

# Ontario Health Teams Phase 2 Evaluation

OHT Priority Populations:-End-of-Life  
Improvement Indicators at Baseline 2017/18 to 2019/20

Luke Mondor  
Ruth E. Hall  
Walter P. Wodchis

June 2021

## © Health System Performance Network, 2021

This publication may be reproduced in whole or in part for non-commercial purposes only and on the condition that the original content of the publication or portion of the publication not be altered in any way without the express written permission of HPSN. To seek this permission, please contact [hspn@utoronto.ca](mailto:hspn@utoronto.ca).

The opinions, results and conclusions included in this report are those of the authors and are independent from the funding sources.

## About Us

The Health System Performance Network (HSPN) is a collaborative network of investigators, visiting scholars, post-doctoral fellows, graduate students and research staff working with health system leaders, and policymakers to improve the management and performance of our health system. Building on Ontario's established record of performance measurement created by the 1998 ground-breaking Hospital Report Research Collaborative, the HSPN was established in 2009 and has built a track record in performance measurement, research, evaluation and improvement in Ontario with expertise in multiple domains of health system performance including perspectives of patients, providers, population health, and cost. The HSPN receives funding from the Ontario Ministry of Health.

### Contact information

Health System Performance Network  
155 College Street, Suite 425  
Toronto ON M5T 3M6  
Telephone: +1 (416) 946-5023  
Email: [hspn@utoronto.ca](mailto:hspn@utoronto.ca)

### Authors Affiliations

Luke Mondor, MSc – HSPN and ICES  
Ruth E. Hall, PhD – HSPN, University of Toronto; Institute for Better Health, Trillium Health Partners; and ICES  
Walter P. Wodchis, PhD – HSPN, University of Toronto; Institute for Better Health, Trillium Health Partners; and ICES

### Acknowledgements

Parts of this material are based on data and/or information compiled and provided by CIHI to ICES. This study was supported by ICES, which is funded by an annual grant from the Ontario Ministry of Health (MOH) and the Ministry of Long-Term Care (MLTC).

### Financial Support

This research was supported by a grant from the Ontario Ministry of Health to the HSPN. The funders had no role in data analysis, decision to publish, or preparation of the report.

### Suggested citation

Mondor L, Hall RE, and Wodchis WP. *Ontario Health Teams Phase 2 Evaluation. OHT Priority Populations: End-of-Life Improvement Indicators at Baseline, 2017/18 to 2019/20*. Toronto, ON: Health System Performance Network. 2021.

### ISBN

This document is available at [hspn.ca](http://hspn.ca).

## About This Report

This report is part of the second phase of the Health System Performance Network (HSPN) central evaluation of Ontario Health Teams (OHTs). The first phase focused on analyses of OHT applications and included surveys and key informant interviews at the time of application to become OHTs. The second phase includes reporting across all OHTs using population-based administrative data. The purpose of the HSPN evaluation is to understand how OHTs are developing and implanting change to drive improvements in patient, provider and health system outcomes.

This report is largely based on data prior to the government's introduction of the OHT initiative, selection and approval, and, prior to OHT implementation of new models of care and therefore considered a baseline of OHT performance. Baseline information on health system indicator trends provides a useful frame of reference for OHT implementation activities and comparators for local measurement.

## Table of Contents

About This Report .....	3
Executive Summary .....	6
Abbreviations.....	7
Background .....	8
Objectives.....	8
Methods.....	8
Data Sources .....	8
Selection of Indicators.....	9
Reporting of Indicators.....	9
Key Findings.....	11
Deaths in Hospital .....	11
Days Spent at Home in the Last 6 Months of Life.....	12
Proportion of Decedents with 1+ Emergency Department Visits in the Last 30 Days of Life.....	13
Proportion of Decedents with Palliative Home Care in the Last 90 Days of Life .....	14
Proportion of Decedents with Palliative Physician Home Visits in the Last 90 Days of Life .....	15
Differences by Highest vs Lowest Deprivation Quintile within OHTs.....	16
Limitations .....	18
Conclusions.....	18
References .....	19
Appendix: Indicator Technical Specifications .....	20

