

Clause 17 in Report No. 9 of Committee of the Whole was adopted, without amendment, by the Council of The Regional Municipality of York at its meeting held on May 21, 2015.

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First Annual Report on the Outcome of
Paramedic Services Research Studies

Committee of the Whole recommends adoption of the following recommendation contained in the report dated April 24, 2015 from the Commissioner of Community and Health Services:

1. Recommendation

It is recommended that Council receive this report for information.

2. Purpose

This report provides an update on the research activities of the Paramedic Services Branch as well as an update on the activities of the EMS Internal Research Review Committee from March, 2013 to March, 2015.

3. Background

The development of new treatments and procedures would not be possible without medical research

Medical advancements are only made possible by the completion of carefully constructed and meticulously completed research trials. Clinical research is an important tool for advancing medical knowledge and patient care.

Outcome of Paramedic Services Research Studies

Researchers interested in studying how paramedic care impacts patients and the healthcare system, develop research studies and bring them to paramedic services for review and implementation. Often, research trials are offered to paramedic services that have a history of participating in research and have sufficient call volumes to ensure adequate enrolment in studies.

As part of the research trial development process, several key stakeholders are engaged to ensure the trial is safe and ethical. These stakeholders include paramedic services leaders, base hospital physicians (physicians who certify and oversee paramedic practice), international medical experts, and medical ethicists. During the development phase of trials, submission of grant funding applications is often completed to cover the costs of the research and equipment required to complete the trial.

To ensure pre-hospital research is the highest quality possible, a randomized control trial design is frequently used. The randomized control trial design uses two randomly selected groups of similar patients to test the effectiveness of the treatment. One group (the intervention group) receives the treatment being trialed while the second group (control group) receives standard care. The outcomes are then compared between the two groups to determine if the treatment was effective or not.

The randomized control study design has been used in all research conducted in York Region Paramedic Services.

The EMS Internal Research Review Committee was established in March 2013

The EMS Internal Research Review Committee (Review Committee) was approved by Council as recommended in Report No. 2 of the Community and Health Services Committee on March 23, 2013.

The purpose of the Review Committee is to review and be able to recommend research proposals submitted to Paramedic Services in accordance with the Paramedic Services Internal Research Review Policy.

When research proposals are received by Paramedic Services, the Review Committee conducts a thorough review of the research proposal to determine the impacts the proposed research will have on York Region residents and Paramedic Services staff.

As part of its review, the Review Committee evaluates each research proposal to ensure that the project meets the Region's legal, risk, ethical, privacy and safety standards and will not interfere with Paramedic Services achieving its performance targets.

The Review Committee members include:

- Deputy Chief/Manager, Community and Health Services – Paramedic and Seniors Services Performance and Development Division
- Associate Counsel, Legal Services
- Program Manager, Records Information Management and Privacy, Community and Health Services – BOQA Information Management, Access & Privacy Office
- Manager, Insurance and Risk, Finance – Treasury Office
- Representative from the Information and Technology Services Branch of the Finance Department.

An update on the activities of the Review Committee and Paramedic Services research initiatives is required to be provided to Council on an annual basis, as outlined in Clause No. 4 of Report No. 2 of the Community and Health Services Committee, adopted by Council on March 28, 2013.

4. Analysis and Options

York Region Paramedic Services has completed one research study and is actively participating in four clinical research studies

York Region Paramedic Services recently completed the ATLANTIC Study (Administration of Ticagrelor in the Cardiac Catheterization laboratory or in the Ambulance for New ST elevation myocardial Infarction to open the Coronary artery - abbreviated to ATLANTIC), which evaluated the efficacy and safety of pre-hospital vs. in-hospital initiation of a new medication in heart attack patients. ATLANTIC was an international, multicentre study that was aimed at determining the best time to administer the drug, Ticagrelor. This drug helps to restore blood flow in the heart when a person is experiencing a heart attack.

In the Atlantic study, 1,862 patients were enrolled worldwide, 48 of which were enrolled by York Region Paramedic Services. The study concluded in October 2013 and showed patients who were treated with Ticagrelor by paramedics had a clinically significant reduction in blood clot formation after having a procedure to place a stent in their heart. The study also demonstrated that there are no safety concerns with paramedics administering this medication.

As a result of this trial, and the identified long-term positive implications for the administration of Ticagrelor by paramedics, recommendations to add this medication to paramedic scope of practice in Ontario are being reviewed by the Provincial Medical Advisory Committee. The results of the study were published in the New England Journal of Medicine in September 2014.

In addition to the completed study, York Region paramedics are participating in four clinical research trials.

These trials include:

1. A medication study: Amiodarone, Lidocaine, Placebo Study (ALPS)
2. Initiation of Cooling by Emergency medical services to Promote the Adoption of in-hospital therapeutic hypothermia in Cardiac arrest Survivors (ICE-PACS)
3. Expanding Paramedicine in the Community trial (EPIC)
4. Community Health Awareness Program by Emergency Medical Services (CHAP-EMS)

ALPS aims to determine the best medication for restoring the heart to a normal rhythm in cardiac arrest patients treated by paramedics

During cardiac arrest, the heart's rhythm may be chaotic requiring medication to stabilize the rhythm. The goal of ALPS is to determine which medication improves survival to hospital discharge for patients suffering out-of-hospital cardiac arrest. ALPS is comparing, what is believed to be the most effective antiarrhythmic drug Amiodarone, against the traditional drug, Lidocaine, or no drug (placebo) in cardiac arrest patients.

