COLORADO
Health Facilities & Emergency Medical Services Division
Department of Public Health & Environment

Emergency Medical and Trauma Services Branch

2014
Stroke Advisory Board Legislative Report

January 2014 – December 2014

Submitted to the Colorado Legislature by the

Emergency Medical and Trauma Services Branch

Health Facilities and Emergency Medical Services Division

Colorado Department of Public Health and Environment

www.coems.info

2014 Annual Report to the Colorado Legislature concerning activities of the Stroke Advisory Board

Table of Contents

Executive Summary

On May 24, 2013, Gov John Hickenlooper signed C.R.S. 25-3-115 into law, originally Senate Bill 13-225, which called for the formation of the Stroke Advisory Board to make recommendations to improve stroke care in the state of Colorado by addressing the following four topics. Each year in January, the Stroke Advisory Board is instructed to produce a report on its progress until the repeal of the board in September 2018.

Data registry
Data collection, by itself, often correlates to improved care and is beneficial in identifying educational opportunities and successful models. The board will continue to research the database options and aims to have a final recommendation for the next annual report. At this time, the board does not recommend a state stroke registry due to the duplication, costs and resources associated with state databases. Instead, the board is looking at multiple data sources for the purpose of quality improvement and possibilities for data collection depending on a facility's volume and level of care.

Treatment and prevention
The board recognizes that urban areas may have more ready access to best practices than rural areas. The disparity in care from rural to urban areas is not a reflection of interest or effort but more a reflection of barriers to accessing resources. The board believes that improving the flow of quality improvement tools and education across Colorado regions would impact care more than the development of statewide protocols. Any improvements should include coordination and mentorship that provide the tools to achieve excellence. The board is forming a framework to develop a robust system of care that is anticipated to improve other time-sensitive conditions.

Rural and urban care coordination
The board understands that improved EMS-to-hospital and rural-to-urban care coordination can improve stroke care. The board advocates regional organization with consideration of the unique needs of agencies and facilities. State level mandates may hinder rural areas and leave weather, geography and local barriers unaddressed. The standards of care should be, and mostly are, consistent through the state. Continued efforts with Regional Emergency Medical and Trauma Advisory Councils will be the focus of a plan to improve coordination in 2015.

State designation of stroke facilities
The board does not currently recommend state designation above and beyond an accreditation or certification in stroke care by a national accrediting body. A support structure is essential to non-accredited stroke facilities in Colorado, and the board has not finalized its recommendation regarding designation of facilities that are not certified Comprehensive or Primary Stroke Centers.

Definitions and Acronyms

CAH- Critical Access Hospital

CCEC- Community Clinic with Emergency Center

CDPHE- Colorado Department of Public Health and Environment, or the department

CHA- Colorado Hospital Association

Cincinnati stroke scale- Stroke assessment scale

C.R.S. 25-3-115- Colorado Revised Statutes: Senate Bill 13-225- A 2013 Colorado Senate bill establishing the STEMI Task Force and Stroke Advisory Board

CSC- Comprehensive Stroke Center

CT- an imaging machine that produces multiple X-ray images for diagnostic purposes

ED- Emergency Department

EMS- Emergency Medical Services

FAST- stroke assessment: Facial droop, Arm weakness, Slurred speech, Time to call 911

GWTG- Get With The Guidelines - Stroke registry

LAPSS- Los Angeles Pre-hospital Stroke Screen

Lytics- short for thrombolytics- medication that breaks down blood clots located in blood vessels

Modified Rankin Scale- a scale used to measure the degree of disability in stroke patients which is used as a clinical outcome measure

PSC- Primary Stroke Center

RETAC- Regional Emergency Medical and Trauma Advisory Council

tPA- tissue plasminogen activator, a medication administered to ischemic stroke patients

Background

On May 24, 2013, Gov. John Hickenlooper signed Senate Bill 13-225 into law. The bill called for the formation of the Stroke Advisory Board to make recommendations to improve stroke care in the state of Colorado by addressing the following issues:

- State database or registry
- Public access to aggregated data
- Treatment and prevention of stroke using evidence-based practice
- Rural and urban care coordination
- Whether stroke designation is necessary to ensure appropriate quality care

The board is made up of 18 Governor-appointed members and one ex-officio member from the department. A description of board members is listed in C.R.S. 25-3-115, located in Appendix 3. The current members are listed in Appendix 2. Meetings are facilitated by the Colorado Department of Public Health and Environment.

The board has been meeting since September 2013 and shortly thereafter established three work groups for data registry, treatment and prevention and rural-urban care coordination. The board agreed to have the groups work separately for a portion of each meeting and summarize discussions in the large group setting. Designation has consistently been an agenda topic for the group in its entirety and often takes shape from the work group discussions.

Stroke Advisory Board meeting information and materials can be found on the website: https://www.colorado.gov/pacific/cdphe/stroke-advisory-board

Introduction

Stroke has, for many years, been among the top five causes of death in both Colorado and the nation. In 2013 there were 1,576 deaths from cerebrovascular disease accounting for 4.7 percent of all deaths in Colorado. Stroke is also a leading cause of disability as many stroke survivors experience lifelong impairment.

Stroke is a time-sensitive condition with treatment options that decrease significantly as time progresses from the onset of symptoms. Early intervention and effective rehabilitation have been shown to improve outcomes with regard to death and disability.

In 2014, the Stroke Advisory Board researched gaps in stroke care in Colorado. Stroke models of care in Colorado and across the nation were examined to aid in the formation of a system that incorporates best practices at every stage of the stroke care continuum. Specific attention has been given to the unique aspects of Colorado's population density, medical needs, medical resource availability, geography, topography and the culture of health and medicine in Colorado.

The following report addresses each legislative topic individually, listing the board's actions toward meeting the priorities established for 2014, current recommendations and the upcoming priorities for 2015.

Data Registry and Public Access to Stroke Data

In 2014, the Stroke Advisory Board researched information from other states, facilities, hospital systems and peer-reviewed studies to determine what benefit a state registry may be to the stroke system of care and what a successful database requires. Data collection is correlated with improved care, partly due to enhanced focus on stroke care processes. Increased attention naturally aids in the adoption of more efficient and effective practices.

