

Paramedic Chiefs of Canada – Clinical KPI Working Group – Engagement Primer

December 5, 2019

In January 2018 the PCC Board assembled a working group to establish Clinical Key Performance Indicators (CKPIs) with the core objective of *“The creation of a repository of industry Standards guided by evidence in areas of clinical outcomes related to system design and performance to assist paramedic services in assessing and benchmarking”*.

Since its first meeting the Working Group (WG) has developed a substantial list of 40+ potential clinical KPIs that are relevant to the provision of paramedic services.

In 2009, the PCC established the Performance Measures Sub-committee with the primary focus as *“the development of national, evidence-informed performance measures that are comprehensive and able to be broadly applied”*. Since establishing the expected measures in 2011 the WG noted there has been less than expected use of the measures and outcome of the work. Therefore, there is reluctance to fully link research, assess complete pertinence, and develop measurement/collection tools for a list of 40 measures. There is a risk that developed clinical measures are catalogued and references are lost due to the volume of the work.

Alternatively the WG has focussed on the development of fewer measures that will provide appropriate information on pan system clinical performance. At the same time, the measures will test the PCC membership’s willingness to engage in clinical performance measures as a means to compare themselves at the national and international levels. The examination of best practices of changes in performance using the measures as a means to improve care amongst PCC members is the ultimate outcome.

In considering the relationship between research and KPIs, the WG determined that KPIs would be supported by current and relevant research, rather than KPIs driving the development of research. That approach is reflected in the list of seven draft measures have been adopted by the WG that are attached to this package for your review:

1. Acute Coronary Syndrome ASA Administration
2. ACS 12 – Lead Capture
3. ACS STEMI Pre-alert
4. ACS Direct to PCI
5. Cerebro-Vascular Accident (CVA) Stroke Assessment
6. CVA Stroke Pre-alert
7. CVA Direct to Stroke Centre

Along with the measures, the WG has been heavily considering how these are collected, disseminated and shared across the membership across the organization. The goal is to provide information that can be easily shared and mutually benchmarked.

In order to move ahead the WG is seeking your written feedback on the draft measures along with how you see your organization’s ability to participate in cKPIs. We would appreciate your contribution of reviewing the attached KPIs and list of questions related to this project.

If you have any questions or comments please feel free to contact any member of the cKPI Committee below or KPIfeedback@paramedicchiefs.ca.

Rick Ferron, Niagara EMS (Co-Chair)	Marty Scott, AHS EMS (Co-Chair)
Andre Berard, Winnipeg Fire Paramedic Services	Russ Borne, AHS EMS
Nicola Little, Winnipeg Fire Paramedic Services	Melanie Doiron, Government of Alberta - Alberta Health
Brian Field, Interdev Technologies	Don Oettinger, Peterborough County-City Paramedics
Kyle Sereda, Moosejaw EMS	Todd Stout, FirstWatch
Michel Ruest, Paramedic Portfolio Manager, Knowledge & Technology – Community Safety, DRDC	Penny Price, Regional Paramedic Program for Eastern Ontario

Paramedic Chiefs of Canada – Clinical KPI Working Group – Feedback Questions

The following questions are intended to assist the WG in developing appropriate initial cKPIs as well as a collection and dissemination framework. Responses to the questions can be directed KPIfeedback@paramedicchiefs.ca.

In reviewing the 7 Measures:

1. Do you support the concept of KPI data collection for sharing /comparing?
2. Would your organization be interested in receiving aggregate data on these measures to use as a comparison?
3. Do you support these seven measures as a start to a potentially larger approach to clinical KPI measurement across the PCC?
4. Do you agree with the criteria and definition of each measure? Please comment on any changes you think would improve the definitions.
5. Is your organization able to capture and report (raw or aggregate data) on these seven measures as defined?
 - a. What limitations does your organization have related to reporting on these measures?
 - b. Are there portions of each you could report on?

The Clinical KPI Working Group thanks you for taking the time to review this information and provide feedback. Your submission back to KPIfeedback@paramedicchiefs.ca by January 10, 2020 would be greatly appreciated.

