2016-2017
ANNUAL REPORT

Centre for Prehospital Care

Health Sciences North

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Centre for Prehospital Care

Health Sciences North

INTRODUCTION

On behalf of the staff and Medical Directors of Health Sciences North Centre for Prehospital Care (HSN CPC), it is our pleasure to present the annual report for fiscal year 2016-2017.

This report follows the template provided by the Emergency Health Services Branch, and demonstrates how our organization addresses the key performance indicators listed in the performance agreement.

We have completed another productive and successful year. Some key achievements during this fiscal year include:

- We certified 61 new paramedics
- We provided advice and on-line medical direction during 448 patch calls
- We audited 6053 ambulance calls
- We facilitated 136 educational sessions

We acknowledge the work of all our staff as we continue to seek new and innovative methods of delivering our services to our stakeholders while meeting and, in some cases, exceeding the expectations defined in our performance agreement.

DR. JASON PRPIC
REGIONAL MEDICAL DIRECTOR

NICOLE SYKES
REGIONAL MANAGER

OUR MISSION AND VISION

Our Mission

The HSN Centre for Prehospital Care fosters exceptional prehospital care to improve the health and wellbeing of our communities by supporting paramedics through:

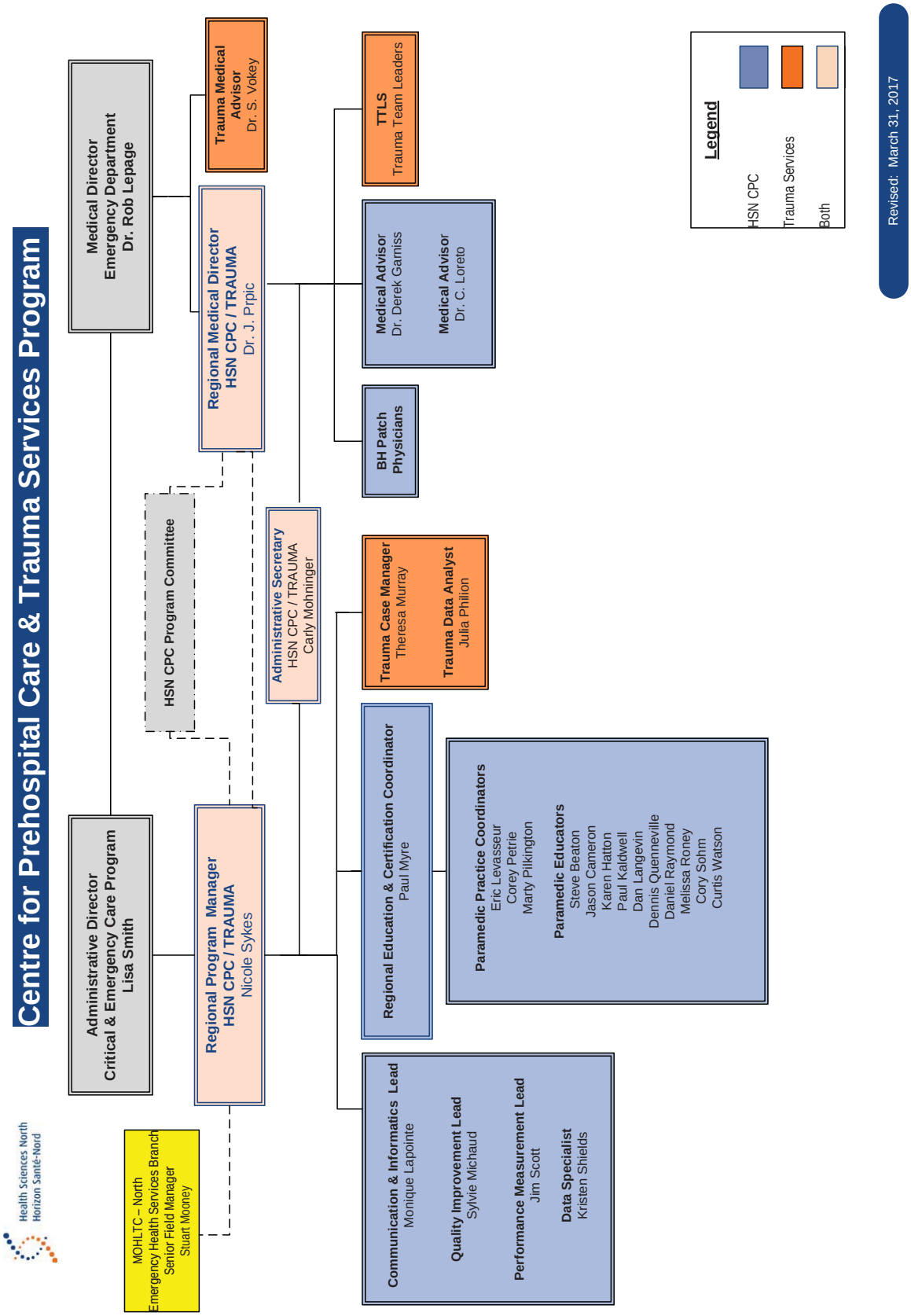
- Innovative education delivery;
- Research;
- Responsive quality programming; and,
- Medical delegation and oversight consistent with approved standards and expert practices.

Our Vision

Leading advancements in prehospital medicine through innovation, research, and education.

ORGANIZATION CHART

As of March 31, 2017



MEET THE TEAM

Nicole Sykes, Regional Manager

Dr. J. Prpic, Regional Medical Director

Paul Myre, Regional Education and Certification Coordinator

Carly Mohninger, Administrative Secretary

Sylvie Michaud, Quality Improvement Lead

Monique Lapointe, Communication & Informatics Lead

Jim Scott, Performance Measurement Lead

Eric Levasseur, Paramedic Practice Coordinator

Marty Pilkington, Paramedic Practice Coordinator

Corey Petrie, Paramedic Practice Coordinator

Cory Sohm, Paramedic Practice Coordinator

Kristen Shields, Data Specialist

HIGHLIGHTS

Collaboration

Working with our colleagues from the Ontario Base Hospital Group (OBHG), the program has had a strategic focus on enhancing the quality of programming delivered, avoiding duplication in the system, and the sharing of knowledge among programs. The goal is to standardize and find efficiencies in processes wherever possible. The Health Sciences North, Centre for Prehospital Care (HSN CPC) team is involved in both formal and informal activities designed to accomplish these goals. These examples illustrate the significant degree to which the program supports a culture of collaboration when considering any new initiatives.

Informal Activities

1. Creating PCP and ACP new scenarios for use with all new certification events through a Provincial Working Group in collaboration with Sunnybrook Centre for Prehospital Medicine, London Health Sciences Centre, Hamilton Health Sciences, Northwestern Ontario Regional Base Hospital, ORNGE Base Hospital
2. Ad hoc sharing of educational materials among Base Hospital programs.
3. Ad hoc sharing of information and resources among Base Hospital Programs.

Formal Activities

Emergency Childbirth Medical Directive

A joint business case for the delivery of the emergency childbirth medical directive education was submitted by all eight Base Hospital Programs in 2016, led by Tim Dodd (CPER) and Maud Huiskamp (Sunnybrook). With the support of EHSB, this has resulted in an agreement with the Association of Ontario Midwives (AOM) who developed the OBHG MAC endorsed curriculum and evaluation tools to measure competency related to the new ALS PCS medical directive. All ~9000 paramedics in Ontario will receive standardized education, created by out-of-hospital childbirth experts, prior to the Medical Directive implementation date of December 2017.

Medical Directors and key educators from across Ontario attended the Emergency Childbirth Instructor Workshop facilitated by the AOM during the OBHG annual meeting in Niagara Falls on Feb 28 2017. Dr. Prpic, Dr. Garniss and Paul Myre attended on behalf of HSN CPC.

New Certification

Dates and available spots during PCP and ACP performance based evaluation events are being shared with neighboring Base Hospital Programs. This has resulted in occasions where paramedics requiring evaluation are able to be accommodated on dates or in locations that enable quicker response times to the given need, or to avoid significant human resource investment to duplicate an already offered service in response to a necessary evaluation event for a single paramedic.

IQ EMS

Health Sciences North Centre for Prehospital Care, London Health Sciences Centre, Southwest Ontario Regional Base Hospital Program and Sunnybrook Centre for Prehospital Medicine continue to work collaboratively pursuing standardization of quality assurance software and working toward the delivery of a centralized data quality management solution using Intelligent Quality Evaluation & Management Suite (IQ EMS), originally developed by Sunnybrook Centre for Prehospital Medicine. This web based software supports the management of many base hospital continuing quality improvement endeavors including data mining, peer review and compliance auditing, secure communication with stakeholders, investigation and self-reporting, efficient work flow and document management, statistical reporting and data visualization. The IQEMS suite is being modified to support the additional base hospitals participating in this large-scale project.

IQEMS will be moved to the centralized infrastructure to facilitate the centralized solution upon completion of the requirements of the Privacy Impact Assessment (PIA) and Threat Risk assessment (TRA). Both the PIA and TRA were completed in 2016 by third party experts, and since the beginning of 2017 the programs have been completing the resulting action items and contracts.

The following formal working groups have been struck to support the deployment of IQEMS:

- IQEMS Project Management group
- IQEMS Operational working group
- IQEMS Technical working group

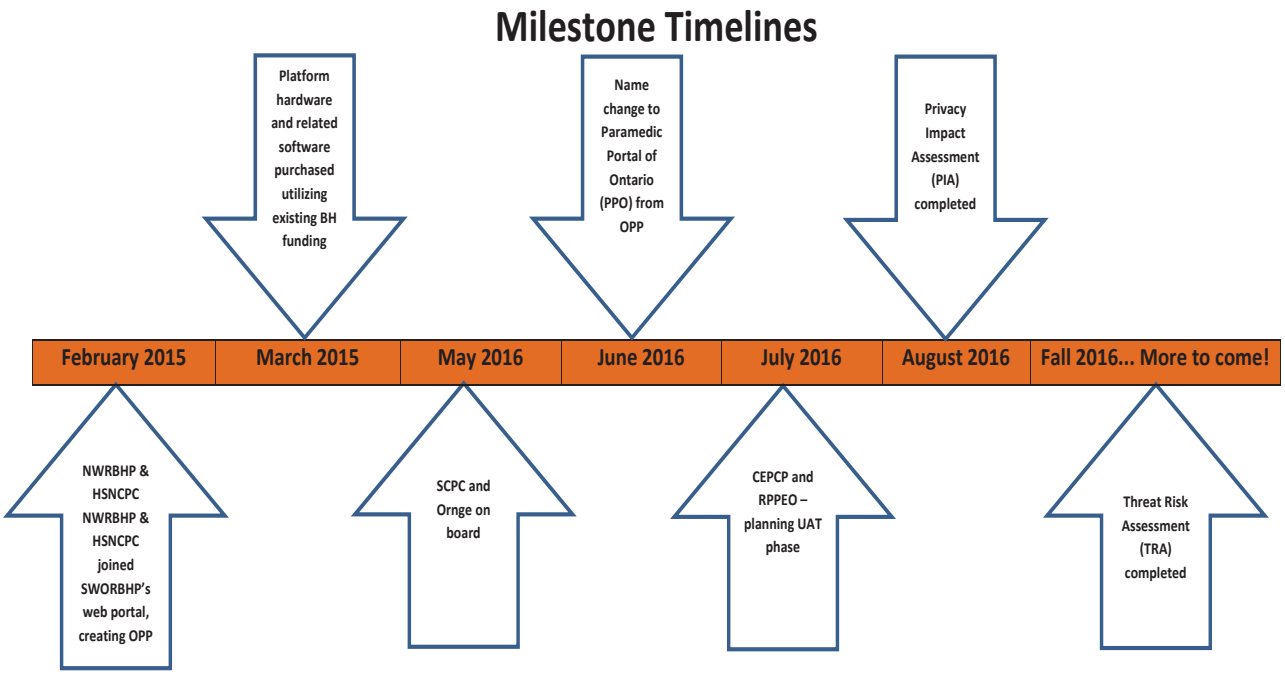
Additional governance development is ongoing and a policy/privacy working group and the evolution of the Project Management group into an Executive level committee are anticipated in 2017.

The projected go live was delayed due to recommendations which required addressing based on the Privacy Impact Assessment Report. We anticipate a new go live date for later Summer 2017.

Paramedic Portal Ontario (PPO) New name and New web address

In 2014 OBHG underwent a review of two actual operational Paramedic Certification and LMS products being utilized in Ontario, the products were scored by the Base Hospital programs as well as evaluated by an independent third party technology expert. As a result, SWORBHP's web portal was chosen in 2015 to be the base of a new, multi-program registry and learning management system (LMS). All development and maintenance has been either developed internally or through a third party utilizing existing BH funding. Centralized infrastructure (monthly hosting & server costs), bug and enhancement resolution as well as regular maintenance/support are being shared equally by all participating BHs.

The Paramedic Portal of Ontario (PPO) completed another phase of development which included upgrades to reflect our current work and future vision and included a new name and web address. The live site now includes 5 of 8 Base Hospitals including Health Sciences North,Centre for Prehospital Care, Northwest, Southwest, Sunnybrook, and ORNGE. A vulnerability risk assessment as well as penetration testing was conducted on PPO and the reporting findings are being addressed as part of this phase. Following the deployment of the new name, development began on the requirements for the next phase. The next version of the PPO will include exciting developments for the paramedic, service operator and administrative staff which will include enhanced reporting and dashboards.



The PPO allows users access to the Paramedic Registry and the Learning Management site.

The paramedic registry module allows the paramedic/employer and RBHP to:

- Review paramedic current certification status,
- View paramedic auxiliary medical directives authorization
- Print paramedic current certification letter,
- Update paramedic demographics
- Manage continuing medical education (CME).
- Submit CME requests for approval and upload the associated supporting documentation

The Learning Management System (LMS) module allows access to online courses.

The Learning Management System allows the paramedic to:

- Electronically book into CME days.
- Access a variety of on line courses e.g mandatory CME precourse, auxiliary medical directives, mind of the medical director recordings, PCP IV precourse materials.

Certification Standard Project

All eight Base Hospital programs are developing procedures and processes to implement the ALS PCS Certification Standard in a standardized fashion across Ontario. Several Base Hospitals have taken the lead on a specific component of the project and all have signed on to a broader Project Charter.

Paramedic App: Ontario Paramedic Clinical Guide

All eight Base Hospital Programs participated in an App working group to establish and enhance an electronic clinical reference platform. The App was deployed in January 2017 with positive anecdotal feedback. The next steps of this project will include: a formal evaluation process though an on-line survey for all users and updating of content to support the ALS PCS V4.0 which comes in effect July 1 2017.

Further development will occur based on the feedback received and requirements identified by the App working group.

Professional Development

Council of Licensure, Enforcement and Regulation (CLEAR)

Congratulations to Corey Petrie, Paramedic Practice Coordinator who successfully completed the CLEAR National Certified Investigator & Inspector Training Basic course. Having this enhanced knowledge will be of great benefit to the program as investigating clinical cases is one of the core deliverables of the program under the Performance Agreement.

During the three-day, hands-on training and certification program in investigation and inspection techniques and procedures the following topics were covered:

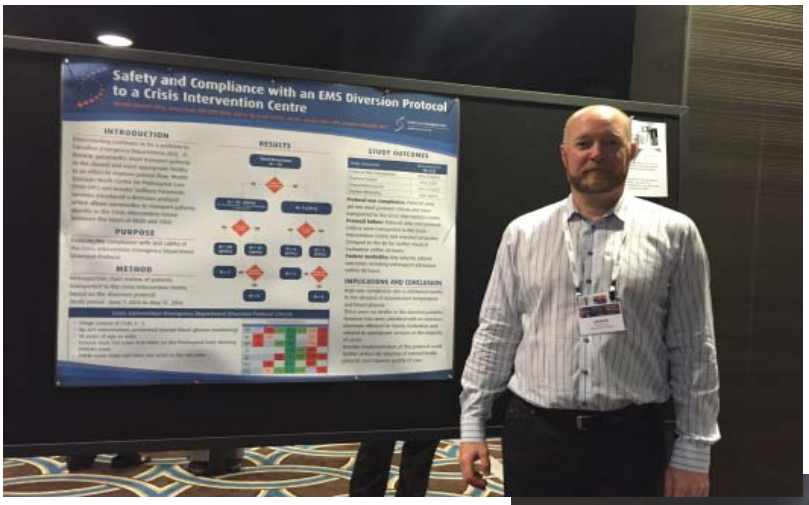
- Professional Conduct: Learn how to develop professional attitudes, conducts and relationships with other regulatory and law enforcement agencies.
- Principles of Administrative Law & the Regulatory Process: Provides the basic guidelines to understanding administrative law and procedure and the regulatory process.
- Investigative Process: Teaches a basic understanding of the investigative process including the intake of complaints, investigative planning and the execution of an investigative plan.
- Investigator Safety: Provides students with an over view of safety concerns for investigators, and high level strategies to mitigating danger.
- Principles of Evidence: Reviews sources of evidence law, types and forms of evidence and the rules and use of evidence in administrative proceedings.
- Evidence Collection, Tagging & Storage: Furnishes the student with basic guidelines for gathering evidence, including proper techniques of custody and storage of evidence.
- Interviewing Techniques: Explains the proper interviewing method, how to establish rapport, and proper and improper questioning techniques.
- Overview of Inspections & Inspection Procedures: Reviews the inspector's role and the specific steps of an inspection; from planning and conducting the inspection to writing the formal report.
- Report Writing: Teaches students ways to improve factual, investigative reports. Learn how to write a report that is accurate, logical, clear, concise and complete.
- Testifying in Administrative & Criminal Proceedings: Provides students with an understanding of the role of the prosecutor, as well as mental and physical preparation for testifying on the witness stand.

Corey adds his new skills to already certified HSN CPC staff members: Sylvie Michaud, Marty Pilkington, Dan Langevin and Jim Scott.

National Association of Emergency Medical Services Physicians (NAEMSP)

The NAEMSP group impacts EMS internationally and HSN CPC has been an important participant in ensuring the Canadian perspective is considered. The number of Canadians that attend the conference has grown appreciably over the last several years to the point where we now have a distinct NAEMSP committee that represents EMS from across Canada. This committee discusses and advances EMS science as it relates to Canada including participation in the NIH and Health Canada funded Resuscitation Outcomes Consortium (ROC), STEMI care, and the Canadian Evidence-based Protocol Project through a "Distinctly Canadian" pre-conference workshop that is included again. HSN CPC staff members Nicole Sykes and Paul Myre in fact participated on the planning committee for this event in previous years.

Dr. Prpic attended the 2017 National Association of EMS Physicians (NAEMSP) Annual Meeting and Scientific Assembly, in New Orleans, Louisiana and presented research on the diversion protocols developed and being used in Sudbury. (See Research section for further detail.)



September 2016

Governor General's Award for Paramedicine

Paul Myre and Eric Levasseur have been given the Governor General's Emergency Medical Services Medal for Exemplary Service.

The award is given to paramedics who have completed at least 20 years of exceptional service, including at least 10 years in the performance of duties involving exposure to harm.

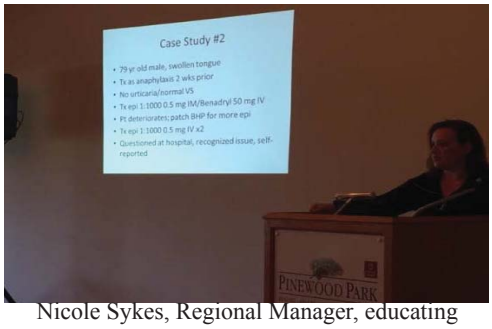
Myre and Levasseur received their awards at the Annual General Meeting of the Ontario Association of Paramedic Chiefs.

Presenting the awards was Lieutenant General Richard Rohmer, one of the most decorated citizens in Canadian history. Rohmer served in the Canadian military as a pilot and took part in the D-Day invasion during the Second World War. He is a recipient of the Order of Canada, Order of Ontario, Order of Military Merit, and holder of the Distinguished Flying Cross.