ALPS is a North American wide randomized control trial with Paramedic Services from York Region, the City of Toronto, Durham Region, Halton Region and Peel Region participating locally. Other services involved are managed through groups located in Ottawa, British Columbia, Seattle, San Diego, Alabama, Dallas, Milwaukee, Portland and Pittsburgh.

To date, York Region Paramedic Services has enrolled 88 of 3, 514 total patients across the entire study. ALPS is projected to end November 2015.

The ICE PACS study investigates if lowering a patient's body temperature increases a patient's chance of survival during cardiac arrest

Research has shown that brain damage caused by lack of blood flow during cardiac arrest can be prevented by lowering a patient's body temperature (therapeutic hypothermia) once they arrive in the hospital. However, research has shown that therapeutic hypothermia is often not applied soon enough, or even at all, in the Emergency Department of most hospitals.

The ICE-PACS trial is assessing if therapeutic hypothermia induced by paramedics will increase the number of patients that receive this life-saving treatment as well as decrease the incidence of brain damage in survivors of cardiac arrest. This research may lead to changes in how cardiac arrest survivors are treated in Canada, and improve the quality of care both in the pre-hospital and in-hospital setting.

ICE-PACS is a randomized control study conducted by Rescu, the pre-hospital research arm of St. Michael's hospital in Toronto. Local paramedic services participating in ICE-PACS include York Region Paramedic Services, Toronto Paramedic Services, Peel Region Paramedic Services and Halton Region Paramedic Services.

York Region Paramedic Services has enrolled 45 of 450 patients to date and enrollment in ICE-PACS is anticipated to continue until the end of 2015.

The EPIC trial has been ongoing since July 2014 with 265 patients enrolled in York Region

EPIC is a randomized control trial that is evaluating the impact community paramedics can have at reducing hospitalizations, emergency department visits and 911 responses among patients with chronic diseases.

Currently there are 265 patients enrolled in EPIC and preliminary results are demonstrating improvements in patients being seen by community paramedics. Data collection for EPIC is expected to end in November 2015 at which time all data will be analyzed and it is anticipated that report on the results of EPIC will be brought forward to Council in January 2016.

A report updating the status of EPIC was brought to Council on January 22, 2015 (Clause 12 in Report No. 1 of Committee of the Whole).

The CHAP-EMS Program is providing health assessments and health promotion programs for residents living in social housing buildings in York Region

In January 2015, the EMS Internal Research Review Committee approved York Region Paramedic Services participation in the CHAP-EMS program. The CHAP-EMS Program is a randomized control trial that uses paramedics, on modified work assignments, to provide health assessment and health promotion programs for residents living at Dunlop Pines in Richmond Hill, Orchard Heights Place in Aurora, Fairy Lake Gardens in Newmarket and Pineview Terrace in Georgina. CHAP-EMS focuses on risk assessments for cardiovascular, diabetes, and falls. The program assists residents to access community health resources and addresses identified risk factors to prevent or manage chronic disease.

The objective of the CHAP-EMS program is to evaluate if there are differences in:

- a) The number of Paramedic 911 responses in older adult social housing buildings receiving CHAP-EMS, to the similar social housing buildings where the CHAP-EMS program is not being provided
- b) Blood pressure measurements pre- and post-intervention
- c) The health perceptions, behaviours, and knowledge of resources pre-and post-intervention and versus control
- d) Health seeking behaviour by older adult residents living in social housing receiving the program, pre- and post- intervention and versus control

The CHAP-EMS program is a randomized control trial being administered by the Department of Family Medicine at McMaster University and is in collaboration with Hamilton Paramedic Services and York Region's Housing and Public Health Services Branches.

Currently Hamilton Paramedic Services, Guelph-Wellington Emergency Medical Services and York Region Paramedic Services are running the CHAP-EMS Programs in their local areas.

The CHAP-EMS Program began on February 9, 2015 at four locations within York Region, and will run for approximately one year in length. York Region Paramedic Services has enrolled 50 participants to date in the CHAP-EMS Program.

Link to key Council-approved plans

This report contributes to supporting the York Region 2015 to 2019 Strategic Plan objective of optimizing the use of paramedic resources so residents have access to appropriate and timely health care.

5. Financial Implications

Any resources required by York Region Paramedic Services above research grants are managed within the approved annual operating budget for Paramedic Services.

6. Local Municipal Impact

York Region Paramedic Services will continue to respond to the changing needs of its communities, including implementing various care protocols and the trial of new equipment in accordance with research study participation. This approach ensures the quality of paramedic services for all York Region residents.

7. Conclusion

York Region Paramedic Services is committed to pursuing opportunities to work with public policy makers, primary health care providers, and various health research teams to assess and develop initiatives which will enhance paramedic services provided to all York Region residents.

For more information on this report, please contact Norm Barrette, Chief and General Manager, Paramedic and Seniors Services at ext. 74709.

The Senior Management Group has reviewed this report.

April 24, 2015

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Accessible formats or communication supports are available upon request