Breaking Down Silos: Paramedics’ New Role in Supporting Palliative Care Patients at Home

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Conflicts of Interest: The investigators have no conflicts of interest to declare

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Background

• >70% of palliative patients wish to spend their dying days at home (CHPCA, 2013).
• 70% of cancer deaths occur in hospital (Statistics Canada, n/d)
• Application of a palliative approach in a preferred location of choice:
  • Reduces aggressive interventions (Rowland et al., 2010)
  • Reduces health care costs (Seow et al., 2016)
  • Reduces emergency department (ED) visits and hospitalizations (Seow et al., 2016; Burge et al., 2003; Lawson et al., 2009)
  • Increases quality of life (Burge et al., 2003)
Health system context

- Needs:
  - Efficient effective health care spending
  - Aging population
  - Per capita spending among highest in OECD without commensurate health outcome benefit
  - Serve health care needs of diverse population/geography

- Opportunities
  - Not all 9-1-1 calls require transport to ED
  - Paramedics don’t always arrive by 9-1-1
  - Paramedics emerging health profession with unique abilities to enhance system

Specific Rationale

Paramedics respond to ~700 calls per year for patients with palliative goals of care.

Some are connected to VON, Continuing Care, and/or palliative programs...

...Some are not

Connected patients/families tell us that they call 9-1-1 if:

- They feel they need a rapid response
- Emotional and stressful situation and they “panic”
- Their usual supports are delayed or not available

I had a number on the magnet to call paramedics, they were here in 15 min. She was dead, but they kept me company. (Family)

- Palliative crises/emergencies
  - Occur for physical, emotional or existential reasons
  - Are common when there is a sudden increase in need (patient unexpectedly worsens) and/or the usual care team is unavailable
  - Paramedics facilitate over half of ED visits for patients receiving palliative care
The Gaps

Traditionally, paramedic protocols are to stabilize patients and transport to ED.

Protocols allowing for “treat and release” for patients receiving palliative care did not previously exist.

Paramedics have no pre-existing knowledge of patient care goals.

Goals of care are not always readily/clearly accessible.

Rationale - Paramedics

Paramedics tell us that the EHS protocols (in our system and everywhere) don’t have a good “fit” with the needs and wishes of the people receiving palliative care.

Old paramedic protocols were:
- Designed to transport to emergency dept. at the hospital

New palliative protocol will:
- Allow paramedics to provide some symptom relief to bridge the gap until other resources (e.g., VON) can arrive, without a transport to the emergency dept.

Purpose

- Enhance the care provided by paramedics for patients receiving palliative care
- Improve access to palliative care supports 24/7
- Enhance the palliative and end of life experience for patients/families by “bridging” supports until the usual care team could take over
- Avoid/reduce unwanted/unnecessary ED visits for patients receiving palliative care
- Improve paramedic comfort and confidence in the provision of palliative care supports
The Program

The Program

- A new Clinical Practice Guideline (CPG) for paramedics responding to patients receiving palliative care focusing on symptom management (e.g., pain, breathlessness, nausea, agitation, psychosocial distress, fear, etc.)

- Collaboration with Pallium Canada to develop a new curriculum for palliative care that is specific for paramedics ("LEAP Mini for Paramedics") taken by all paramedics in NS in early 2015

- EHS Special Patient Program (SPP) - database to make patient care wishes accessible to paramedics

The CPG

6700:00 PALLIATIVE CARE

<table>
<thead>
<tr>
<th>Key Breaking/Patient Care</th>
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<tbody>
<tr>
<td>Determining Best Care in Patients Receiving Palliative Care</td>
</tr>
<tr>
<td>- Key steps in providing palliative care - Decision-making process - Involvement of the patient, family, and caregivers - Communication and coordination of care</td>
</tr>
<tr>
<td>- Patient/family/caregiver may choose to receive palliative care without transportation to the emergency department</td>
</tr>
<tr>
<td>Milestones:</td>
</tr>
<tr>
<td>1. Through the CPG, 3 new medications suited for the palliative population are going to be carried by paramedics</td>
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Clinical Practice Guideline

A innovative clinical practice guideline (CPG) was developed for NS and PEI paramedics specifically for palliative care

