Describe any programs focused on pediatric injury prevention***

    The Safe Kids project involves most of the facility injury prevention coordinators within MHRETAC. This group focuses on car seat checks for pediatrics among other issues related to pediatric injures. Car seat checks are provided at some of the MHRETAC save a life project events in the community such as the public education offering at Ace on the Fax.

- **Information Systems**

  The hospitals and EMS agencies provide data to CDPHE utilizing Image Trend or other trauma registry databases. The EMS agencies are now on NEMSIS Version 3. Each of the EMS agencies and facilities have developed extensive quality improvement programs using data that is collected internally. The Medical Directors for the EMS agencies and the Trauma Directors for the facilities direct and support these quality improvement efforts. Broadband internet access is available to the metro area. RMD is tracking the compliance reports for EMS agencies to improve the quality of the data.

Section 4: Goals and Objectives:

Goal #1 Conferences and RETAC Forums will be held to provide education on personal, patient and community safety, EMS financial components and EMTS issues related to RETACs.

A. Goal Statement

The MHRETAC is proud to sponsor and support the Annual National EMS Safety Summit, EMS Financial Symposium and the RETAC Forums.

B. Background

This goal is important because EMS providers are at risk for PTSD, suicide, personal physical injuries, fatigue and risk to patient safety. Creating a culture of safety will bring awareness to individuals that will make them reconsider their decisions and thus provide a safer work environment for themselves, patients and the communities they serve.

The MHRETAC has been the co-sponsor and organizer of the Annual National EMS Safety Summit since 2008. This conference was initiated to reduce ambulance crashes, provide training and education on driving skills and ambulance safety issues in the back of the ambulance. Since that time, the safety issues have expanded into dealing with issues such as MCI, active shooter scenario, sleep deprivation, physical fitness, behavioral health, lightning strikes and more. The gap in the EMTS system is that this is the one and only conference of this type dedicated solely to deal with the issues of EMS safety in Colorado and nationally.

The EMS Financial Symposium is a pre-conference to the safety summit and is necessary since there are EMS agencies closing due to lack of financial stability. With the changes in reimbursement with Medicaid and Medicare, agencies need to be kept up to date on how it impacts their agency and the bottom line.

C. Components Addressed

Integration of Health Services, EMTS Research, Legislation and Regulation, System Finance, Human Resources, Education Systems, Public Access, Communication System, Medical Direction, Public Education, Clinical Care, Mass Casualty, Public Education, Prevention, Information System, and Evaluation

D. Project Description

The MHRETAC will coordinate and co-sponsor the National EMS Safety Summit and the EMS Financial Symposium which includes administrative support for all activities related to developing the agenda and speakers, obtaining a venue, marketing, soliciting vendors, registering attendees, providing CEU's, soliciting sponsors and coordinating all the finances related to the conferences. The EMS Financial Symposium will focus on how to set up EMS agencies for financial success which includes dealing with third-party payors.

The MHRETAC will coordinate all the aspects of the RETAC Forums including location, agendas, attendees, rooming lists, meeting minutes and all financial aspects related to the RETAC Forum.

E. Estimated Cost

Conference expenses include the costs of staff support, speaker travel and expenses, hotel room fees, hotel AV equipment and supplies. Vendor fees and some outside Colorado registration fees will offset the expenses. There is a large amount of donated in-kind hours in developing the agenda, communicating with speakers and in making all the arrangements necessary for this 3-day conference including the National Safety Summit Planning Committee and the SEMTAC Safety Committee Members.

F. Desired Outcome

The Annual National EMS Safety Summit and EMS Financial Symposium will continue to be held as funding is available. The outcome of the conferences is that the EMS providers in Colorado and surrounding states will be more aware of the need for a safety culture and will apply these changes within their agencies to keep everyone safer and save lives. The EMS Financial Symposium will provide financial awareness to keep EMS agencies viable in the communities. The RETAC Forums will be held around Colorado with informative agendas and good attendance.

