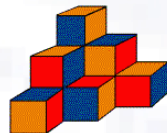


Evaluating the impact of an in-home program by a multidisciplinary health care team on 911 calls

8th International Roundtable on Community Paramedicine

In combination with the
Emergency Medical Services Chiefs of Canada
Vancouver, 2012



**North Central
EMS Institute**





Acknowledgements

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Follow researchers

Chris Day, PCP

Amber Stitchman, ACP

Impact of a multidisciplinary health care team on 911 calls

Overview

Background

Program overview

Study overview



<http://ircp.info/>

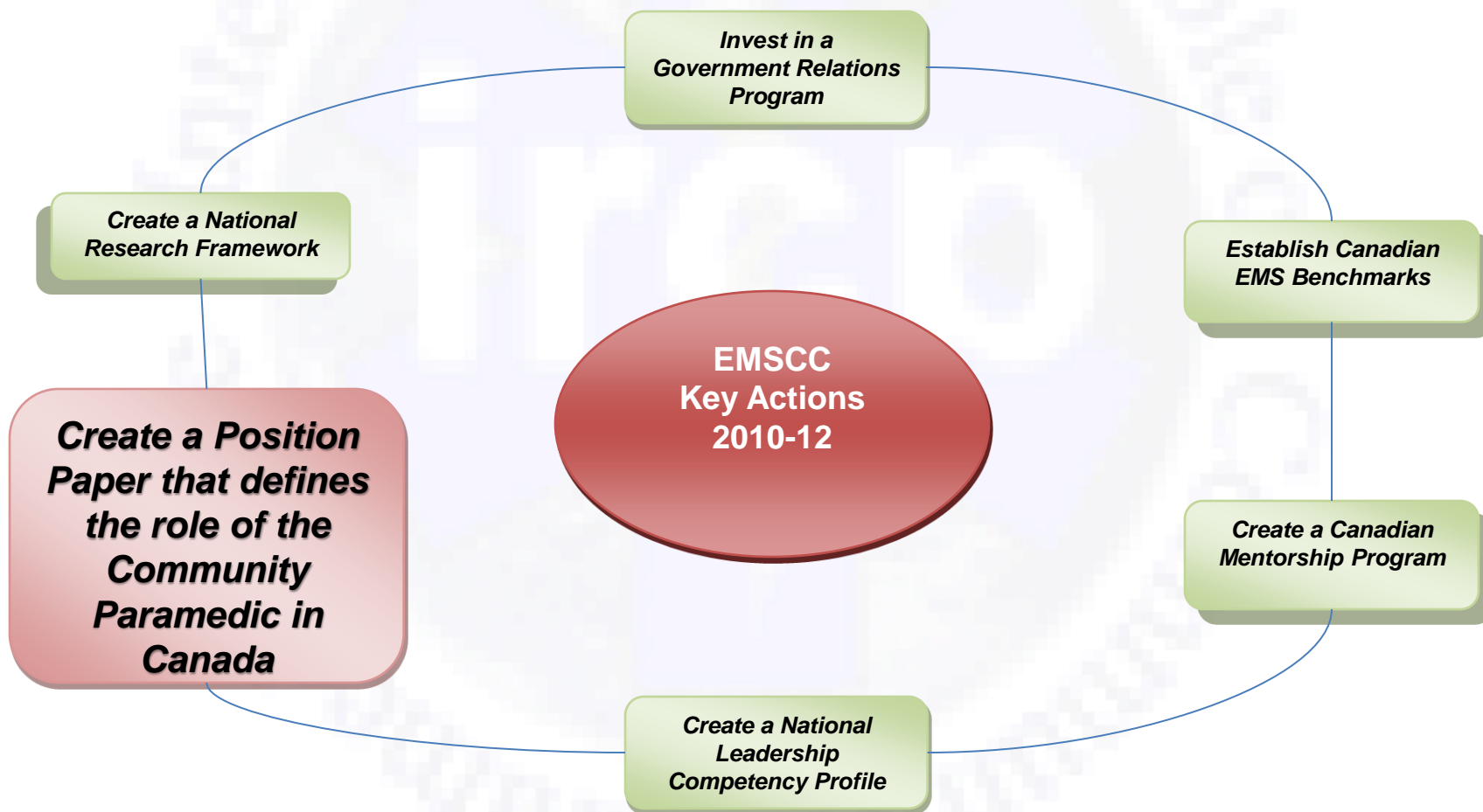
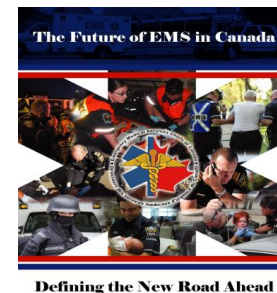
Mission: To promote the international exchange of information / experience related to the provision of flexible & reliable health care services to residents using novel health care delivery models.