## List of Tables and Figures

Exhibit 1: EOL indicators examined in this report.....	9
Exhibit 2: Deaths in hospital by OHT, 2017/18 to 2019/20.....	11
Exhibit 3: Days spent at home in the last 6 months of life by OHT, 2017/18 to 2019/20 .....	12
Exhibit 4: Proportion of decedents with 1+ emergency department visits in the last 30 days of life by OHT, 2017/18 to 2019/20 .....	13
Exhibit 5: Proportion of decedents with palliative home care in the last 90 days of life by OHT, 2017/18 to 2019/20 .....	14
Exhibit 6: Proportion of decedents with palliative physician home visits in the last 90 days of life by OHT, 2017/18 to 2019/20 .....	15
Exhibit 7: Difference in EOL indicator results in the highest vs lowest deprivation quintile within each OHT, 2019/20 data .....	16

## Executive Summary

Ontario Health Teams (OHTs) were introduced in 2019 by the Ontario Ministry of Health (MOH) as a new way of integrating care delivery. They were developed to enable patients, families, and cross-sectoral groups of providers and organizations to work together to create a coordinated continuum of care that is better connected to patients in their local communities. At maturity, OHTs will be clinically and fiscally accountable for a defined population. However, in the first year OHTs were asked to identify a priority population that they would begin to implement their new integrated care pathways. Palliative or end-of-life (EOL) care was among the top three priority populations selected by OHTs.

The objective of this work is to report on indicators related to palliative and EOL care at the OHT level using routinely collected health administrative data sources held at ICES. The HSPN and MOH have adopted the Quadruple Aim Framework inclusive of patient experience, provider experience, health outcomes, and cost. This report focuses on system level indicators that reflect patient experience, health outcomes and system efficiencies for EOL/ palliative care. We contrast these indicators across measures of material deprivation and rurality.

### Results in Brief

In 2019/20, there were 105,513 deaths identified across the 42 OHT attributable populations and it varied from 241 to 5,549 deaths. Half all deaths (50.5%) occurred in hospital with some variability across OHTs (37.7% to 60.8%). On average, in the last six months of life, 87% (158 days) of the last 180 days of life were spent at home, with little variability across OHT decedents (84% to 92%) or 151 to 166 days across OHTs).

The indicators with the greatest variability across OHTs were; the proportion of decedents with palliative home care and the proportion of decedents with palliative physician home visits in the last 90 days of life (Coefficients of Variation in 2019/20 of 21 and 20, respectively). All EOL indicators were relatively stable over time across OHTs.

There was weak to negligible correlation between the concentration of the attributable population in the most vs least deprived areas and all EOL/ palliative care indicators at the OHT level. However, we found a moderate positive correlation with rurality for mean number of days at home in the last 6 months of life (i.e. higher number of days at home among OHTs with a greater proportion of their attributable population in rural areas).

Within OHTs, all but the average days at home in the last 6 months of life indicator, in general, showed that inequities in material deprivation were present (i.e., outcomes were not the same among decedents from the most vs least deprived areas). However, the direction and magnitude of inequity varied considerably by OHT.

### Conclusion

This report provides an overview of baseline performance across 42 candidate OHTs across five EOL indicators. These baseline findings illustrate where there are opportunities for OHTs to focus their implementation activities to improve EOL care.

## Abbreviations

CCC = Complex Continuing Care; CCRS = Continuing Care Reporting System database; DAD = Discharge Abstract Database; EOL = end of life; HCD = Home Care Database; NACRS = National Ambulatory Care Reporting System database; NRS = National Rehabilitation Reporting System database; OHIP = Ontario Health Insurance Plan claims database; OHTAM = Ontario Health Teams attribution database; ONMARG = Ontario Marginalization database; OMHRS = Ontario Mental Health Reporting System; RPDB = Registered Persons Database; SDS = Same Day Surgery database;

## Background

Ontario Health Teams (OHTs) were introduced in 2019 by the Ontario Ministry of Health (MOH) as a new way of integrating care delivery. They were developed to enable patients, families, and health care providers work together to create a coordinated continuum of care that is better connected to patients in their local communities. OHTs involve a cross-sectoral group of providers and organizations, and at maturity will be clinically and fiscally accountable for a defined population [1]. In the first year of activity, OHTs were asked to identify a priority population they would begin to implement their new integrated care pathways and palliative or end-of-life (EOL) care was among the top three priority populations selected by OHTs [2].

