Montana Time Sensitive Illness & Injury Performance Improvement Initiative

A Voluntary Recognition Program

Time Sensitive emergencies (STEMI, Stroke, Cardiac Arrest, and Trauma) tax an EMS crew to their fullest. Because there are specific, identifiable, and measurable steps to be taken, performance of the system can be tracked and inferences about overall operations of a service can be made. Survival from all emergencies (medical or trauma) can be improved by measuring performance, identifying areas of improvement, developing, and implementing an improvement plan, and then measuring outcomes – the quality improvement (QI) process.

The EMSTS section of DPHHS has developed a process for agencies to evaluate their performance, provide training opportunities for skills improvement, and measure change. This voluntary initiative will recognize the hard work agencies are doing to ultimately improve patient outcomes related to time sensitive emergencies.

This manual will help guide you through the quality improvement process and the application for recognition. It will require collaboration with your local hospitals and non-transporting agencies. Many of the steps are things you may already be doing. Some will be new and challenging. The foundation of the entire process will be *excellent* documentation (ePCRs, training records, patient outcomes, etc.). This initiative will assist with all aspects of agency operations, not just for this project.

This Program has been reviewed by the MT Emergency Care Council and representatives from other specific condition focused groups (AHA, UofA, etc.). It reflects the most current "best practice" for out-of-hospital emergency care. Updates to the initiative will occur as needed.

If your agency is interested in participating, review this manual and submit the notice of intent (NOI). If you have any questions, please contact Janet Trethewey: jtrethewey@mt.gov, 406-4440442 or Shari Graham: Sgraham2@mt.gov, 406-444-6098.

NOTE: This is *VOLUNTARY*! Your decision to participate will not impact your agency's licensure by the MT EMSTS office.

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Emergency Cardiovascular Care

Performance Improvement Initiative Requirements

EMS recognition will be based on some common performance and training measures as well as those specific to a condition. Recognition is Yes/No with a "Plus" for certain activities. The standards of care are very clear, the benchmarks have been available for years, and the training has been widely distributed.

Common Criteria to be Met

- 80% of all cases are reviewed with staff using data from a monitor/AED and ePCR. Areas of excellence and improvement are noted.
- 50% of all cases are reviewed with the medical director and/or hospital team. Areas of excellence and improvement are noted
- Benchmarks for PI are established/reviewed no less than annually
- 80% staff participation in an annual joint training with receiving hospital(s) and 1st responders – i.e., Mock Code Drill.

Plus Criteria

- Community Awareness Campaigns and CPR/AED courses are offered semi-annually
- 911 Emergency Medical Dispatch (EMD) follow up of outcomes is done on 80% cases each quarter. Areas of excellence and improvement are noted.

Exceptions/Exemptions

- Consideration will be given to those agencies who have a low call volume per quarter. A review/practice on mock calls can be substituted
- Consideration will be given to those agencies who do not have an EMD program. Activities to educate/advocate for EMD with stakeholders can be substituted

The following pages list the specific criteria for each Cardiovascular Emergency Initiative. A fuller explanation of the criteria follows each section. A list of resources is available to help with collection of data related to each condition.

Performance Improvement Initiative - Chest Pain

To improve survival and decrease disability from heart attacks, especially STEMIs, EMS agencies must make a concerted effort to improve their response to these emergencies. The mind-set of responders needs to be "Time is Muscle" to reduce disability and the chance of death. Recognition is Yes/No with a "Plus" for certain activities.

EMS Recognition Criteria – 2022-2023

(See Appendix for explanation of criteria)

Equipment

Heart Monitor Brand _____

Training (attach requested documentation)

80% staff participation in semi-annual 12-lead placement/monitor review training (copy of sign-in)

80% staff participation in semi-annual ventilatory assistance training using "smart BVM" (copy of sign-in)

Performance (Documented in ePCR; attach semi-annual summary reports)

80% cases – 1st medical contact to 12-lead <10 minutes

80% cases 12-lead transmitted to hospital

80% qualifying cases STEMI alert made prior to arrival

80% cases receive aspirin in the field

80% cases have capnography monitoring

80% cases have ≤ 15 min on-scene time

QI

80% cases reviewed with crew

50% cases reviewed with Medical Director /Hospital team

AHA/Chest Pain MI Registry data from PCI hospital reviewed annually

Benchmarks for PI are established/reviewed no less than annually

Appendix

Training Requirements

Competencies in placing 12-lead patches and using the monitor (including data transmission) need to be maintained. Ventilations should be practiced using a "smart BVM" that controls rate and volume, and the use of airway adjuncts. An excellent way to meet community awareness criteria and training requirements is to provide 12-leads to athletic teams, community groups, etc. Contact the ECVC office for further information.