Data collection also provides the opportunity for quality improvement by identifying areas of success and deficiencies within and across systems. Evidence-based practice endorses process measures which work to decrease crucial time intervals in acute stroke treatment, optimizing care and improving outcomes in post-acute settings. Nationally recognized organizations as well as other state systems are adopting these process measures. Unfortunately, quality outcome measures are difficult to obtain and measure objectively; however, some process measures objectively assess acute care which, in turn, affects long-term outcomes.

Report on 2014 Priorities

Identify the top 10 data points necessary for improving acute stroke care

The Stroke Advisory Board analyzed multiple datasets to catalogue the minimum data necessary to most effectively measure the quality and process efficiency of stroke care. The measures selected should not be burdensome to small facilities treating stroke patients to allow for a functional system-wide quality improvement model. Data sources from hospitals, pre-hospital agencies and post-hospital organizations were reviewed. Moving forward, the following data collection issues should be considered:

- EMS data submission varies, but stroke measures are of increasing interest, and agencies are voluntarily submitting more data.
- Certified stroke centers may not report all stroke records.
- Hospitals not certified as stroke centers do not have data collection systems that measure the quality of stroke care.
- Data from sources downstream of the hospital exist in patient charts but are unavailable in a formal data registry.
- Functional measures are measured relative to the patient's previously perceived function. This subjectivity is relevant in the rehabilitation process but is not standardized in a way that assists in quantifying outcome measures and may not produce data useful for system quality improvement.

Clarify what data are available and the source

Data Point	Source	Relevance	PI potential
EMS stroke alert time	EMS	Hospital preparation	EMS/hospital communication
Door to needle time	GWTG	Treatment window	EMS/hospital coordination
% eligible patients receiving lytics	GWTG or CHA	Best practice compliance	Identify strengths/ weaknesses

Data points to explore in 2015

Reason eligible patients did not receive lytics	GWTG	Best practice compliance	Education opportunities
Modified Rankin Score	GWTG	Outcome indicator	Discharge care coordination
30 day readmit and reason	GWTG or CHA	Care quality assessment	pending data exploration

Determine the number of each type of facility

Facility	#	Data Available From
CSC	3	GWTG, CHA
PSC	19	GWTG, CHA
General Hospitals	62	CHA
CAHs	29	Most report to CHA
CCECs	20	No state data source, low priority
Rehabilitation hospitals, facilities	4 hospitals, facilities to be researched	Further exploration in 2015
Urgent Care facilities	Unknown, not state licensed	None, not a 2015 priority

Current Recommendations

Data collection, by itself, correlates to improved care and is beneficial in identifying educational opportunities and successful models. The board will continue to research the options for a database and aims to have a final recommendation for the next annual report. At this time, the board does not recommend a state registry due to the duplication, costs and resources associated with state databases. A state registry would likely duplicate the data submitted by certified stroke centers. Instead, the board is looking at multiple data sources for the purpose of quality improvement and possibilities for data collection depending on a facility's volume and level of care.

2015 Priorities

Registry options to explore:

- State access to stroke center data submitted to Get With The Guidelines-Stroke registry
    - This provides no additional burden to facilities and is already available. This would require minimal resources from the department. A recommendation could be made for mandatory participation in the registry with special attention to avoid additional burdens it would place on facilities with limited resources.
    - This does not provide data on patients not presenting to a stroke center and facilities are not required to enter all stroke patients into the registry. The reports do not provide the department with the ability to perform data analytics or customize reports.
- State database for stroke patients
    - This allows flexibility in data collection as desired measures may change over time. The state would have data analyzing capabilities. The complexity of the registry would be customizable and could include all hospitals through electronic spreadsheet collection.
    - This type of registry requires state personnel resources to create, house and operate the registry and provide technical assistance. Legislation would be required to give the department the authority to mandate reporting and collect data.
- Facility level data collection shared at a quality improvement review
    - This provides quality improvement and data collection without the extensive resources to create and operate a database. An advisory committee may review the data in a case study format. This model has been successful in other states with rural facilities that have low patient volumes.
    - This model is effective for low patient volume facilities but is not a viable comprehensive data collection model. It would require personnel and expertise to review data at the facility to help make recommendations for improvement and might require a department representative to travel to the facility.

Registry questions for 2015:

- What data collection model or models are best for Colorado?
- What data should be submitted and how can the data be used?
- Who should submit data and how?
- Who would receive, review and analyze data?
- What is the quality improvement process after analyzing data?
- What funding is needed?

Data Sources utilized in 2014

Death Certificate Data

These data did not significantly contribute to 2014 efforts and are not anticipated to be utilized in 2015. While these data are informative, they do not provide the in-depth information necessary for an analysis of the stroke system of care. Public education is of great importance and is a large focus of many national organizations but is somewhat outside of the scope of the advisory board. Further information is available in Appendix 1.

Centers for Medicare and Medicaid Services - Hospital Inpatient Quality Reporting (IQR)

In 2014, this was not a major source of information but was occasionally referenced and may be of future interest due to the inclusion of stroke core measures. This is considered a supplemental source of information; it holds claims data and is not limited to Medicare and Medicaid. A limitation is that claims-based data may not reflect procedures or patient information unrelated to a billed item.

Quintiles (vendor for Get With the Guidelines Patient Management Tool)

This was discussed and reviewed in 2014 and will be integral in data exploration in 2015. This database contains all data points the board believes to be indicative of quality stroke care. Comprehensive and primary stroke centers participate in this database and account for 77 percent of stroke patients treated in a hospital according to the Colorado Hospital Association dataset, described below. The limitations include: the state does not have direct access to these data; small facilities do not have the resources to participate, and facilities are not required to enter all stroke patients. The board will continue to explore the use of this dataset.

Colorado Hospital Association Discharge Datasets (Inpatient and Emergency Department data)

This was the most utilized source of data in 2014 and gives a general idea of what stroke care looks like in Colorado. This will continue as a fundamental source of data in 2015. This dataset includes almost all hospitals in Colorado except several Critical Access Hospitals which see low patient volumes and very few stroke patients. This is an informative database but is of limited use for the purpose of performing quality improvement. This is an administrative database and does not necessarily show all patient procedures and treatments. The board found referring facilities were not coding for tPA due to no or minimal reimbursement, resulting in the appearance that treatment was not delivered. Additionally, this data will consistently be at least 18 months in arrears also making quality improvement difficult.

Emergency Medical Services Dataset (EMS data)

This dataset has complemented the Colorado Hospital Association data and will continue to be useful in 2015 in exploring EMS practices and care coordination. More and more agencies are voluntarily reporting additional measures as it is of no extra burden to the agency to submit more than the required 67 data fields. Participation is required and the vast majority of agencies are reporting.