Vision: To facilitate dialogue and research focused on designing systems which will ensure patients' needs continue to be met in situations where health services are less available and provision of care is increasingly challenging.

The Second Generation Paramedics (G2P) will provide services through models of delivery & enhanced protocols through an integrated collaborative network with other health care providers.



<http://www.emscc.ca/docs/EMS-Strategy-Document.pdf>





County of Renfrew Paramedic Service Vision

Our vision is to improve the quality of life of the residents and visitors of the County of Renfrew.

Goals

- Healthy Supportive Communities
- Positive Change in Our Communities
- Consistent & Shared Communication
- Collaborative Partnerships

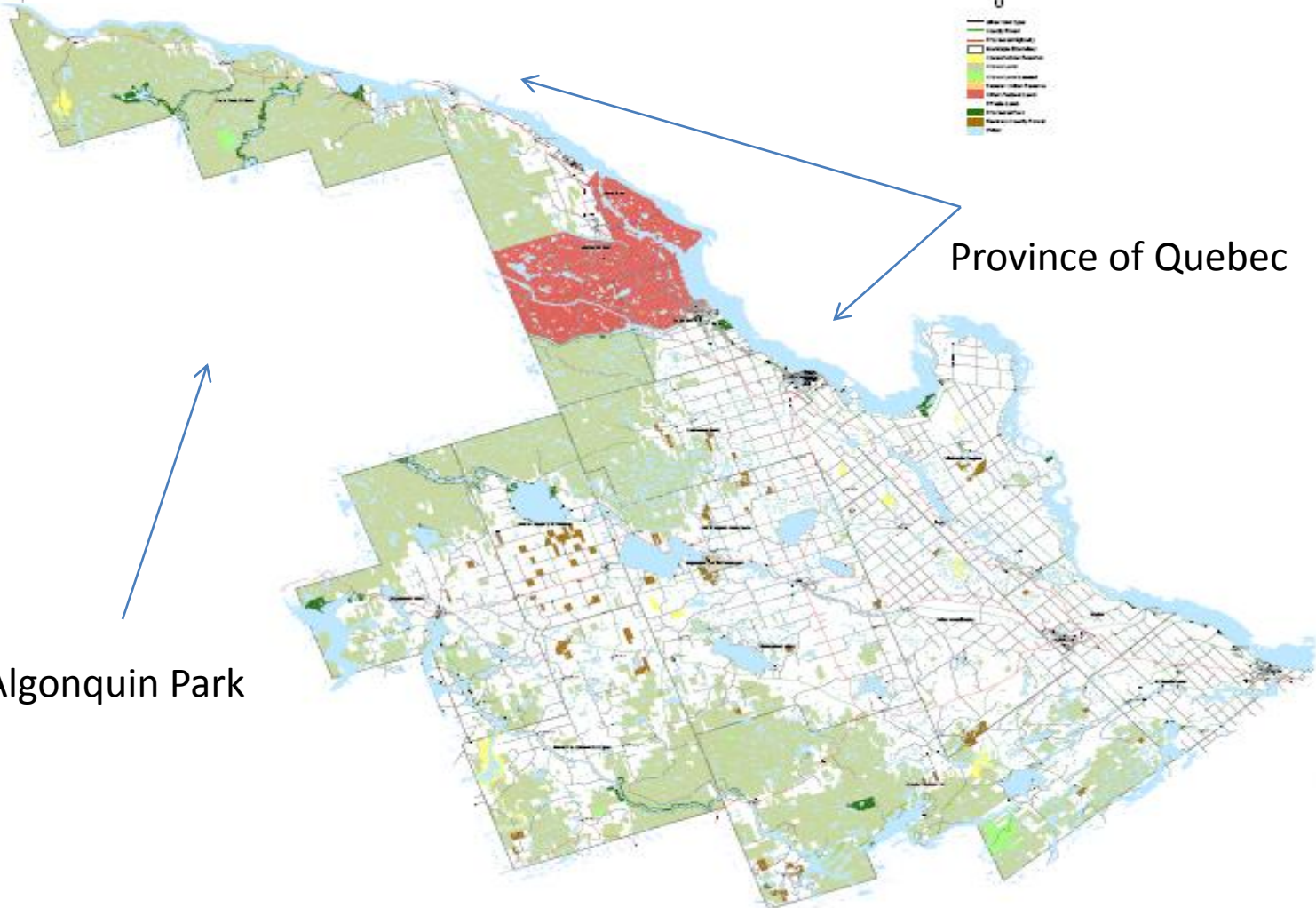


County of Renfrew



Province of Quebec

Algonquin Park



Renfrew County Goal – ‘Changing Our Reality’



January, 2010 - Front Page Headline – Ottawa Citizen



County of Renfrew

Local Community Paramedic Drivers

Recognizing the ever present pressures within the health care system and consistent increase in demand for assistance the Paramedic Service is responding to these needs through the creation of a Community Paramedic Program.

Ongoing community and industry partnerships continue to be developed and programs are being delivered which will have a positive impact on morbidity and mortality rates



County of Renfrew Statistical Reality

- Community needs vary widely
- Multilingual areas in the county
- Wide coverage with rural pockets
- Aging population
- 50% of population is overweight or obese
- 47% are physically inactive
- 25% are smokers
- 18% have high blood pressure
- 59% do not eat recommended +5 vegetables /fruits per day
- high % unemployment
- low education levels – post secondary education (54%)
- high poverty rates & low resource communities
- inadequate affordable housing

Vision: Improved Quality of Life

Capacity Building
Partnerships
Innovation

Community

Residence & Visitors

Internal Stakeholders

Hospitals, Health
Clinics, Physiotherapy
LTC, Mental Health
Social Services

**External
Stakeholders**

MOHLTC, LHIN
National
Organizations

Education

New competencies

IPE

Infrastructure

Culture

Values/ Beliefs

**Academic
Institutions**

CME

Financial

**Fiscal realities
Transparency**

**MOHLTC/LHIN
Budgeting**

**Determining cost/
benefit Analysis**

**Internal/ external
Organizations**

Paramedic Service

Redefine Borders

**Create new activities
and partnerships**

**Reaching out to
allied agencies**