This goal will be measured by the conferences and RETAC Forums being held.

See Appendix I: Save the Date for the EMS Financial Symposium and National EMS Safety Summit April 14-17, 2020

Goal #2 MHRETAC and FRETAC will have a coordinated and effective Regional Medical Direction Program

A. Goal Statement

The MHRETAC supports Regional Medical Direction and working with FRETAC to support the program.

B. Background

This goal is important because the data provided by this program indicates how the EMS system is working in the metro area. The gap was that each agency was working on CQI and not looking at CQI regionally. The CQI data is still limited but the state is working on providing access to data. The goal was also to get the medical directors working more closely together.

The MHRETAC and Foothills RETAC each submitted a systems improvement grant for a Regional Medical Direction Program for both RETACS in coordination with the Denver Metro EMS Medical Directors (DMEMSMD). The Regional EMS Coordinator works closely with both RETAC Executive Directors. Both RETACs have Regional Medical Liaisons who serve as advisors to support the RETACs and the DMEMSMD group. The

major focus has been on updating the Denver Metro Protocols and conducting other focused projects such as the use of Ketamine. CQI projects may be developed.

C. Components Addressed

Medical Direction, Evaluation, Information Systems

D. Project Description

The MHRETAC, FRETAC and DMEMSMD will work collaboratively to provide a regional RMD program utilizing the Regional EMS Coordinator. Meetings will occur every other month under the direction of the Regional Medical Liaisons (RML's) who provide direction for the RMD program. The major focus will be updating the Denver Metro Protocols, improving the compliance reports on data and developing and maintaining the regional CARES project. Future CQI projects may be developed. Each RETAC will maintain financial control over the RMD grants and handle all expenses and payrolls.

E. Estimated Cost

The major cost of the RMD program is for the Regional EMS Coordinator contract and the webmaster. The physicians involved continue to donate their time to this project. The donated time from the RETAC Board of Directors for the two RETACs, the RML's and the DMEMSMD group is huge. There are no revenues generated by this program.

F. Desired Outcome

Both MHRETAC and FRETAC will have a regional CARES project, improved compliance data reports, updated Denver Metro Protocols and CQI projects that impact patient care outcomes. The two RETACs and the DMEMSMD group will work closely with the Regional EMS Coordinator to assure the process is valuable and data is produced in cooperation with CDPHE.

This goal will be measured by completing the Denver Metro Protocols, improving compliance data reports and the regional CARES project in place.

Goal #3 MHRETAC will conduct save a life projects to citizens during community training events as part of an injury prevention program

A. Goal Statement

The goal is to provide community training on lifesaving skills such as use of tourniquets, hemorrhage control, hands only CPR and AEDs so they can take care of themselves in a situation prior to EMS arrival. Preventing heatstrokes in pediatrics and lightning strikes are the other two injury prevention save a life projects.

B. Background

The White House launched a Stop the Bleed national campaign to raise awareness and a call to action in 2018. This campaign is intended to cultivate grassroots efforts that encourage bystanders to become trained, equipped and empowered to help someone in a bleeding emergency before professional help arrives.

Data indicated that no matter how rapid the arrival of professional emergency responders, bystanders will always be first on the scene. A person bleeding can die from blood loss within five minutes; thus, it is important to quickly stop the blood loss. Those individuals who are nearest to someone with life threatening injuries are best positioned to provide the first care. According to a recent National Academies of Science study, trauma is the leading cause of death for Americans under age 46.

Data indicates that 383,000 people suffer from sudden cardiac arrest annually. With access to AED's and hands only CPR, at least 40,000 lives could be saved each year. Only 30% of Americans know how to perform CPR. With the adoption of the hands only CPR method, more people are comfortable in learning these skills.

MHRETAC wrote grants to purchase tourniquets, stop the bleed kits, CPR manikins and AED trainers as part of a cache system within the MHRETAC. Healthcare providers can check out these caches to enable them to provide community training. Caches are located both north and south.

