

Palliative and End-of-Life Patients in Ontario: Characteristics and Patterns of Health Care Utilization and Costs Across the Health System Continuum

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Background

- Analysis for CE LHIN on behalf of Declaration of Partnership
- Objectives:
 - Identification of palliative care and end-of-life patients using administrative databases (ICES)
 - Description of characteristics and utilization patterns of identified patients across Ontario's various health sectors

Defining Palliative and End-of-Life

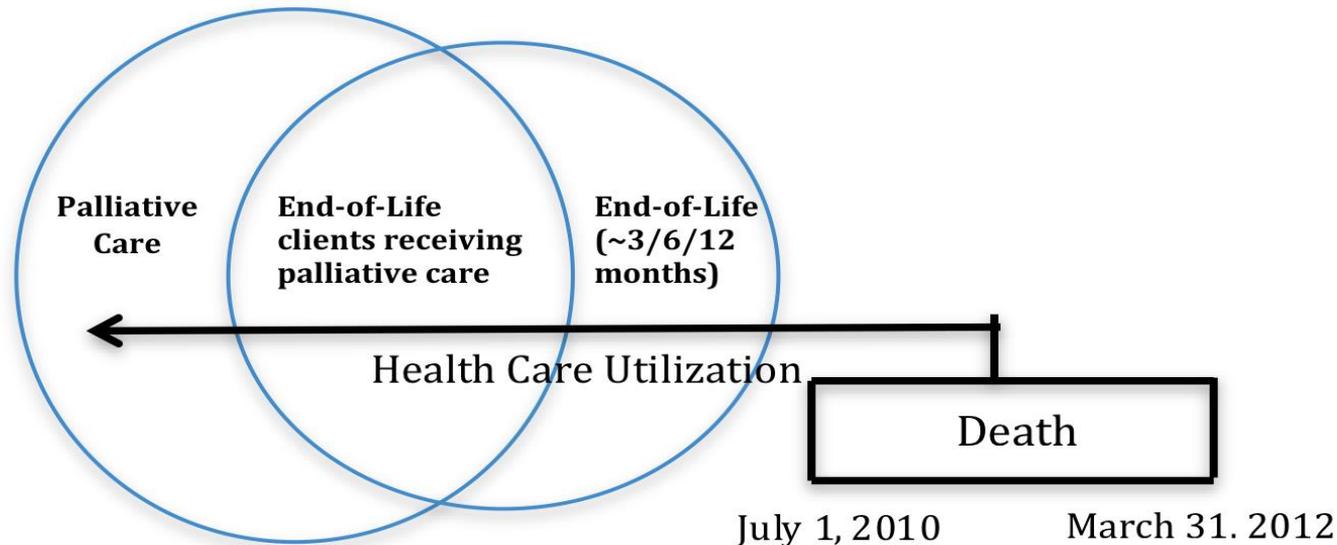
- Palliative care:
 - A form of care/service
 - Captured through palliative and/or end-of-life billing and diagnostic codes
 - Examples:
 - Physician billing codes (OHIP)
 - Hospital ICD10/9 codes
 - EOL code for home care services

Defining Palliative and End-of-Life

- End-of-life:
 - A fixed period of time clinically determined to indicate how long patient/client is expected to live for
 - Captured through continuing care (LTC, home care, CCC) assessment tools or EOL codes
 - Examples:
 - Questions from RAI-LTC, RAI-CCC, RAI-HC, or RAI-CA
 - EOL code for home care admission