From left to right: Nicole Sykes, Regional Manager of Centre for Prehospital Care and Trauma Services, Eric Levasseur, Paramedic Practice Coordinator, Lieutenant General Richard Rohmer, Paul Myre, Regional Education and Certification Coordinator, Lisa Smith, Director of Critical and Emergency Care Program, Health Sciences North

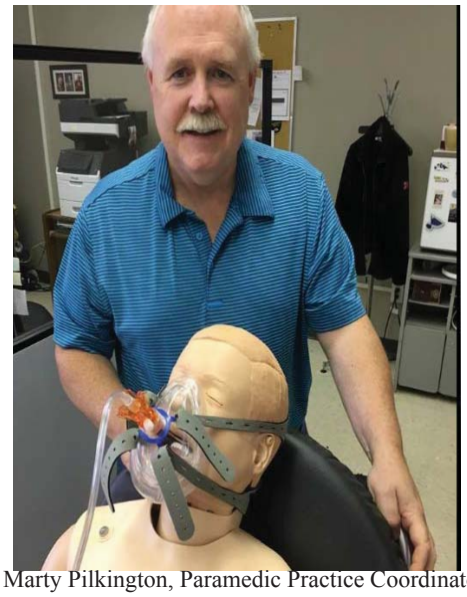
Sylvie Michaud, Quality Improvement Lead of the Centre for Prehospital Care received a recognition Award from the Ontario Base Hospital Group for 15 years of Service!
March 2017

The flags were raised to celebrate the opening of the new EMS Station in North Bay.
September 2016



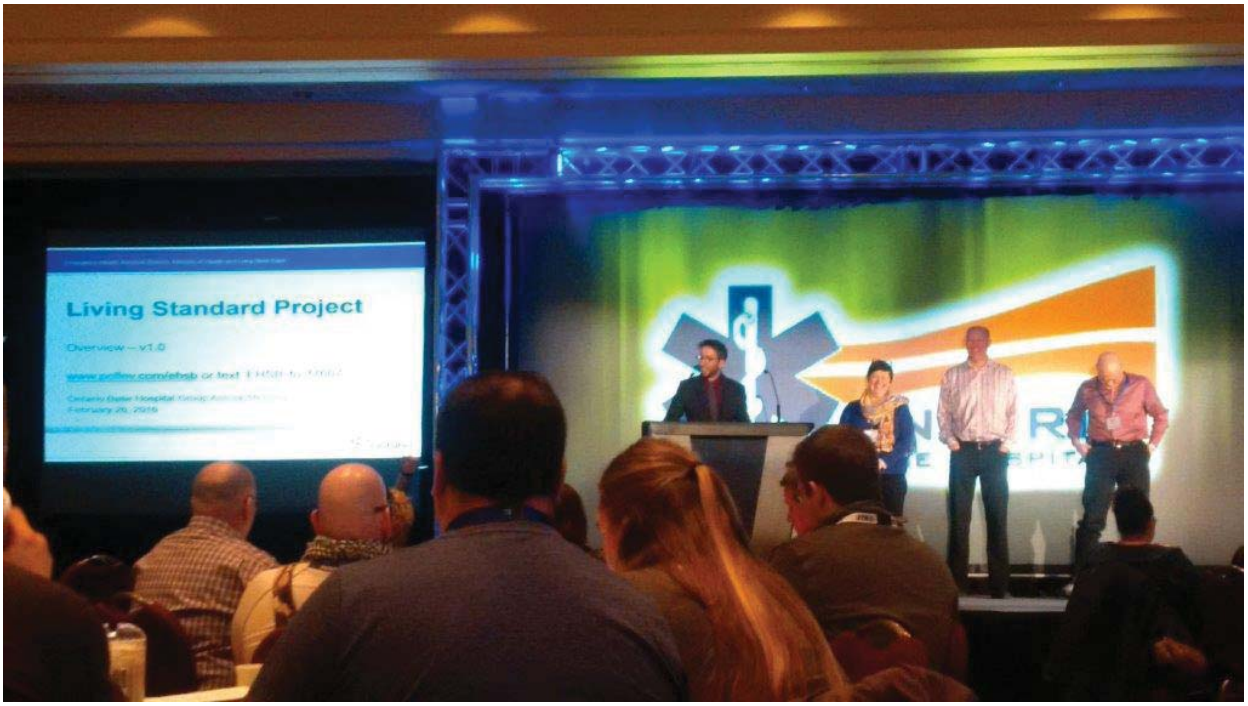
Nicole Sykes, Regional Manager, educating paramedics about *Just Culture* at the Nipissing Symposium
October 2016

Nicole Sykes, Regional Manager in Attawapiskat
April 2016



Marty Pilkington, Paramedic Practice Coordinator, Timmins Site is featured in *Humans of HSN*
September 2016

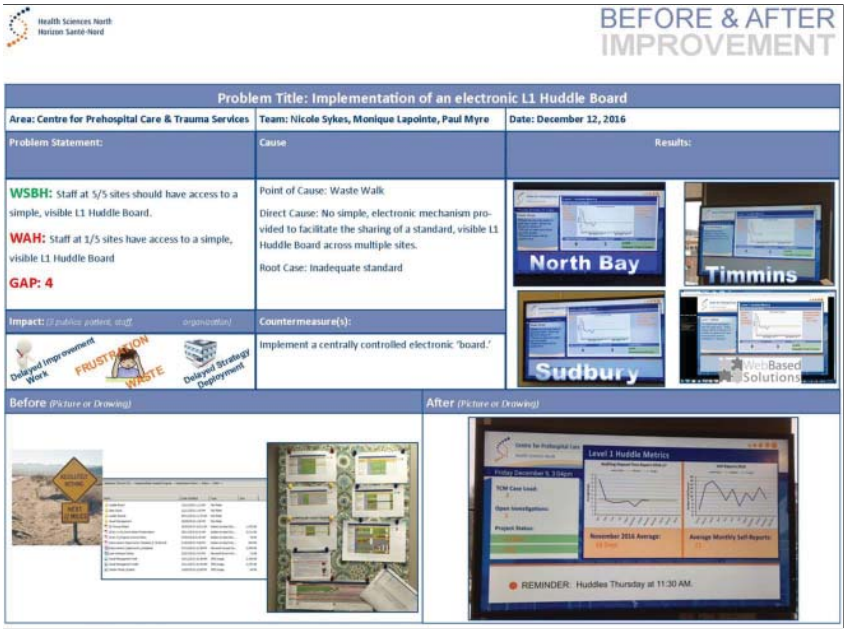
Nicole Sykes, Regional Manager of the Centre for Prehospital Care, along with Rob Smith, Chief of Manitoulin-Sudbury Paramedic Services spoke about Just Culture and a Collaborative Culture on March 2nd, 2017 at the OBHG Annual General Meeting and Conference



Dr. Prpic took part in a panel presentation on the Ministry of Health and Long Term Care - Emergency Health Services Branch's Living Standards Project at the OBHG Annual General Meeting and Conference in Niagara on the Lake in March 2017,

Centre for Prehospital Care goes LEAN

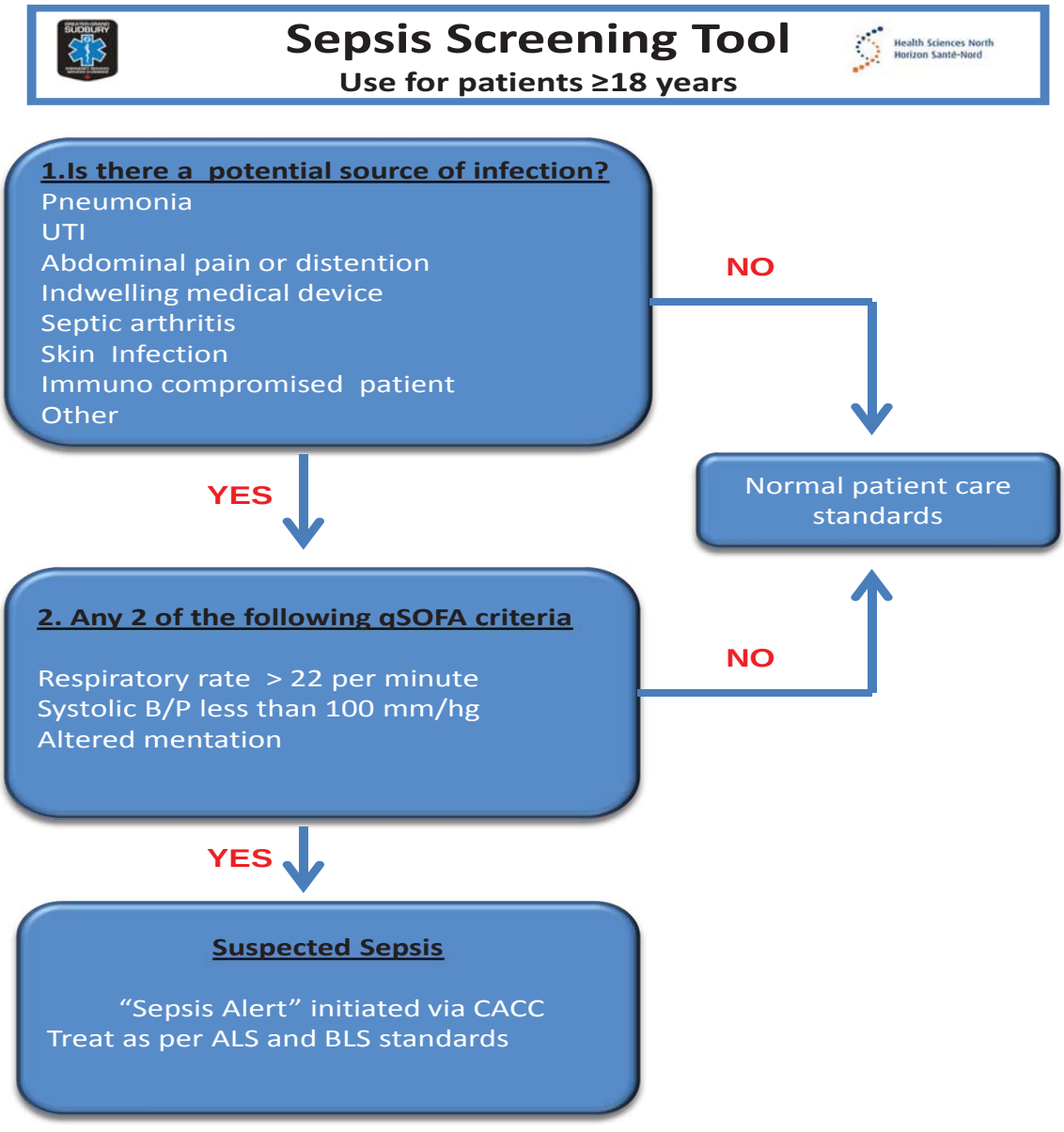
The Centre for Prehospital Care has been on the road of cultural transformation by adopting LEAN methodologies. CPC will continue to be an active participant and leader in the North, working with system partners in developing and/or executing joint, collaborative and complimentary quality improvement initiatives to improve integration and continuity of care for the population that we serve.



June 2016

Sepsis Alert Protocol

Severe sepsis is a condition with a high mortality rate. It is estimated that approximately half of the patients seen in the ED with sepsis are transported by Paramedic Services. This group of patients could benefit greatly from timely prehospital care. As a result, Health Sciences North Centre for Prehospital Care (HSN CPC) and Greater Sudbury Paramedic Services (GSPS) introduced a "Prehospital Sepsis Alert". In June of 2016, we hypothesized that pre-notifying the hospital of critically ill patients will allow hospital staff time to prepare and deliver timely medical care. Through research conducted by Dr. Yves Vaillancourt and Dr. Jason Prpic, in collaboration with HSN CPC staff, we have been able to show a clinically and statistically significant reduction in the time to antibiotic administration with the implementation of the Sepsis Alert protocol.



Web-Based Self-Reporting Continues to Rise

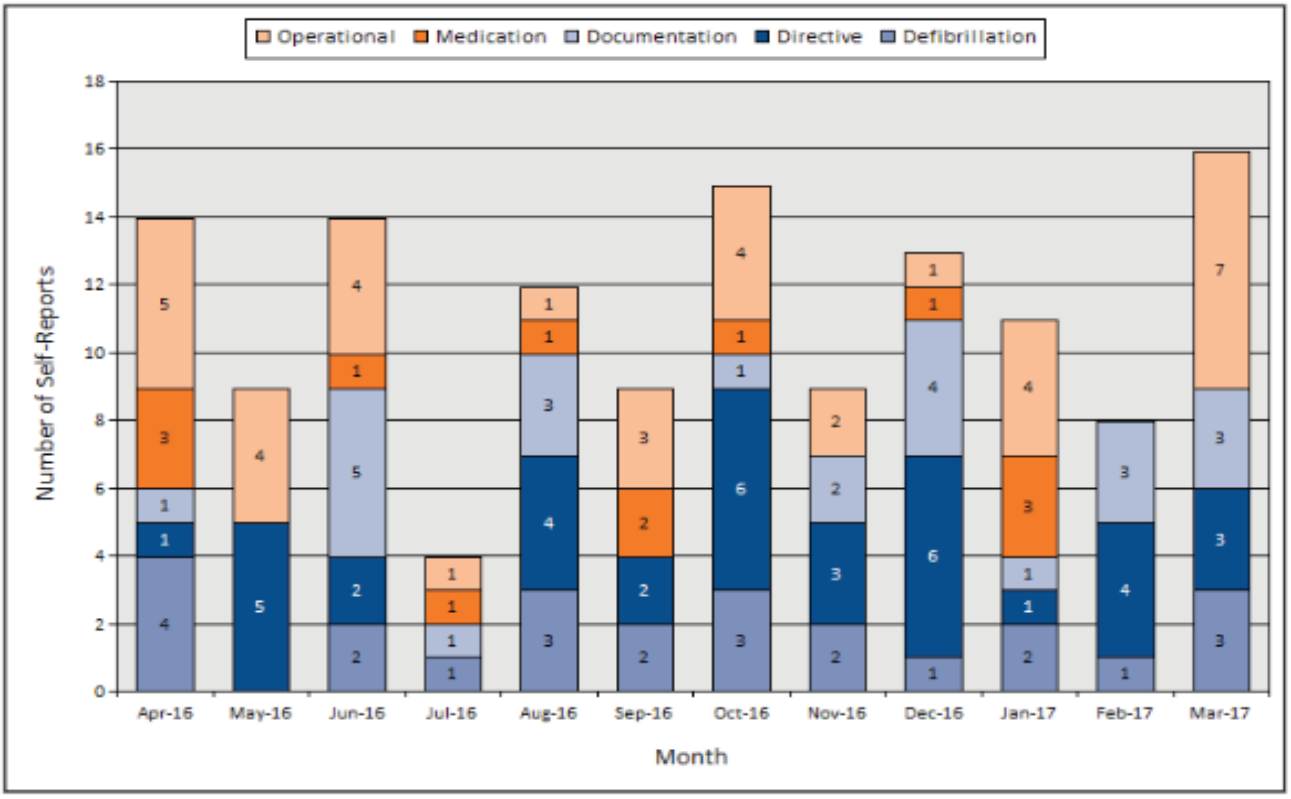
The HSN CPC strongly believes that self-reporting of adverse events is not only professional but developmental and has become part of our paramedics' standard of practice.

The simple fact of recognizing an event means that some form of self-remediation has taken place. From a program prospective, we look for trending issues and develop regional education based on actual needs. Located on the HSN CPC website, the Paramedic Self-Reporting tool was launched in April 2014 and the activities continue to impress. There were 134 self-reports generated and reviewed in fiscal 2016/2017.

This report currently resides on the HSN Centre for Prehospital Care Program website and is updated on a monthly basis.

Self-reports may include, but are not limited to, medical directive variances, documentation omissions or any challenges a paramedic may encounter during a call. The Self-Report form does not replace the option of contacting a Paramedic Practice Coordinator (PPC) for discussion, however serves as a standardized method of reporting.

Self-Reports by Month/Identified Issue
April 1, 2016 to March 31, 2017
n = 134



STEMI Alert

The Heart and Stroke Foundation of Canada estimates 70,000 heart attacks occur in Canada every year which equates to one every seven (7) minutes. STEMI (ST Segment-Elevation Myocardial Infarction) is representative of the most severe type of heart attack involving a sudden blockage of one of the coronary arteries. The HSN Cardiodiagnostics and Emergency Department (ED), in collaboration with the HSN CPC, the City of Greater Sudbury Paramedic Service, and Manitoulin-Sudbury Paramedic Services utilize a protocol whereby when a STEMI is recognized in the pre-hospital setting, a “STEMI ALERT” is immediately declared by attending paramedics. This declaration triggers the pre-notification of the receiving department, either the ED or the Cardiac Catheterization Laboratory (Cath Lab), activating a series of intra-departmental processes where resources are rapidly deployed and focused on preparing for definitive interventions. This protocol drastically reduces diagnosis to intervention times by allowing the receiving departments to prepare for the patient's arrival and streamline the continuum of care.

The standard of care for patients receiving an urgent primary Percutaneous Coronary Intervention (PCI) in the Cath Lab is a door to balloon time of ninety (90) minutes. The door to balloon time is measured from the moment a STEMI positive patient enters a health care facility to the time the balloon in the Cath Lab is inflated.

Distance Education

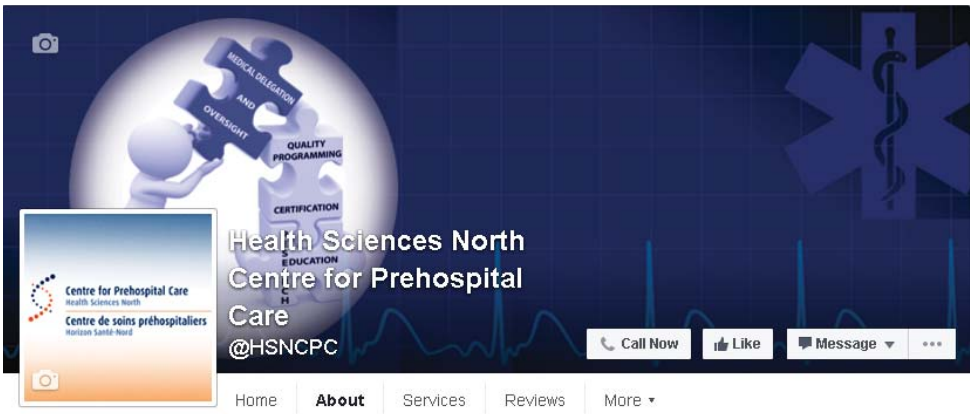
We continue to provide education to over 726 paramedics across one of the largest geographical regions in Ontario. To meet the challenge, HSN CPC continues to experiment with different methods of education delivery such as via Adobe Connect, Personal Videoconferencing (PC VC), Social Media and the Ontario Paramedic Portal. The newer methods of delivery allow HSN CPC to enhance learning opportunities and facilitate the delivery of education allowing ease of access by paramedics. OTN videoconferencing continues to allow the connectivity by the Northeast Region Paramedics to the Base Hospital for real time educational, certification and administrative purposes. We currently have 25 archived presentations that paramedics can view from anywhere with an internet connection at any time.

HSN CPC continues to work on solutions to further reduce barriers of time and distance for paramedics to participate in a higher level of learning regardless of their location.

Social Media

facebook.com/hsncpc

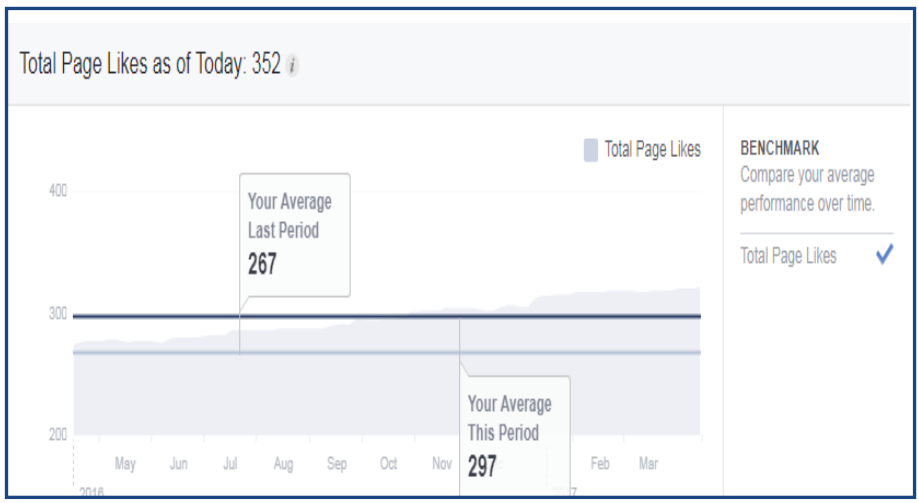
At HSN CPC, we monitor our social media stats to ensure continuous engagement from our paramedics and community. Our page likes have increased by 11% from 2015-16 to 2016-17 fiscal years (Figure 1 & 2). Over half (59%) of our audience are between the ages of 25 to 44 years and 45% of our followers are women and 54% are men. The majority of our audience is from Northeastern Ontario. (Figure 3)



We continue to monitor and develop our Facebook site to ensure the highest engagement of our posts.