7 Measures

Paramedic Chiefs of Canada KPI Working Group

2019

[PCC KPI WORKING GROUP – 7 MEASURES DRAFT]

The following is draft document of clinical key performance indicators for the Canadian prehospital environment

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PCC KPI Legend

PCC KPI bundle	Measures categorized by clinical area
Clinical area	Clinical care area
Measure title	KPI title
Description	General Description of measure
Measure type	Process /outcome /balancing
Evidence	Supporting evidence or link to supporting evidence
Numerator	Generalized to be inclusive for all agencies
Denominator	Generalized to be inclusive for all agencies

Acute Coronary Syndrome

ASA administration

PCC KPI bundle: ACS-01

Clinical area: Acute Coronary Syndrome

Measure title: ACS ASA Administration

Description: Percent of suspected ACS patients that received prehospital ASA

Measure type: process

Evidence or rationale: Guidelines and Systematic Review (SR/EBG)

Citation: Link, M. S., Berkow, L. C., Kudenchuk, P. J., Halperin, H. R., Hess, E. P., Moitra, V. K., Donnino, M. W. (2015). Part 7: Adult Advanced Cardiovascular Life Support. 2015 American Heart Association Guidelines Update for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. *Circulation*, 132(18suppl2), S444-S464. Retrieved from http://circ.ahajournals.org/content/132/18_suppl_2/

Citation : American Heart Association. (2015). (2015). American Heart Association Guidelines for CPR & ECC <https://eccguidelines.heart.org/index.php/circulation/cpr-ecc-guidelines-2>

Numerator: Number of patients that received ASA among patients over 35 with a prehospital impression of non-traumatic Chest Pain.

Denominator: Total number of patients over 35 with a prehospital impression of non-traumatic Chest Pain.

12 Lead capture

PCC KPI bundle: ACS-02

Clinical area: Acute Coronary Syndrome

Measure title: 12 Lead Capture

Description: Percent of suspected ACS patients that received prehospital 12 Lead.

Measure type: process

Evidence or rationale: Guidelines and Systematic Review (SR/EBG)

Citation : Brainard, A. H., Raynovich, W., Tandberg, D., & Bedrick, E. J. (2005). The prehospital 12-lead electrocardiogram's effect on time to initiation of reperfusion therapy: a systematic review and meta-analysis of existing literature. *The American journal of emergency medicine*, 23(3),351-356.

Citation : American Heart Association. (2015). (2015). American Heart Association Guidelines for CPR & <https://eccguidelines.heart.org/circulation/cpr-ecc-guidelines/part-9-acute-coronary-syndromes/>

Numerator: Number of patients that received prehospital 12 Lead capture among patients over 35 with a prehospital impression of non-traumatic Chest Pain.

Denominator: Total number of patients over 35 with a prehospital impression of non-traumatic Chest Pain.

**Where possible consider wider range prehospital impressions that should benefit from 12 lead capture, such as abdominal pain, respiratory distress, altered level of consciousness, and general weakness by age.*

STEMI pre- alert

PCC KPI bundle: ACS-03

Clinical area: Acute Coronary Syndrome

Measure title: STEMI PRE-ALERT

Description: Percent of suspected STEMI patients where a STEMI PRE ALERT was performed.

Measure type: process

Evidence or rationale: Guidelines and Systematic Review (SR/EBG)

Link, M. S., Berkow, L. C., Kudenchuk, P. J., Halperin, H. R., Hess, E. P., Moitra, V. K., Donnino, M. W. (2015). Part 7: Adult Advanced Cardiovascular Life Support. 2015 American Heart Association Guidelines Update for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. *Circulation*, 132(suppl 2), S444-S464. Retrieved from http://circ.ahajournals.org/content/132/18_suppl_2/

Numerator: Number of patients where a STEMI PRE - ALERT was performed among patients with a prehospital impression of STEMI.

Denominator: Total number of patients with a prehospital impression of STEMI.

Direct to PCI

PCC KPI bundle: ACS- 04

Clinical area: ACS

Measure title: Direct to PCI

Description: Percent of suspected STEMI patients triaged in the field to a PCI capable facility.

Measure type: process

Evidence or rationale: Guidelines and Systematic Review (SR/EBG)

Citation: American Heart Association. (2015). (2015). American Heart Association Guidelines for CPR & ECC
<https://eccguidelines.heart.org/index.php/circulation/cpr-ecc-guidelines-2/>

Numerator: Number of patients who were directly transported to a PCI capable facility among patients with a prehospital impression of STEMI.

Denominator: Total number of patients with a prehospital impression of STEMI.

Cerebro-Vascular Accident

Stroke Assessment

PCC KPI bundle: CVA-01

Clinical area: Stroke

Measure title: Stroke Assessment

Description: Percent of suspected stroke patients who had a stroke assessment performed.