Methods

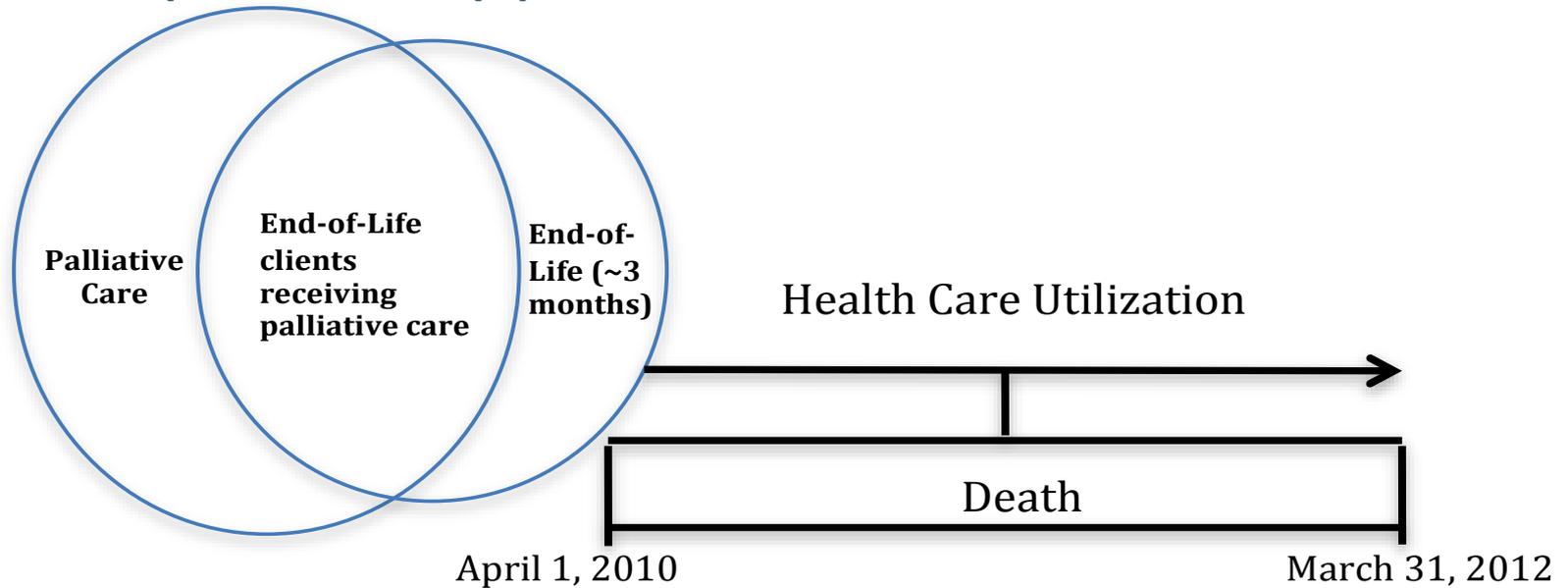
1. Retrospective approach



- Data source: Registered Persons Database (RPDB)
- Examined all deaths between July 1, 2010 and March 31, 2012
- From date of death, looked back 3, 6 and 12 months intervals for Palliative Care or EOL Designation

Methods

2. Prospective approach



- Data sources: available clinical and administrative datasets at ICES (physician billing, hospital, home-care, long-term care, complex continuing care etc.)
- Examined all patients between April 1, 2010 and December 31, 2011 and followed them forwards until death or to last date of data availability (March 31, 2012)

Results

Databases where palliative care and EOL patients were identified, Ontario, April 1, 2010 to December 31, 2011

Source*	N	%
CIHI Discharge Abstract Database	58,011	7.35
NACRS - Emergency Room	50	0.01
RAI - HC - Home care	5,119	0.65
RAI - CA	9,138	1.16
Palliative care in HCD service record	35,839	4.54
HC Assessment conducted in hospice/palliative facility	286	0.04
OHIP - Physician Services	681,298	86.27
Total =	789,741*	100

Source*	N	%
Home Care Database Service Records	35,839	47.96
Home Care Database Admission Records	16,228	21.72
RAI - Home care	4,663	6.24
RAI - Contact Assessment	6,737	9.02
RAI - CCRS_CCC (Complex Continuing Care)	5,007	6.70
RAI - CCRS_LTC (Long Term Care)	6,248	8.36
Total =	74,722*	100

* Individuals may be identified as palliative/end-of-life in multiple data sources