Annual joint training should be conducted with receiving hospital(s) practicing transitions of care, transmission of patient information and appropriate documentation. Annual joint training should include all participating first responders to focus on good transitions of care and transmission of patient information. Research suggests this is the area that has the potential for the most adverse patient actions throughout the chain of survival.

Performance

Most performance measures are included in complete/accurate documentation within the ePCR. Quarterly summary reports of specific metrics can be obtained for use in PI / Benchmarking.

Aspirin administration can be done either by the patient and/or crew.

QI

Data from the heart monitor is downloaded and reviewed with the responding crew to discuss performance. This is a learning/teaching opportunity and not for disciplinary purposes.

Involvement of the agency medical director and/or hospital ED staff for quality improvement is vital. Review for trend data helps with benchmarking and PI activities.

Hospitals collect data on all chest pain cases through one of two data systems: AHA's Get With the Guidelines-STEMI or the NCDR's Chest Pain – MI Registry. Outcome data is available for EMS agencies.

PI activities can include improvement of many metrics. In addition to those listed for recognition, other metrics *could* include things like decreasing chute time, improving the % of first-time success with IVs, meeting AHA guidelines for aspirin administration, etc.

Other / Plus

Improvement in outcomes depends upon appropriate bystander response. The more people in a community who know the signs and symptoms of a heart attack AND who call 911, the greater the survival rate.

Providing information to 911 dispatchers on call outcomes is vital for an improved system. Dispatchers also benefit from practice with responders to improve rapid recognition and care direction when appropriate. Ultimately, excellent communication between agencies improves outcomes.

Performance Improvement Initiative – Stroke

To improve survival and decrease disability from strokes, EMS agencies must make a concerted effort to improve their response to these emergencies. The mind-set of responders needs to be "Time is Brain" to reduce disability and the chance of death. Recognition is Yes/No with a "Plus" for certain activities.

EMS Recognition Criteria – 2022-2023

(See Appendix for explanation of criteria)

Training (attach requested documentation)

80% staff participation in quarterly stroke scale & stroke severity screening review (copy of sign-in)

80% staff participation in semi-annual ventilatory assistance training using "smart BVM" (copy of sign-in)

Performance (Documented in ePCR; attach quarterly summary reports)

80% cases Last Known Well documented

80% cases Time of Discovery documented

80% cases glucose level documented

80% cases stroke alert made prior to hospital arrival

80% cases stroke assessment (BEFAST) documented

50% cases stroke severity screen (LAMS or VAN) documented

80% cases have capnography monitoring

80% cases have ≤ 15 min on-scene time

QI

80% cases reviewed with crew

50% cases reviewed with Medical Director/Hospital team

AHA/Get With the Guidelines-Stroke data from PCI hospital reviewed annually

Benchmarks for PI are established/reviewed no less than annually

Appendix

Training Requirements

Competencies in utilizing a stroke scale and stroke severity screening need to be maintained. Ventilations should be practiced using a "smart BVM" that controls rate and volume, and the use of airway adjuncts.

Annual joint training should be conducted with receiving hospital(s) practicing transitions of care, transmission of patient information and appropriate documentation. Annual joint training should include all participating first responders to focus on good transitions of care and transmission of patient information. Research suggests this is the area that has the potential for the most adverse patient actions throughout the chain of survival.

Performance

Most performance measures are included in complete/accurate documentation within the ePCR. Quarterly summary reports of specific metrics can be obtained for use in PI / Benchmarking.

QI

A checklist of procedures should be reviewed to make sure all criteria are met. This is a learning/teaching opportunity and not for disciplinary purposes.

Involvement of the agency medical director and/or hospital ED staff for quality improvement is vital. Review for trend data helps with benchmarking and PI activities.

Hospitals collect data on all stroke cases through AHA's Get With the Guidelines-Stroke. Outcome data is available for EMS agencies annually.

PI activities can include improvement of many metrics. In addition to those listed for recognition, other metrics *could* include things like decreasing chute time, improving the % of first-time success with IVs, meeting AHA guidelines, etc.

Other / Plus

Improvement in outcomes depends upon appropriate bystander response. The more people in a community who know the signs and symptoms of a stroke AND who call 911, the greater the survival rate.

Providing information to 911 dispatchers on call outcomes is vital for an improved system. Dispatchers also benefit from practice with responders to improve rapid recognition and care direction when appropriate. Ultimately, excellent communication between agencies improves outcomes.