Through fund raising efforts, MHRETAC has provided some donated AED's along with stop the bleed kits to small businesses, churches and communities.

This goal is important because having these skills will help people save lives. Data from other parts of the country indicate that this training has become very popular and necessary to get communities involved in saving lives. The gap in the EMTS system is that this training is limited due to lack of personnel to train the communities.

C. Components Addressed

Integration of Health Services, EMTS Research, Public Education. Prevention, and Evaluation

D. Project Description

The save a life project for the MHRETAC includes training on hands only CPR, use of an AED, tourniquet application, stop the bleed for hemorrhage control, prevention of heatstrokes and lightning safety. Education on these topics are provided by EMS and injury prevention coordinators from the hospitals within MHRETAC. Caches have been developed to assist health care providers to have the proper equipment for training. Training is provided to healthcare providers on how to train communities without a classroom setting. Training will be provided at community events such as AirLife Memorial, Operation Freebird, small businesses and churches. Stop the Bleed kits will be provided with the AED donation at schools, businesses and churches.

E. Estimated Cost

The estimated cost is unknown. The cost of the tourniquets, dressing and tape would depend on the amount of supplies used during the year. Grants will need to be written to cover the on-going expenses of supplies. The solicited help from healthcare professionals would be in-kind contributions. There are no revenues generated from this goal.

F. Desired Outcome

The desired outcome is that there will be in increase in people trained to save lives on the scene prior to EMS arrivals.

This goal will be measured by providing training to the communities.

Goal #4 The MHRETAC Mass Casualty Incident (MCI) planning efforts will be a collaborative effort with FRETAC, NCR, UASI and HCC's through the EMS Planning and Preparedness Committee to provide a regional approach for managing an MCI and Multiple-Person Injury (MPI) event

A. Goal Statement

The Regional MCI planning and response efforts will continue between FRETAC, NCR, UASI, HCCs and MHRETAC with participation by stakeholders at the EMS Planning and Preparedness Committee meetings.

B. Background

The MHRETAC MCI planning and response needs will continue to be integrated with the EMS Planning and Preparedness Committee. This goal is important and beneficial since both RETACs are next to each other and provide resources as needed during an MCI event. The MCI plans for both RETACs mirror each other and plans are updated on alternate years by each RETAC. The EMS Planning and Preparedness Committee will encourage more representation at meetings from stakeholders.

Data indicates that when more agencies plan together for MCI events, the response is smoother and more effective to that event. There isn't a gap in the EMTS for this, but it is one of the 15 components of the EMTS system that needs to be addressed.

C. Components Addressed

Integration of Health Services, Legislation and Regulation, System Finance, Human Resources, Education Systems, Public Access, Evaluation, Communication Systems, Medical Direction, Clinical Care, Mass Casualty, Public Education, Prevention and Information Systems.

D. Project Description

The EMS Planning and Preparedness Committee which meets every other month, will take the lead with MCI. The MHRETAC will access the current status of the regional MCI/med surge trailers as to location, status of inventory, need and use of these trailers. The minimum inventory list will be reviewed and updated as necessary. The MHRETAC MCI Plan will be updated and or combined as a regional plan with the EMS Planning and Preparedness Committee. MCI exercises will be conducted with EMS agencies taking the lead and coordinating these efforts with hospital participation.

E. Estimated Cost

There may be some cost associated with replacing some storage containers for the caches to make them more accessible in the trailers or buildings. Most of the expenses of this project will again be the donated time and effort of all those stakeholders in the 11 counties to develop a good MCI managed system for caches and other supplies. There are no revenues generated from this goal.

F. Desired Outcome

There will be an increase in participation with MCI planning from hospitals, pre-hospital agencies, public health and emergency managers through the EMS Planning and Preparedness Committee which includes both RETACs, NCR, UASI and HCC.
MCI planning documents will be updated on a regular basis and FRETAC and MHRETAC documents will mirror each other.

This goal will be measured by completing the tasks outlined in the project description.