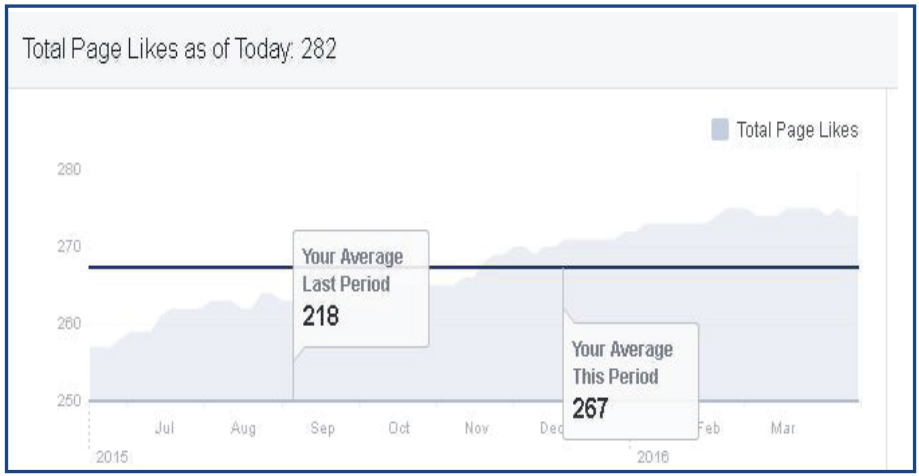
Trending 2016-2017

FIGURE 1



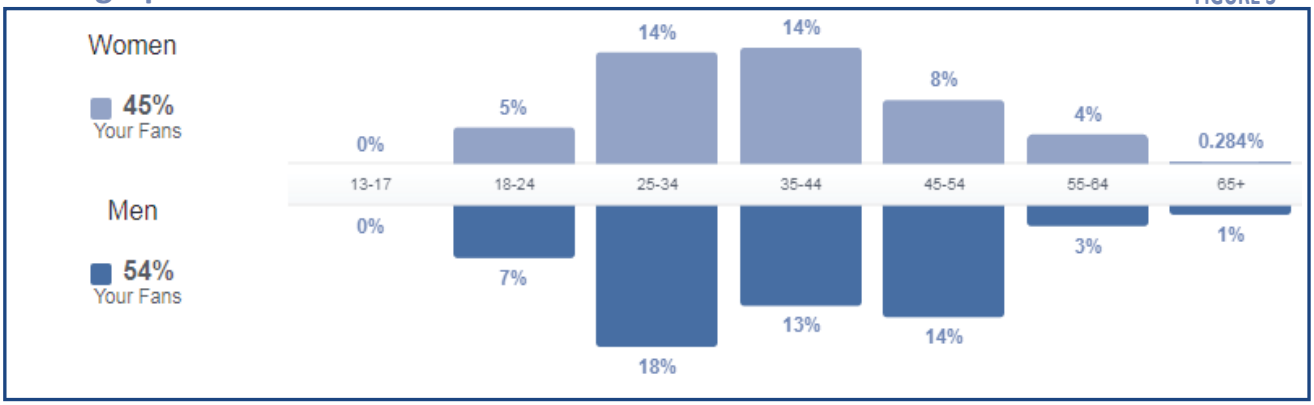
2015-2016

FIGURE 2



Demographics

FIGURE 3



COUNTRY	PEOPLE REACHED
CANADA	351
USA	1

LANGUAGE	PEOPLE REACHED
ENGLISH (US)	324
ENGLISH (UK)	23
FRENCH (CANADA)	4
TURKISH	1

CITY	PEOPLE REACHED
SUDBURY, ON	79
SAULT STE. MARIE, ON	25
NORTH BAY, ON	20
VAL CARON, ON	18
TIMMINS, ON	16
GARSON, ON	14
LIVELY, ON	8
PARRY SOUND, ON	8
NEW LISKEARD, ON	7
NAUGHTON, ON	6
AZILDA, ON	6
OTTAWA, ON	6
CHELMSFORD, ON	5
COPPER CLIFF, ON	5
THUNDER BAY, ON	5
KIRKLAND LAKE, ON	5
CAPREOL, ON	5
HEARST, ON	4
HAMILTON, ON	4
CONISTON, ON	4
BURKS FALLS, ON	4
WIKWEMIKONG, ON	4
BARRIE ON	3
MINDEMOYA, ON	3
STURGEON FALLS, ON	3
MOOSONEE, ON	3
MONTREAL, QC	2
FOR ALBANY, ON	2
MANITOULIN ISLAND, ON	

CITY CONT..	PEOPLE REACHED
ALLISTON, ON	2
AMHERSTBURG, ON	2
POWASSAN ON	2
NOTRE-DAME DU-NORD, ON	2
GATINEAU, QC	2
COCHRANE, ON	2
TORONTO ON	2
EARLTON, ON	2
ELLIOT LAKE, ON	2
IROQUOIS, ON	2
ENGLEHART, ON	2
GORE BAY, ON	2
COBALT, ON	1
SCHUMACHER, ON	1
LATCHFORD, ON	1
SMITHS FALLS, ON	1

RESEARCH

Epistry Epidemiologic Registry

Epistry is an epidemiologic databank intended to help understand the burden of out-of-hospital cardiac arrest and life-threatening traumatic injury and to shed light on whether and how EMS process and geographic, socioeconomic and periodic variation may be associated with differences in outcome. The Epistry is designed to collate high-quality comprehensive Emergency Medical System (EMS) based data using uniform standardized criteria for consecutive cases of cardiac arrest and traumatic injury within the Resuscitation Outcomes Consortium (ROC). Epistry data collection commenced December 1, 2005. An approximate 20,000 episodes were enrolled in Epistry in the first year alone. The aims of Epistry include

1. Establish a comprehensive ongoing data infrastructure to facilitate the design, implementation, and interpretation of ROC interventional trials.

Define the incidence and outcome of out-of-hospital cardiac arrest and traumatic injury.

2. Describe the relationships between resuscitation performance and EMS structure, adjusting for episode-specific factors.
3. Evaluate the relationships between outcome and patient, EMS, regional, and periodic factors.

NUMBER OF CASES APRIL 1, 2016 - MARCH 31, 2017	
Patients requiring treatment	164
Patients not requiring treatment	179

Safety and Compliance with an EMS Direct Transport Protocol to a Withdrawal Management Facility vs. Emergency Department

Verdah Bismah, Queen's University, Jason Prpic, Sylvie Michaud, Nicole Sykes, Paul Myre, Health Sciences North Centre for Prehospital Care

Background: Transportation to alternative destinations (diversion) has been proposed as part of a resolution to overcrowding in hospital emergency departments (ED). We aimed to evaluate compliance and safety of an EMS protocol allowing paramedics to transport medically stable intoxicated patients to an alternate facility, Withdrawal Management Services (WMS). Patients were eligible for diversion if they were ≥ 18 years old, scored <4 on the modified Prehospital Early Warning (PHEW) score, and did not have any vital sign parameters in the red zone (as per PHEW score criteria). We hypothesize this protocol is safe for the prehospital diversion of intoxicated patients. Methods: A retrospective analysis was conducted on patients presenting to EMS with alcohol intoxication from June 1, 2015 to May 31, 2016. Study outcomes were: missed protocol opportunities, protocol noncompliance, protocol failure (presentation to ED within 48 hours of appropriate diversion), and patient morbidity (hospital admission or adverse event within 48 hours of diversion). Data was abstracted from EMS reports, hospital records, and WMS discharge forms. Data was analyzed using proportions and 95% confidence intervals. Results: EMS responded to 681 calls for intoxication, 568 were taken to the ED and 113 were diverted. Of the 568 transported to ED, 65 (11%) could have been diverted to WMS, these are cases of missed protocol opportunity. Of the 113 diversions, there was protocol noncompliance in 41 cases (36%), but 35 were due to incomplete sets of vital signs. Another 5 (12%) diversions involved vital signs documented outside allowed limits. 8 patients (20%) from the protocol noncompliance group presented to ED within 48 hours of diversion, none were admitted. Protocol failure occurred in 16 patients (22%), of which 1 was admitted. Overall, 24 patients (21%) presented to the ED after diversion, and 1 (1%) was admitted. Conclusions: EMS providers had high protocol compliance when transporting patients directly to the ED. There was some protocol non-compliance in diverting patients to WMS, largely attributed to incomplete recording of vital signs. The protocol causes low levels of morbidity in diverted patients. Broader implementation of the protocol could reduce the volume of intoxicated patients in the ED.

Safety and Compliance with an EMS Diversion Protocol to a Withdrawal Management Centre

Verdah Bismah BHSc, Jason Prpic MD CCFP (EM), Sylvie Michaud CCP(f), BScPH, Nicole Sykes RN, Jennifer Amyotte ACP

Centre for Prehos I Care
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INTRODUCTION

Overcrowding continues to be a problem in Canadian Emergency Departments (ED). In Ontario, paramedics must transport patients to the closest and most appropriate facility. In an effort to improve patient flow, Health Sciences North Centre for Prehospital Care (HSN CPC) and Greater Sudbury Paramedic Services introduced a diversion protocol which allows paramedics to transport patients directly to the Withdrawal Management Centre.

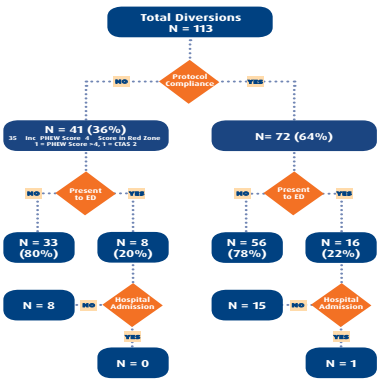
PURPOSE

Evaluate the compliance with and safety of the Withdrawal Management Emergency Department Diversion Protocol.

METHOD

Retrospective chart review of patients transported to the Withdrawal Management Centre based on the diversion protocol.
Study period : June 1, 2015 to May 31, 2016

RESULTS



STUDY OUTCOMES

Study Outcomes	Diverted to CI (N=45)
Protocol Non-Compliance	36% (41/113)
Protocol Failure	22% (16/72)
Presentation to ED	21% (24/113)
Patient Morbidity	1% (1/113)

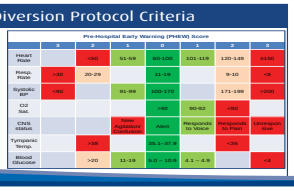
Protocol non-compliance: Patients who did not meet protocol criteria and were transported to the Withdrawal Managment Centre.
Protocol failure: Patients who met protocol criteria were transported to the Withdrawal Managment Centre and required secondary transport to the ED for further medical evaluation within 24 hours.
Patient morbidity: Any adverse patient outcomes including subsequent admission within 48 hours.

IMPLICATIONS AND CONCLUSION

High non-compliance rate is attributed mostly to the absence of documented temperature and blood glucose.
There were no deaths in the diverted patients and one hospital admission for an unrelated issue.
Diversion allowed for timely evaluation and referral to appropriate services in the majority of cases.
Broader implementation of this protocol could further reduce ED volumes of patients under the influence and improve quality of care

Withdrawal Management Emergency Department Diversion Protocol Criteria

- Triage criteria of CTAS 3 - 5
- No ALS interventions performed (except blood glucose monitoring)
- 18 years of age or older
- Patient must not score 4 or more on the Prehospital Early Warning (PHEW) score
- PHEW score must not have any score in the red zone

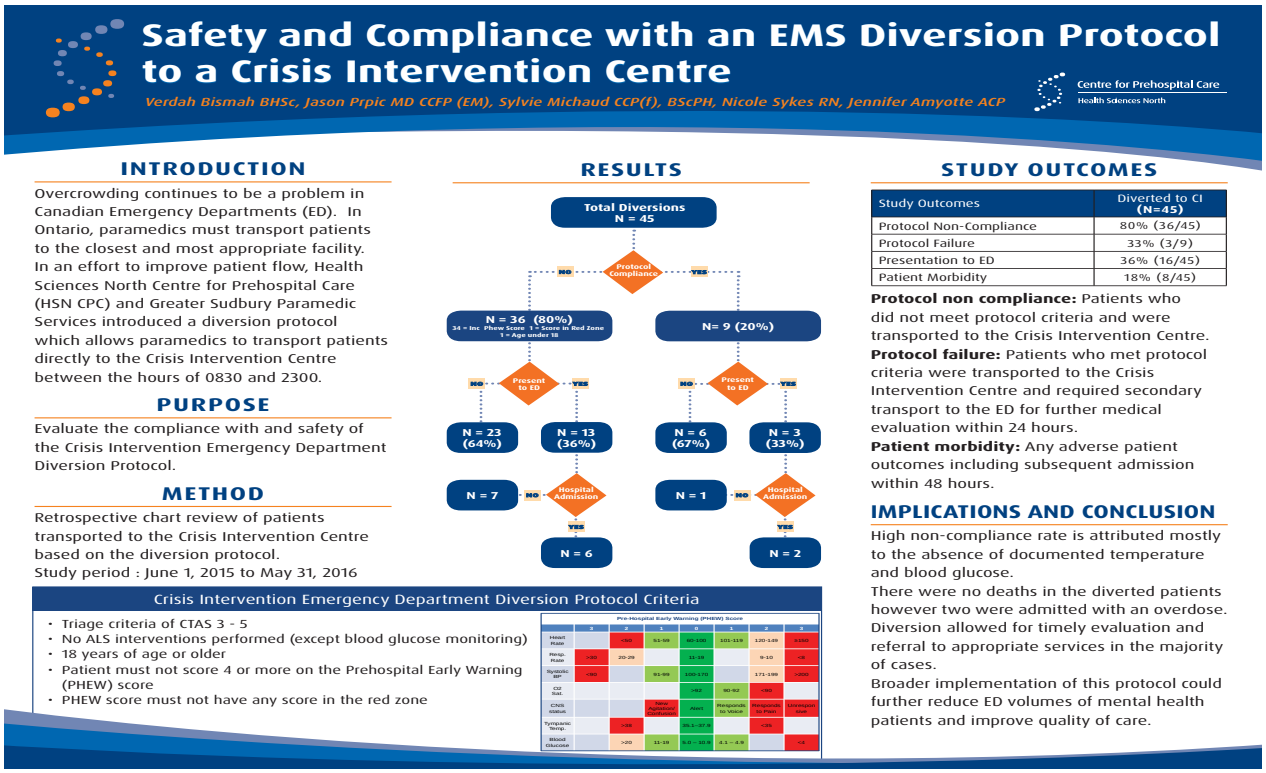


RESEARCH

Safety and Compliance with an EMS Direct Transport Protocol to a Mental Health Facility vs. Emergency Department

Verdah Bismah, Queen's University, Jason Prpic, Sylvie Michaud, Nicole Sykes, Paul Myre, Health Sciences North Centre for Prehospital Care,

Background: Transportation to alternative destinations (diversion) has been proposed as part of a resolution to overcrowding in hospital emergency departments (ED). We aimed to evaluate compliance and safety of an EMS protocol allowing paramedics to transport medically stable mental health patients to an alternate facility, Crisis Intervention (CI). Patients were eligible for diversion if they were ≥ 18 years old, scored <4 on the modified Prehospital Early Warning (PHEW) score, and did not have any vital sign parameters in the red zone (as per PHEW score criteria). We hypothesize this protocol is safe for the prehospital diversion of mental health patients. Methods: A retrospective analysis was conducted on patients presenting to EMS with psychiatric complaints. Study outcomes were: missed protocol opportunities, protocol noncompliance, protocol failure (presentation to ED within 48 hours of appropriate diversion), and patient morbidity (hospital admission or adverse event within 48 hours of diversion). Data was abstracted from EMS reports, hospital records, and CI discharge forms. Data was analyzed using proportions and 95% confidence intervals. Results: EMS responded to 695 calls with psychiatric complaints, 650 were taken to the ED and 45 were diverted. Of the 650 patients taken to ED, 18 (3%) could have been diverted to CI, these are missed protocol opportunities. Of the 45 diversions, there was protocol noncompliance in 36 cases (80%), but 34 were due to incomplete sets of vital signs. Only 1 (3%) diversion involved vital signs documented outside allowed limits. 13 patients (36%) from the protocol noncompliance group presented to ED within 48 hours of diversion, 6 were admitted. Protocol failure occurred in 3 patients (33%) who met diversion criteria but presented to ED within 48 hours, 2 of which were admitted. Overall, 16 patients (36%) presented to the ED after diversion, and 8 (18%) were admitted. Conclusions: EMS providers had high levels of compliance with the protocol when taking patients straight to the ED. There was poor protocol compliance in diverting patients to an alternate destination, though this is largely attributed to incomplete recording of vital signs. The protocol provides moderate levels of safety in diverted patients.



qSOFA Sepsis Alert Protocol

Severe sepsis and septic shock has a mortality rate of approximately 30%. Delays in antibiotic administration leads to increased mortality. Early antibiotics and fluid administration have an impact on patient outcome. We hypothesized that the implementation of an EMS sepsis-alert in the pre-hospital setting will not lead to reduction in antibiotic administration time in the Emergency Department.

This was a single center pre and post retrospective observational study measuring the effect of a sepsis alert implementation in the prehospital setting on antibiotic administration times in the ED. The pre-implementation period spanned from June 5, 2015 to June 5, 2016. We used the International Classification of Diseases (ICD)-10 codes for sepsis to retrieve all charts with a sepsis diagnosis made in the Emergency Department. The Sepsis Alert was implemented on June 6, 2016 and the post-implementation data was gathered until February 28, 2017. The diagnosis of sepsis in the ED for the intervention period was based on the Third International Consensus Definitions for Sepsis and Septic Shock definition and charts were individually reviewed by a physician.

The mean time to antibiotics in the pre-group was 138.81 minutes whereas the post-group had a mean time of 90.20 minutes. We performed a two-sample t-test with unequal variance which showed that the difference was statistically significant with a $p=0.003$. This was an absolute mean reduction of 48.81 minutes.

We were able to reject the null hypothesis and were able to show a clinically and statistically significant reduction in the time to antibiotic administration with the implementation of the qSOFA Sepsis Alert protocol. Our sample size was much smaller than required in order to power the study at 80% and our study was only powered at 26%. However, given that we were able to reject the null hypothesis, although underpowered, the results remain valid.

Prehospital Medical Direct- Stroke Care Outcomes

Stroke is a leading cause of adult disability in Canada. More than 25,000 Ontarians experience a stroke every year and over 100,000 are living with the consequences of stroke. As a result, the Ontario Stroke System was developed to establish an integrated and coordinated system designed to improve patient care and outcomes for persons who experience a stroke in the province. Our primary objective was to create connections between pre-hospital records (Ambulance Call Reports) and hospital data at the 4 Designated Stroke Centre (DSC) and Tele-Stroke Centre to gain a better understanding of the stroke and TIA volumes within the North East LHIN. Methods: This was a prospective cohort study involving all prehospital patients presenting with possible signs or symptoms of stroke. The HSN CPC database was queried for any Ambulance Call Reports with a documented Primary and/or Final Problem Code of (41) Stroke/TIA between April 01, 2015 and March 31, 2016. 866 ACRs were retrieved. Of those, 51 ACRs were merged with the primary ACR, 39 were emergency inter-hospital transfers, and 4 ACRs had refusals from the patient. 772 patients were included for secondary review. Results: Of the 772 patients triaged under the Stroke Protocol, 5% (n=41) were redirected to a DSC, 13% (n=98) were transported to a community hospital and 82% (n=633) were transported to a DSC not on redirect (the closest hospital was also a DSC). Overall, 87% (n=674) of patients presenting with signs or symptoms of stroke in northeastern Ontario are transported to a DSC. Of the 41 redirected, 29% (n=12) were transported to Health Sciences North, 24% (n=10) to Timmins and District Hospital, 17% (n=7) to Sault Area Hospital, 15% (n=6) to North Bay Regional Health Centre, 15% (n=6) Temiskaming Hospital (tele-stroke). Of the 98 patients who were not redirected to a designated stroke centre, all but one patient had sufficient documentation to support the decision of transporting the patient to a community hospital versus a DSC.

MEDICAL DELEGATION

Q1 The Host Hospital shall ensure that Emergency Medical Attendants and Paramedics are qualified to perform the Controlled Acts and/or other medical procedures as recommended by the Provincial Medical Advisory Committee (PMAC) and the Director. Describe the process.

The HSN CPC is mandated by the Ambulance Act (Ontario Reg. 257/00) to ensure that paramedics are competent to practice. The method by which paramedics are certified is strongly influenced by the Delegation of Controlled Acts policy developed by the College of Physicians and Surgeons of Ontario. In short, it is the responsibility of the Regional Base Hospital Programs to provide an ongoing process by which the "Providers" are continuously informed of best practice guidelines and new trends and are competent to practice in the prehospital environment. As no single process can accomplish these goals, the HSN CPC combined various methodologies and techniques to be utilized as part of a comprehensive continuing education program. The goal of the CME program is to prepare paramedics to respond appropriately to a wide range of patient situations both routinely and infrequently encountered in the field. Paramedics who do not meet these requirements may be subject to a performance review by the Medical Director or delegate and may have their certification temporarily suspended until such a time that all mandatory CME credit hours are accumulated.