Paul Coverdell stroke registry

This dataset is a national dataset with funding available to states on a competitive basis. This dataset does not have the flexibility to add measures of interest and doesn't offer all the crucial data points identified by the board. This dataset was not utilized in 2014 and does not appear to be a plausible source of data in 2015.

Treatment and Prevention of Stroke

To achieve the 2014 priorities, the board's research on current conditions allowed framing educational needs for each prospective target audience. Continued work in 2015 will suggest possible educational efforts for treatment and prevention through collaborative regional approaches. The care coordination group is becoming more intimately linked with the efforts of the stroke treatment and prevention work group.

Report on 2014 Priorities

Prioritize and develop educational strategies

Treatment and prevention became subtopics within the education umbrella. The board has identified several populations and stroke education foci. The board is committed to recommendations that supplement regional stroke protocols to meet unique needs of agencies, facilities, communities and regions in delivering optimal care.

Prevention

American Heart Association, Million Hearts, National Stroke Association and others are thought to be addressing stroke prevention adequately. The board agreed prevention is a lower priority in 2015 to avoid duplication.

Treatment

Stroke treatment includes the acute and post-acute phases encompassing patient, EMS and hospital populations. Education and rehabilitation resources will be further explored in 2015 from hospital survey results and other sources for rehabilitation data.

Education focus	Public	Pre-hospital (EMS)	Hospital	Rehabilitation/ Recovery	Stroke Survivors
Prevention	Risk factor management				Risk factor management
Treatment: Acute	Recognize and call 911	Stroke Recognition and treatment	Diagnosis Treatment		
Post-acute			Treatment Rehab assessment Patient education	Treatment Patient education	
Long-term			Rehab transition Patient education	Treatment Patient education	Community based recovery

Survey EMS agencies to assess stroke protocol development needs

A survey of EMS agencies assessed resources, regional needs and standardized practices. Feedback revealed significant interest in quality improvement, educational activities and improvement in communications between EMS, urban facilities and rural facilities. A majority of the RETACs in Colorado have adopted regional stroke protocols. The board will be working with the regions to aid in standardizing care, improving education, assessing the need for resources and improving quality.

Investigate telemedicine potential, gaps and rehabilitation implications

Telemedicine is utilized to connect lower and higher level care facilities. Telephone only consultations limit the consulting physician's assessment capabilities. Telemedicine is increasingly used in diagnosing and monitoring patients. Future implications for rehabilitation, prevention and risk factor management may be far reaching. Much progress may be made in this arena as reimbursement is being explored at a national level.

Current Recommendations

The board recognizes that urban areas may have better access to best practices and cutting-edge technology than rural areas. The disparity between rural and urban areas is not a representation of interest or effort but more a reflection of barriers to accessing resources. The board believes that improving the flow of quality improvement tools and education across Colorado RETACs would impact care more than the development of statewide protocols. Any improvements should include coordination and mentorship that provide the tools to achieve excellence. The board is forming a framework to develop a robust system of care which is anticipated to improve other time-sensitive conditions.

2015 Priorities

Educational Strategies

Public	Pre-hospital/ EMS	Hospital	Rehabilitation/ Recovery	Stroke Survivors
Symptom recognition Call 911	Standardize data Symptom recognition Assessment tools Appropriate transport Appropriate destination Resource lists	Standardize data Recognize/diagnose Treatment expertise Bypass ED into CT Patient discharge kit Facility resource lists Existing education modules	Care transition Treatment expertise Discharge information Caregiver education	Expectation guidelines Resources Website Discharge material Caregiver education

Explore the barriers to effective rehabilitation services.

Develop options to improve the accessibility and use of rehabilitative services.

Rehabilitative services include:

Therapies: physical, occupational, speech, cognitive, recreational, psychological

Other services: vocational counseling and social services

Rural/Urban Coordination of Care

The Stroke Advisory Board researched models across the nation for care coordination at the state and local levels considering the unique needs and characteristics of Colorado.

Report on 2014 Priorities

Assess the use of stroke protocols in Colorado to determine educational or technical needs.
The Regional Emergency Medical and Trauma Advisory Council (RETAC) survey revealed protocol prevalence and regional needs. See image 1.

Assess the possibilities for system improvement
The EMS and RETAC survey addressed this information as discussed previously in the Treatment and Prevention section. A hospital survey revealed encouraging aspects of rural stroke capabilities as well as gaps. The board has been moving forward with coordinating efforts with the RETACs based on expressed individual needs from facilities, agencies and regions. See images 2 and 3.

Assess the potential for telemedicine and transfer agreements in care coordination
Telemedicine was addressed in the treatment and prevention work group. The hospital survey provided insight that roughly 50 percent of critical access hospitals have telemedicine. The board found that most hospitals have transfer agreements, but those may not be specific to stroke. Further work on facility coordination will be a priority in 2015. See image 4.

Work with RETACs to improve EMS stroke patient management
Regional approaches are more likely to address local challenges. The board began conversations with RETACs and will continue efforts in 2015. Efforts thus far have been well received.

Current Recommendations

The board understands improved EMS-to-hospital and rural-to-urban coordination can improve stroke care. The board advocates regional organization with consideration of the unique needs of agencies and facilities. State level mandates may hinder rural areas and leave weather, geography and local barriers unaddressed. The standards of care should be, and mostly are, consistent through the state. Continued efforts with regions will be the focus of a plan to improve coordination in 2015.

2015 Priorities

RETAC collaboration

- Individual regional needs: personnel, machinery, education, quality improvement
- What funding may be needed and possible sources?

