EPIC: Expanding Paramedicine in the Community

A Non-Blind Randomized Controlled Study of a Community Paramedicine Intervention for Chronic Disease Management

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BACKGROUND

- Diabetes mellitus (DM), congestive heart failure (CHF) and chronic obstructive pulmonary disease (COPD) are associated with significant morbidity, mortality and an economic burden of billions of dollars annually in Canada
- Chronic Care Models (CCM) are disease management plans that consist of an integrated care approach to chronic illness and have been shown to improve disease control and reduce total health care costs
- Paramedics have a unique skill set as they are accustomed to delivering care in the community, and through additional training related to CCMs may help delivery home-based care to patients with chronic disease
- To date, no studies involving CCMs have included the use of community paramedics conducting home visitation to patients with chronic disease under medical delegation of their primary care provider
- This study is a collaboration between Health for All Family Health Team; Markham Family Health Team; York Region Emergency Medical Services; Central Community Care Access Centre; Sunnybrook Centre for Prehospital Medicine; Centennial College; and Rescu, Li Ka Shing Knowledge Institute, St. Michael's Hospital

OBJECTIVES

Primary: To evaluate whether community paramedics trained in chronic disease management and working under the medical delegation of primary care physicians can decrease rates of hospital admissions and ED visits

Secondary: A) To evaluate the effect of a community paramedicine intervention on patient mortality, hospital length of stay, EMS utilization and HFAFHT & MFHT utilization **B)** To evaluate the feasibility outcomes for this intervention with respect to methodology and patient safety

PARTICIPANTS

Table 1. Participants enrolled in study at each FHT site

Study Site	Patient Enrolment
Health For All FHT	61
Markham FHT	147
Total	209

STUDY DESIGN I

Community Paramedicine Training

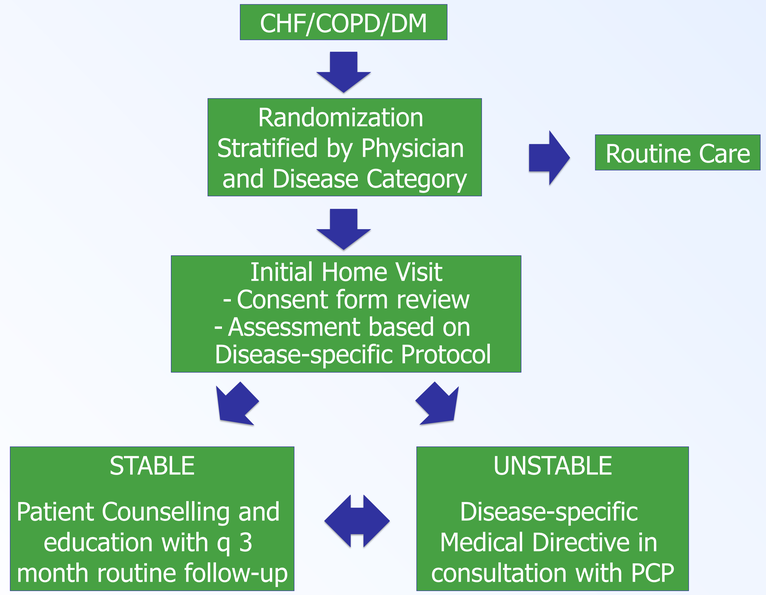
- Delivered and Coordinated through Centennial College
- Paramedics underwent 6-week training program focusing on chronic disease management with both didactic teaching sessions, simulation-based education as well as clinical rotations

Table 2. Week One Community Paramedicine Training Curriculum

WEEK 1	Monday May 6	Tuesday May 7	Wednesday May 8	Thursday May 9	Friday May 10
Theme	YORK REGION	General Assessment/Review	Cardiac	Respiratory	Endocrinology / Diabetes
AM	YORK REGION EMS EDUCATION DAY	Cardiac 1 and diagnostic test review -Alterations in Human Body Function; Pharmacology; [4 hours]	Cardiac 2 - Alterations in Human Body Function; Pharmacology; [4 hours]	Alterations in Human Body Function; Pharmacology; [4 hours]	Endocrinology and PVD - Alterations in Human Body Function; Pharmacology; [4 hours]
PM	YORK REGION EMS EDUCATION DAY	General Health Assessment - Health Assessment Diagnostics and Care [lab and inclass, 3 hrs]	Health Assessment Diagnostics and Care [inclass and lab, 3 hrs]	Health Assessment Diagnostics and Care [inclass and lab, 3hrs]	Endocrinology and PVD - Health Assessment Diagnostics and Care [inclass and lab, 3hrs]

Protocol

Figure 1. EPIC Study Protocol



STUDY DESIGN II

Outcomes and Data Analysis

Table 3. EPIC Study Outcome Summary

		CHF		COPD		DM	
		Case	Con	Case	Con	Case	Con
Primary Outcome	Number of Hospitalizations						
Secondary Outcomes	Number of hospital admissions						
	Length of stay						
	Number of ED visits						
	Number of 911 Calls						
	Number of EMS transports						
	Number of Clinic Visits						

- Analysis will be based on intention to treat
- Baseline characteristics between case & control groups for each disease state will be summarized with descriptive statistics
- Any variation between case & control groups will be identified with bivariate analytical techniques, explored with stratified analyses, and adjusted via multiple regression analysis
- Primary and secondary outcomes for each disease pair of case & controls will be compared via t-tests

DISCUSSION

- The use of community paramedics to deliver care to patients with chronic disease in the community under the medical delegation of family physicians in order to reduce the rate of hospitalization has not been previously investigated, and potentially represents a novel approach to avoiding unnecessary hospital visits and admissions

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