Performance Improvement Initiative - OHCA

To improve survival from out-of-hospital cardiac arrests (OHCA), EMS agencies must make a concerted effort to improve their response to these emergencies. The mind-set of responders needs to shift from "wow, we had a save!" to "why didn't we save this patient?" As an agency, and a state, no one should be satisfied with a 10-15% survival rate. Those with a 30% survival rate should be looking to get to 35%. Recognition is Yes/No with a "Plus" for certain activities.

EMS Recognition Criteria – 2022-2023

(See Appendix for explanation of criteria)

Equipment

Indicate which equipment your service has available on the first-out ambulance

AED ___ Heart Monitor ___ / Brand _____ Mechanical CPR device ___ / Brand _____

Training (attach requested documentation)

80% staff participation in Quarterly HPCPR/mechanical CPR training utilizing feedback manikins & smart BVMs (copy of sign-in)

80% staff participation in Monthly 2 min refresher drills (copy of check-off)

Performance (Documented in ePCR; attach quarterly summary reports)

80 % cases - 1st medical contact to 1st CPR < 2 minutes (if no bystander CPR)

80% cases with ROSC in field receive 12-lead reading

80% cases have appropriate ventilatory rate via capnography feedback

80% cases meet HPCPR standards

QI

80% cases reviewed with crew

50% cases reviewed with Medical Director/Hospital team

Out-of-Hospital Survival rates are reviewed annually

Benchmarks for PI are established/reviewed no less than annually

CARES data is entered each quarter (outcome provided by state coordinator)

Appendix

Training Requirements

HPCPR Training should focus on high quality compressions (Rate, Depth, Recoil), minimal interruptions (<10 seconds for deployment of Lucas, intubation, defibrillation, moving patient) with a total CPR fraction time ≥ 90%. Ventilations should be practiced using a "smart BVM" that controls rate and volume, and the use of airway adjuncts.

Monthly 2 min refresher drills can be performed at the start of shift, before/after monthly meetings, etc. Participants should perform one of the above basic skills for 2 minutes to maintain proficiency.

Annual joint training should be conducted with receiving hospital(s) practicing transitions of care, transmission of patient information and appropriate documentation. Annual joint training should include all participating first responders to focus on good transitions of care and transmission of patient information.

Performance

Most performance measures are included in complete/accurate documentation within the ePCR. Quarterly summary reports of specific metrics can be obtained for use in PI / Benchmarking.

QI

Data from the heart monitor is downloaded and reviewed with the responding crew to discuss performance. This is a learning/teaching opportunity and not for disciplinary purposes. The ECVC Program offers free annotation services for agencies using LP 15 monitors. Zoll's monitors offer this feature without further purchase.

Involvement of the agency medical director and/or hospital ED staff for quality improvement is vital. Review for trend data helps with benchmarking and PI activities.

Data entry into the Cardiac Arrest Registry for Enhanced Survival (CARES) should be maintained quarterly. Agency reports can be run at any time. National reports are available annually.

PI activities can include improvement of many metrics. In addition to those listed for recognition, other metrics *could* include things like decreasing chute time, improving the % of first-time success with IVs or intubation, meeting AHA guidelines for adrenalin administration, etc.

Other / Plus

Improvement in outcomes depends upon appropriate bystander response. The more people in a community who know CPR at any level and how to use an AED, the greater the survival rate.

Providing information to 911 dispatchers on call outcomes is vital for an improved system. Dispatchers also benefit from practice with responders to improve rapid recognition and care direction when appropriate. Ultimately, excellent communication between agencies improves outcomes.

Performance Improvement Initiative - Traumatic Brain Injury

To improve survival and decrease disability from traumatic brain injuries, EMS agencies must make a concerted effort to improve their response to these emergencies. The mind-set of responders needs to be “Save the Brain” to reduce disability and the chance of death. Recognition is Yes/No with a “Plus” for certain activities.

Pre-Application Requirement

Prior to Application for Recognition, medical director approval to utilize EPIC guidelines must be provided.