Develop a plan to improve coordination between stroke centers and non stroke centers
Develop a plan to improve rural and urban facility coordination

Click here to view the map of certified stroke centers in Colorado

Survey results from RETACs and rural hospitals

Prevalence of STEMI and stroke protocols in the 11 RETACs

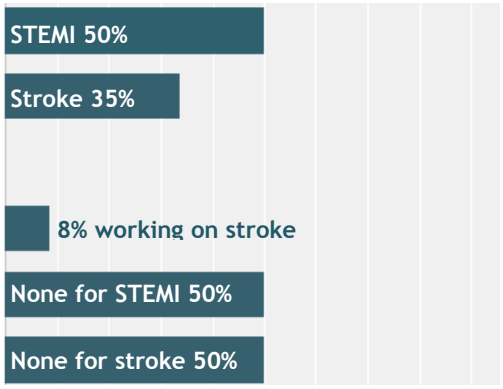

Image 1

20 Critical Access Hospitals report the following stroke assessment information from the primary EMS provider

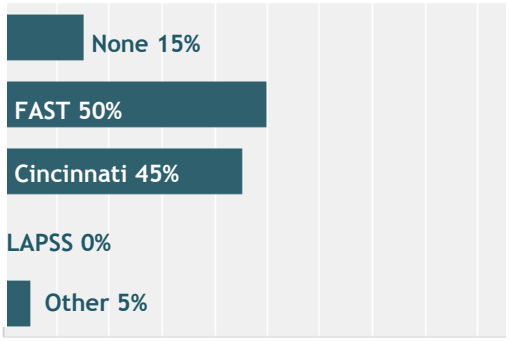

Image 2

20 Critical Access Hospitals report the percentage of stroke patients that arrived with advanced notice of stroke from EMS.

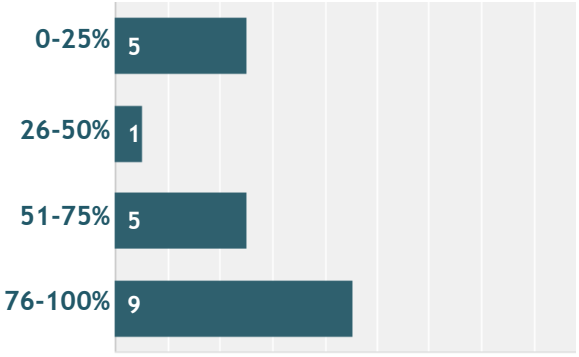

Image 3

20 Critical Access Hospitals report having transfer agreements with a CSC or PSC.

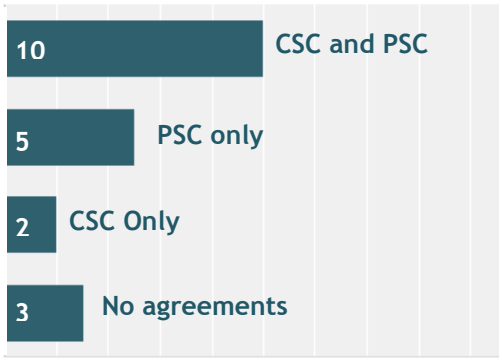

Image 4

Stroke Designation for Hospitals

The board is to research whether state designation is appropriate or needed to assure access to the best quality care to stroke patients in Colorado. National accrediting bodies presently certify stroke centers nationwide. Colorado currently has three Comprehensive and 19 Primary Stroke Centers certified by The Joint Commission. The board was made aware that in the future The Joint Commission will be offering a third level of certification, Acute Stroke Ready. This certification is not uncommon in other states through state designation or recognition. Data from Colorado hospitals show that 77 percent of strokes treated in a hospital are seen at a Comprehensive or Primary Stroke Center. Increasing the number of stroke centers may increase the percentage of patients treated at a stroke center due to improved availability.

Report on 2014 Priorities

Research how stroke care is being managed in other states

States designating stroke centers often choose to do so to offer a relatively lower cost to facilities compared to certification or designation through a national accrediting body. This is accomplished by enacting a state requirement for certification or designation based on national standards from Brain Attack Coalition, National Stroke Association or American Stroke Association and often with the input of an advisory board. National certification is commonly sufficient for state designation; however, state designation may require additional criteria or data measures submitted to the state. Data reporting is often tied to the designation process for quality improvement purposes. In states where designation is not utilized, robust regional organization may be adopted which avoids the costs associated with designation for facilities and the state. Designation is most commonly seen with Comprehensive and Primary Stroke Centers credentialed by a national accrediting body. Acute Stroke Ready facilities may be either nationally certified or solely designated by the state with unique data requirements.

Research the issues surrounding stroke designation

The issues to be considered in designation are the process, cost and resources associated with designation, reviews and data collection. State designation requires significant infrastructure. The board believes the current criteria for comprehensive, primary and stroke-ready centers are sufficient and need no additions to ensure appropriate stroke care in accredited facilities. That left the board with the task of addressing the access to appropriate stroke care in facilities not certified as a stroke center. These facilities often have low patient volumes and fewer resources. Improving relationships with stroke centers may be beneficial. The board intends to address how small and rural facilities should be equipped to deliver appropriate stroke care while limiting the burden to rural facilities. Whether designation is necessary to achieve this in Colorado will be further investigated in 2015.

Current Recommendations

The board does not currently recommend state designation above and beyond an accreditation or certification in stroke care by a national accrediting body. A support structure is essential to facilities not certified as a stroke center in Colorado, and the board has not finalized its recommendation regarding designation of facilities that are not certified as a Comprehensive or Primary Stroke Center.

2015 Priorities

Develop the framework for a non-stroke center support system

Finalize a recommendation for designation

Appendix 1

Catalogue of data sorces

All-Payer Claims Database (Sponsored by the Center for Improving Value in Health Care)

As of December 2014, the APCD "includes 2010-2013 historic claims data from the 21 largest commercial payers' individual and large-group fully-insured lines of business, plus Medicaid, representing over 2.5 million Coloradans…" (from https://www.cohealthdata.org/#/home)

Emergency Medical Services Dataset (prehospital data)

The Data Services Section at the Colorado Department of Public Health and Environment manages and uses data to assess the emergency medical services system in Colorado. This program analyzes patient care data from ambulance trip reports submitted by EMS agencies through ImageTrend or other vendors. The Colorado EMS Database is based on the National Emergency Medical Services Information System (NEMSIS) PreHospital EMS Dataset Version 2.2.1. The NEMSIS project was developed to help states collect more standardized elements and eventually submit data to a national EMS database. The state receives de-identified patient level and aggregated data.