**Stimulate and
Facilitate
Change**



Community Paramedic Programs





Heart Wise Exercise Program

In 2008, it was identified that the need to expand Heart Wise Exercise into rural areas was critical due to the disproportionate prevalence of cardiovascular disease and the concurrent lack of physical activity programs available.

The University of Ottawa Heart Institute approached the County of Renfrew Paramedic Service to adapt the Heart Wise Exercise model into a rural environment. This partnership created an opportunity to receive a Ministry of Health Promotion grant enabling expansion of the Heart Wise Exercise model based upon the successes of the Ottawa model.

Partnered with Ottawa Heart Institute, local Community Centres



Community Paramedic Clinics

Identified need in the community for primary health monitoring

Withdrawal of family physicians

Communities without a hospital

Paramedics provide health teaching, monitor vital signs, medication compliance, physical activity and nutrition monitoring

Partnered with Renfrew County Diabetes Education, Renfrew County Public Health, and Algonquin, Centennial, La Cite and St. Lawrence Colleges



Adhoc Home Visits

Within the emergency deployment plan

Visits for shut-in seniors

Paramedic identified inclusion

Referrals from the medical community

Voluntary inclusion

Linked to the Community of Care Access Centre Programs



**Partnered with CACC, GEM RN
Supported by County Paramedics**



PACCT

Paramedic And Community Care Team

Recent studies show 85% of people over 65 years old want to continue to live at home



Partnered with Ottawa EMS, Regional Paramedic Program of Eastern Ontario, Sunnybrook Health Sciences Center, Community Care Access Center





Madawaska Communities Circle of Health

**A Multi-Sectorial Integrated Model of Health/Healthcare for the
Madawaska Communities.**

Purpose:

- **Develop and work within a model of integrated services**
- **Promote healthy living;**
- **Provide safe, quality services;**
- **Improved access for clients across the continuum of care making best use of available resources/services.**



Community Paramedic Response Unit

“recognizes that interprofessional education and practice needs to be a central component of a paradigm shift in how healthcare is delivered “

Outcomes:

- 1. Contribute to the Community Paramedic initiatives**
- 2. Affect the response time to emergency calls in the communities**

Measure outputs, linking constructs (interprofessional relationships) will demonstrate the outcome of the Community Paramedic initiatives.