## Objectives

The objective of this work is to report on indicators specific to palliative and EOL care across OHT attributable populations using routinely collected health administrative data sources held at ICES. We sought to describe variation in these indicators, cross-sectionally and over time, to identify where opportunities and challenges exist to better integrate care and improve patient outcomes. Monitoring and evaluation of these indicators facilitates evidence-based decision making and care improvements for Ontarians.

## Methods

### Data Sources

In January 2021, a database of Ontarians linked to an OHT was shared with ICES by the MOH. This database, the OHT Attribution Models database (OHTAM), links Ontarians to a single usual provider of primary care, and then assigns that provider's patients to a hospital and a larger network (i.e., an OHT) based on historical health care utilization patterns. Specialists are linked to networks based on hospital where they provided the most services. Nearly all Ontarians are assigned to a network using this methodology, which closely resembles the Ontario physician networks developed at ICES [3]. Importantly, the networks are based on health care utilization and physician-hospital referral patterns, and not where individuals live in Ontario. Administrative data from 2017 were used to attribute individuals to OHTs and create the dataset, which we herein refer to as the *OHT attributable population*. Each OHT in the dataset was anonymized for reporting.

Health administrative datasets used in this work included the Registered Persons Database (RPDB), Canadian Institute for Health Information's Discharge Abstract Database (DAD) and Same Day Surgery Database (SDS), National Ambulatory Care Reporting System (NACRS), Ontario Mental Health Reporting System (OMHRS), Ontario Health Insurance Plan claim database (OHIP), Complex Continuing Care (CCC), National Rehabilitation Reporting System database (NRS), Home Care Database (HCD), Continuing Care Reporting System (CCRS), Ontario Marginalization (ONMARG) database, and the 2006 Canadian Census (Census). Detailed information on these data is available elsewhere (see: <https://datadictionary.ices.on.ca/Applications/DataDictionary/Default.aspx>). These datasets were linked using unique encoded identifiers and analyzed at ICES, an independent, non-profit research institute funded by an annual grant from the MOH. As a prescribed entity under Ontario's privacy legislation, ICES is authorized to collect and use healthcare data for the purposes of health system analysis, evaluation and decision support. Secure access to these data is governed by policies and procedures that are approved by the Information and Privacy Commissioner of Ontario. The use of these data in this project was authorized under section 45 of Ontario's Personal Health Information Protection Act, which does not require review by a Research Ethics Board.

## Selection of Indicators

A jurisdictional scan of Ontario health system reports and the OHT full applications identified 26 indicators for consideration. This was followed by a modified Delphi approach among the team to select seven indicators to report at the OHT attributable population level as measures of EOL integrated care outcomes. An important criterion for indicator selection was it could be measured in administrative databases for all OHTs. We also desired a parsimonious number of indicators. Lastly, we validated the indicators with the Ontario Palliative Care Network, and they endorsed the five presented in the report.

*Exhibit 1: EOL indicators examined in this report*

Indicator	Definition	Quadruple Aim
Deaths in hospital	The proportion of decedents that died in a hospital setting (defined as acute or psychiatric care institution, emergency department, inpatient rehab or complex continuing care)	Patient Experience (access) Health Outcome
Days spent at home in the last 6 months (180 days) of life	Average days at home (180 minus total days in hospital, emergency department, inpatient rehab and complex continuing care) in the last 6 months of life	Patient Experience (access)
Proportion of decedents with 1 or more emergency department visits in the last 30 days of life	The proportion of decedents that had one or more unplanned emergency department visits in their last 30 days of life	Patient Experience (access) Cost/Efficiency
Proportion of decedents receiving palliative home care in the last 90 days of life	The proportion of decedents that had one or more palliative home care services (excluding care management and placement services) in their last 90 days of life	Patient Experience (access) Health Outcome
Proportion of decedents receiving palliative physician home visits in the last 90 days of life	The proportion of decedents that had one or more physician consults/ visits in their last 90 days of life with a corresponding palliative in-home visit code	Patient Experience (access)