Quintiles (vendor for Get With The Guidelines Patient Management Tool)

"Get With The Guidelines®-Stroke is an in-hospital program for improving stroke care by promoting consistent adherence to the latest scientific treatment guidelines… [It allows for] submission of CMS (Center for Medicare and Medicaid Services) Core Stroke Measures and other data [and] performance feedback reporting for continuous quality improvement…Data submission and feedback reporting are performed using the American Heart Association's Patient Management Tool™ (PMT), an online, interactive system provided by Outcome, A Quintiles Company… [There are] 14 pilot Comprehensive Stroke Center metrics reported on via Get With The Guidelines-Stroke…[In addition, there are] 30-Day Measures…that can be reported on via the Get With The Guidelines-Stroke 30-day follow-up form. This form allows hospitals to capture patient data in the 30-day period after hospitalization, such as mortality, re-hospitalization, follow-up visits, medication adherence, rehabilitation, patient education, etc." (from http:/www.heart.org)
In addition, this database is used by The Joint Commission Comprehensive and Primary Stroke Center accreditation process and hospitals using the American Heart Association/American Stroke Association Get with the Guidelines criteria. The data contained are a thorough description of the course of care for stroke patients in the first 30 days.

Colorado Hospital Association Discharge Dataset

"The Colorado Hospital Association (CHA) Discharge Data Program (DDP) database consists of administrative claims data derived from hospital billing information for all patients discharged from Colorado hospitals and patients who have hospital-based outpatient surgery. Beginning with 1988, the discharge data comes from all general acute care hospitals in Colorado. The 2012 database (most current full year) consists of 473,777 inpatient records and 427,025 outpatient surgery records. There are up to 32 different data elements (demographic, diagnoses and procedures, admission, length of stay and discharge status, and charges) recorded for each patient…Inpatient quality indicators at www.cohospitalquality.org are also derived from this data." (from the Colorado Hospital Association)

Centers for Medicare and Medicaid Services - Hospital Inpatient Quality Reporting (IQR)

"The Hospital IQR Program was developed as a result of the Medicare Prescription Drug, Improvement and Modernization Act (MMA) of 2003. The Hospital IQR Program is intended to equip consumers with quality of care information to make more informed decisions about health care options. It is also intended to encourage hospitals and clinicians to improve the quality of inpatient care provided to all patients. The hospital quality of care information gathered through the program is available to consumers on the Hospital Compare website… [Hospitals are required] to submit data for specific quality measures for health conditions common among people with Medicare." (from http:/www.cms.gov) Data are collected on stroke patients with a primary discharge diagnosis of stroke and transient ischemic attack. Data submission is required for all hospitals except for critical access hospitals; 29 of 79 hospitals are critical access. Since critical access hospitals treat a small minority of the patients seen in Colorado, the majority of stroke patients should appear in this database.

Death Certificate Data

"The death certificate is a permanent legal record of the fact of death of an individual… [It] provides important information about: the decedent (such as age, sex, race, education, date of death, his or her parents, and, if married, the name of the spouse), the circumstances and cause of death, and final disposition… Statistical data from death certificates are used to identify public health problems and measure the results of programs established to alleviate these problems. These data are a necessary foundation on which to base effective public health programs. Health departments could not perform their duties without such data."
(from http://www.cdc.gov/nchs/data/misc/hb_fun.pdf)Note: death data are not linked back to other data sources such as hospital records, EMS records, etc., except during specially funded studies.

Appendix 2

Stroke Advisory Board Members

Angie Baker
Littleton
Term expires - 08-01-17
Representative for a stroke related National Association

Timothy Bernard, MD
Denver
Term expires 08-01-18
Board-certified neurologist

Kevin Burgess, Paramedic
Loveland
Term expires - 08-01-16
EMS Provider

Julia Cowan, PT
Aurora
Term expires - 08-01-17
Stroke rehabilitation facility

Donald Frei, Jr., MD
Denver
Term expires - 08-01-17
Interventional neuroradiologist

Nancy Griffith, RN, Co-chair
Centennial
Term expires - 08-01-17
Statewide hospital association

John Hudson, MD
Lakewood
Term Expires 08-01-18
Board-certified neurosurgeon

Christina Johnson, MD
Denver
Term expires - 08-01-16
Statewide chapter of emergency physicians

William Joseph Jones, MD Chair
Denver
Term expires - 08-01-16
Board-certified vascular neurologist

Mary Ann Orr
Denver
Term expires - 08-01-17
Member of the public who has suffered a stroke

Michelle Reese
Golden
Term expires - 08-01-16
CDPHE designee - ex officio

David Ross, DO
Colorado Springs
Term expires - 08-01-17
Statewide association of physicians

Karin Schumacher, PT
Denver
Term expires - 08-01-17
Physical therapist involved in stroke care

Richard Smith, MD
Denver
Term expires - 08-01-17
National stroke association

Michelle Whaley, RN
Castle Rock
Term expires - 08-01-16
RN involved in stroke care

Mary White
Englewood
Term expires - 08-01-16
Urban area hospital administrator

Vacant - Primary care physician

Vacant - Expert in stroke database management

Vacant - Rural area hospital administrator

Senate Bill 13-225

NOTE: The governor signed this measure on 5/24/2013.

SENATE BILL 13-225

BY SENATOR(S) Giron, Guzman, Aguilar, Newell, Nicholson, Carroll, Heath, Kefalas, Todd, Morse;
also REPRESENTATIVE(S) Ginal and Primavera, Schafer, Fields, Garcia, Hamner, Hullinghorst, Kraft-Tharp, Labuda, Rosenthal, Ryden, Vigil, Young.

CONCERNING THE DEVELOPMENT OF A SYSTEM TO IMPROVE QUALITY OF CARE TO PATIENTS SUFFERING SPECIFIED ACUTE INCIDENTS, AND, IN CONNECTION THEREWITH, MAKING AN APPROPRIATION.

Be it enacted by the General Assembly of the State of Colorado:

SECTION 1. In Colorado Revised Statutes, **add** 25-3-114, 25-3-115, and 25-3-116 as follows:

25-3-114. STEMI task force - creation - membership - duties - report - repeal. (1) (a) THERE IS HEREBY CREATED IN THE DEPARTMENT THE STEMI TASK FORCE. NO LATER THAN AUGUST 1, 2013, THE GOVERNOR SHALL APPOINT FIFTEEN MEMBERS TO THE TASK FORCE AS FOLLOWS:

(I) ONE MEMBER WHO IS A COLORADO RESIDENT REPRESENTING A NATIONAL ASSOCIATION WHOSE GOAL IS TO ELIMINATE CARDIOVASCULAR DISEASE AND STROKE;

Capital letters indicate new material added to existing statutes; dashes through words indicate deletions from existing statutes and such material not part of act.