Paramedic Services present paramedics who have, at minimum, an offer of employment at the requested paramedic level to the Base Hospital for certification. Primary Care Paramedics (PCP) complete an orientation process to ensure that they are properly prepared for the evaluation process. They demonstrate competency through a process of scenarios and written questions mapped to their respective scope of practice. During the certification event, they are required to demonstrate competency through a series of scenarios, skills stations and oral questions. In addition to the requirements of a PCP, all Advanced Care Paramedic (ACP) candidates are required to have written the MOH ACP exam prior to attending.

Q2 The Host Hospital shall ensure that the Base Hospital Program establishes and maintains a procedure whereby Paramedics already certified under the authority of another Base Hospital Program Medical Director are recognized by the Base Hospital Program.

2.1 Describe the procedure used to ensure paramedics already certified under the authority of another Base Hospital Program Medical Director are recognized by the Base Hospital Program.

Cross Certification applies to paramedics already certified by an Ontario Base Hospital who are seeking certification from another Base Hospital. Once the paramedic is deemed eligible for cross-certification, the Paramedic must complete the Certification Request Form which includes:

- Certification from previous Ontario Base Hospitals.
- A declaration of any deactivation and/or decertification.
- Current certification status from previous Base Hospitals under which the paramedic is certified.
- Permission for the prospective Base Hospital to obtain information from other Base Hospitals regarding paramedic competencies and skills.

Following this, the Paramedic must successfully complete a Base Hospital orientation and/or evaluation process for any or all Auxiliary Medical Directives required which may include an interview/clinical evaluation with the medical director or delegate. It may also include an evaluation using written, scenario based, and oral examinations. But this is reserved only for skills the paramedic was not certified in with their previous Base Hospital.

After completion of these steps, the Base Hospital Medical Director will certify the paramedic.

2.2 Total number of paramedics that work for more than one employer.

As of March 31, 2017, HSN Centre for Prehospital Care had 69 paramedics who worked for more than one employer.

Q3 Provide a list of affiliated Ambulance Services with whom the Base Hospital has signed agreements.

Algoma District Paramedic Services
City of Greater Sudbury Paramedic Services
Cochrane District Social Services Administration Board

- Cochrane District EMS
- Notre Dame Hospital Ambulance Service
- Sensenbrenner Hospital Ambulance Service

City of Sault Ste. Marie Fire Services – EMS Division
Nipissing Paramedic Services

- North Bay EMS
- Mattawa EMS
- Temagami EMS

Manitoulin-Sudbury DSB Paramedic Services
Parry Sound District Emergency Medical Service
Temiskaming District EMS
Weeneebayko Area Health Authority Paramedic Service

3.1/3.2 Total number of PCPs for this reporting year; Total number of ACPs for this reporting year.

Total Number of Paramedics: 726

Total number of ACP: 70 Total number of PCP: 656

REPORTING PERIOD	TOTAL ACPS	TOTAL PCPS	TOTAL
April 1, 2016 to March 31, 2017	70	656	726

SERVICE	ACP	PCP	TOTAL
ALGOMA DISTRICT PS	–	63	63
COCHRANE DISTRICT EMS	–	71	71
GREATER SUDBURY PS	59	80	139
MANITOULIN-SUDBURY DSB PS	–	115	115
MATTAWA	–	8	8
NORTH BAY	11	58	69
NOTRE DAME HOSPITAL AS	–	5	5
PARRY SOUND EMS	–	70	70
SAULT STE. MARIE FS	–	56	56
SENSENBRENNER HOSPITAL AS	–	15	15
TEMAGAMI	–	7	7
TEMISKAMING DISTRICT EMS	–	49	49
WAHA PS	–	59	59

3.3 A list of the delegated Controlled Acts

*Note: Not all components of the scope of practice are Controlled Acts

SCOPE OF PRACTICE FOR PARAMEDICS (* = SELECT AREAS OF THE REGION)

MEDICATIONS CARRIED	PRIMARY CARE	ADVANCED CARE
Acetaminophen	✓	✓
Adenosine		✓
Amiodarone (North Bay ACP)		✓
ASA	✓	✓
Atropine		✓
Calcium Gluconate		✓
50% Dextrose in water	*	✓
Dimenhydrinate (Gravol)	✓	✓
Diphenhydramine (Benadryl)	✓	✓
Dopamine		✓
Epinephrine 1:1,000	✓	✓
Epinephrine 1:10,000		✓
Glucagon	✓	✓
Ibuprophen	✓	✓
Ketorolac	✓	✓
Lidocaine (Sudbury ACP)		✓
Midazolam		✓
Morphine		✓
Naloxone	✓	✓
Nitroglycerin	✓	✓
Oxygen	✓	✓
Salbutamol (MDI and Nebulization)	✓	✓
Sodium Bicarbonate		✓
Xylometaxoline HCL (Otrivin)		✓

3.3 A list of the delegated Controlled Acts *continued*

SCOPE OF PRACTICE FOR PARAMEDICS (* = SELECT AREAS OF THE REGION)

AIRWAY/VENTILATORY COMPROMISE SKILLS	PRIMARY CARE	ADVANCED CARE
CPAP	✓	✓
Endotracheal Intubation (Oral/Nasal)		✓
Endotracheal Suctioning		✓
King LT Insertion	✓	✓
Magill Forceps Utilization		✓
Needle Thoracostomy		✓
Oral/Nasal Airway	✓	✓
Oximetry	✓	✓
Positive Pressure Ventilation with BVM	✓	✓
Suctioning Mouth and Nose	✓	✓

CARDIOVASCULAR COMPROMISE	PRIMARY CARE	ADVANCED CARE
12 Lead Acquisition	✓	✓
12 Lead Interpretation	✓	✓
ECG Interpretation (PCP-five basic rhythms only)	✓	✓
Pacing		✓
Fluid Bolus Initiation	*	✓
Intravenous Cannulation	*	✓
Intraosseous Access		✓
Manual Defibrillation	✓	✓
Synchronized Cardioversion		✓
Emergency Home Dialysis Disconnect	✓	✓

OBSTETRICAL/NEONATAL TRANSFER	PRIMARY CARE	ADVANCED CARE
Assess and Recognize Obstetrical Emergencies	✓	✓
Delivery of the Neonate	✓	✓

DRUG ADMINISTRATION	PRIMARY CARE	ADVANCED CARE
Administer Drugs via SL; SC; PO; IM; IN, MDI and Nebulized Routes	✓	✓
Administer Drugs via ETT; IO		✓
Administer Drugs via IV	*	✓
Administer Drugs via PR		✓
PICC Line Access		✓

PRIMARY CARE PROGRAM	Greater Sudbury Paramedic Service	Manitoulin Sudbury EMS	Sault Ste Marie EMS	Algoma EMS	Nipissing DSSAB[1]	West P.S. Health Centre A.S.	District of Timiskaming EMS	Cochrane District EMS[2]	WAHA PS
Medical Cardiac Arrest (Defibrillation, Termination of Resuscitation)	X	X	X	X	X	X	X	X	X
Trauma Cardiac Arrest (Defibrillation, Termination of Resuscitation)	X	X	X	X	X	X	X	X	X
Hypothermia Cardiac Arrest (Defib)	X	X	X	X	X	X	X	X	X
Foreign Body Airway Obstruction Cardiac Arrest (Defibrillation)	X	X	X	X	X	X	X	X	X
Neonatal Resuscitation	X	X	X	X	X	X	X	X	X
Return of Spontaneous Circulation	X	X	X	X	X	X	X	X	X
Cardiac Ischemia (ASA, Nitroglycerin SL)	X	X	X	X	X	X	X	X	X
Acute Cardiogenic Pulmonary Edema (Nitroglycerin SL)	X	X	X	X	X	X	X	X	X
Hypoglycemia (Dextrose IV, Glucagon IM)	X	X	X	X	X	X	X	X	X
Bronchoconstriction (Salbutamol MDI/neb, Epinephrine 1:1000 IM)	X	X	X	X	X	X	X	X	X
Moderate to Severe Allergic Reaction (Epinephrine IM, Diphenhydramine IV/IM)	X	X	X	X	X	X	X	X	X
Croup (Epinephrine 1:1000 nebulized)	X	X	X	X	X	X	X	X	X
12 Lead ECG Acquisition & Interpretation	X	X	X	X	X	X	X	X	X
Adult Analgesia (Ibuprophen, Acetaminophen, Ketorolac)	X	X	X	X	X	X	X	X	X
Opioid Toxicity (Naloxone SC/IM/IV)	X	X	X	X	X	X	X	X	X
Auxiliary Intravenous & Fluid Therapy (0.9% NaCl)	X		X		X	X	X	X	
PCP Manual Defibrillation	X	X	X	X	X	X	X	X	X
Auxiliary Continuous Positive Airway Pressure	X	X	X	X	X	X		X	
Auxiliary Supraglottic Airway (King LT)	X	X	X	X	X	X	X	X	X
Auxiliary Nausea and Vomiting (Dimenhydrinate IV/IM)	X	X	X	X	X	X	X	X	X
Auxiliary Chemical Exposure Medical Directive (CYANOKIT)								X	
Auxiliary Home Dialysis Emergency Disconnect	X	X	X		X				
Auxiliary Special Events Medical Directives			X		X	X			
Auxiliary Electronic Control Device Probe Removal									

[1] Nipissing DSSAB includes Mattawa and Temagami Ambulance Services
[2] Cochrane District EMS includes Sensenbrenner and Notre Dame Ambulance Services

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ADVANCED CARE PROGRAM	Greater Sudbury Paramedic Service	North Bay & District Ambulance Service
Medical Cardiac Arrest (Epinephrine 1:10,000 IV/IO/ETT, Lidocaine/Amiodarone IV/IO)[3]	X	X
Trauma Cardiac Arrest	X	X
Hypothermia Cardiac Arrest	X	X
Foreign Body Airway Obstruction Cardiac Arrest (Laryngoscopy and Magill forceps)	X	X
Neonatal Resuscitation (Epinephrine 1:10,000 IV/IO/ETT)	X	X
Return of Spontaneous Circulation (Dopamine IV)	X	X
Cardiac Ischemia (ASA, Nitroglycerin SL, Morphine IV)	X	X
12 Lead ECG Acquisition & Interpretation	X	X
Acute Cardiogenic Pulmonary Edema (Nitroglycerine SL)	X	X
Cardiogenic Shock (Dopamine IV)	X	X
Symptomatic Bradycardia (Atropine IV, Transcutaneous Pacing, Dopamine IV)	X	X
Tachydysrhythmias (Valsalva Maneuver, Adenosine IV, Lidocaine/Amiodarone IV, Synchronized Cardioversion)	X	X
Intravenous & Fluid Therapy (0.9% NaCl IV/IO)	X	X
Pediatric Intraosseous (IO) Infusion	X	X
Hypoglycemia (Dextrose IV, Glucagon IM)	X	X
Seizure (Midazolam IV/IM)	X	X
Opioid Toxicity (Naloxone SC/IM/IV)	X	X
Endotracheal Intubation – Oral (Lidocaine spray)	X	X
Bronchoconstriction (Salbutamol MDI/neb, Epinephrine 1:1000 IM)	X	X
Moderate to Severe Allergic Reaction (Epinephrine 1:1000 IM, Diphenhydramine IV/IM)	X	X
Croup (Epinephrine 1:1000 neb)	X	X
Tension Pneumothorax – (Needle Thoracostomy)	X	X
Hyperkalemia (Calcium Gluconate and Salbutamol)	X	X
Adult Analgesia (Ibuprophen, Acetaminophen- PO Ketorolac IM/IV and Morphine IV)	X	X
Pediatric Analgesia (Morphine IV/SC)	X	X
Auxiliary Adult Intraosseous (IO) Infusion	X	X
Auxiliary Central Venous Access Device (CVAD access)	X	X
Auxiliary Continuous Positive Airway Pressure	X	X
Auxiliary Supraglottic Airway	X	X
Auxiliary Nausea and Vomiting (Dimenhydrinate IM/IV)	X	X
Auxiliary Combative Patient (Midazolam IM/IV)	X	X
Auxiliary Procedural Sedation (Midazolam IV)	X	X
Auxiliary Nasal Tracheal Intubation (Xylometazoline, Lidocaine spray)	X	
Auxiliary Home Dialysis Emergency Disconnect	X	X

[3] Greater Sudbury Paramedic Service – Lidocaine
North Bay and District Ambulance Service - Amiodarone

ADVANCED CARE PROGRAM	Greater Sudbury Paramedic Service	North Bay & District Ambulance Service
Auxiliary Special Events Medical Directives		X
Auxiliary Electronic Control Device Probe Removal		

Timelines for Medical Directive/Skill Implementation/Removal

Year	Month	Service	Modifications
2016	April	ALL	Addition of PCP 12 Lead ECG Interpretation
2016	April	Greater Sudbury & Sault Ste Marie	Addition of PCP Auxiliary Home Dialysis Emergency Disconnect
2016	January	Greater Sudbury	Addition of Autonomous PCP IV
2015	December	Manitoulin-Sudbury	Addition of PCP Auxiliary Home Dialysis Emergency Disconnect
2015	December	Algoma	Addition of PCP 12 Lead ECG Acquisition
2015	June	Greater Sudbury & North Bay	Addition of ACP Hyperkalemia Medical Directive (Calcium Gluconate and Salbutamol)
2015	June	ALL	Addition of PCP Opioid Toxicity Medical Directive (Naloxone)
2015	June	ALL	Addition Adult Analgesia Medical Directive
2014	November	ALL	Addition PCP Manual Defibrillation
2014	August	Greater Sudbury & North Bay	Addition of ACP Auxiliary Home Dialysis Emergency Disconnect
2014	July	ALL	Addition of Auxiliary Analgesia Medical Directive
2014	June	Manitoulin Sudbury	Addition of PCP 12 Lead ECG Acquisition
2014	April	Cochrane	Addition of Auxiliary Chemical Exposure Medical Directive – Administration of Antidotes for Cyanide Exposures (CYANOKIT)
2014	May	Sault Ste Marie	Addition of Special Events Medical Directives
2014	February	North Bay	Removal of ACP Nasal Tracheal Intubation
2013	December	Greater Sudbury	Addition of ACP Pediatric Pain Medical Directive
2013	December	North Bay	Addition of ACP Pediatric Pain Medical Directive
2013	July	North Bay	Addition of ACP Auxiliary CVAD Access
2013	April	Timiskaming	Addition of PCP 12 Lead ECG Acquisition
2013	April	James Bay	Addition of PCP 12 Lead ECG Acquisition
2013	March	Sensenbrenner	Addition of PCP Autonomous IV
2013	March	Notre Dame	Addition of PCP Autonomous IV
2013	March	Cochrane	Addition of PCP Autonomous IV
2012	November	North Bay	Addition of ACP Adult Intraosseous (IO) Infusion
2012	June	Manitoulin Sudbury	Addition of CPAP
2012	June	Cochrane	Addition of CPAP
2012	June	Notre Dame	Addition of CPAP
2012	June	Sensenbrenner	Addition of CPAP
2012	May	North Bay	Addition of PCP 12 Lead ECG Acquisition
2012	May	Temagami	Addition of PCP 12 Lead ECG Acquisition
2012	May	Mattawa	Addition of PCP 12 Lead ECG Acquisition
2011	November	All	Transition to ALS PCS Version 3.0
2011	June	Parry Sound	Addition of 12 Lead ECG Acquisition
2011	May	Temagami	Addition of CPAP
2011	April	Algoma	Addition of CPAP
2011	May	ALL	Removal of Auxiliary Taser Probe Removal
2010	January	Greater Sudbury	Addition of ACP 12 Lead ECG Interpretation
2010	March	North Bay	Addition of ACP 12 Lead ECG Interpretation
2010	April	Greater Sudbury	Addition of PCP 12 Lead ECG Acquisition
2010	April	Greater Sudbury	Addition of CPAP
2010	April	North Bay	Addition of CPAP
2010	April	Parry Sound	Addition of CPAP

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2010	July	Sault Ste Marie	Addition of Pediatric Attenuator Cables
2010	August	North Bay	Removal of Lasix
2009	December	North Bay	Removal of Flumazenil
2009	September	James Bay	Addition of Pediatric Attenuator Cables
2009	August	Parry Sound	Removal of PCP Rectal Valium
2009	April	All	Addition of King LT

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3.4 A list of the Controlled Acts that have been removed this reporting year.

There have been no Controlled Acts removed from April 1, 2016- March 31, 2017.

Q4 Does the Host Hospital adhere to the Provincial Medical Directives recommended by the PMAC and approved by the Director?

HSN Centre for Prehospital Care adheres to the latest version of the ALS PCS Version 3.3 as well as the latest Version 3.4 which came into effect on February 1, 2017.

Q5 The Host Hospital shall adhere to Provincial Certification, Recertification, Change in Certification and Remediation policies, as recommended by PMAC within recommended timelines.

5.1 Have the provincial Certification, Recertification, Change in Certification and Remediation policies, as recommended by PMAC within recommended timelines been adhered to?

HSN CPC adheres to the Provincial Maintenance of Certification Policy, Appendix 6 in the Advanced Life Support Patient Care Standards, Version 3.3, as well as the latest Version 3.4 which came into effect on February 1, 2017.

5.2 Total number of initial PCP and ACP certification awarded in the reporting year.

PERIOD	TOTAL ACPS	TOTAL PCPS	TOTAL
April 1, 2016 to March 31 2017	7	54	61

SERVICE	ACP	PCP	TOTAL
ALGOMA DISTRICT PS	–	2	2
COCHRANE DISTRICT EMS	–	3	3
GREATER SUDBURY PS	5	6	11
MANITOULIN-SUDBURY DSB PS	–	13	13
MATTAWA	–	-	-
NORTH BAY	2	5	7
NOTRE DAME	–	-	-
PARRY SOUND EMS	–	3	3
SAULT STE. MARIE FS	–	4	4
SENSENBRENNER	–	-	-
TEMAGAMI	–	-	-

TEMISKAMING DISTRICT EMS	–	2	2
WAHA PS	–	16	16

5.3 Total number of PCP and ACP reactivations in the reporting year.

REPORTING PERIOD	TOTAL ACPS	TOTAL PCPS	TOTAL
April 1, 2016 to March 31 2017	7	34	41

SERVICE	ACP	PCP	TOTAL
ALGOMA DISTRICT PS	–	1	1
COCHRANE DISTRICT EMS	–	2	2
GREATER SUDBURY PS	7	5	12
MANITOULIN-SUDBURY DSB PS	–	7	7
MATTAWA	–	2	2
NORTH BAY	-	2	2
NOTRE DAME	–	-	0
PARRY SOUND EMS	–	2	2
SAULT STE. MARIE FS	–	4	4
SENSENBRENNER	–	-	0
TEMAGAMI	–	–	0
TEMISKAMING DISTRICT EMS	–	6	6
WAHA PS	–	2	2

5.4 Total number of PCP and ACP deactivations in the reporting year.

REPORTING PERIOD	TOTAL ACPS	TOTAL PCPS	TOTAL
April 1, 2016 to March 31, 2017	6	52	60

SERVICE	ACP	PCP	TOTAL
ALGOMA DISTRICT PS	–	4	4
COCHRANE DISTRICT EMS	–	6	6
GREATER SUDBURY PS	6	6	12
MANITOULIN-SUDBURY DSB PS	–	5	5
MATTAWA EMS	–	1	1
NORTH BAY EMS	–	1	1
NOTRE DAME	–	-	0
PARRY SOUND EMS	–	3	3
SAULT STE. MARIE FS	–	4	4
SENSENBRENNER	–	1	1
TEMAGAMI	–	-	0
TEMISKAMING DISTRICT EMS	-	6	6
WAHA PS	-	12	12

Q6.1 Does the Medical Director practice emergency medicine full-time or part-time in the hospital emergency unit?

The medical director currently works in the HSN Emergency Department and exceeds the minimum requirement of 250 clinical hours.

6.2 Does the Medical Director hold recognized medical specialty credential(s) in emergency medicine?

The Medical Director is credentialed in Emergency Medicine as CCFP (EM).

Q7.1 Do all Base Hospital physicians have knowledge of paramedic practice and provincial medical directives?

HSN CPC has centralized all BHP patching to the Health Sciences North Emergency Department. Base Hospital Physicians are all Emergency Department Physicians and final year Residents credentialed through Health Sciences North.

The Emergency Department Physicians receive an orientation program which includes an overview of their roles and responsibilities as base hospital physicians and an introduction to the ALS Patient Care Standards. Dr. Prpic, Medical Director, regularly reviews the directives and/or amendments with the emergency physicians and shares CQI findings. The latest revision to the orientation manual relevant to the 2016-2017 fiscal year was in August 2015.

Emergency Department meetings have a standing Prehospital Care Section where changes in practice/directives can be addressed.