Treat and Release

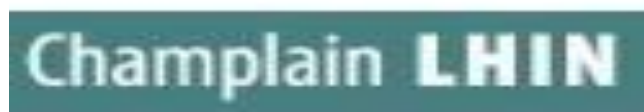
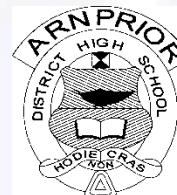
Transportation to appropriate clinic or departments

Response times

External Partners in Community Paramedic Programs



Regional Paramedic Program
for Eastern Ontario





Aging at Home

The Deep River Community Challenge

87% of patients are waiting placement to Long Term Care, rehabilitation or in home clinical support

5 year wait for institutional Long Term Care

Alternate Level of Care beds vs. Acute Care bed usage

Proportionately older population than County average



Aging at Home

“To allow seniors to live with dignity and independence in their own homes.”

\$702 million investment over 3 years given so that programs suiting the needs of the seniors in that community can be developed

Partnered with North Renfrew Long Term Care





Aging at Home

Goals

To allow seniors to stay at home

To decrease unnecessary 911 calls

To decrease Emergency visits and hospital off-load delay

To improve the quality of life of our seniors in our community

To relieve stress for the family and caregivers

Aging at Home Program

Program Components

Paramedic

Housekeeping

Maintenance

Personal Support Worker

Alerting system

24 hour support line



Primary Outcome

The purpose of this paper is to review whether the use of Community Paramedics as part of an integrated health care team, can support clients living at home, resulting in a decrease in the utilization of 911 calls.

The primary outcome is to measure the utilization of 911 activations.



Research Design

A **retrospective case series study** that involved reviewing program charts of clients that participated in the LHIN 'Aging at Home' 24-hour flexible in-home support housing program located in a rural community, in the Province of Ontario between **January 1, 2010 and April 30, 2011**. Either a Community Paramedic or Personal Support Worker responded to each client medical or trauma incident. The request for assistance was generated by an alarm activated system, which the client utilized.





Intervention

- Provincial program
 - Waiting list and living at home
- Program activation system
 - Call bell system
- Program hours of operations
 - 24 hours
- Response
 - Non-emergency SUV
- Skill Set
 - Expanded Role



Data Collection

Transcribed each medical or trauma response into MS Word and Excel datasheets.

Within each response

- Name of the client,
- Date of the incident,
- Chief complaint,
- Whether transportation to the hospital emergency department was facilitated by utilizing 911



Analysis

- 27 clients in total
- 100% of the 129 visits were available for the study
- 69 to 94 years of age; average age of 85; median of 87;
- 17 (54%) were female
- 5 clients required +10 visits, totalling 61 visits or 41%
- Emergency Department return visits - 8%
- Single home or three storey/less
- 13 categories were created
- 15 of the 129 visits resulted in 911 activation