Results – Retrospective Approach

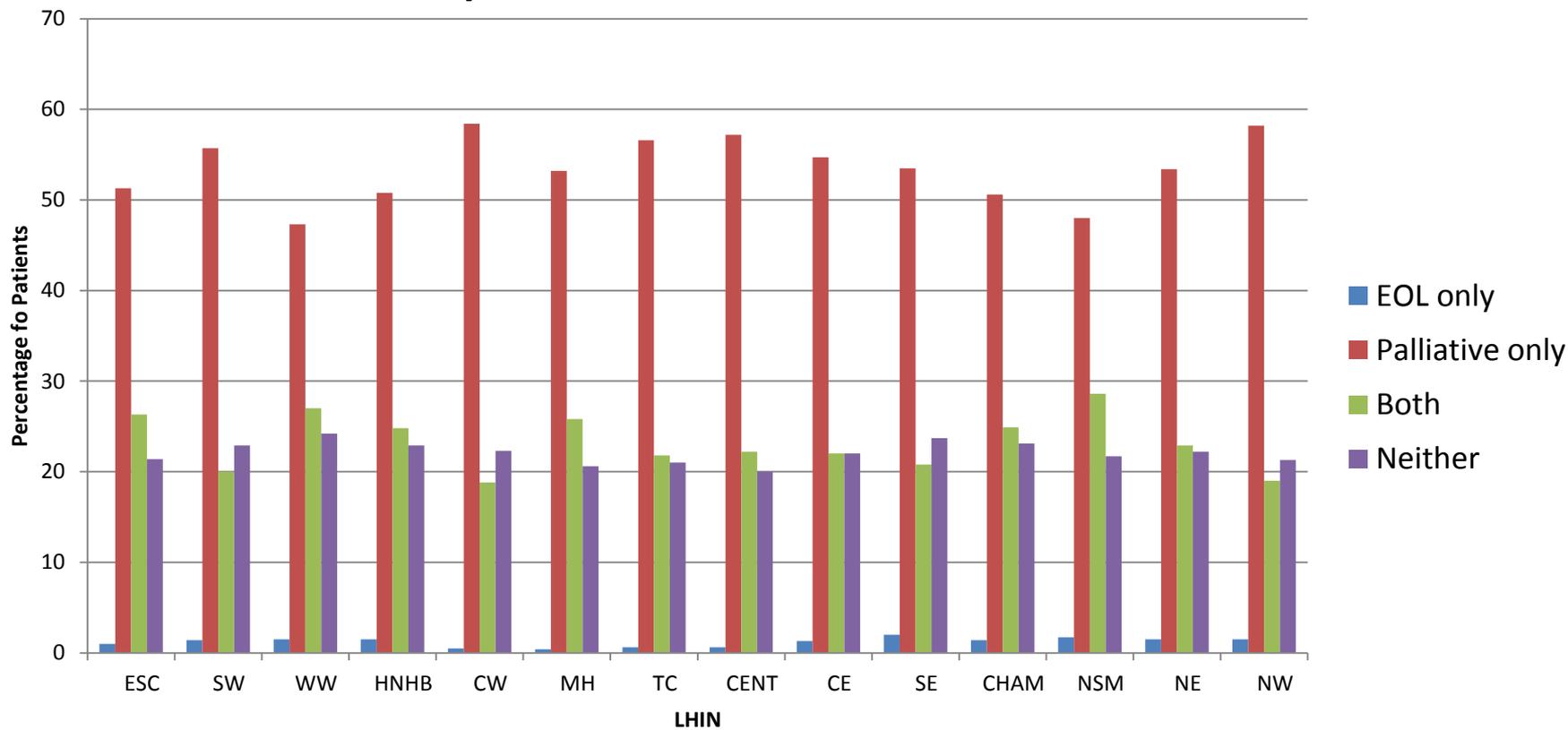
- A total of 153,874 individuals died in Ontario between July 1, 2010 and March 31, 2012
- The majority (59%) received some form of palliative care in last 12 months prior to death
- Of these 59%, the majority (70%) received palliative care without being designated EOL
- About 22.7% of the total decedent cohort did not receive palliative care or were designated as EOL

Table 3. Proportion of people who died between July 1, 2010 and March 31, 2012 were identified as End of Life, Palliative, Both or Neither in the 12 months prior to their death

Cohort	N	%
. End of Life (only)	1,810	1.18
. Palliative (only)	81,613	53.04
. Both	35,533	23.09
. Neither	34,918	22.69
Total	153,874	100