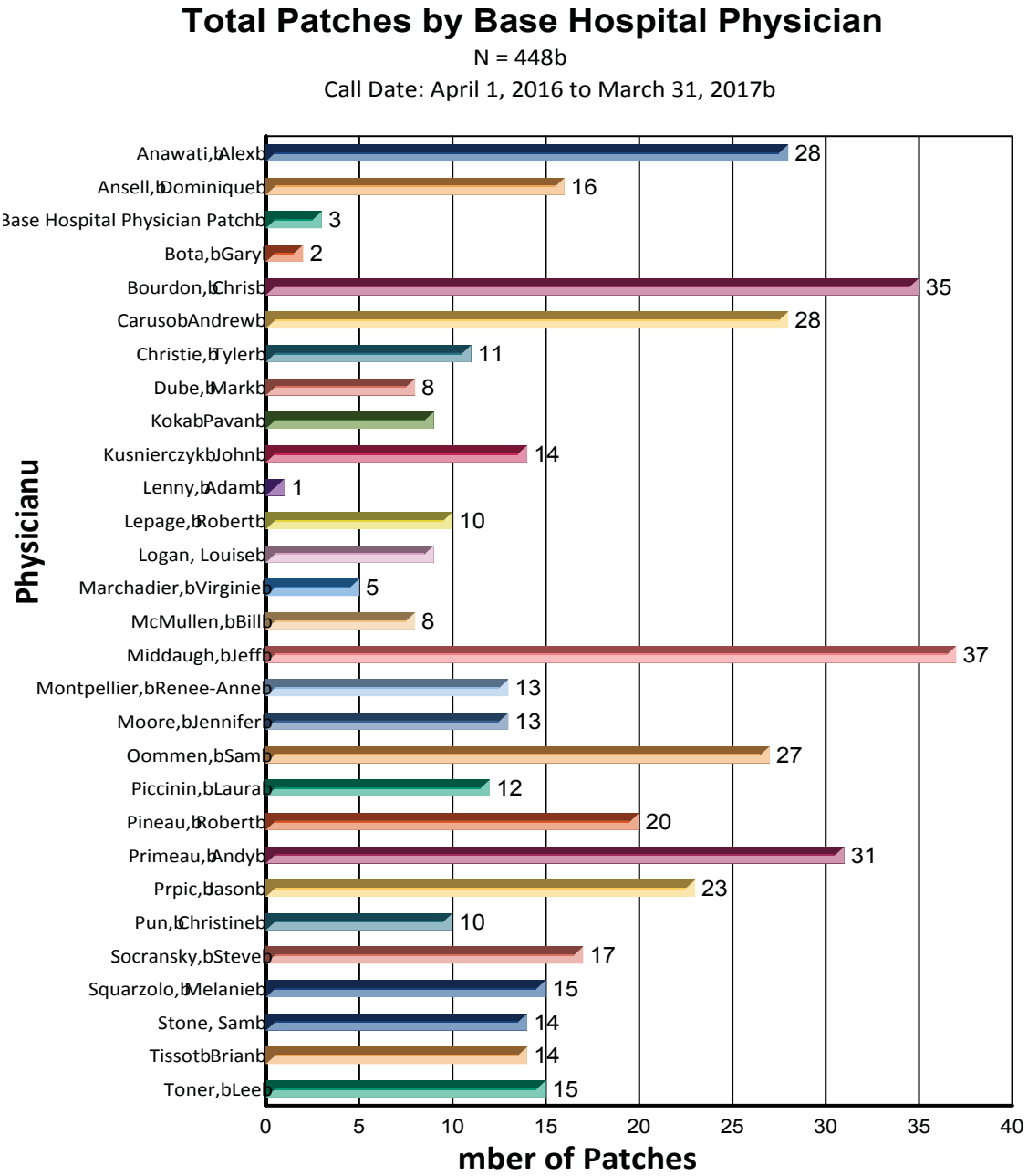
7.2 Total number of emergency physicians engaged as a Base Hospital Physician (list names).

28 emergency physicians were engaged as Base Hospital Physicians

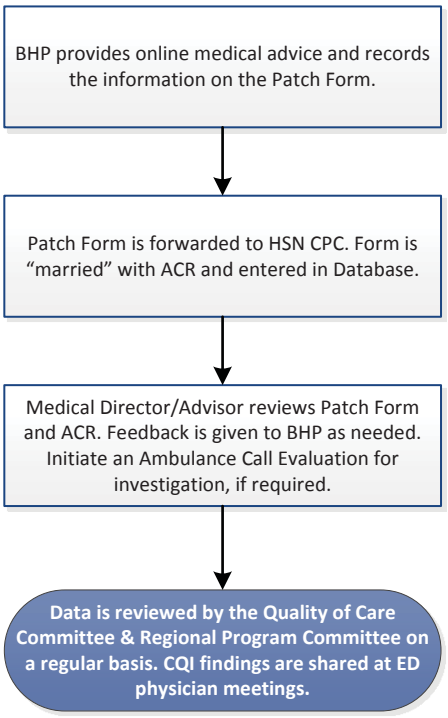
BASE HOSPITAL PHYSICIANS		
Dr. Alex Anawati	Dr. Robert Lepage	Dr. Andy Primeau
Dr. Dominique Ansell	Dr. Louise Logan	Dr. Jason Prpic
Dr. Gary Bota	Dr. Virginie Marchadier	Dr. Christine Pun
Dr. Christopher Bourdon	Dr. Bill McMullen	Dr. Steve Socransky
Dr. Andrew Caruso	Dr. Jeff Middaugh	Dr. Melanie Squarzolo
Dr. Tyler Christie	Dr. Renee-Anne Monpellier	Dr. Sam Stone
Dr. Mark Dube	Dr. Jennifer Moore	Dr. Brian Tissot
Dr. Pavan Koka	Dr. Sam Oommen	Dr. Lee Toner
Dr. John Kusnierczyk	Dr. Laura Piccinin	
Dr. Adam Lenny	Dr. Robert Pineau	

Q8.1 Total number of Base Hospital physician and paramedic online interactions that have been reviewed for medical quality.

Total of 448 online interactions occurred between April 1, 2016 and March 31 2017, and 100% were reviewed for medical quality.



8.2 Describe the medical quality review process.



MEDICAL OVERSIGHT

Q9 List the dates of Provincial Medical Advisory Committee (PMAC) meetings attended by a member of the Base Hospital Program.

- May 16, 2016
- September 27, 2016
- December 6, 2016
- March 1, 2017

Q10 Are Base Hospital Physicians available for on-line medical direction and control on a 24 hr/7 days a week basis?

Yes.

Q11 The Host Hospital shall ensure that the Base Hospital Program enters into and keeps in effect an agreement with each certified land ambulance service provider listed in Appendix D, with respect to the qualification, ongoing medical oversight, and re-qualification of Paramedics to deliver controlled medical acts under the authority of the Base Hospital Program Medical Director.

HSN CPC has an agreement with each land ambulance service in the Northeast.

Q12 The Host Hospital shall ensure that the Base Hospital Program monitors the delivery of patient care in accordance with the Advanced Life Support Patient Care Standards. Describe the actions taken to monitor the delivery of patient care in accordance with the Advanced Life Support Patient Care Standards.

Continuous Quality Improvement (CQI) is a complex responsibility that requires the collective effort of varied focus areas. Within the HSN CPC, CQI is attained through an integrated system of performance measurement, performance improvement and continuing medical education within a broad based system of quality management and medical leadership.

Performance Measurement is accomplished by collecting and randomly reviewing ambulance call reports (ACRs) for the appropriateness and quality of advanced patient care. Skills and specific patient conditions are categorized as high or low risk procedures by HSN CPC Quality of Care Committee (QCC). Tables 1 & 2 from Appendix N of the HSN CPC Performance Agreement (PA) are then applied to determine the total number of calls to be reviewed through the Ambulance Call Evaluation (ACE) process.

Quality Improvement is an inclusive, multidisciplinary process that focuses on identification of system wide opportunities for improvement. Our efforts focus on identification of the root causes of problems through Event Analyses, Self-Reports, and Clinical Audit Reports to reduce or eliminate these causes and develop steps to correct inadequate or faulty processes. The need and importance of a wide overlap between performance measurement, performance improvement and Continuing Medical Education (Figure 4) is vital to ensure ongoing quality patient care as demonstrated in the well-known and widely used Plan-Do-Study-Act cycle (Figure 5).

FIGURE 4

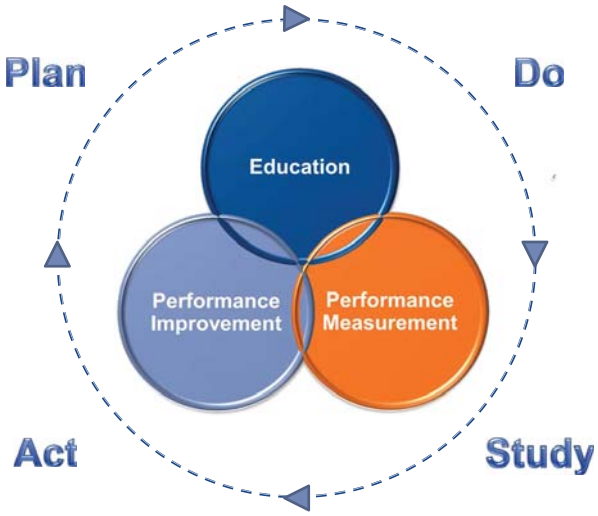


FIGURE 5

Q13 The Host Hospital shall ensure that the Base Hospital Program monitors the delivery of patient care in accordance with the Basic Life Support Patient Care Standards, if such monitoring is contained in the agreement with the Upper Tier Municipality and Designated Delivery Agent for land Ambulance Services as set out in Appendix D.

HSN Centre for Prehospital Care has an agreement with Manitoulin-Sudbury DSB that requires monitoring of the delivery of patient care in accordance with the Basic Life Support Patient Care. A novel model for sampling calls of significant interest was collaboratively developed to perform this work. All other audit activities centre around the ALS PCS. Where a BLS issue is noted during the regular ALS auditing processes, service operators are notified for their follow up.

Q14/14.1 The Host Hospital shall ensure that timely advice is provided to each Upper Tier Municipality and Designated Delivery Agent for Land Ambulance Services as set out in Appendix D regarding medical issues in prehospital care. Provide the total number of prehospital medical care issues raised by the UTM or DDA that required advice from the Base Hospital. Total number of prehospital medical care issues raised by the UTM or DDA that required advice from the Base Hospital.

Inquiries received by the UTM or DDA involving medical issues in prehospital care are logged in the Ambulance Call Evaluation Data Base.

41 requests were received, of which 9 resulted in an event analysis and were copied to the Field Office.

OUTCOME	
None	4
Resolved through Clinical Interview	3
Resolved Through Discussion	14
Resolved Through Remedial Action	2
Resolved with Directional and/ or Education Statements	18

14.2 List the top 5 subject areas that advice was requested from UTMs and DDAs (i.e. medical equipment, medical acts, policies, etc).

1. Medical Directives and Auxiliary Skills
2. ePCR audits
3. BLS advice
4. Patient Care Equipment
5. Policy and Procedures

Q15 The Host Hospital shall ensure participation in provincial, regional and community planning that affects prehospital care such as emergency planning, where the Host Hospital has the authority to do so. The total number and dates of provincial, regional, and community planning meetings, indicate the meeting hosts are listed below.

REGIONAL	PROVINCIAL	COMMUNITY	NATIONAL
39	62	45	1

REGIONAL	PROVINCIAL	COMMUNITY	NATIONAL
HSN CPC Council (Sudbury/ Videoconference) - Monthly	Base Hospital Managers/Directors Business Meeting - Monthly	Manitoulin-Sudbury District Services Board- Community Paramedicine	NAEMSP Planning Committee (Teleconference)
HSN CPC Quality of Care Committee (Sudbury/ Videoconference) - Monthly	Ontario Base Hospital Medical Advisory Group (MAC) (Toronto) - Quarterly	Sudbury Paramedic Service Quality of Care Committee - Quarterly	
Collaborative Just Culture tool Development - Ad hoc	OBHG Executive Committee (Toronto) - Quarterly	Sudbury Paramedicine CGSES HSN CPC Meeting-Annual	
HSN CPC NEO Regional Data Advisory Group (Teleconference) - 3 times/year	OBHG Education Sub-Committee - Quarterly	Collaborative Research Initiatives- HSN CPC/ Sudbury Paramedic Services- Bi-annual	
Regional Trauma Network Committee(HSN - Sudbury) - Quarterly	OBHG Data Quality Management (DQM) - Quarterly	Patient Safety and Quality Network Meeting (Sudbury) - Monthly	
Sudbury CACC Advisory Committee	OBHG Standardization Working Group (SWAG) (Toronto) - Quarterly & Ad hoc	COAT Committee(Clinical Oversight and Assessment Team)- Monthly	
HSN CPC Program Committee (Sudbury/Teleconference) - Quarterly	Ontario Trauma Advisory Committee (OTAC) Quarterly Meeting (Toronto) - Quarterly	Medicine and Emergency Care Program Council- Monthly	
Nipissing EMS Annual Symposium (North Bay) - Annual	Ontario Trauma Care Network (OTCN) (Teleconference) - Monthly	HSN Annual General Meeting- Annual	
STEMI Bypass Steering Committee	Research Design Meeting Group - Initial Certification Project (Sudbury/ Videoconference)		
	OBHG Strategic Planning Steering Group		
	Sunnybrook/HSN Joint Medical Council Meeting (Toronto) - Bi-Annual		
	OBHG Initial Certification Working Committee (Toronto)- Ad hoc		
	OBHG Annual General Meeting(Niagara-on-the-lake)		
	CCSO Town Hall Meeting - Annual		
	Treat and Release Working Group- Quarterly		
	OAPC Fall AGM & Conference - Annual		
	NIPPN Spring Meeting- Annual		

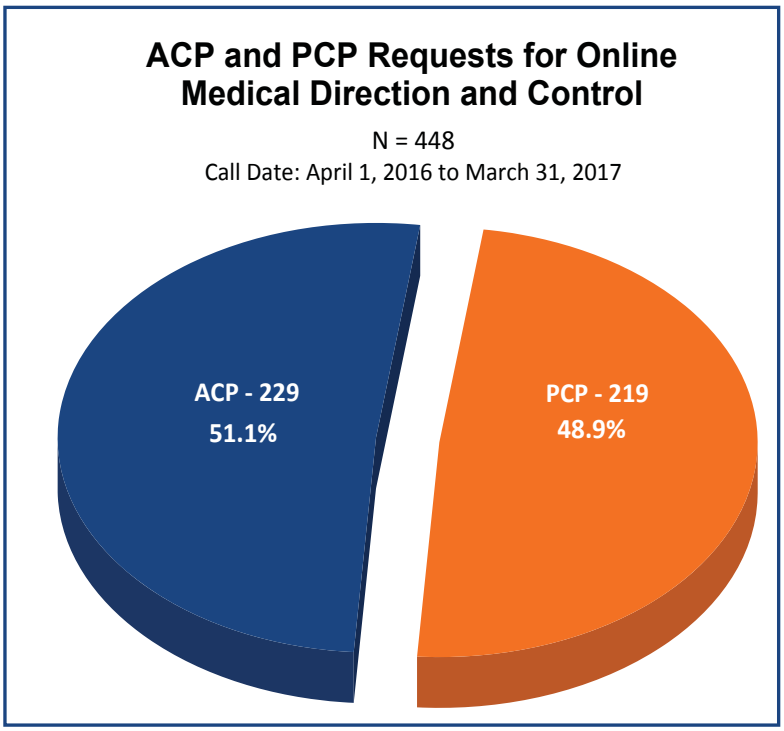
Q16 The Host Hospital shall make every reasonable effort to ensure that each request for medical advice, direction, or assistance received from an Emergency Medical Attendant, paramedic or communications officer is provided expeditiously and that performance standards are set out in this Agreement are met.

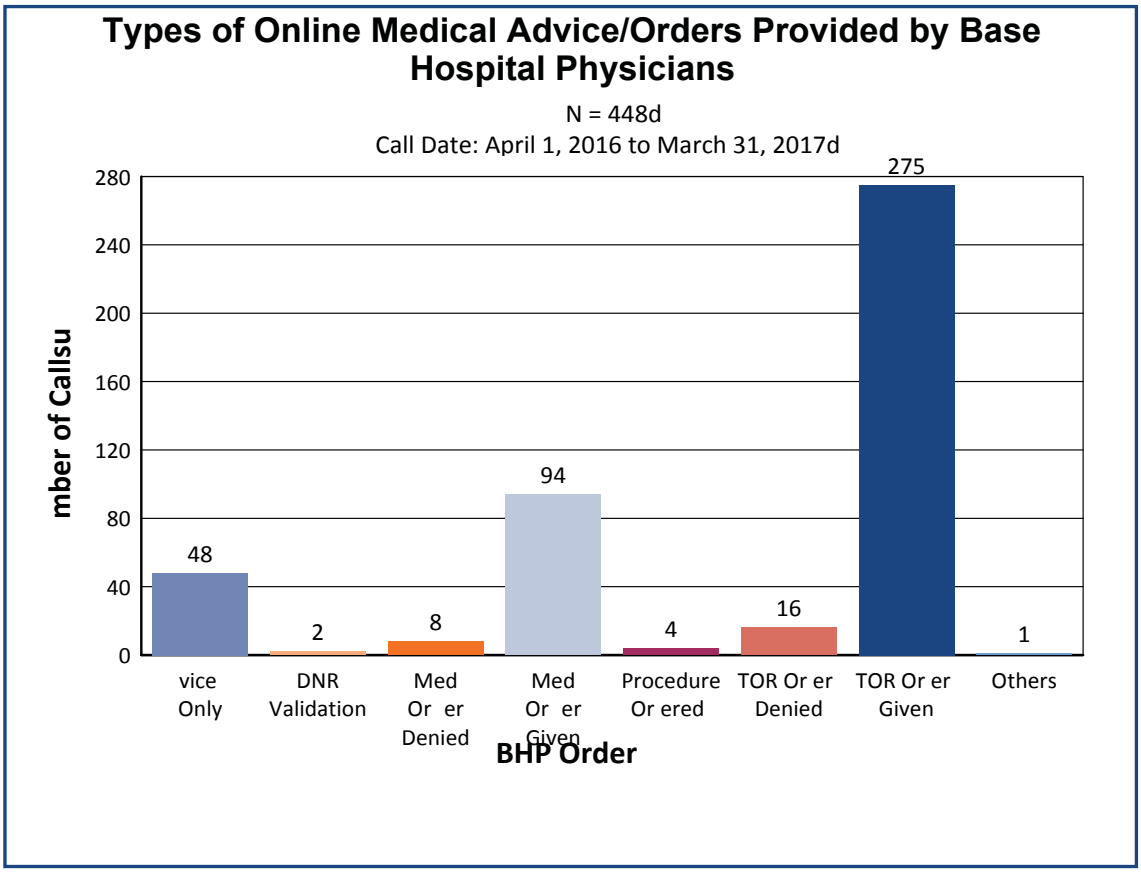
16.1 How are requests for medical advice, direction or assistance from an emergency medical attendant, paramedic or communications office provided?

The following are primary methods of communication:

- 24/7 Online Medical Direction and Control through the Base Hospital Physicians
- iMedic/ Zoll which is used to discuss audit findings and patient care dialogues
- Email which is used for the communication of general information and notifications
- Live chats during webcasts are a means for paramedics to ask questions and interact with their medical directors
- Twice annual (at minimum) in person sessions with Paramedic Practice Coordinators in an interactive education setting

16.2 Total number of formal requests for medical advice direction or assistance from an Emergency Medical Attendant, Paramedic or communications officer provided.





Q17 Where a Host Hospital has not been available to expeditiously provide medical advice (eg. Radio patch), direction, or assistance to an Emergency Medical Attendant, Paramedic, or communications officer, the Host Hospital shall document the circumstances of the event in an incident report that will be provided to the Senior Field Manager within 48 hours of the event.
The total number and nature of incident reports provided to the senior Field Manager related to medical advice delays.

All patch failures identified during the ACE process or escalated to the QI Lead are further analyzed to determine root cause and to recommend system improvements.

There were 5 incidences reviewed and of those only 2 resulted in no BHP contact. All were reported to the Field Office.

Q18.1 Describe the process used to assist operators with request for assistance and information regarding direct patient care components and elements of local policy and procedures.

Once a request for assistance and/or information has been received in writing by the program, it is triaged by the receiver to determine if its nature is Medical, Educational, CQI, Research, Operational or Other.