Analysis

129 Interventions by Community Paramedics or Personal Support Workers

114 Interventions – Non 911 Activation

15 Interventions – 911 activations

86 Interventions –
Remain at Home

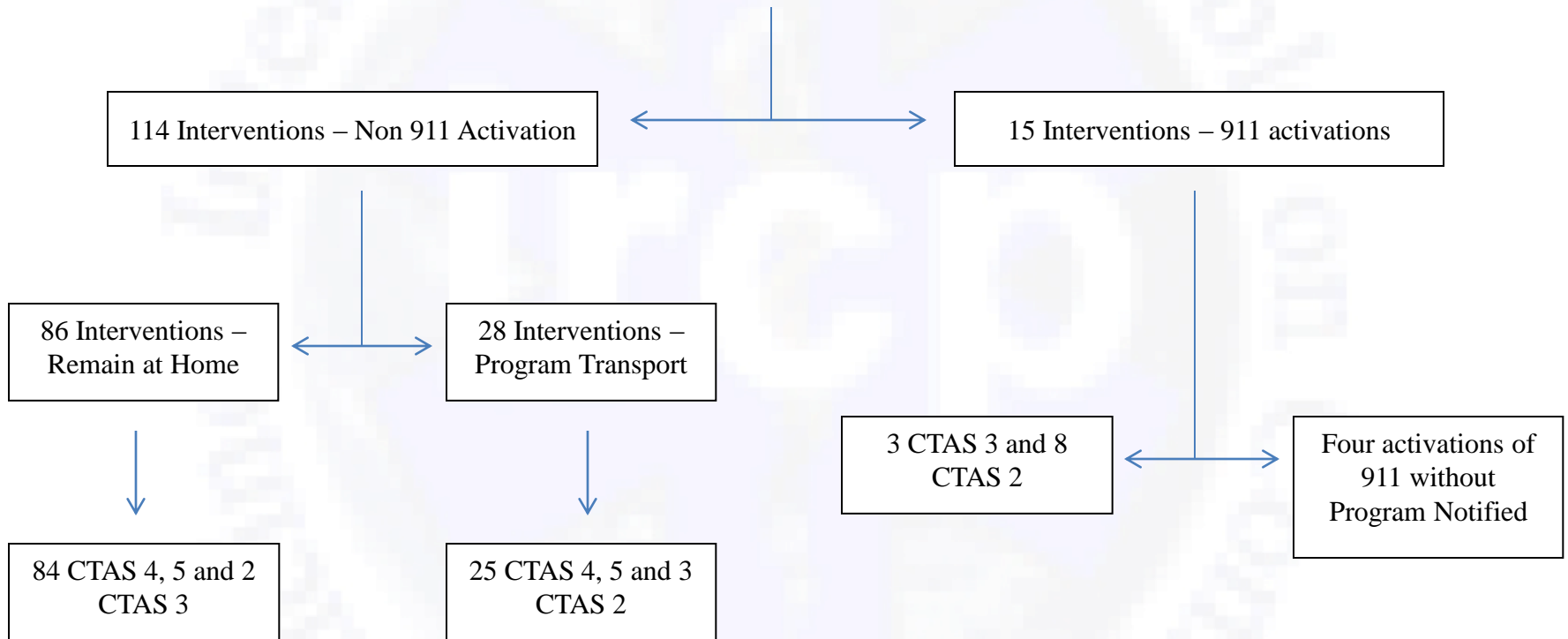
28 Interventions –
Program Transport

3 CTAS 3 and 8
CTAS 2

Four activations of
911 without
Program Notified

84 CTAS 4, 5 and 2
CTAS 3

25 CTAS 4, 5 and 3
CTAS 2



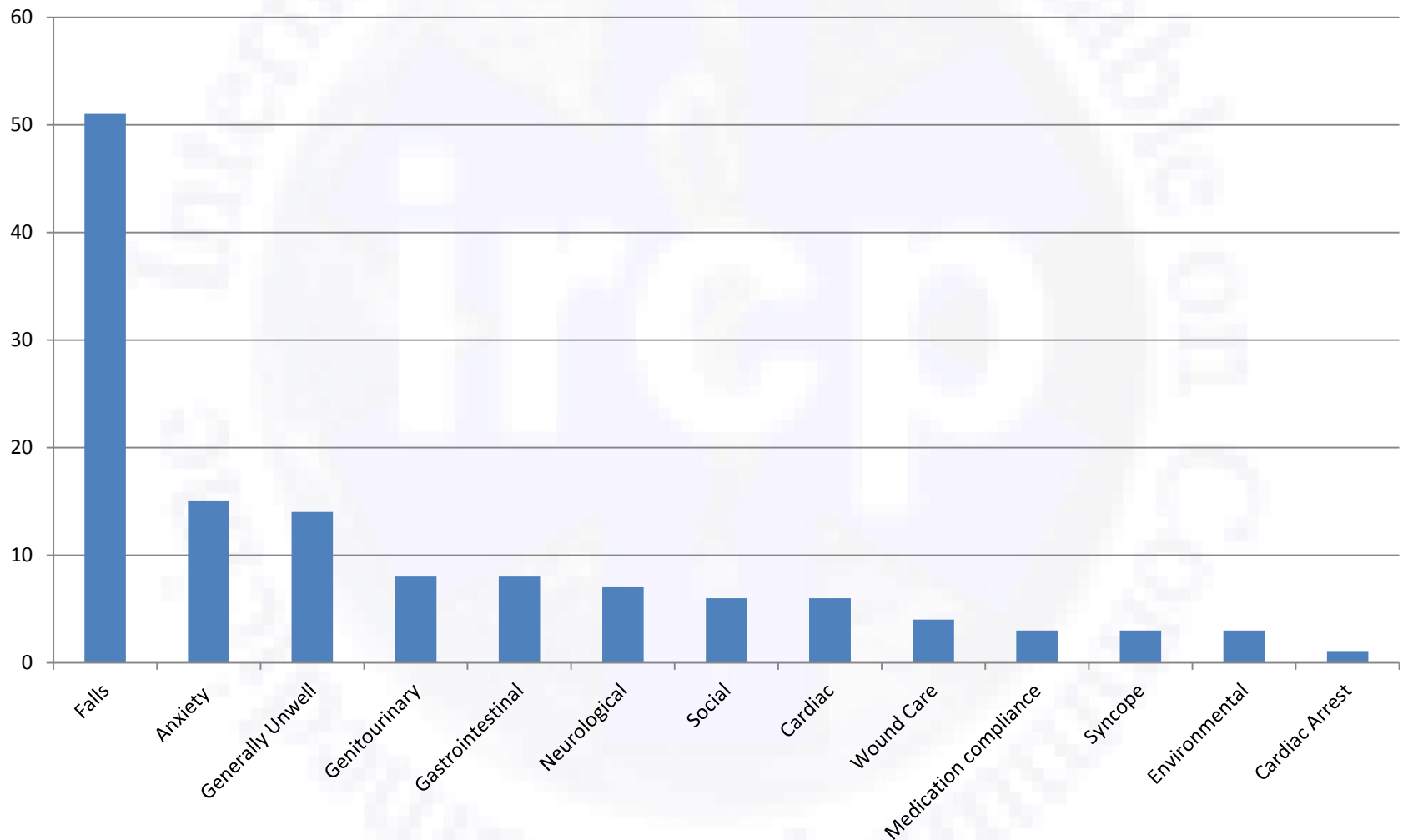


Analysis

Medical/Trauma incidents as documented by Community Paramedics or PSW	Number of Occurrences	Percentage of Occurrences	Received intervention	Number of incidents transported to the emergency department	Number of incidents transported to the admitting department	Number of ED Visits post 28 days
Falls	51	40%	29	3	0	4
Anxiety	15	12%	15	0	0	0
Generally Unwell	14	11%	13	4	4	0
Genitourinary	8	6%	8	3	2	0
Gastrointestinal	8	6%	7	1	1	3
Neurological	7	5%	6	3	0	0
Social	6	5%	4	0	0	0
Cardiac	6	5%	6	2	2	0
Wound Care	4	3%	4	2	0	0
Medication compliance	3	2%	3	0	1	0
Syncope	3	2%	2	0	0	0
Environmental	3	2%	1	0	0	0
Cardiac Arrest	1	1%	1	0	0	0
Total	129	100%				