Results – Retrospective Approach

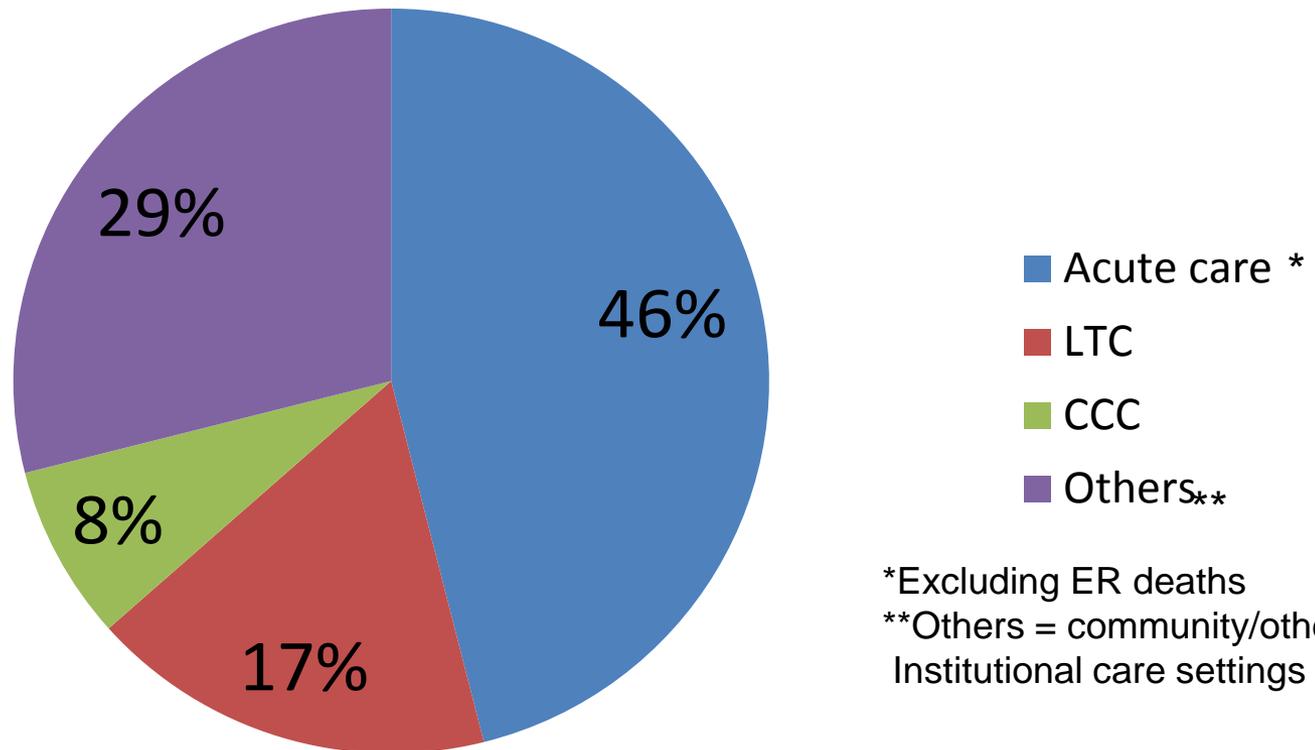
**Distribution of Cohort by Health Region (LHIN)
July 1, 2010 and March 31, 2012**



- Distribution across LHINs was similar across province (between 50-60% Palliative only, <2% EOL only, 20-30% Both, & 20-25% Neither for most)