(II) ONE MEMBER WHO IS A CARDIOLOGIST PRACTICING IN THIS STATE;

(III) ONE MEMBER WHO IS AN INTERVENTIONAL CARDIOLOGIST PRACTICING IN THE WESTERN SLOPE AREA OF THE STATE;

(IV) ONE MEMBER WHO IS AN INTERVENTIONAL CARDIOLOGIST PRACTICING IN THE FRONT RANGE AREA OF THE STATE;

(V) ONE MEMBER REPRESENTING A STATEWIDE ASSOCIATION OF CARDIOLOGISTS;

(VI) ONE MEMBER REPRESENTING A STATEWIDE ASSOCIATION OF PHYSICIANS;

(VII) ONE MEMBER REPRESENTING A STATEWIDE HOSPITAL ASSOCIATION;

(VIII) ONE MEMBER REPRESENTING AN EMERGENCY PHYSICIANS ASSOCIATION;

(IX) ONE MEMBER WHO IS AN EMERGENCY MEDICAL SERVICE PROVIDER, AS DEFINED IN SECTION 25-3.5-103 (8);

(X) ONE MEMBER WHO IS A REGISTERED NURSE INVOLVED IN CARDIAC CARE;

(XI) ONE HOSPITAL ADMINISTRATOR FROM A HOSPITAL LOCATED IN A RURAL AREA OF THE STATE;

(XII) ONE HOSPITAL ADMINISTRATOR FROM A HOSPITAL LOCATED IN AN URBAN AREA OF THE STATE;

(XIII) ONE MEMBER OF THE PUBLIC WHO HAS SUFFERED A STEMI HEART ATTACK; AND

(XIV) TWO MEMBERS WITH EXPERTISE IN CARDIOVASCULAR DATA REGISTRIES, ONE OF WHOM IS A CARDIOLOGIST.

PAGE 2-SENATE BILL 13-225

(b) THE EXECUTIVE DIRECTOR OF THE DEPARTMENT OR THE EXECUTIVE DIRECTOR'S DESIGNEE SHALL SERVE AS AN EX OFFICIO MEMBER OF THE TASK FORCE.

(c) MEMBERS OF THE TASK FORCE SERVE WITHOUT COMPENSATION AND ARE NOT ENTITLED TO REIMBURSEMENT OF EXPENSES INCURRED IN SERVING ON OR PERFORMING DUTIES OF THE TASK FORCE.

(2) (a) THE TASK FORCE SHALL STUDY AND MAKE RECOMMENDATIONS FOR DEVELOPING A STATEWIDE PLAN TO IMPROVE QUALITY OF CARE TO STEMI PATIENTS. IN CONDUCTING THE STUDY, THE TASK FORCE SHALL EXPLORE THE FOLLOWING ISSUES, WITHOUT LIMITATION:

(I) CREATION OF A STATE DATABASE OR REGISTRY CONSISTING OF DATA ON STEMI CARE THAT MIRRORS THE DATA HOSPITALS SUBMIT TO NATIONALLY RECOGNIZED ORGANIZATIONS;

(II) ACCESS TO AGGREGATED STEMI DATA, WHICH MUST EXCLUDE ANY IDENTIFYING OR CONFIDENTIAL INFORMATION ABOUT THE REPORTING HOSPITAL OR PATIENTS TREATED BY THE HOSPITAL, FROM A STATE DATABASE THAT MAY BE DEVELOPED OR FROM A NATIONALLY RECOGNIZED ORGANIZATION;

(III) A PLAN THAT WOULD ENCOURAGE RURAL AND URBAN HOSPITALS TO COORDINATE SERVICES FOR THE NECESSARY REFERRAL OR RECEIPT OF PATIENTS REQUIRING STEMI CARE IN THE STATE; AND

(IV) THE CRITERIA USED BY NATIONALLY RECOGNIZED BODIES FOR DESIGNATING A HOSPITAL IN STEMI CARE AND WHETHER A DESIGNATION IS APPROPRIATE OR NEEDED TO ASSURE ACCESS TO THE BEST QUALITY CARE FOR COLORADO RESIDENTS WITH STEMI EVENTS.

(b) BY JANUARY 31, 2014, THE TASK FORCE SHALL SUBMIT AN INITIAL REPORT, AND BY JULY 31, 2015, THE TASK FORCE SHALL SUBMIT ITS FINAL REPORT, SPECIFYING ITS FINDINGS AND RECOMMENDATIONS TO THE HEALTH AND HUMAN SERVICES COMMITTEE OF THE SENATE, THE HEALTH, INSURANCE, AND ENVIRONMENT COMMITTEE OF THE HOUSE OF REPRESENTATIVES, OR THEIR SUCCESSOR COMMITTEES, AND THE DEPARTMENT. THE TASK FORCE SHALL INCLUDE IN ITS REPORTS A RECOMMENDATION ON WHETHER A DESIGNATION OF A HOSPITAL IN STEMI

PAGE 3-SENATE BILL 13-225

CARE IS APPROPRIATE OR NEEDED TO ASSURE ACCESS TO THE BEST QUALITY CARE FOR COLORADO RESIDENTS WITH STEMI EVENTS.

(3) THE DEPARTMENT MAY ACCEPT AND EXPEND, SUBJECT TO APPROPRIATION BY THE GENERAL ASSEMBLY, GIFTS, GRANTS, AND DONATIONS TO PAY THE DIRECT EXPENSES OF THE DEPARTMENT IN ASSISTING AND STAFFING THE TASK FORCE. THE DEPARTMENT SHALL TRANSMIT ANY MONETARY GIFTS, GRANTS, OR DONATIONS IT RECEIVES TO THE STATE TREASURER FOR DEPOSIT IN THE HEALTH FACILITIES GENERAL LICENSURE CASH FUND, AND THOSE MONEYS MAY BE USED ONLY TO PAY THE DIRECT EXPENSES OF THE DEPARTMENT.

(4) AS USED IN THIS SECTION, UNLESS THE CONTEXT OTHERWISE REQUIRES:

(a) "DEPARTMENT" MEANS THE DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT.

(b) "STEMI" MEANS ST-ELEVATION MYOCARDIAL INFARCTION.

(5) THIS SECTION IS REPEALED, EFFECTIVE AUGUST 1, 2015.