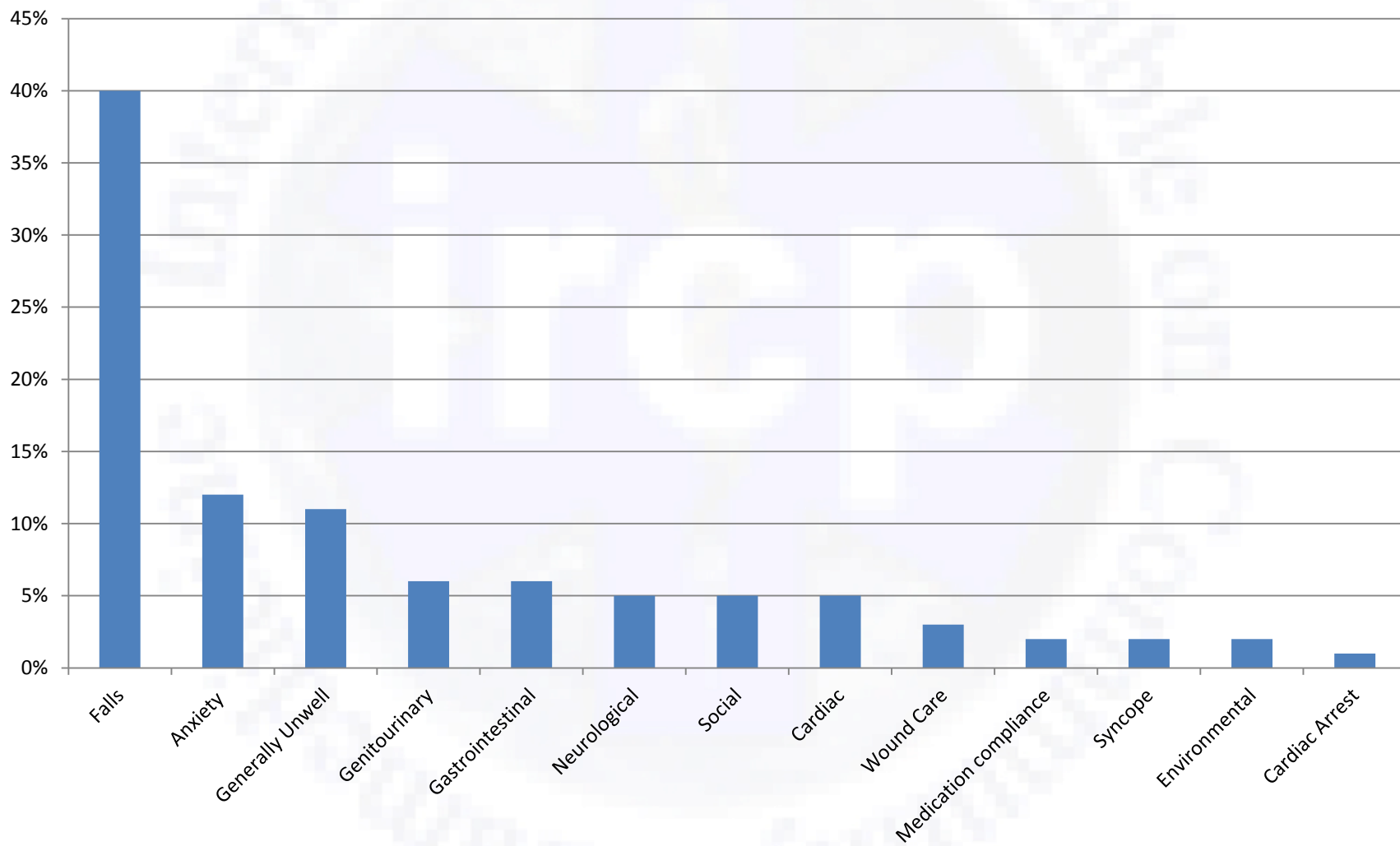


Analysis





Analysis





Analysis

Safe practice

- 71 visits to the Hospital
- 48 Emergency Visits
- 28 Transported by the program
- 13 Transported by the Paramedic Service
- 7 were follow up appointments

None of the emergency department visits were a result of the non-transport of the 86 clients visits

13 Paramedic transports – sepsis, pneumonia, unresponsiveness, SOB with tachycardia, knee dislocation, Foley catheter, lower back pain



Limitations

Single integrated team in north-eastern Ontario Town
Limited by the sources of error common to retrospective chart review:

- Incorrect recording of data on the initial log
- Incorrect transfer of data
- Inconsistent interpretation of the logs
- Creation of the categories biased by same service (geographical & cultural)
- $n = 129$ does not allow for generalization
- NO control group; NO before-after design, which lends to internal and external validity challenges



Future Direction

Research opportunities:

- Comparative study
- Cost savings
- Client satisfaction
- Client health care knowledge requirements
- Post graduate program or a self directed paramedic service delivery program
- Competency profile
- Coordinated provisions of care Integrated Care best practice



Conclusion

Study implies that the contribution of the Community Paramedic in the Aging at Home Program can contribute to the reduction in 911 activations without compromising the health of the clients.

Paper acknowledges that the impact analysis of 911 activations is only one way to evaluate the contribution of the Community Paramedic

Study also suggests that additional research can further validate the Community Paramedic contribution through the use of a comparative study.

Opportunity to explore the questions of potential system financial savings; defining Community Paramedics core competencies, and determining the level of satisfaction of the clients.