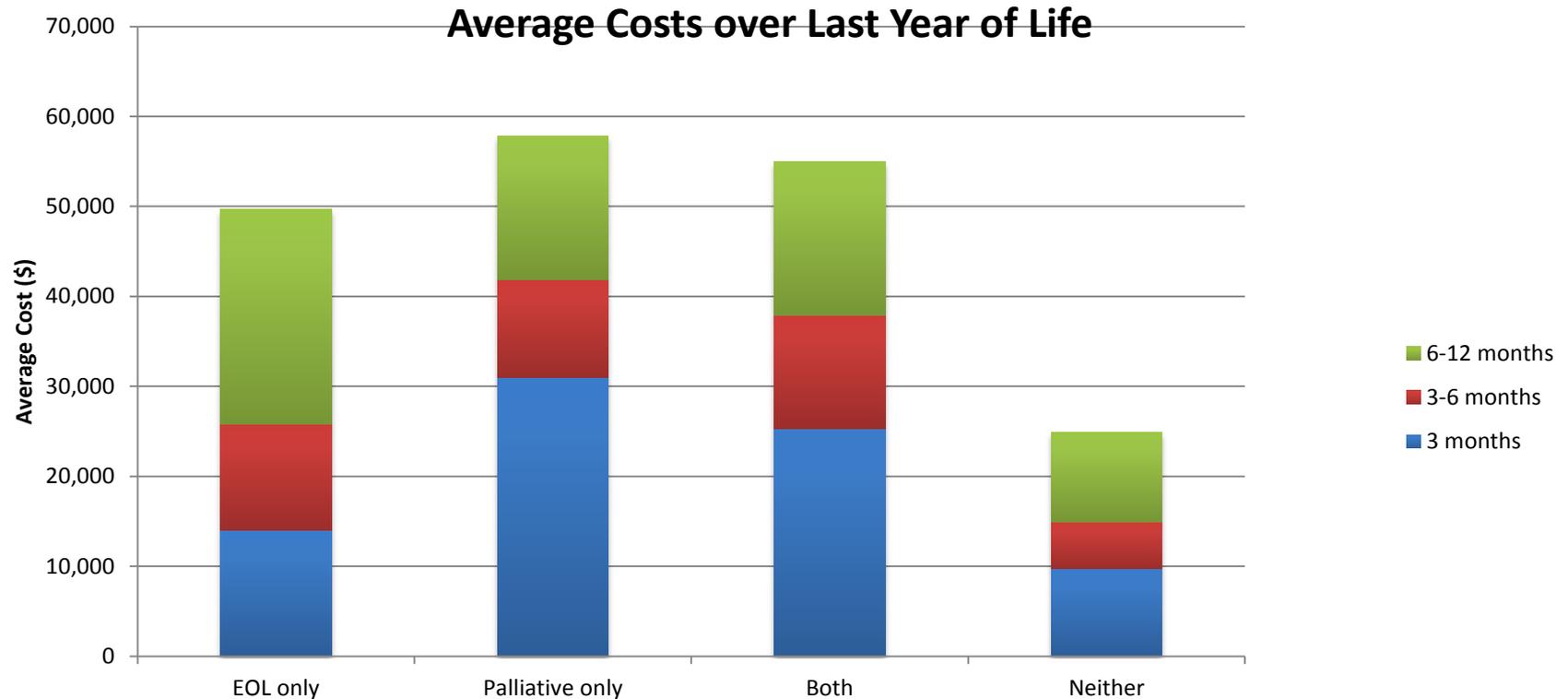
Results – Retrospective Approach

Distribution of Place of Death for all Patients Dying between July 1, 2010 and March 31, 2012



On average Ontarians spend about 2 weeks (or 15%) of their last 90 days in hospital

Results – Retrospective Approach



- Total cost in last year of life for 9 months (July 2010-March 2011) death cohort was \$3.3 billion dollars.
 - Top three cost sectors were inpatient services (46.1%), continuing care (LTC, home care, rehab) (27.4%), and physician services (10.5%)
 - ~50% of this cost was consumed in the last 3 months of life

Results – Prospective Approach

- Between April 1, 2010 to December 31, 2011, 689,330 individuals were identified as receiving at least one episode of palliative care
- About 47,134 individuals were identified as EOL
- Few deaths in comparison to total palliative cohort demonstrates palliative care provision prior to last year of life
- Distribution was relatively similar between LHINs and sex
- The majority of those who had an EOL indication were more likely to be older (65+), while the majority of those who received palliative care were in the middle age demographic (40-64)

Population Grouping*	N	N Deaths
. End of Life	47,134	41,872
. Palliative	689,330	123,687

*some individuals represented in both groups

Results – Prospective Approach

- Palliative care patients consumed a total of \$3.6 billion dollars, with 53% of total costs occurring in last 3 months of life
- Top three cost sectors were inpatient services (51.6%), continuing care (LTC, home care, rehab) (21.3%), and physician services (10.9%)

Total Palliative cohort costs prior to death by sector	0-3 month		3-6 month		6-12 month	
	Cost	N	Cost	N	Cost	N
Total	1,898,881,039.37	285,510	717,121,449.32	202,931	985,741,082.10	205,220
Inpatient	1,208,656,445.30	52,017	310,126,016.61	17,316	338,865,399.04	17,308
Physician	194,805,887.96	61,762	82,204,340.03	59,449	113,870,953.02	59,892
CC (LTC, Home care, rehab)	313,597,139.55	48,626	174,608,653.60	34,806	280,184,356.85	31,948
Outpatient	71,816,589.13	17,689	78,022,252.08	15,268	129,417,100.21	17,011
Drug	58,048,900.08	54,425	53,873,532.19	53,061	100,102,154.10	53,608
ED	51,956,077.35	50,991	18,286,654.81	23,031	23,301,118.88	25,453

Conclusions

- Palliative care can be distinguished and operationalized separately from end-of-life (service vs. designation) when conducting administrative database analyses
- Although a significant number of patients are receiving palliative care, is it meaningful? (1 billing code vs. several)
- Even though palliative care is being provided, very few patients were identified as end-of-life
 - Increased age makes identification more probable
- The majority of patients (46%) die in hospital, with 2 weeks of final 3 months of life spent in hospital
- Improved identification and designation of end-of-life patients may reduce inpatient hospitalization near final few months of life

Limitations

- Results may change depending on how palliative care vs. end-of-life patients are defined and operationalized
- This study is limited by its data sources
 - EOL designation difficult to capture
 - Place of death difficult to capture
 - Accuracy of billing/designation codes

Next Steps

- Subsequent analysis to look at:
 - In depth understanding of health sectors
 - Account for intensity of palliative care
 - Compare cost differences in greater detail between the 4 different cohorts (palliative, EOL, both, neither)

Stay Tuned!