25-3-115. Stroke advisory board - creation - membership - duties - report - repeal. (1) (a) THERE IS HEREBY CREATED IN THE DEPARTMENT THE STROKE ADVISORY BOARD, THE PURPOSE OF WHICH IS TO EVALUATE POTENTIAL STRATEGIES FOR STROKE PREVENTION AND TREATMENT AND DEVELOP A STATEWIDE NEEDS ASSESSMENT IDENTIFYING RELEVANT RESOURCES. NO LATER THAN AUGUST 1, 2013, THE GOVERNOR SHALL APPOINT EIGHTEEN MEMBERS TO THE STROKE ADVISORY BOARD AS FOLLOWS:

(I) SIX PHYSICIANS WHO ARE ACTIVELY INVOLVED IN STROKE CARE AND WHO SATISFY THE FOLLOWING CRITERIA: ONE PHYSICIAN WHO IS BOARD-CERTIFIED IN PRIMARY CARE; ONE PHYSICIAN WHO IS BOARD-CERTIFIED IN VASCULAR NEUROLOGY; ONE PHYSICIAN WHO IS PRIVILEGED AND ACTIVELY PRACTICING INTERVENTIONAL NEURORADIOLOGY; ONE PHYSICIAN WHO IS BOARD-CERTIFIED IN NEUROSURGERY; ONE PHYSICIAN REPRESENTING A STATEWIDE CHAPTER OF EMERGENCY PHYSICIANS; AND ONE PHYSICIAN WHO IS A BOARD-CERTIFIED NEUROLOGIST SERVING PATIENTS IN A RURAL AREA OF THE STATE;

PAGE 4-SENATE BILL 13-225

(II) ONE MEMBER REPRESENTING A STATEWIDE ASSOCIATION OF PHYSICIANS;

(III) ONE MEMBER REPRESENTING A STATEWIDE HOSPITAL ASSOCIATION;

(IV) ONE MEMBER WHO IS AN EMERGENCY MEDICAL SERVICE PROVIDER, AS DEFINED IN SECTION 25-3.5-103 (8);

(V) ONE MEMBER WHO IS A REGISTERED NURSE INVOLVED IN STROKE CARE;

(VI) ONE HOSPITAL ADMINISTRATOR FROM A HOSPITAL LOCATED IN A RURAL AREA OF THE STATE;

(VII) ONE HOSPITAL ADMINISTRATOR FROM A HOSPITAL LOCATED IN AN URBAN AREA OF THE STATE;

(VIII) ONE REPRESENTATIVE FROM A STROKE REHABILITATION FACILITY;

(IX) ONE MEMBER WHO IS A COLORADO RESIDENT REPRESENTING A NATIONAL ASSOCIATION WHOSE GOAL IS TO ELIMINATE CARDIOVASCULAR DISEASE AND STROKE;

(X) ONE MEMBER WHO IS A COLORADO RESIDENT REPRESENTING A NATIONAL STROKE ASSOCIATION;

(XI) ONE MEMBER WHO IS A PHYSICAL OR OCCUPATIONAL THERAPIST ACTIVELY INVOLVED IN STROKE CARE;

(XII) ONE MEMBER OF THE PUBLIC WHO HAS SUFFERED A STROKE OR IS THE CAREGIVER OF A PERSON WHO HAS SUFFERED A STROKE; AND

(XIII) ONE MEMBER WHO IS AN EXPERT IN STROKE DATABASE MANAGEMENT.

(b) THE EXECUTIVE DIRECTOR OF THE DEPARTMENT OR THE EXECUTIVE DIRECTOR'S DESIGNEE SHALL SERVE AS AN EX OFFICIO MEMBER OF THE STROKE ADVISORY BOARD.

PAGE 5-SENATE BILL 13-225

(c) MEMBERS OF THE STROKE ADVISORY BOARD SERVE WITHOUT COMPENSATION AND ARE NOT ENTITLED TO REIMBURSEMENT OF EXPENSES INCURRED IN SERVING ON OR PERFORMING DUTIES OF THE ADVISORY BOARD.

(2) (a) THE STROKE ADVISORY BOARD SHALL STUDY AND MAKE RECOMMENDATIONS FOR DEVELOPING A STATEWIDE PLAN TO IMPROVE QUALITY OF CARE FOR STROKE PATIENTS. IN CONDUCTING THE STUDY, THE STROKE ADVISORY BOARD SHALL EXPLORE THE FOLLOWING ISSUES, WITHOUT LIMITATION:

(I) CREATION OF A STATE DATABASE OR REGISTRY CONSISTING OF DATA ON STROKE CARE THAT MIRRORS THE DATA HOSPITALS SUBMIT TO NATIONALLY RECOGNIZED ORGANIZATIONS;

(II) ACCESS TO AGGREGATED STROKE DATA, WHICH MUST EXCLUDE ANY IDENTIFYING OR CONFIDENTIAL INFORMATION ABOUT THE REPORTING HOSPITAL OR PATIENTS TREATED BY THE HOSPITAL, FROM A STATE DATABASE THAT MAY BE DEVELOPED OR FROM A NATIONALLY RECOGNIZED ORGANIZATION BY THE ADVISORY BOARD, BY ANY PERSON WHO SUBMITS A WRITTEN REQUEST FOR THE DATA;

(III) EVALUATION OF CURRENTLY AVAILABLE STROKE TREATMENTS AND THE DEVELOPMENT OF RECOMMENDATIONS, BASED ON MEDICAL EVIDENCE, FOR WAYS TO IMPROVE STROKE PREVENTION AND TREATMENT;

(IV) A PLAN THAT WOULD ENCOURAGE RURAL AND URBAN HOSPITALS TO COORDINATE SERVICES FOR THE NECESSARY REFERRAL OR RECEIPT OF PATIENTS REQUIRING STROKE CARE IN THE STATE; AND

(V) THE CRITERIA USED BY NATIONALLY RECOGNIZED BODIES FOR DESIGNATING A HOSPITAL IN STROKE CARE AND WHETHER A DESIGNATION IS APPROPRIATE OR NEEDED TO ASSURE ACCESS TO THE BEST QUALITY CARE FOR COLORADO RESIDENTS WITH STROKE EVENTS.