EMS Recognition Criteria – 2022-2023

(See Appendix for explanation of criteria)

Training (attach requested documentation)

80% staff participation in quarterly EPIC guidelines review (copy of sign-in)

80% staff participation in quarterly ventilatory assistance training using “smart BVM” (copy of sign-in)

Performance (Documented in ePCR; attach quarterly summary reports)

80% cases O2 applied within 1 minute of arrival on scene

80% cases SPO2 documented at 90%+ at 5-minute intervals

80% cases HR documented at 5-minute intervals

80% cases SBP documented at 5-minute intervals

80% cases RR documented at 5-minute intervals

80% cases glucose level documented
100% of cases with BG >70mg/dl given Dextrose (appropriate to level of endorsement)

80% cases have capnography monitoring

100% cases documented if using Positive Pressure Ventilation (PPV)

80% cases have ≤ 15 min on-scene time

QI

80% cases reviewed with crew

50% cases reviewed with Medical Director/Hospital team

Benchmarks for PI are established/reviewed no less than annually

Appendix

Training Requirements

Competencies in avoiding the four "H-Bombs" during TBI care need to be maintained. Review of the guidelines should be quarterly. Ventilations should be practiced using a "smart BVM" that controls rate and volume, and the use of airway adjuncts. At least one training/year should include practice with pediatric patients. Additional training with Positive Pressure Ventilation (if applicable) to avoid overventilation should be included.

Performance

Most performance measures are included in complete/accurate documentation within the ePCR. Quarterly summary reports of specific metrics can be obtained for use in PI / Benchmarking.

QI

Data from the monitor and ePCR is downloaded and reviewed with the responding crew to discuss performance. This is a learning/teaching opportunity and not for disciplinary purposes.

Involvement of the agency medical director and/or hospital ED staff for quality improvement is vital. Review for trend data helps with benchmarking and PI activities.

PI activities can include improvement of many metrics. In addition to those listed for recognition, other metrics *could* include things like decreasing chute time, improving the % of first-time success with IVs, etc.

Other / Plus

A key part of TBI care is prevention. Sponsoring seatbelt awareness campaigns and doing activities such as bike rodeos with helmet giveaways are excellent opportunities. Having a child car seat installation technician doing safety checks is another opportunity for prevention.

Providing information to 911 dispatchers on call outcomes is vital for an improved system. Dispatchers also benefit from practice with responders to improve rapid recognition and care direction when appropriate. Ultimately, excellent communication between agencies improves outcomes.

NOTE

An agency must be MT EPIC-TBI recognized prior to application for the Performance Improvement Initiative.

Check List of Required Documentation – CV Emergencies

REQUIREMENT	DOCUMENTATION	Date
80% of all cases are reviewed with staff using data from a monitor/AED and ePCR.	Check sheet	
50% of all cases are reviewed with the medical director and/or hospital team.	Check sheet	
Benchmarks for PI are established/reviewed	PI documents	
80% staff participation in an annual joint training with receiving hospital(s) and 1st responders	Sign in Sheet	
CHEST PAIN		
80% staff participation in semi-annual 12-lead placement/monitor review training	Sign in Sheets	
80% staff participation in semi-annual ventilatory assistance training using "smart BVM"	Sign in Sheets	
Performance standards	summary reports	
AHA/Chest Pain MI Registry data from PCI hospital reviewed	sign in sheet	
STROKE		
80% staff participation in quarterly stroke scale & stroke severity screening review	Sign in sheets	
80% staff participation in semi-annual ventilatory assistance training using "smart BVM"	Sign in sheets	
Performance standards	summary reports	
AHA/Get With the Guidelines-Stroke data from PCI hospital reviewed	sign in sheet	
OHCA		
80% staff participation in Quarterly HPCPR/mechanical CPR training utilizing feedback manikins & smart BVMs	sign in sheets	
80% staff participation in Monthly 2 min refresher drills	log sheets	
Performance standards	summary reports	
Out-of-Hospital Survival rates are reviewed annually	sign in sheet	
CARES data is entered each quarter		
Plus Criteria		
Community Awareness Campaign – STEMI		
Community Awareness Campaign – Stroke		
CPR/AED Courses		
911 Dispatcher feedback/review		
Exemptions/Exceptions*		
Documentation as approved by Initiative Staff		

Check List of Required Documentation – TBI Emergencies

REQUIREMENT	DOCUMENTATION	Date
Medical Director Approval	MT EPIC-TBI Agency Recognition	
80% of all cases are reviewed with staff using data from a monitor/AED and ePCR.	check sheet	
50% of all cases are reviewed with the medical director and/or hospital team.	check sheet	
Benchmarks for PI are established/reviewed	PI documents	
Training		
80% staff participation in quarterly ventilatory assistance training using “smart BVM”	Sign in Sheets	
Performance		
Performance standards	Summary reports	
Plus Criteria		
Community Awareness Campaign – TBI Prevention		
911 Dispatcher feedback/review		
Exemptions/Exceptions*		
Documentation as approved by Initiative Staff		