- Medical advice and/or inquiries are reviewed by the applicable Medical Advisor or the Regional Medical Director and, when required, forwarded to the Quality of Care Committee (QCC) to be reviewed by the Medical Program as a whole. Minutes of this committee are available to all staff and a report from this committee is provided at Regional Program Committee meetings.
- Educational advice and/or inquiries are assigned to the Regional Education & Certification Coordinator for review and, when required, brought to monthly Council or QCC meetings. A Medical Advisor or the Regional Medical Director may be consulted, as needed.
- Quality Improvement advice and/or inquiries are forwarded to the Quality Improvement Lead for review. A Medical Advisor or the Regional Medical Director may be consulted, as needed.
- Assistance or information related to reportable program metrics are forwarded to the Performance Measurement Lead for review.
- Operational advice and/or inquiries are forwarded to the applicable Paramedic Practice Coordinator and, when required, forwarded to the monthly Council meetings for review.
- Research inquiries are forwarded to the Performance Improvement Lead or Regional Manager and when required, the Regional Medical Director is consulted.

18.2 List the top 5 subject areas that information was requested from operators (i.e. medical equipment, medical acts, policies, etc).

1. Initial certification / Return to work requests
2. ePCR Audit requests / ACE reviews
3. Investigation and Remediation
4. Medical equipment purchase advice
5. Continuing Medical Education

EDUCATION

Q19 The Host Hospital will provide a process to confirm and/or ensure the education and standard of practical skills necessary for certification and delegation of specific controlled acts approved by the Provincial Medical Advisory Committee (PMAC) to Emergency Medical Attendants and Paramedics.

HSN Centre for Prehospital Care develops a yearly CME program that covers the paramedic scope of practice as per the ALS PCS. The goal of the CME program is to prepare paramedics to respond appropriately to a wide range of patient situations both routinely and infrequently encountered in the field.

The MOHLTC-EHSB has mandated that PCPs receive a minimum of 8 hours of CME and that ACPs receive a minimum of 24 hours of CME annually. To meet the needs of the service operators, the paramedics and the Regional Base Hospital Programs, these hours have been converted to credit hours. In order for Northeast Paramedics to remain in good standing and maintain certification, ACPs must accumulate 24 credit hours while PCPs must accumulate 8 credit hours by the first week in December of each calendar year. Paramedics who do not meet these requirements are subject to a performance review by the Medical Director or delegate and may have their certification temporarily suspended until such a time that all mandatory CME credit hours are accumulated.

19.1 List the topic, date and length of each continuing medical education program offered to and held for medical, nursing and other allied health staff of the Host Hospital and receiving hospitals in the Ministry-approved geographic coverage area.

DATE	TOPIC/INSTRUCTOR	HOURS
June 21, 2016	Manual Defibrillator: Shocking news / Dr. Chris Loreto	2
June 30, 2016	Sepsis- New Information/ Dr. Derek Garniss	2
July 6, 2016	CPR/ Monique Lapointe	3
September 6, 2016	CPR/ Eric Levasseur	3
September 8, 2016	Prehospital Pediatrics/ Dr. Sean Murray	2
December 1, 2016	Effective Self-Directed CME for Paramedics /Dr. John Tuinema	2
December 6, 2016	Termination of Resuscitation / Dr. Derek Garniss	2
December 6, 2016	CPR/ Monique Lapointe	3
February 2, 2017	Opiate Crisis Part 1 and 2 / Dr. Chris Loreto	2
March 7, 2017	CPR/ Eric Levasseur	3

Q20 The Host Hospital shall ensure that prehospital patient care education is provided in accordance with education standards approved by the Minister as may be implemented and amended from time to time. Provide the topics and time allotted for each educational session delivered this year to paramedics.

DATE	TOPIC/INSTRUCTOR	HOURS
April- June 2016	Spring Paramedic Practice Rounds: 12 Lead ECG interpretation and Death Review (Entire Region)	4
June 21, 2016	Manual Defibrillator: Shocking news / Dr. Chris Loreto	2
June 30, 2016	Sepsis- New Information/ Dr. Derek Garniss	2
June- September 2016	Summer CME Series M & M Rounes with Dr. Jason Prpic (ACP only)	6
September 8, 2016	Prehospital Pediatrics/ Dr. Sean Murray	2
September- November 2016	Fall Paramedic Rounds (Elective)	4
December 2016	Adding Critical Thinking to Cath Lab Activations, Part I	2
December 2016	Adding Critical Thinking to Cath Lab Activations, Part II	2
December 1, 2016	Effective Self-Directed CME for Paramedics /Dr. John Tuinema	2
December 6, 2016	Termination of Resuscitation / Dr. Derek Garniss	2
February 2, 2017	Opiate Crisis Part 1 and 2 / Dr. Chris Loreto	2

Q21 The Host Hospital shall ensure the development and implementation of an educational plan for the Region linked to Continuous Quality Improvement initiatives.

Q22 The Host Hospital shall ensure the provision of the mandated hours of education per year for both PCPs and ACPs.

22.1 Total number of hours of CME delivered per PCP.

In this fiscal year, 8 hours minimum were delivered per PCP.

22.1 Total number of hours of CME delivered per ACP.

In this fiscal year, 24 hours minimum were delivered per ACP.

CONTINUOUS QUALITY IMPROVEMENT (CQI)

Q23 The Host Hospital shall ensure the implementation of a CQI program for each Paramedic employed or engaged by land ambulance service operators as set out in Appendix D, and ensure the provision of regular commentary to each Paramedic and operator.

23.1 Total number of paramedics that have been provided with commentary by the host hospital and a brief description of their program.

All paramedics certified under the Program receive commentary on a regular basis, generally via the applicable Paramedic Practice Coordinator for their area. Commentary may include electronic distribution of memos, policies and other documents. As part of auditing activities, paramedics are provided commentary on at least 5 of their ACRs involving ALS skills, if available. Additionally, paramedics receive positive commentary via the program's electronic Ambulance Call Evaluation system whenever possible.

23.2 Total number of commentary provided to all paramedics.

During the fiscal year 2016/2017, HSN CPC made available approximately 6053 commentaries to paramedics via the Ambulance Call Evaluation process. This means that commentary was made available to paramedics for 100% of all calls audited.

The program also distributed various correspondence including 7 memos/ letters to paramedics via email and the HSN CPC website. In addition, 13 MOH EHSB memos with attachments such as training bulletins and standard documentation were distributed and posted to the website.

23.3 Was a minimum of one chart review commentary provided to each paramedic?

100% of chart review commentaries are available to paramedics 24/7 via an electronic system.

Our electronic system allows paramedics access to 100% of all auditing activities related to themselves. Generally, 5 audits are conducted per paramedic resulting in 5 commentaries available in the system.

Q25 The Host Hospital shall include a report on all CQI activities and findings as part of the annual report submitted to the Ministry.

Refer to Appendix A: Performance Measurement Standard Reports, Section 2 for the overall Audit Activities Summary Report and Section 3 for Patient Care Variance Report.

Q26 The Host Hospital shall collaborate with Emergency Medical Services System Stakeholders to share relevant CQI data, as appropriate. How and when was CQI data shared with Emergency Medical Services System stakeholders?

WHAT	WHO	FREQUENCY	HOW
AMBULANCE CALL EVALUATION (ACE) Notification of any event or circumstance which could have resulted, or did result, in unnecessary harm to a patient. Any ACE that has been weighted, on closure, with an error severity of Major or Critical.	• Paramedics • Service Providers	• Upon discovery • During review • Upon closure	ACE platform
EVENT ANALYSIS Sharing of information and outcomes during and post analysis.	• Service Providers • MOH Field Office	• Upon discovery • During review • Upon closure	Event Analysis Report
SERVICE RELATED AUDIT ACTIVITIES REPORTS Number of audits completed, level of deficiency (minor, major, critical), Call Number and Paramedics' name	• Service Providers	• Monthly • Quarterly	ACE Reports
CLINICAL AUDITS Measures of current practice against a defined (desired) standard with the intent to improve systems vs individual practice.	• Service Providers	• 3 times a year	Clinical Audit Reports
AD HOC CQI FINDINGS	• Service Providers	• HSN CPC Program Committee meetings	
REGIONAL DATA ADVISORY COMMITTEE	• Service Providers • Hospital Representative • CACC Representatives	• Quarterly	Discussions Minutes
ONLINE MEDICAL CONTROL INTERACTIONS REPORTS	• Service Providers	• Quarterly	Report
BHP PATCH PROCESS DOCUMENTATION OMISSIONS	• Paramedics • Service Providers	• Upon discovery	ACE Report
BLS OMISSIONS/COMMISSIONS	• Service Providers	• Upon discovery	ACE Report

Q27 The Host Hospital shall ensure that Host Hospital physicians will be available to provide "online" continuous quality improvement and advice on a continuous basis.

All HSN Emergency Physicians and 3rd year Residents are oriented by the Base Hospital Regional Medical Director prior to providing on-line Medical Control. Ongoing education is delivered during face-to-face departmental meetings and via email updates.

Dedicated patch phones are located in the HSN Emergency Department (ED). All Registered Nurses in the ED have been trained, through the ED Nurse Clinician, to answer the patch telephone and advise paramedics that a BHP will be on the line shortly. The RN answering the telephone is responsible for notifying the BHP of the call and advising the paramedic if there will be any delay. HSN CPC has also provided formal education to the paramedics on patching. Reminder emails are sent on a regular basis to help keep this process consistent.

Q28 The Host Hospital shall ensure the establishment of a mechanism to track customer inquiries and organizational responsiveness to these inquiries and survey land ambulance stakeholder groups on a regular basis, and that all consumer feedback will be reviewed and integrated into quality management planning.

All inquiries related to quality management are addressed in the same manner in which they were received i.e. an email is responded to with an email. Any inquiries/feedbacks relative to the quality management or education activities under the purview of the Base Hospital are incorporated into the Annual CME Plan and/or the Annual Quality Programming Overview. Each of these plans is provided to relevant stakeholders in draft form and feedback is actively solicited on each plan on an annual basis. All findings related to activities as laid out in the plan are distributed to key stakeholders and available upon request.

Additions to our Quality Programming Overview for 2017 will include the new chart audit processes and reporting based on our transition into IQEMS effective April 1, 2017. Changes to our Quality Programming are expected by the 3rd Quarter of 2017-2018 once we have determined all the various all the various reporting functionalities and new audit practices.

Refer to:

Appendix A: Performance Measurement Standard Reports, Sections 3-7
Appendix B: Quality Programming Overview 2016
Appendix C: Quality Programming Overview 2017

Q29 The Host Hospital shall ensure the conduct of clinically-focused audits of controlled acts performed on or indicated for a patient by a Paramedic employed or retained by an operator covered by this Agreement, to monitor paramedic compliance with Provincial Medical Directives, in accordance with the following chart audit process:

29.1 Total number of Ambulance Call Reports (ACRs) requiring auditing.

The total number of medical directive/protocols and cases that required auditing following the sampling of high risk and low risk tables in accordance with our PA was 1121. In addition we were required to perform a minimum of 5 audits per medic. These numbers are not necessarily cumulative.

29.2 Total number of medical directive/protocols and cases that have been audited.

There were 6053 ambulance call reports that were electronically audited. Of these audited calls, 936 (15%) were identified as having a variance and required further action; and 5117(85%) were closed with no further action.

29.3 Have all paramedics that have performed at least 5 acts within the ALS PCS had a minimum of 5 ACR audited this year?

All Paramedics with at least 5 acts within the ALS PCS had a minimum of 5 ACRs audited this year.

Refer to Appendix A: Performance Measurement Standard Reports, Section 2

29.4 Total number of new paramedics (less than 6 months) and total number who had 80% of their charts audited

The Program audits a minimum of 80% of ALS Calls performed by newly certified Paramedics. This activity is ongoing and ever changing as new paramedics are brought into the numerous services throughout our area with many differing start dates.

There were 61 new ACP and PCPs in 2016-2017.

29.5 Number of cancelled calls where paramedics made patient contact that were audited.

PRIMARY PROBLEM	SKILL SETS REVIEWED	YEAR	# OF CALLS	ANNUAL AUDITS REQUIRED *	~MONTHLY AUDITS REQUIRED	AUDITS COMPLETED TO DATE	ANNUAL VARIANCE
REFUSALS 72-Refused Service	Any treatment	2015/16Total (Year End)	7665	366	31	367	1
	No treatment	2016/17 Total (Year End)	7290	365	30	309	56

* Lower Risk Skills - Audit Requirements as per the Performance Agreement Table 1

Refer to Appendix A: Performance Measurement Standard Reports, Section 1

APPENDIX A: PERFORMANCE MEASUREMENT STANDARD REPORTS

Performance Measurement Standard Reports
April 1, 2016 – March 31, 2017

Centre for Prehospital Care

Health Sciences North

www.hsnsudbury.ca/portalen/basehospital

APPENDIX A

Performance Measurement Standard Reports
April 1, 2016 – March 31, 2017

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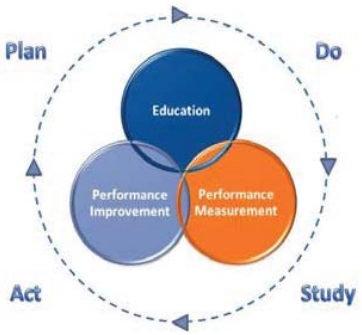
Section 6: Paramedic Self-Reports

Section 7: BLS Issues Reported to Service Operators

Section 8: Paramedic Skills Activities Report



Performance Measurement Standard Reports
April 1, 2016 – March 31, 2017

SECTION 1

HSN CPC AUDIT REQUIREMENTS AND ACTIVITIES

This section provides the measurement of audit activities related to low and high risk calls based on the auditing activities April 1, 2015 – March 31, 2016 and compared with the previous fiscal from April 1, 2014 to March 31, 2015.

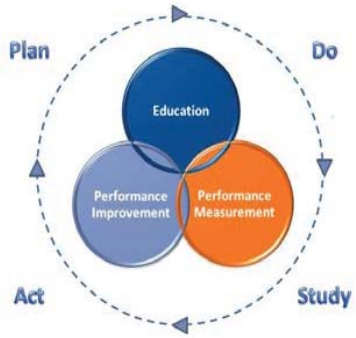
Medical Directives/Protocols and Cases:

- Higher level of auditing based on the call type.
- Use of a proven sampling model that addresses both low and high risk call types.
- Table 1 lists the required number of charts to be audited where medical directives/protocols or specific cases have been performed. This low risk model provides a sampling error of +/- 5% (CI 95%).
- Table 2 lists the required number of charts to be audited where there are higher risks associated with the performance of a skill or the completion of a certain type of call. This high risk model provides a sampling error of +/- 2.5% (CI 95%).

Table 1 – Low Risk	
Calls	**Audits**
50	44
100	80
200	132
500	217
750	254
1000	278
2000	322
3500	346
5000	357
10000	370
20000	377
30000	379

Table 2 – High Risk	
Calls	**Audits**
50	48
100	94
200	177
500	377
750	604
1000	806
2000	889
3500	1068
5000	1178
10000	1332
20000	1427
30000	1462

Note: Due to a change in our data collection process for Manitoulin-Sudbury their numbers for the 4th quarter are not reflected in this chart/report. Manitoulin-Sudbury performed 211 ALS calls in the 2015/16 Q4 period and 100% of these calls were audited therefore there is no significant impact on our requirements and statistics.



APPENDIX A

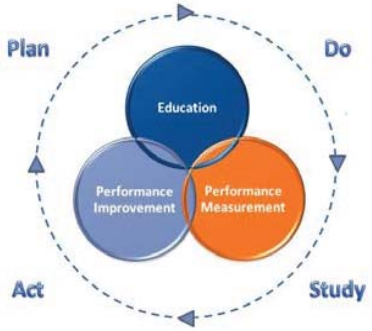
Performance Measurement Standard Reports
April 1, 2016 – March 31, 2017

HSN CPC Auditing Requirements and Activities Report
April 1, 2016 to March 31, 2017

Lower Risk Auditing

Anticipated Primary Problems Captured	Skill Sets Reviewed	# of Calls	Annual Audits Required	˜Monthly Audits Required	Audits Completed to Date	Annual Variance
Airway/Ventilatory	**Total – 2015/16**	**2568**	** 334	28	**800**	**466**
21-Resp. Distress	**Total – 2016/17_Q4**	**3153**	** 343	29	**982**	**639**
22-Resp. Disease	Salbutamol	1353			425	
54-CHF	Nitro	91			51	
84-Local Allergic Reaction	Gravol	1313			367	
85-Anaphlaxis	IV	396			139	
63-Nausea and/or Vomiting						
Chest Pain/Other	**Total – 2015/16**	**3919**	** 350	29	**1151**	**801**
51-Ischemic CP	**Total – 2016/17_Q4**	**3280**	** 344	29	**950**	**606**
53-Palpitations	ASA					
54-CHF	Nitro					
56-Cardiogenic Shock	12 Lead					
57-MI	IV					
59-Other Cardiac	Gravol					
46-Seizure/Post Ictal						
66-Musk/skel Trauma						
Cardiac Arrest	**Total – 2015/16**	**695**	** 248	21	**283**	**35**
Trans/Non-Trans	**Total – 2016/17_Q4**	**723**	** 251	21	**430**	**179**
73-Patient Expired	Obviously Dead					
6-Transport of Dead Pt						
Decreased LOC	**Total – 2015/16**	**357**	** 185	30	**135**	**50**
42-Altered LOC	**Total – 2016/17_Q4**	**334**	** 179	15	**141**	**38**
45-Behaviour/Psychiatric	D50W & Transported	156			62	
46-Seizure/Post Ictal	Glucagon & Transported	178			79	
48-Confusion/Disorientation						
49-Unconscious						
83-Diabetic Emergency						
92-General Illness/Weakness						
Refusals	**Total – 2015/16**	**7665**	** 366	31	**367**	**1**
72-Refused Service	**Total – 2016/17_Q4**	**7290**	** 365	30	**309**	**56**
	Any treatment					
	No treatment					
Pain/Analgesic	**Total – 2015/16**	**890**	* 269	22	**666**	**397**
QCC Request/Approved	**Total – 2016/17_Q4**	**826**	* 262	22	**620**	**358**
	Acetaminophen/Ibuprofen					
	Ketorolac					
Overall Low Risk Calls	**Total – 2015/16**	**16094**	** 376		**2736**	**2360**
	Total – 2016/17_Q4	**15606**	** 375		**3432**	**3057**

** = Lower Risk Skills – Audit Requirements as per the Performance Agreement Table 1



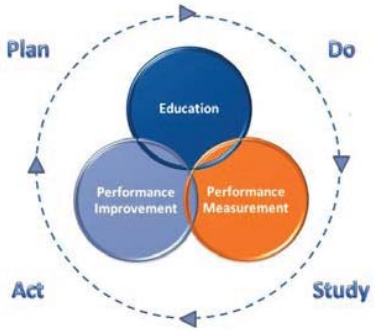
Performance Measurement Standard Reports
April 1, 2016 – March 31, 2017

HSN CPC Auditing Requirements and Activities Report
April 1, 2016 to March 31, 2017

High Risk Auditing

Anticipated Primary Problems Captured	Skill Sets Reviewed	# of Calls	Annual Audits Required	*Monthly Audits Required	Audits Completed to Date	Annual Variance
Cardiac Arrest	**Total – 2015/16**	**297**	* 249	21	**289**	**40**
01-Medical	**Total – 2016/17_Q4**	**487**	* 370	31	**484**	**114**
02-Traumatic	Cardiac Arrest - Transported	271			270	
TOR -QCC requested for 2016/17	TOR	216			214	
Airway/Ventilatory	**Total – 2015/16**	**453**	* 350	29	**442**	**92**
Anaphylaxis	**Total – 2016/17_Q4**	**455**	* 351	29	**452**	**101**
21-Resp. Distress	Epi 1:1000 +/- Benadryl	83			83	
22-Resp. Disease	CPAP	168			168	
24-Resp. Arrest	Benadryl only	204			201	
54-CHF						
84-Local Allergic Reaction						
85-Anaphylaxis						
Chest Pain/Other	**Total – 2015/16**	**324**	* 268	22	**317**	**49**
(Controlled Drugs)	**Total – 2016/17_Q4**	**347**	* 283	24	**346**	**63**
51-Ischemic CP	Midazolam	62			61	
53-Palpitations	Morphine	256			256	
54-CHF	Narcan	29			29	
56-Cardiogenic Shock						
57-MI						
46-Seizure/Post Ictal						
66-Musk/skel Trauma						
Low Frequency	**Total – 2015/16**	**1**	* 1	0	**1**	**0**
High Acuity	**Total – 2016/17_Q4**	**1**	* 1	0	**1**	**0**
	EDD	0			0	
	Calcium Gluconate	1			1	
Decreased LOC	**Total – 2015/16**	**116**	* 108	9	**114**	**6**
S/A + Refusal of Transport	**Total – 2016/17_Q4**	**160**	* 145	12	**156**	**11**
	D50W	91			89	
	Glucagon	69			67	
Overall ALS High	**Total – 2015/16**	**1191**	* 671		**1163**	**492**
Risk Calls	**Total – 2016/17_Q4**	**1450**	* 746		**1439**	**693**

* = High Risk Skills - Audit Requirements as per the Performance Agreement Table 2



Performance Measurement Standard Reports
April 1, 2016 – March 31, 2017

SECTION 2

HSN CPC AUDITING REQUIREMENTS - RESULTS

This section is a breakdown of auditing results by service operator and by paramedic and is based on the following paramedic auditing requirements as per the Regional Base Hospital Performance Agreement:

- Annually, each paramedic will have a minimum of 5 audited calls where a controlled act was performed.
- If a paramedic has less than 5 calls where a controlled act was performed, 100% of these calls will be audited.
- Newly certified paramedics will have 80% of calls where a controlled act was performed audited for the first six (6) months. Newly certified paramedics are those who have never been certified by a base hospital.