Measure type: process

Evidence or rationale: Guidelines and Systematic Review (SR/EBG)

Prehospital Stroke Scale Citation : Nazliel, B., Starkman, S., Liebeskind, D. S., Ovbiagele, B., Kim, D., Sanossian, N., ... Duckwiler, G. (2008). A Brief Prehospital Stroke Severity Scale Identifies Ischemic Stroke Patients

Harboring Persisting Large Arterial Occlusions. *Stroke*, 39(8), 2264-2267.

Citation : Kidwell, C. S., Starkman, S., Eckstein, M., Weems, K., & Saver, J. L. (2000). Identifying Stroke in the Field : Prospective Validation of the Los Angeles Prehospital Stroke Screen (LAPSS).

Stroke, 31(1), 71-76.

Citation : Kidwell, C. S., Saver, J. L., Schubert, G. B., Eckstein, M., & Starkman, S (1998). Design and retrospective analysis of the Los Angeles prehospital stroke screen (LAPSS). *Prehospital Emergency Care*, 2(4), 267-273.

Citation : Bray, J. E., Martin, J., Cooper, G., Barger, B., Bernard, S., & Bladin, C. (2005). Paramedic identification of stroke: community validation of the Melbourne ambulance stroke screen.

Cerebrovascular Diseases, 20(1), 28-33.

Numerator: Number of patients who had a stroke assessment performed (CPSS, LAMS, etc.) among patients with a prehospital impression indicative of stroke.

Denominator: Total number of patients with a prehospital impression indicative of stroke.

**Where possible consider wider range of prehospital impressions that would benefit from a prehospital stroke assessment.*

Stroke pre- alert

PCC KPI bundle: CVA-02

Clinical area: Stroke

Measure title: Stroke Pre- Alert

Description: Percent of suspected stroke patients who had a Stroke Pre- Alert performed.

Measure type: process

Evidence or rationale: Guidelines and Systematic Review (SR/EBG)

Early hospital notification for patients with a positive stroke screen Citation : Jeon, S. B., Koh, Y., Choi, H. A., & Lee, K. (2014). Critical care for patients with massive ischemic stroke. *Journal of Stroke*, 16(3), 146-160.

Citation : Abdullah, A. R., Smith, E. E., Biddinger, P. D., Kalenderian, D., & Schwamm, L. H. (2008).

Advance Hospital Notification by EMS in Acute Stroke Is Associated with Shorter Door-to-Computed Tomography Time and Increased Likelihood of Administration of Tissue-Plasminogen Activator. *Prehospital Emergency Care*, 12(4), 426–431.

Numerator: Number of patients who had a Stroke Pre- Alert performed among patients with a prehospital impression indicative of stroke.

Denominator: Number of patients with a prehospital impression indicative of stroke.

** Where possible consider wider range of prehospital impressions that should benefit from a prehospital stroke assessment.*

Direct to Stroke center

PCC KPI bundle: CVA-03

Clinical area: Stroke

Measure title: Direct to Stroke center

Description: Percent of suspected stroke patients who are directly triaged in the field to a comprehensive stroke center.

Measure type: process

Evidence or rationale: Guidelines and Systematic Review (SR/EBG)

Door to Needle Time in Patient with Acute Stroke

Citation: Jayaraman, M. V., Iqbal, A., Silver, B., Siket, M. S., Amedee, C., McTaggart, R. A., ... Alexander-Scott, N. (2016). Developing a statewide protocol to ensure patients with suspected emergent large vessel occlusion are directly triaged in the field to a comprehensive stroke center: how we did it. *Journal of neurointerventional surgery*, 9(3), 1-3.

Citation: Fonarow, G. C., Smith, E. E., Saver, J. L., Reeves, M. J., Bhatt, D. L., Grau-Sepulveda, M. V., Schwamm, L. H. (2011). Timeliness of Tissue-Type Plasminogen Activator Therapy in Acute Ischemic Stroke: Patient Characteristics, Hospital Factors, and Outcomes Associated With Door-to-Needle Times Within 60 Minutes. *Circulation*, 123, 750-758.

Numerator: Number of patients where direct transport to a thrombolysis/ mechanical thrombectomy intervention capable facility was performed among patients with a prehospital impression indicative of Stroke.

Denominator: Number of patients with a prehospital impression indicative of Stroke

*Where possible consider wider range of prehospital impressions that should benefit from a prehospital stroke assessment.

APPENDIX