The novelty of the palliative CPG is to provide palliative support without the need to transport to the emergency department (if so desired by the patient/family/caregiver)
Education

The Program collaborated with Pallium Canada to develop a 7-hour palliative curriculum specific to the paramedic context (LEAP Mini for Paramedics)

LEAP Mini for Paramedics Curriculum
- Taking Ownership in Palliative Care
- Useful Resources, Tools and Advanced Care Planning
- Making Decisions in Palliative Care
- Pain in Palliative Care
- Dyspnea in Palliative Care
- Essential Conversations in Palliative Care
- Psychological Distress in Palliative Care
- Neurosurgery and Infection in Palliative Care
- Delirium in Palliative Care
- Last Days and Hours in Palliative Care

Special Patient Program

The Special Patient Program (SPP) was developed to maintain the comfort and quality of life for patients with rare conditions and unique care needs.

In 2015, the SPP was expanded to include those who are receiving palliative care.

An electronic database now pushes SPP form to paramedic tablet.

SPP Enrolment Form

- Until the database is ready, the Palliative SPP Enrolment Form is on the EHS website: http://novascotia.ca/dhw/ehs/palliative-care.asp
- Completed forms are faxed to EHS
- ~10 business days for the SPP application to be reviewed and card issued
Special Patient Program

Preferred Location of Care

Preferred Location of Death

Demographics

Cardiac Arrest

Cardiac arrest (if patient has no pulse and is not breathing)

19. Choose one: [ ] Attempt resuscitation/CPR [ ] Artificial ventilation [ ] Allow natural death [ ] do not attempt resuscitation

Select one (mandatory)
Goals of Care (a)

Choose only **ONE Goals of Care Designation** (mandatory)

<table>
<thead>
<tr>
<th>E - FULL</th>
<th>S - SELECTIVE</th>
<th>C - COMFORT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal: Maintaining higher level of patient comfort</td>
<td>Goal: Maintaining mid-level of patient comfort</td>
<td>Goal: Maintaining patient comfort</td>
</tr>
</tbody>
</table>

How it Works

**Event**
- Notification with patient/families/care givers
- Review of patient's medical history

**Approval**
- Completed forms are submitted to EHS Provincial Medical Director for review and approval
- Completed forms are submitted to EHS Provincial Medical Director for review and approval

**SPP Card**
- Once approved, the patient/family are mailed a SPP card with their unique SPP identification number
- Once approved, the patient/family are mailed a SPP card with their unique SPP identification number

**Call 9-1-1**
- Call 9-1-1 if the patient/family encounters an acute crisis
- Call 9-1-1 if the patient/family encounters an acute crisis

**On Scene**
- Paramedics will be dispatched and the EHS Communications Centre will push the information from the enrollment form to the paramedic's tablet in the field
- Paramedics will be dispatched and the EHS Communications Centre will push the information from the enrollment form to the paramedic's tablet in the field

Communication with Usual Care Team

- **Record of Visit Form**
  - Form paramedics will leave on site documenting the care given
  - Can be left with the chart/home binder if available
  - Patients/families can bring to follow up appointments with care team

- **If no follow up care team available**
  - Paramedics may help family connect with Continuing Care via 1-800 number
Methods

- **Paramedic**
  - Pre-post online survey

- **System**
  - An electronic survey for 1 year pre and 1 year post implementation

- **Patient/Family**
  - Mailed survey pre-EMS encounter
  - Telephone interview post-EMS encounter

Results

- **Paramedic Comfort & Confidence**
Results: Paramedic Comfort & Confidence

<table>
<thead>
<tr>
<th></th>
<th>Pre (N=235)</th>
<th>Post (N=287)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>73 (31.1%)</td>
<td>83 (31.1%)</td>
</tr>
<tr>
<td>PCP</td>
<td>105 (44.7%)</td>
<td>118 (44.2%)</td>
</tr>
<tr>
<td>Years on the job (mean)</td>
<td>13.01</td>
<td>12.5</td>
</tr>
<tr>
<td>PEOL calls (median)</td>
<td>6 (3,12)</td>
<td>4 (2,10)</td>
</tr>
<tr>
<td>No prior palliative</td>
<td>183</td>
<td></td>
</tr>
</tbody>
</table>

Results: Attitudes

Results: Paramedic Comfort
Results: Paramedic Confidence

QUOTES FROM PARAMEDICS:

“I think the program is absolutely fantastic. It really covers an important patient need, and releases strain from our emergency system, especially when patients do not require, nor need, a trip to the ER department. I think the more that paramedics do for this patient type the better.”