Audit Activities Summary Report

From: April 1, 2016
To: March 31, 2017*

CPC Audit Activities		Total #		# Medics with ALS Calls			
		Audits	Medics	≥ 5	1 - 4	0	< 10
	N =	5922	795	605	138	52	354
	% =			76%	17%	7%	45%
Audit Activities By Service		Total #		# Medics with ALS Calls			
		Audits	Medics	≥ 5	1 - 4	0	< 10
Algoma 740	N =	397	73	51	18	4	50
	% =			70%	25%	5%	68%
Cochrane District 741	N =	581	79	64	5	10	27
	% =			81%	6%	13%	34%
Hearst 133	N =	75	12	8	4	0	8
	% =			67%	33%	0%	67%
WAHAPS 263	N =	290	63	30	28	5	52
	% =			48%	44%	8%	83%
Kapuskasing 275	N =	108	21	10	8	3	11
	% =			48%	38%	14%	52%
Manitoulin-Sudbury 782 / 752	N =	836	138	85	42	11	107
	% =			62%	30%	8%	78%
Nipissing 469 / 285 / 287	N =	638	85	72	9	4	26
	% =			85%	11%	5%	31%
Parry Sound 745	N =	406	69	61	6	2	24
	% =			88%	9%	3%	35%
Sault Ste. Marie 262	N =	724	57	53	3	1	4
	% =			93%	5%	2%	7%
Sudbury 747	N =	1567	147	133	9	5	16
	% =			90%	6%	3%	11%
Timiskaming District 750	N =	300	51	38	6	7	29
	% =			75%	12%	14%	57%

Performance Measurement Standard Reports
April 1, 2016 – March 31, 2017

SECTION 3

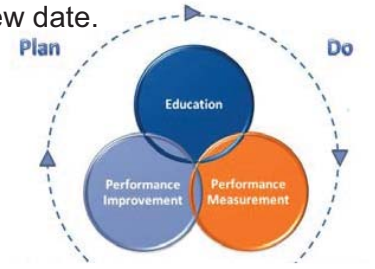
PATIENT CARE VARIANCES REPORT (ACE OUTCOMES)

This section provides a summary of the types of variances and the Base Hospital (BH) outcomes identified during the auditing process and include a breakdown by service operator and paramedic.

Audit Activity Report
Variance Summary
April 1, 2016 - March 31, 2017

		Total Audits	Variances					BH Outcomes				
			Minor	Major	Critical	Other	Total	Open	Resolved Through Clinical Interview	Resolved Through Discussion	Resolved Through Remedial Action	Resolved wit Directional and/or Educationa Statement
Algoma	**N =**	403	4	4	3	9	20	0	1	8	0	11
740	% =		1%	1%	1%	2%	5%	0%	5%	40%	0%	55%
Cochrane District	**N =**	592	88	42	12	39	181	0	0	51	0	130
741	% =		15%	7%	2%	7%	31%	0%	0%	28%	0%	72%
Hearst	**N =**	78	7	5	1	7	20	0	0	1	0	19
133	% =		9%	6%	1%	9%	26%	0%	0%	5%	0%	95%
WAHAPS	**N =**	298	24	12	5	15	56	0	0	19	0	37
263	% =		8%	4%	2%	5%	19%	0%	0%	34%	0%	66%
Kapuskasing	**N =**	113	16	4	6	4	30	0	0	6	0	24
275	% =		14%	4%	5%	4%	27%	0%	0%	20%	0%	21%
Manitoulin-Sudbury	**N =**	834	14	28	7	178	227	2	0	80	0	98
782 / 752	% =		2%	3%	1%	21%	27%	1%	0%	35%	0%	43%
Nipissing	**N =**	626	22	23	9	15	69	1	0	39	3	26
469 / 285 / 287	% =		4%	4%	1%	2%	11%	1%	0%	57%	4%	38%
Parry Sound	**N =**	414	16	23	4	10	53	0	1	23	4	25
745	% =		4%	6%	1%	2%	13%	0%	2%	43%	8%	47%
Sault Ste. Marie	**N =**	817	3	16	1	53	73	1	0	16	0	56
262	% =		0%	2%	0%	6%	9%	1%	0%	22%	0%	77%
Sudbury	**N =**	1568	22	27	38	47	134	2	5	47	0	80
747	% =		1%	2%	2%	3%	9%	1%	4%	35%	0%	60%
Timiskaming District	**N =**	310	35	18	5	15	73	0	0	23	0	50
750	% =		11%	6%	2%	5%	24%	0%	0%	32%	0%	68%
	N =	6053	251	202	91	392	**936**	6	7	313	7	556
Total	% =		4%	3%	2%	6%	**15%**	0.6%	0.7%	33.4%	0.7%	59.4%

Note: Variance Summary report totals are calculated by review date.



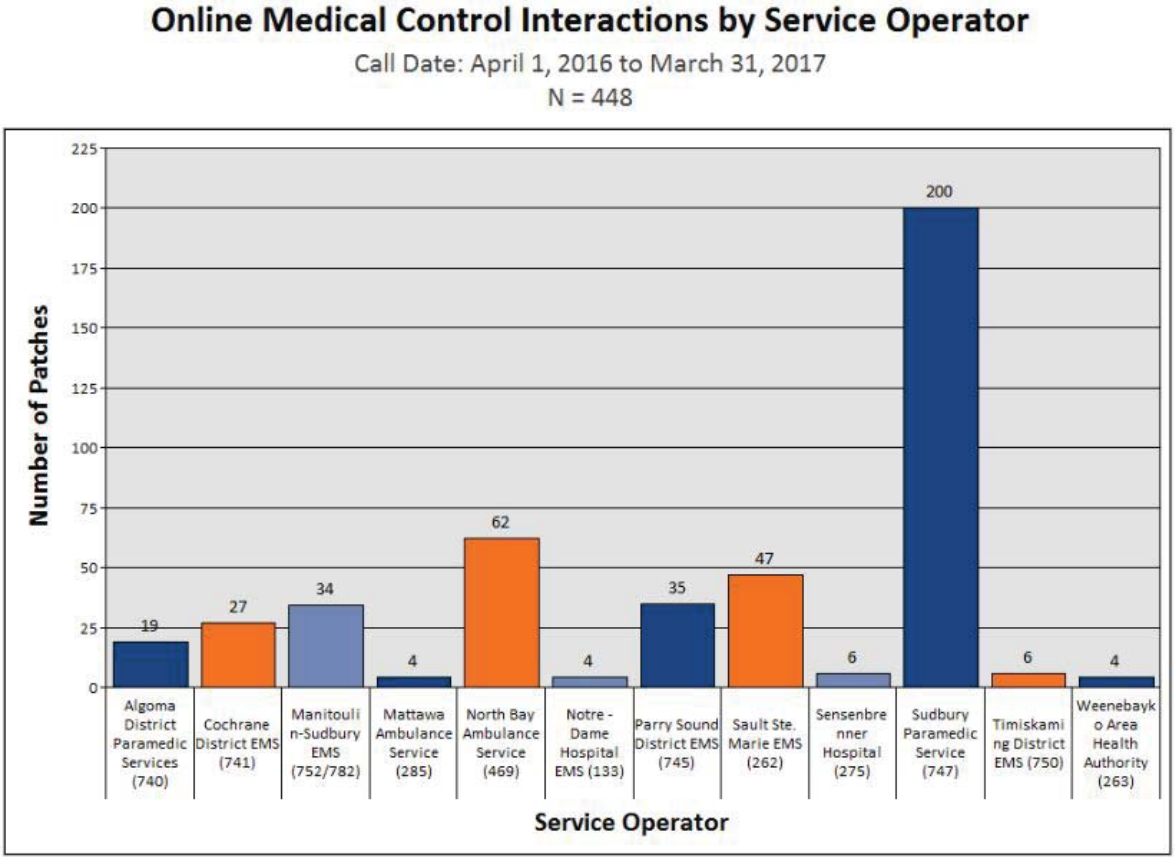
Performance Measurement Standard Reports
April 1, 2016 – March 31, 2017

SECTION 4

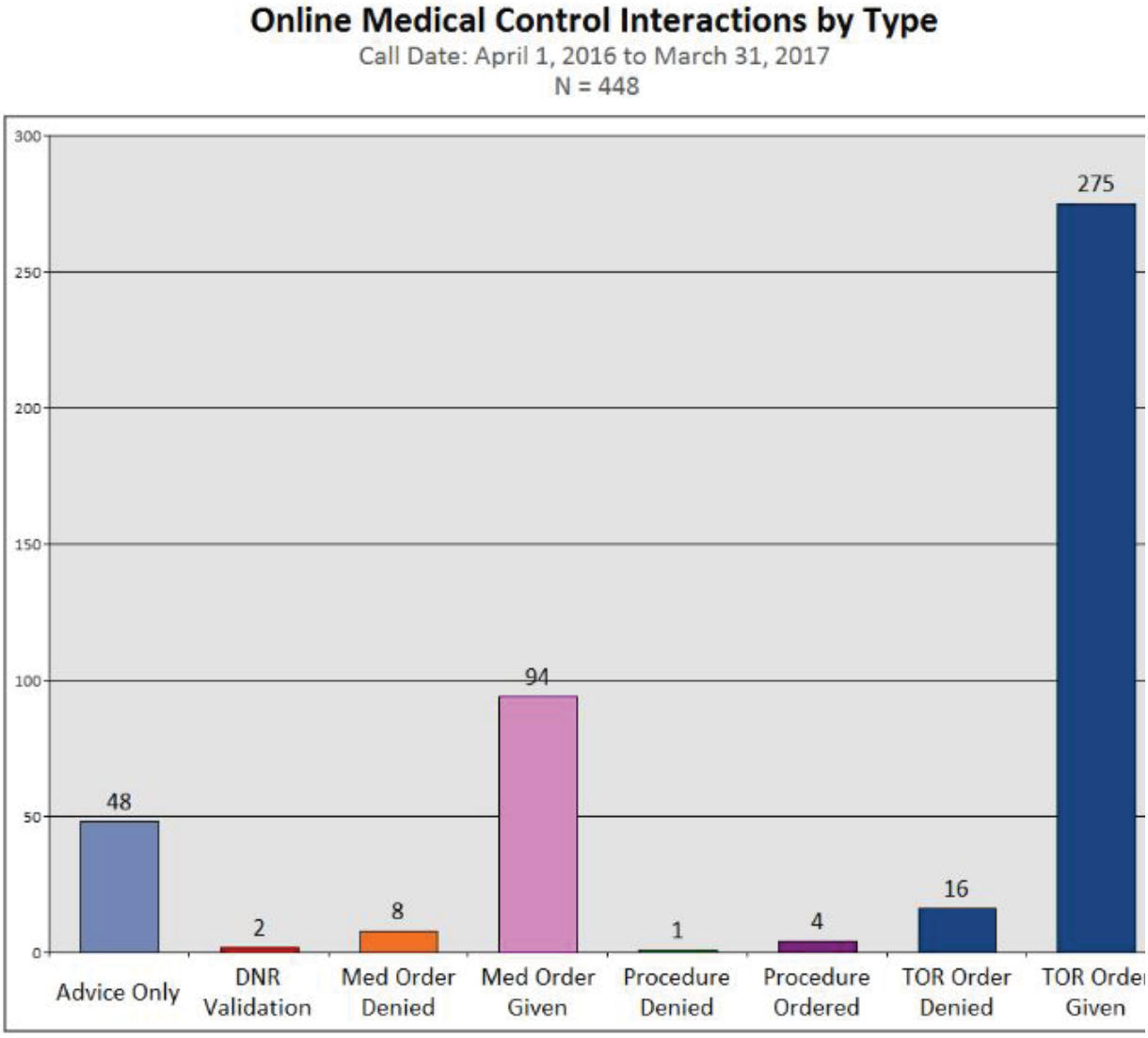
ONLINE MEDICAL CONTROL INTERACTION REPORTS

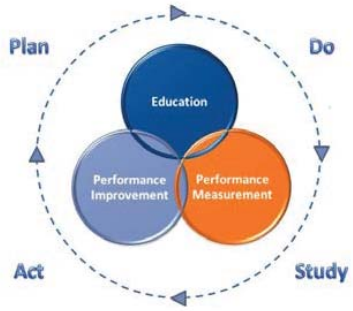
This section provides a summary of "Patch" interactions by service and by interaction type. As of September 24, 2014, 100% of all identified online medical control interactions are audited.

TOTAL CPC AUDITING ACTIVITIES		5922
	# of Audited Calls	% of Total Audits
On-Line Medical Control Interactions	448	7.5%



Performance Measurement Standard Reports
April 1, 2016 – March 31, 2017





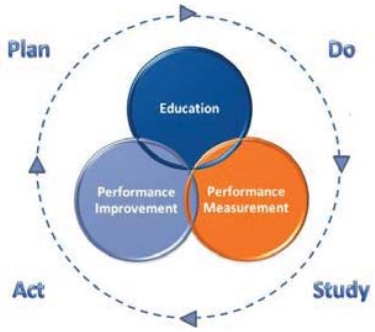
Performance Measurement Standard Reports
April 1, 2016 – March 31, 2017

SECTION 5

SERVICE OPERATOR RELATED AUDIT REPORTS

This section provides a summary of all audits completed upon the request of the service operator.

TOTAL CPC AUDITING ACTIVITIES		5922
	# of Audited Calls	% of Total Audits
Service Operator Requests for Auditing	40	0.7%
Service Operator Contracted Audits	181	3.05%



Performance Measurement Standard Reports
April 1, 2016 – March 31, 2017

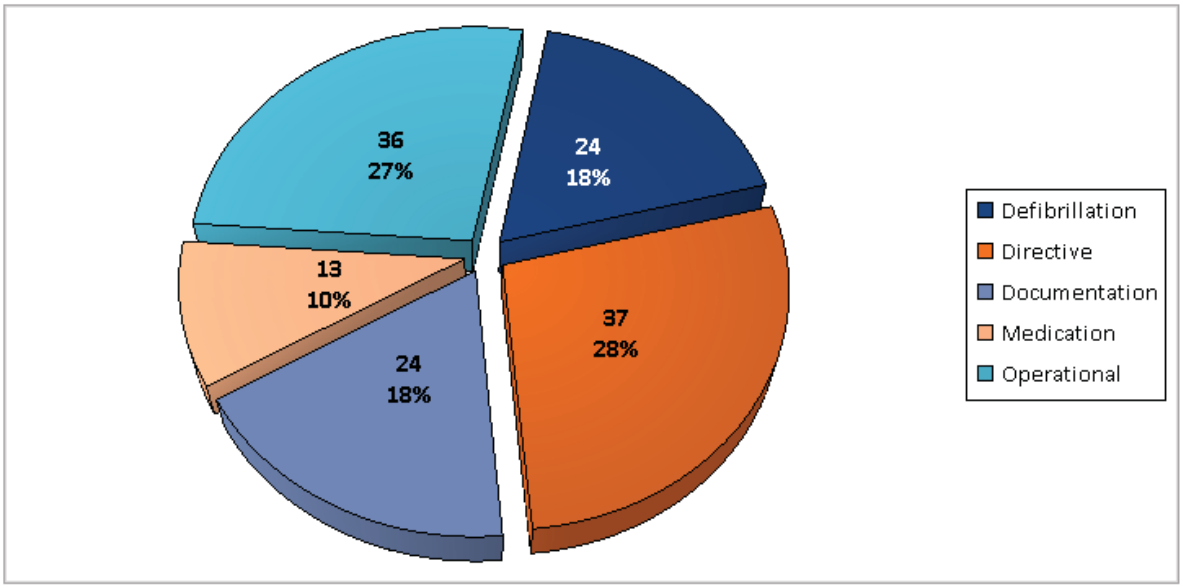
SECTION 6

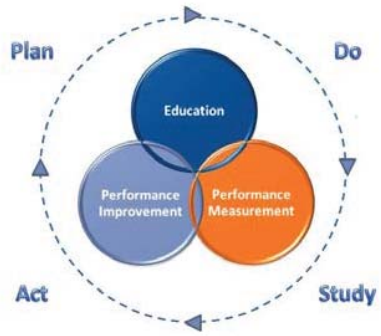
PARAMEDIC SELF REPORTS

This section is based on paramedic self-reports received during this time period and are related to identified omissions and/or commissions in patient care or documentation.

Recognized as a very important component of paramedic practice, the number of self-reports continue to rise. Further expansion and development of this program continues as we strive to improve patient safety and outcomes.

HSN CPC Paramedic Self-Reports by Reason
Self-Reported April 1, 2016 to March 31, 2017
N = 134





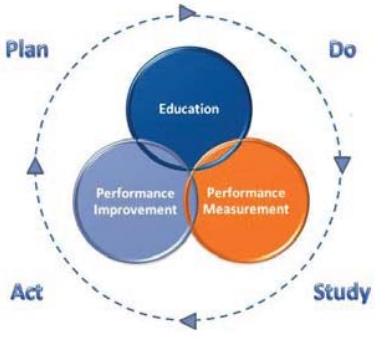
APPENDIX A

Performance Measurement Standard Reports
April 1, 2016 – March 31, 2017

Paramedic Self-Reports by Service and Reason

Self-Reported April 1, 2016 to March 31, 2017

	Reason for Self-Report					
Service	Defibrillation	Directive	Documentation	Medication	Operational	Totals by Service
Algoma	2	1	0	0	2	5
Cochrane	2	5	1	1	4	13
Hearst	0	1	1	0	1	3
James Bay	1	4	0	1	4	10
Kapuskasing	2	4	0	2	2	10
Manitoulin-Sudbury	4	2	5	2	5	18
North Bay	2	6	5	1	6	20
Parry Sound	5	4	6	1	4	20
Sault Ste. Marie	3	3	3	2	3	14
Sudbury	2	6	1	3	5	17
Temiskaming	1	1	2	0	0	4
Totals by Reason	24 18%	37 28%	24 18%	13 10%	36 27%	134



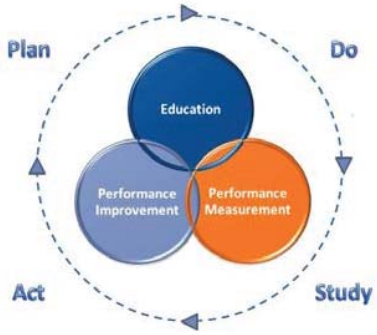
Performance Measurement Standard Reports
April 1, 2016 – March 31, 2017

SECTION 7

BLS ISSUES REPORTED TO SERVICE OPERATORS

This section is based on BLS PCS Issues identified during auditing of ALS calls and reported to the service operator.

TOTAL CPC AUDITING ACTIVITIES		
	# of Calls	**% of Total Audits**
BLS PCS Issues Forwarded to Service Operators	113	1.9%



Performance Measurement Standard Reports
April 1, 2016 – March 31, 2017

SECTION 8

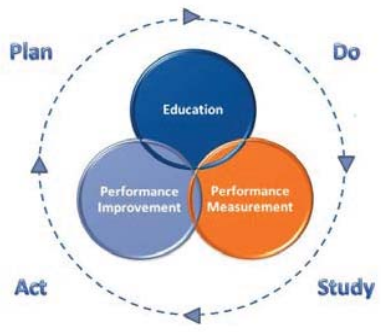
PARAMEDIC SKILLS ACTIVITIES REPORT

Please note the following;

Service Count by ACR – is the total number of calls (by call #) where a particular ALS skill set was used as part of the overall patient care plan.

Paramedic by Name - paramedic skills activities are based on the number of times a paramedic was on a call where an ALS skill was used as part of a patient care plan.

Paramedic Count by Crew – this count is based on the total count of ALS skill activities by the entire responding crew e.g. calls may have anywhere from 1-4 crew members identified on the ACR thereby each identified member would get credit for their active participation in the assessed need and delivery of the identified ALS skill set.