Goal #5 MHRETAC will participate with national organizations such as NEMSMA and IAEMSC to provide National EMS Safety Officer Credentials and on-line education training.

A. Goal Statement

The MHRETAC will have a National EMS Safety Officer program with competencies, job descriptions, validated exam and credentials recognized by a national organization such as NEMSMA and IAEMSC. On-line training for BNICE (Biological, Nuclear, Incendiary, Chemical, Explosives) Project is being developed by IAEMSC and the MHRETAC.

B. Background

This goal is important because the safety of EMS personnel is becoming more and more important as we know this type of job is among the top jobs for work injuries. Having a recognized safety officer in an organization will put more credibility into the need to develop a culture of safety. NHTSA and ACEP developed a book on Strategies for developing a culture of safety in organizations. NAEMT has developed a national council that is considering the steps to be taken to develop a culture of safety and will assure that those steps are accomplished. Developing this role, will assist that council in accomplishing that task. Several people on that council also service on the National EMS Safety Officer committee.

The BNICE training will allow EMS to take the nine videos developed at their leisure instead of attending an onsite class. There will also be a small exam at the end of the training to prove that they obtained the knowledge in the course.

The gap in the EMTS system is that the need for this type of role is slowly being recognized and will be filled once this task is completed.

C. Components Addressed

Integration of Health Services, EMTS Research, Legislation and Regulation, Communication System, Human Resources, Education, Prevention, Medical Direction, Information System, Clinical Care and Evaluation

D. Project Description

The MHRETAC will attend national conferences to promote the National EMS Safety Summit and the EMS Financial Symposium while soliciting speakers, identifying agenda topics and showing support for national organizations. The National EMS Safety Officer Committee will meet again once the safety officer exam is completed. The MHRETAC will be able to promote this national credential at the safety summit. The BNICE training is an on-line training that will provide CEU's through St. Anthony EMS. MHRETAC is recognized as sponsoring this program with IAEMSC. MHRETAC will continue to be a member of the National EMS Safety Council that meets every other month to promote EMS safety and the safety summit.

E. Estimated Cost

This project will be all in-kind donated by the committee representatives. There are no revenues generated from this goal.

F. Desired Outcome

The role of the National EMS Safety Officer will be identified with competencies identified, a validated exam developed, and a nationally recognized credential awarded for those who pass the exam. The BNICE training will prove to be educational for EMS providers.

This goal will be measured by completing the safety officer exam and the BNICE training videos.

Section 5: Attest Statement

ATTEST STATEMENT

Biennial Plan

By signing below, the RETAC Chairman and the RETAC Coordinator/Executive Director attest that the information contained in this document, to the best of their knowledge, completely and accurately represents the most current information available to complete the RETAC Biennial plan. The goals and objectives incorporated herein have been reviewed and agreed upon by the RETAC Board of Directors to be included in this document.

Charles W. Mains, MD
Print Chairperson Name

Chairperson Signature

6-30-19
Signature Date

Shirley J. Terry, BSN, RN
Print RETAC Executive Director Name

RETAC Coordinator/Executive Director Signature

6-30-19
Signature Date

Appendices Content

Supporting Documents

Attachments

A. Maps
   1. Colorado RETAC's Map
   2. Mile-High RETAC
   3. North Central Region (NCR) and Urban Area Securities Initiative (UASI)
B. MHRETAC Hospitals June 2019
C. MHRETAC Authority Documents
   1. Intergovernmental Agreement
   2. Bylaws (2018 and 2019)
D. EMS Financial Symposium and National EMS Safety Summit Agenda, March 26-29, 2019
E. MHRETAC Trauma Triage Algorithm 2015 Adults and Pediatrics
F. MHRETAC Inter-facility Transfer Guidelines and Algorithm
G. MCI Minimum Inventory List
H. MHRETAC Brochure
I. Save the Date EMS Financial Symposium and National EMS Safety Summit April 14-17, 2020
J. MHRETAC Goals- Executive Summary