“I believe palliative care training has helped elevate paramedic care in this particular sector to an excellent degree.”

Results

Patient/Family Satisfaction

Survey A (Pre-EMS Encounter)

Response Rate:
• 225 surveys distributed, 67 (30%) returned/completed

Survey completed by:
• 13 (19%) by patient
• 49 (73%) by family/caregiver

Education:
• 29 (43%) did not complete high school
• 24 (36%) high school graduate/GED
• 11 (16%) higher education

Ethnicity:
• 36 (53%) identify as Caucasian
Being Enrolled in the SPP (Survey A)

- Fulfilling care wishes
  - Location of care/death wishes will be respected/fulfilled by paramedics
  - Simply being enrolled increases family confidence to care for their loved one at home
- Peace of mind
  - Comfort knowing the paramedics know about them, their situation, and care plan in advance of an emergency call
- Feeling prepared for emergencies

QUOTES FROM PATIENTS/FAMILIES:

- "Great program - paramedics will be so much more knowledgeable when they are in the home and know how to handle the patient. More awareness of patient’s needs."
- "Support for my mom to fulfill her wishes to remain in the home and receive care without having to be transported to hospital."

Results: Post-EMS Encounter (Survey B)

Most common reason for calling paramedics: Breathlessness; reported by 6 families, followed by pain and falls (2 each)

All indicated that the paramedics helped their symptoms

14/18 respondents rated the care as "excellent"

7 respondents indicated they would have had to find a way to get to the hospital, and that family members would have been in hospital for the end of the life period in the absence of the program

Patient/Family Satisfaction (Survey B)

QUOTES FROM FAMILIES:

- "It’s a great program. There are times when making a trip to outpatient it's very stressful and exhausting for my father. And we’re not comfortable assessing his symptoms here at home."
- "It’s better than we expected. The staff is trained to provide palliative care in home and transport to hospital at just the right time, and that they help us make the right decision for mom."
- "Very professional, very supportive and empathetic, gentle and respectful. I haven’t had any incident where we felt they weren’t providing the best possible service."

- Comfort knowing that the program was available 24/7 in the event of an acute crisis
- Patients described the paramedics as going "above and beyond" for their family during the crises
- Ability of paramedics to alleviate symptoms enough that patient/family were able to stay home
- Families expressed desire to see the program continue
- Improved the program, their loved one would not be able to be cared for at home
## Results

![Emergency health system](image)

### Population Served

<table>
<thead>
<tr>
<th>All Cancer Patients</th>
<th>Special Patient Program only</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-Project</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>76.0 (12.2)</td>
</tr>
<tr>
<td>Female Sex</td>
<td>387 (83.7%)</td>
</tr>
<tr>
<td>Number of Calls</td>
<td>664</td>
</tr>
<tr>
<td>Documented AND/DNR</td>
<td>475 (71.6%)</td>
</tr>
<tr>
<td>Registered in SPP</td>
<td>158 (23.9%)</td>
</tr>
<tr>
<td>Calls with advanced life support on scene</td>
<td>444 (66.0%)</td>
</tr>
</tbody>
</table>

### SPP Enrolment

- **1500+ Palliative SPP Enrolments (since June 2015)**

![SPP Enrolment Map](image)
EHS Palliative Care Calls

1,500 calls (July 2015 – July 2016)

Unique locations for palliative calls (post-project)
- Higher density of calls in Halifax, which houses the bulk of the population
- A broad distribution of calls in rural areas

System: Commit Time

Maximum commit time: 6:29 for transport, vs 3:15 non-transport

Call Outcome

Transports dropped from 59.2% of all calls (including transfers) to 47.6%
System Findings

- The total time committed to a call (including transport and offload in the ED) is not longer when the patient remains at home.
- Transports dropped (treat and release rate 47.6%)
- Being in the SPP is associated with even lower proportion transported.
  - Registration in the SPP has a "protective" effect in avoiding transport to ED.