Centre for Prehospital Care
Health Sciences North

ALS Skills Inventory
April 1, 2016 - February 28, 2017

SKILL \ SERVICE CODE		Hearst	Sault Ste. Marie	WAHAPS	Kapuskasing	Mattawa	Temagami	North Bay	Algoma	Cochrane	Parry Sound	Sudbury	Timiskaming	Manitoulin-Sudbury	Total
		133	262	263	275	285	287	469	740	741	745	747	750	752/782	
CPAP	145	0	23	0	4	2	1	14	6	17	4	70	10	19	**170**
CPAP - Unsucc.	147	0	0	0	0	0	0	2	0	0	0	4	0	0	**6**
Oro/Naso Airway	170	0	0	0	0	0	0	0	0	0	0	0	0	68	**68**
King LT-D	172	1	9	2	2	1	0	10	3	1	7	98	2	8	**144**
Unsucc. King LT	173	0	0	1	0	0	0	0	2	0	0	7	1	1	**12**
CPR	200	6	89	9	7	6	2	65	35	63	42	167	23	43	**557**
CPR 30:2	203	0	0	0	0	0	0	0	0	0	0	105	0	0	**105**
CPR 10:1	204	0	0	0	0	0	0	0	0	0	0	16	0	0	**16**
Valsalva Manoeuvre	303	0	0	0	0	0	0	5	0	0	0	17	0	0	**22**
Defib - Manual	306	0	17	2	2	0	1	16	5	20	15	59	7	0	**144**
Defib - SAED	307	0	10	0	0	0	0	10	1	0	3	9	1	2	**36**
SAED - No Shock	308	0	1	5	4	0	1	10	3	22	9	5	15	30	**105**
External Pacing	309	0	0	0	0	0	0	1	0	0	0	0	0	0	**1**
12 Lead ECG/Interpretation	313/318	55	937	189	86	39	27	951	290	617	383	3285	236	207	**7302**
Needle Thorascomy	320	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
ETT	326	0	0	0	0	0	0	3	0	0	0	10	0	0	**13**
Unsucc. ETT	327	0	0	0	0	0	0	0	0	0	0	17	0	0	**17**
ETT - Suctioning	328	0	0	0	0	0	0	0	0	0	0	3	0	0	**3**
Mcgill Forceps	331	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
IV - Saline Lock	342	9	337	1	4	8	2	20	0	75	82	1631	6	0	**2175**
IV - Normal Saline	345	1	122	0	17	3	10	391	0	35	105	221	66	0	**971**
IV Unsuccessful	350	10	266	0	34	9	2	145	0	127	87	795	41	0	**1516**
IV - Fluid Bolus	351	4	114	1	9	3	1	83	0	23	40	252	16	0	**546**
IO Infusion	358	0	0	0	0	0	0	26	0	0	0	106	0	0	**132**
Unsucc. IO	359	0	0	0	0	0	0	1	0	0	0	10	0	0	**11**

Centre for Prehospital Care
Health Sciences North

ALS Skills Inventory
April 1, 2016 - February 28, 2017

SKILL \ SERVICE CODE		133 Hearst	262 Sault Ste. Marie	263 WAHAPS	275 Kapuskasing	285 Mattawa	287 Temagami	469 North Bay	740 Algoma	741 Cochrane	745 Parry Sound	747 Sudbury	750 Timiskaming	752/782 Manitoulin-Sudbury	Total
TOR - Medical	410	0	19	2	1	3	0	27	10	16	18	96	1	16	**209**
TOR - Trauma	411	0	5	0	0	0	0	1	0	0	2	3	0	0	**11**
Adenosine	500	0	0	0	0	0	1	5	0	0	0	14	0	0	**20**
Amiodarone	502	0	0	0	0	0	0	9	0	0	0	0	0	0	**9**
ASA	504	26	472	106	36	18	10	381	172	267	228	989	122	273	**3100**
D50W	530	2	47	0	1	1	0	47	0	9	19	110	4	0	**240**
Gravol	533	6	251	58	28	6	1	167	64	133	93	365	32	94	**1298**
Benadryl	534	0	30	2	3	0	1	19	4	12	42	75	6	23	**217**
Dopamine	536	0	0	0	0	0	0	2	0	0	0	1	0	0	**3**
Epi - 1:1000	540	1	8	0	3	0	0	11	4	2	16	29	1	10	**85**
Epi - 1:10000	541	0	0	0	0	0	0	30	0	0	0	128	0	0	**158**
Fentanyl	550	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Glucagon	560	2	16	8	5	1	0	21	31	30	17	58	10	30	**229**
Lidocaine - Bolus	591	0	0	0	0	0	0	0	0	0	0	23	0	0	**23**
Midazolam	603	0	0	0	0	0	0	16	0	0	0	41	0	0	**57**
Morphine	604	0	0	0	0	0	0	76	0	0	0	165	0	0	**241**
Narcan	610	0	4	0	0	0	0	7	0	0	1	13	0	1	**26**
Nitro Spray	615	16	239	39	27	11	7	209	66	135	100	520	80	91	**1540**
Salbutamol	650	10	168	13	26	15	4	147	68	147	61	486	83	104	**1332**
Sodium Bicarbonate	651	0	0	0	0	0	0	1	0	0	0	2	0	0	**3**
Acetaminophen	702	5	108	21	9	1	2	45	53	31	66	98	17	48	**504**
Ibuprofen	703	4	80	17	8	1	1	38	49	29	44	73	13	48	**405**
Ketorolac (Toradol)	704	1	38	3	3	3	0	41	8	14	32	129	10	23	**305**
Calcium Gluconate	817	0	0	0	0	0	0	1	0	0	0	0	0	0	**1**
Total ACRs		**159**	**3410**	**479**	**319**	**131**	**74**	**3054**	**874**	**1825**	**1516**	**10305**	**803**	**1139**	**24087**

APPENDIX A

APPENDIX B: QUALITY PROGRAMMING OVERVIEW 2016

QUALITY PROGRAMMING OVERVIEW 2016

Centre for Prehospital Care

Health Sciences North

www.hsnsudbury.ca/portalen/basehospital

QUALITY PROGRAMMING OVERVIEW 2016

Continuous quality improvement (CQI) is a complex responsibility that requires the collective effort of varied focus areas. Within the Health Sciences North Centre for Prehospital Care (HSN CPC), CQI is attained through an integrated system of performance measurement, performance improvement and continuing medical education within a broad based system of quality management and medical leadership.

Performance measurement is accomplished primarily by collecting and randomly reviewing ambulance call reports (ACRs) where Advanced Life Support (ALS) skill sets were performed and/or not performed when they should have been. Skills and specific patient conditions are categorized as either high or low risk procedures by the Health Sciences North Centre for Prehospital Care (HSN CPC) Quality of Care Committee (QCC). Tables 1 and 2 from Appendix N of the HSN CPC Performance Agreement (PA) are then applied to determine the total number of calls to be reviewed through the ambulance call evaluation (ACE) process.

Performance improvement endeavours are essential in the development of a strong system that allows the HSN CPC to examine how the overall patient care system is working and identifies general areas of weakness or concern to enable wide spread change. The HSN CPC continues to develop benchmarks that we measure against and develop continuing medical education (CME), which is disseminated to our paramedics and services, as a means to improving overall system and practitioner quality.

The need and importance of a wide overlap between performance measurement, performance improvement and continuing medical education (Figure 1) is vital to ensure ongoing quality patient care as demonstrated in the well-known and widely used Plan-Do-Study-Act cycle (Figure 2).

Fig. 1

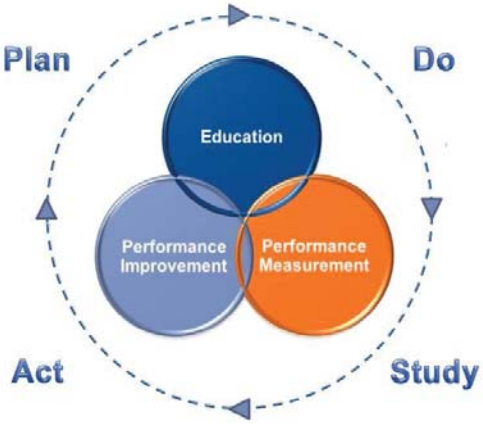


Fig. 2

QUALITY PROGRAMMING OVERVIEW 2016

A. PERFORMANCE MEASUREMENT

CHART AUDIT PROCESSES

The cases that must be audited fall into 3 categories.

1. **Medical Directives/Protocols & Cases**
   a) Higher level auditing based on the call type.
   b) Uses a sampling model that addresses both Lower and High Risk call types.
   c) The lower risk (as determined by the HSN CPC Quality of Care Committee) model provides a sampling error of +/- 5% (CI 95%). Refer to PA, Appendix N, Page 80, Table 1.
   d) In cases of higher risk (as determined by the HSN CPC Quality of Care Committee) where a smaller sampling error is desired, a model that provides a sampling error of +/- 2.5% (CI 95%) is used. Refer to PA, Appendix N, Page 81, Table 2.
2. **Paramedics**
   a) Each Paramedic will have a minimum of 5 charts audited where a controlled act was performed.
   b) If a Paramedic has done < 5 calls where a controlled act was performed, 100% of the calls with controlled acts performed will be audited.
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   a) A selection of cancelled calls where Paramedics made patient contact, with or without controlled acts performed, will be audited.
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STANDARD REPORTS

Numerous reports are generated to ensure compliance with the PA Chart Audit Process as well as with the ALS/BLS Patient Care Standards. These reports will be shared with the Service Operators and the Ministry of Health and Long-Term Care (MOHLTC) as outlined below. Following receipt, we invite service operators to contact the Performance Measurement Lead to discuss all or any aspects of their service findings within the reports.

1. **HSN CPC Audit Requirements and Activities Report**
   a) All call types are categorized and the potential skill sets used for each category are listed.

QUALITY PROGRAMMING OVERVIEW 2016

b) These are then reviewed by the Quality of Care Committee (QCC) and assigned levels of risk.
c) A database search is developed, based on call type and skill sets and generated on a weekly basis to identify the call activities throughout each respective area and the appropriate auditing activity is then completed.
d) This is also a live document and the estimate of call activities and auditing requirements are based on the previous year's activity.
e) This document is regularly updated and evaluations/comparisons of previous year versus current year call activities are done to ensure compliance with the PA.

Report Distribution:

- Service Operator
  - Semi-annually for data up to and including September 30 and March 31. Reports will be distributed within the ensuing six weeks.
- MOHLTC:
  - Annually by June 30.

2. HSN CPC Auditing Requirements - Results

a) This is a living process that provides up-to-date auditing requirements and activities on a service-by-service and paramedic-by-paramedic basis.
b) The PPC will update the live document as to the current call activities and ensure appropriate auditing activities are completed.
c) This live document will then be forwarded to the Performance Measurement Lead who will compile all the data into a service wide report to be shared within as a compliance check.

Report Distribution:

- Service Operator:
  - Quarterly for data up to and including June 30, September 30, December 31 and March 31. Reports will be distributed within the ensuing six weeks.

  NOTE: HSN CPC reports are based on fiscal April 1, 2015 to March 31, 2016 as per Ministry requirements therefore providing calendar year reports, as per service operator requests, may result in incomplete data for the calendar year reports.
- MOHLTC:
  - Annually by June 30.

QUALITY PROGRAMMING OVERVIEW 2016

3. Patient Care Variances Report (ACE Outcomes)

a) All ambulance call evaluations (ACE) with an identified documentation and/or patient care variance will be weighted and tracked.
b) All variances and error severities will have an identified indicator.
c) Repetitive errors and/or repetitive practitioners will be reported to the Performance Improvement Lead and Regional Education Coordinator for appropriate action.

Report Distribution:

- Service Operator:
  - Monthly for each calendar month throughout the year. These reports will consist of specific data related only to the identified month and every attempt will be made to have them distributed by the first Wednesday of the month following the reporting period.
  - Quarterly for data up to and including June 30, September 30, December 31 and March 31. Reports will be distributed within the ensuing six weeks.
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4. Online Medical Control Interaction Reports

a) 'Patch' interactions broken down by service.
b) 'Patch' interactions broken down by interaction type.
c) Identified potential/actual failures.

Report Distribution:

- Internally:
  - As required.
- Service Operator:
  - Quarterly for data up to and including June 30, September 30, December 31 and March 31. Reports will be distributed within the ensuing six weeks.
- MOHLTC:
  - Patch failures reported upon discovery.
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QUALITY PROGRAMMING OVERVIEW 2016

5. Service Operator Driven Audit Reports

a) Identify all ACEs that are completed on request by the Service Operator.

Report Distribution:

- Service Operator:
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6. Paramedic Self Reports

a) Identify number of paramedic self-reports regionally.

Report Distribution:

- Service Operator:
  - Quarterly for data up to and including June 30, September 30, December 31 and March 31. Reports will be distributed within the ensuing six weeks.
- MOHLTC:
  - Annually by June 30.

7. BLS Issues Reported to Service Operators

a) Where BLS PCS issues are discovered during the normal auditing process.

Report Distribution:

- Service Operator:
  - As discovered
  - Quarterly for data up to and including June 30, September 30, December 31 and March 31. Reports will be distributed within the ensuing six weeks.
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QUALITY PROGRAMMING OVERVIEW 2016

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a) Skills activities are based on the number of times a paramedic was on a call where an ALS skill was used as part of a patient care plan.

Report Distribution:

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B. PERFORMANCE IMPROVEMENT

PROCESSES AND REPORTING

1. Investigations

a) The Performance Improvement Lead will lead and coordinate all patient care related investigations for the HSN CPC.

b) Appropriate and timely notifications/reports will be shared with all necessary stakeholders.

c) The Performance Improvement Lead will organize any and all follow-up with both the Performance Measurement Lead and Regional Education Coordinator to ensure outcome recommendations are adhered to.

Report Distribution:

- All necessary parties as required
- Service Operator:
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QUALITY PROGRAMMING OVERVIEW 2016

2. Clinical Audit Reports

Large scale patient care activities audit reports will be undertaken three times per year to evaluate actual performance against predicted benchmarks.

Report Distribution:

- Service Operator, Regional and Provincial:
  - By April 30, August 31, and December 31.
- MOHLTC:
  - Annually by June 30.

3. Focused Reports

a) Ad hoc reports responsive to needs as they arise.
b) Content may be driven from the Quality of Care Committee, HSN CPC Program Committee or Program Council.
c) Repetitive errors reported by the Performance Measurement Lead will drive to a system audit on specific skills and/or patient care activities.
d) Implementation of a new or changed directive will lead to a system audit of pre implementation outcomes versus post. This will typically include three months of data on either side of the change.
e) Results of these audits may be used to drive future year, large scale clinical audits depending on results.
f) A comprehensive paramedic call review to determine patient care variances (PCV) looking at both commissions and omissions of care will be completed in conjunction with the Regional Education Coordinator to determine the educational needs of the next CME cycle.

Report Distribution:

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APPENDIX B

APPENDIX C: QUALITY PROGRAMMING OVERVIEW 2017

QUALITY PROGRAMMING OVERVIEW 2017

Centre for Prehospital Care

Health Sciences North

www.hsnsudbury.ca/portalen/basehospital

APPENDIX C

QUALITY PROGRAMMING OVERVIEW 2017

Continuous quality improvement (CQI) is a complex responsibility that requires the collective effort of varied focus areas. Within the Health Sciences North Centre for Prehospital Care (HSN CPC), CQI is attained through an integrated system of performance measurement, performance improvement and continuing medical education within a broad based system of quality management and medical leadership.

Performance measurement is accomplished primarily by collecting and randomly reviewing ambulance call reports (ACRs) where Advanced Life Support (ALS) skill sets were performed and/or not performed when they should have been. Skills and specific patient conditions are categorized as either high or low risk procedures by the Health Sciences North Centre for Prehospital Care (HSN CPC) Quality of Care Committee (QCC). Tables 1 and 2 from Appendix N of the HSN CPC Performance Agreement (PA) are then applied to determine the total number of calls to be reviewed through the ambulance call evaluation (ACE) process.

Performance improvement endeavours are essential in the development of a strong system that allows the HSN CPC to examine how the overall patient care system is working and identifies general areas of weakness or concern to enable wide spread change. The HSN CPC continues to develop benchmarks that we measure against and develop continuing medical education (CME), which is disseminated to our paramedics and services, as a means to improving overall system and practitioner quality.

The need and importance of a wide overlap between performance measurement, performance improvement and continuing medical education (Figure 1) is vital to ensure ongoing quality patient care as demonstrated in the well-known and widely used Plan-Do-Study-Act cycle (Figure 2).

Fig. 1

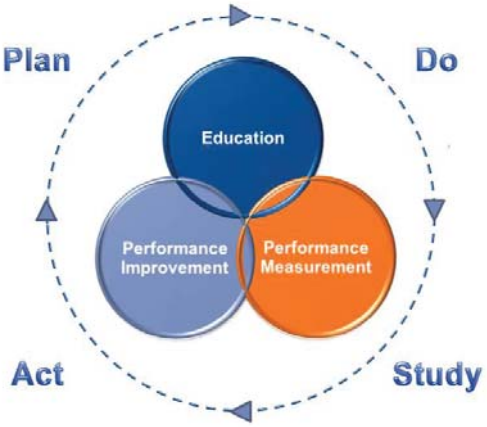

Fig. 2

QUALITY PROGRAMMING OVERVIEW 2017

As we begin our transition to the Intelligent Quality Evaluation and Management Suite (IQEMS) on April 1, 2017, the following sections will be affected based on the new chart audit processes and reporting functionalities. Reporting will be on hold beginning April 1, 2017 as we work through the various reporting functionalities and the new audit practices.

Since this is a living document, the following sections will be updated once the new enhanced auditing and reporting systems are finalized.

A. PERFORMANCE MEASUREMENT

CHART AUDIT PROCESSES

The cases that must be audited fall into 3 categories.

1. **Medical Directives/Protocols & Cases**
   a) Higher level auditing based on the call type.
   b) Uses a sampling model that addresses both Lower and High Risk call types.
   c) The lower risk (as determined by the HSN CPC Quality of Care Committee) model provides a sampling error of +/- 5% (CI 95%). Refer to PA, Appendix N, Page 80, Table 1.
   d) In cases of higher risk (as determined by the HSN CPC Quality of Care Committee) where a smaller sampling error is desired, a model that provides a sampling error of +/- 2.5% (CI 95%) is used. Refer to PA, Appendix N, Page 81, Table 2.
2. **Paramedics**
   a) Each Paramedic will have a minimum of 5 charts audited where a controlled act was performed.
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APPENDIX C

APPENDIX D: EVENT ANALYSIS 2016-2017

EVENT ANALYSIS REPORT 2016-2017

Incident analysis is a structured process for identifying what happened, how and why it happened, what can be done to reduce the risk of recurrence and make care safer, and what was learned. (http://www.patientsafetyinstitute.ca). Ambulance Call Evaluations that require a more in-depth review are escalated to the Quality Improvement Lead for further analysis. For 2016-2017, 47 cases were reviewed of which 40 (85%) involved a medical advisor.

No of Escalated Files	No of Closed Files	Average Duration to close a file (d)	Reviewed by Medical Director
47	45 (96%)	42	40 (85%)

ACE Escalation by	Number of Cases	%
Audit Process	27	58%
Audit Huddles	13	28%
Hospital Personnel	3	6%
Service Provider	2	4%
Self-Report	1	2%
MoHLTC	1	2%
Grand Total	**47**	**100%**

Result of Case Review - Base Hospital Outcome	Number of Cases	%
None	18	**38%**
Open	2	**4%**
Patch Failure - Technical	2	**4%**
Resolved Through Clinical Interview	2	**4%**
Resolved Through Discussion	6	**13%**
Resolved Through Remedial Action	10	**21%**
Resolved with Directional and/or Educational Statement	6	**13%**
Unable to substantiate variance	1	**2%**
Grand Total	**47**	**100%**

Medical Directive	Number of Cases	%
ACP Adult Analgesia	2	4%
ACP Auxiliary Combative Patient	1	2%
ACP Medical Cardiac Arrest	7	15%
ACP Neonatal Resuscitation	1	2%
ACP Seizure	1	2%
ACP Symptomatic Bradycardia	1	2%
Not Applicable	3	7%
Other	1	2%
PCP Acute Cardiogenic Pulmonary Edema	1	2%
PCP Adult Analgesia	1	2%
PCP Auxiliary Nausea and Vomiting	1	2%
PCP Bronchoconstriction	1	2%
PCP Cardiac Ischemia	2	4%
PCP Hypoglycemia	1	2%
PCP Medical Cardiac Arrest	19	40%
PCP Moderate to Severe Allergic Reaction	3	6%
PCP Trauma Cardiac Arrest	1	2%
Grand Total	**47**	**100%**

Medication	Number of Cases	%
ASA	3	0.06%
Epinephrine	2	0.04%
Ketorolac	2	0.04%
Midazolam	2	0.04%
Morphine	1	0.02%
Salbutamol	1	0.02%
Glucagon	1	0.02%
Grand Total	**12/47**	