(b) BY JANUARY 31, 2014, AND BY EACH JANUARY 1 THEREAFTER, THE STROKE ADVISORY BOARD SHALL SUBMIT A REPORT SPECIFYING ITS FINDINGS AND RECOMMENDATIONS TO THE HEALTH AND HUMAN SERVICES COMMITTEE OF THE SENATE, THE HEALTH, INSURANCE, AND ENVIRONMENT COMMITTEE OF THE HOUSE OF REPRESENTATIVES, OR THEIR SUCCESSOR COMMITTEES, AND THE DEPARTMENT. THE STROKE ADVISORY BOARD SHALL

PAGE 6-SENATE BILL 13-225

INCLUDE IN ITS REPORT A RECOMMENDATION ON WHETHER A DESIGNATION OF A HOSPITAL IN STROKE CARE IS APPROPRIATE OR NEEDED TO ASSURE ACCESS TO THE BEST QUALITY CARE FOR COLORADO RESIDENTS WITH STROKE EVENTS.

(3) THE DEPARTMENT MAY ACCEPT AND EXPEND, SUBJECT TO APPROPRIATION BY THE GENERAL ASSEMBLY, GIFTS, GRANTS, AND DONATIONS TO PAY THE DIRECT EXPENSES OF THE DEPARTMENT IN ASSISTING AND STAFFING THE STROKE ADVISORY BOARD. THE DEPARTMENT SHALL TRANSMIT ANY MONETARY GIFTS, GRANTS, OR DONATIONS IT RECEIVES TO THE STATE TREASURER FOR DEPOSIT IN THE HEALTH FACILITIES GENERAL LICENSURE CASH FUND, AND THOSE MONEYS MAY BE USED ONLY TO PAY THE DIRECT EXPENSES OF THE DEPARTMENT.

(4) AS USED IN THIS SECTION, UNLESS THE CONTEXT OTHERWISE REQUIRES, "DEPARTMENT" MEANS THE DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT.

(5) THIS SECTION IS REPEALED, EFFECTIVE SEPTEMBER 1, 2018. PRIOR TO THE REPEAL, THE DEPARTMENT OF REGULATORY AGENCIES SHALL REVIEW THE FUNCTIONS OF THE STROKE ADVISORY BOARD IN ACCORDANCE WITH SECTION 2-3-1203, C.R.S.

25-3-116. Department recognition of national certification - suspension or revocation of recognition - definitions. (1) A HOSPITAL THAT HAS AN ACCREDITATION, CERTIFICATION, OR DESIGNATION IN STROKE OR STEMI CARE FROM A NATIONALLY RECOGNIZED ACCREDITING BODY, INCLUDING BUT NOT LIMITED TO A CERTIFICATION AS A COMPREHENSIVE STROKE CENTER OR PRIMARY STROKE CENTER BY THE JOINT COMMISSION ON ACCREDITATION OF HEALTH CARE ORGANIZATIONS AND PROGRAMS OR ITS SUCCESSOR ORGANIZATION OR AN ACCREDITATION AS A STEMI RECEIVING CENTER OR STEMI REFERRAL CENTER BY THE SOCIETY FOR CARDIOVASCULAR PATIENT CARE OR ITS SUCCESSOR ORGANIZATION, MAY SEND INFORMATION AND SUPPORTING DOCUMENTATION TO THE DEPARTMENT. THE DEPARTMENT SHALL MAKE A HOSPITAL'S NATIONAL ACCREDITATION, CERTIFICATION, OR DESIGNATION AVAILABLE TO THE PUBLIC IN A MANNER DETERMINED BY THE DEPARTMENT.

(2) THE DEPARTMENT SHALL DEEM A HOSPITAL THAT IS CURRENTLY ACCREDITED, CERTIFIED, OR DESIGNATED BY A NATIONALLY RECOGNIZED

PAGE 7-SENATE BILL 13-225

ACCREDITING BODY AS SATISFYING THE REQUIREMENTS FOR RECOGNITION AND PUBLICATION BY THE DEPARTMENT. THE DEPARTMENT MAY SUSPEND OR REVOKE A RECOGNITION AND PUBLICATION OF A HOSPITAL'S ACCREDITATION, CERTIFICATION, OR DESIGNATION IF THE DEPARTMENT DETERMINES, AFTER NOTICE AND HEARING IN ACCORDANCE WITH THE "STATE ADMINISTRATIVE PROCEDURE ACT", ARTICLE 4 OF TITLE 24, C.R.S., THAT THE HOSPITAL NO LONGER HOLDS AN ACTIVE ACCREDITATION, CERTIFICATION, OR DESIGNATION FROM A NATIONALLY RECOGNIZED CERTIFYING BODY.

(3) WHETHER A HOSPITAL ATTAINS A NATIONAL ACCREDITATION, CERTIFICATION, OR DESIGNATION IN STROKE OR STEMI CARE HAS NO BEARING ON, OR CONNECTION WITH, THE LICENSING OR CERTIFICATION OF THE HOSPITAL BY THE DEPARTMENT PURSUANT TO SECTION 25-1.5-103 (1) (a).

(4) AS USED IN THIS SECTION, UNLESS THE CONTEXT OTHERWISE REQUIRES:

(a) "DEPARTMENT" MEANS THE DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT.

(b) "STEMI" MEANS ST-ELEVATION MYOCARDIAL INFARCTION.

SECTION 2. In Colorado Revised Statutes, 2-3-1203, **add** (3) (ee.5) as follows:

2-3-1203. Sunset review of advisory committees. (3) The following dates are the dates for which the statutory authorization for the designated advisory committees is scheduled for repeal:

(ee.5) SEPTEMBER 1, 2018:

(II) THE STROKE ADVISORY BOARD CREATED IN SECTION 25-3-115, C.R.S.;

SECTION 3. Appropriation. In addition to any other appropriation, there is hereby appropriated, out of any moneys in the general fund not otherwise appropriated, to the department of public health and environment, for the fiscal year beginning July 1, 2013, the sum of

PAGE 8-SENATE BILL 13-225

$41,402 and 0.6 FTE, or so much thereof as may be necessary, for allocation to the emergency preparedness and response division for the stroke and STEMI heart attack designation line item related to the implementation of this act.

SECTION 4. Safety clause. The general assembly hereby finds, determines, and declares that this act is necessary for the immediate preservation of the public peace, health, and safety.

John P. Morse
PRESIDENT OF
THE SENATE

Mark Ferrandino
SPEAKER OF THE HOUSE
OF REPRESENTATIVES

Cindi L. Markwell
SECRETARY OF
THE SENATE

Marilyn Eddins
CHIEF CLERK OF THE HOUSE
OF REPRESENTATIVES

APPROVED_____

John W. Hickenlooper
GOVERNOR OF THE STATE OF COLORADO

PAGE 9-SENATE BILL 13-225