Quotes from Paramedics:
"I think the program is absolutely fantastic. It really covers an important patient need, and releases strain from an emergency system, especially when patients need care, yet want, a trip to the ED department. I think the more that paramedics can do for this patient type the better!"

Limitations

- Pre-post paramedic comfort/confidence:
- Technical issues in pre survey
- Small sample size
- System:
- Case finding
- Timing of survey

ROI
Return on Investment

<table>
<thead>
<tr>
<th>Cost</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) LEAP for 1200 medics</td>
<td>$413,291.00</td>
</tr>
<tr>
<td>2) First round new meds</td>
<td>$2,364.18</td>
</tr>
<tr>
<td>3) 0.5 FTE coordination</td>
<td>$40,000.00</td>
</tr>
<tr>
<td>4) Upgrade SPP database</td>
<td>$156,038.22</td>
</tr>
<tr>
<td>Tangible Direct Cost</td>
<td>$661,693.40</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Value of avoided ED visits</td>
<td>$41,741.49</td>
</tr>
<tr>
<td>2) Value of avoided admissions</td>
<td>$53,049,880.92</td>
</tr>
<tr>
<td>3) Value of 114 returned unit hours to system</td>
<td>$16,197.33</td>
</tr>
<tr>
<td>Tangible Direct Benefit</td>
<td>$53,107,819.74</td>
</tr>
</tbody>
</table>

ROI = $53,107,819.74 - $661,693.40 = $52,496,126.34

Moving Care to the Home and Community

- 24/7 even in rural community
- Speed of response
- On reserve
- Bring assets to the home eg narcotics
- Online physician support
- More remain home in EoL period and at EoL (in NS approx. 24% die at home)
- Decrease of hospital resources in EoL period

Frequently Asked Questions

- Can patients/delites call to be in the SPP to receive palliative support?
- Can "lights and sirens" be turned off for palliative calls?
- Can patients/delites call to the SPP?
Frequently Asked Questions

Can paramedics use medications present in the home of patients receiving palliative care?

All the new medications added for palliative care, which can PCPs vs ACPs administer?

Can paramedics give palliative patients medications that they have not previously been taking?

Does the ambulance transport fee apply if the patient stays home?

Ongoing work

Case definition query
Analysis of cancer and non-cancer (RIM)
Economic analysis (CFHI)
Paramedic focus groups regarding fit with professional identity (NSHA)
Health administrative data re hospital free days in last 6 months/30 days/week of life, comparing BC to NS (CIHR)
Ability to share goals of care from EHS to ED and decrease interventions in ED (TRIC)
Resources Available

Videos
1) Public information video
2) How to Complete the SPP Enrollment Form (target: health care providers)

Brochures
1) Information for patients receiving palliative care
2) Information for health care providers
3) Information for patients and families (non-palliative)

All are available at: https://novascotia.ca/dhw/ehs/palliative-care.asp

What worked well

- Enhanced collaboration between paramedics and home care, palliative care
- Breaking down silos, working as a team
- Diverse interprofessional team
- Improved process for Expected Death at Home
- Medication admin, narcotics, IV and subcut access already part of paramedic skill
- Momentum of MIH already established

Challenges

- Fear calls would deplete system resources
- Cost of education/training
- Fear of replacement of other services/professions
- Paramedic comfort with treat and release, palliative support as goal of care
- Fit of palliative care with paramedic identity
- Legislative framework
- Funding model
Key program elements

- Funding model that supports this
- Local players that support this: medics, managers, docs, palliative care
- A way of identifying eligible patients
- Training beyond current foundational prep
- A guideline that supports paramedics/T&R

Opportunities

- Potential for expansion to other chronic disease, populations not well served by ED visit
  - Heart failure
  - Frail elderly
  - COPD

Challenges

- Payment models – to the service
- Payment models to the paramedic
Conclusions

Paramedics, patients/families, system all seeing positive impact
Key elements need to be in place for success
Model for new integrated system of care

Thanks to the Project Team, and to EHS and our paramedics for stepping out of the box
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