## Reporting of Indicators

All EOL indicators are calculated on the attributable population that died (decedents). We report at the OHT level, only for OHTs that have submitted a full application to the MOH and were approved. These 42 OHTs account for approximately 85% of the full Ontario attributable population. Full information of the calculation of each selected indicator – including data sources used, derivation of numerators and denominators, and other details – can be found in the accompanying Appendix.

We report each measure annually (from 2017/18 to 2019/20) at the OHT-level using model-based risk adjusted methods. Risk adjustment is a statistical method that accounts for differences in the distribution of individual-level characteristics (and other risk factors) between different providers so that providers that care for older, more complex patients are not unfairly penalized (relative to providers that care for younger, healthier populations). Model-based risk adjustment is ideal as it (1) allows for a consistent approach across all indicators, whether the indicator is a risk (proportion) or rate (events over time), (2) is flexible in that different regression models can be applied to best fit the data, and (3) allows for control for multiple confounding factors. In this report, all estimates are risk adjusted for age and sex.

To quantify the degree of variability of risk adjusted results at the OHT-level in each reporting period (here, years), we calculated the coefficient of variation (CV), the ratio of the standard deviation to the mean. The higher the CV value, the greater the level of dispersion around the mean and possibly represents a measure where some OHTs are performing much better than others. We also described the minimum and maximum percent change in risk adjusted estimates in 2019/20 relative to prior reporting periods.

We used the ONMARG database to derive the material deprivation quintile for the attributable population using and individual's postal code. Material deprivation includes aspects of income, education, family structure and housing quality. These data are collected from the Canadian census and are at the neighbourhood level<sup>1</sup>. Material deprivation measures the ability or inability to access and attain basic needs. The concept is closely connected to poverty. For each target population, we calculated the proportion of each OHTs attributable population living in each quintile of material deprivation. We ranked OHTs according to the ratio of their population residing in the most vs least deprived areas of Ontario (i.e., proportion of population in quintile 5 vs quintile 1). Kendall's rank correlation statistic (T) was used to quantify associations between this material deprivation rank and risk adjusted indicator performance. The rank correlation coefficient varies between +1 and -1. Values between  $\pm 0.00$  and 0.10 suggest a negligible association; values between  $\pm 0.10$  and 0.39 suggest a weak association; values between  $\pm 0.40$  and 0.69 suggest a moderate association; values between  $\pm 0.70$  and 0.89 suggest a strong association; and values between  $\pm 0.90$ -1.00 suggest a very strong association. Correlations between the OHT ranks of risk adjusted performance versus rank of rurality (i.e., proportion of each OHTs attributable population residing in a rural vs urban community) was also calculated. Here, urban versus rural was based on residing in a community of 10,000 persons or more. We report our results through an equity lens rather than something to adjust away through risk-adjustment.

### ***Understanding and interpreting the scatterplots:***

Each panel represents OHT-level risk adjusted estimates calculated separately for each reporting period. OHTs were ordered from left to right according to their level of performance, from most to least desirable respectively, based on the most recent year of data (2019/20). The ordering of OHTs is consistent from panel to panel, so for example, the leftmost point in each panel always represents the same OHT, but in different reporting periods. Comparing each point to the dotted line shows the OHT performance relative to the total OHT attributable population in a reporting period.

Each dot is colour-coded according to the OHT's ratio of decedents in most (Q5) vs least (Q1) deprived areas, so that correlations can be seen visually. Dark blue dots represent OHTs with a higher proportion of their attributable population in the most deprived neighbourhoods as compared to the proportion of the attributed population in the least deprived neighbourhoods; light green represent OHTs where there is a higher proportion in the least as compared to the most deprived neighborhoods.

<sup>1</sup> Neighbourhoods (here, dissemination areas) represent areas of 400 to 700 people.

## Key Findings

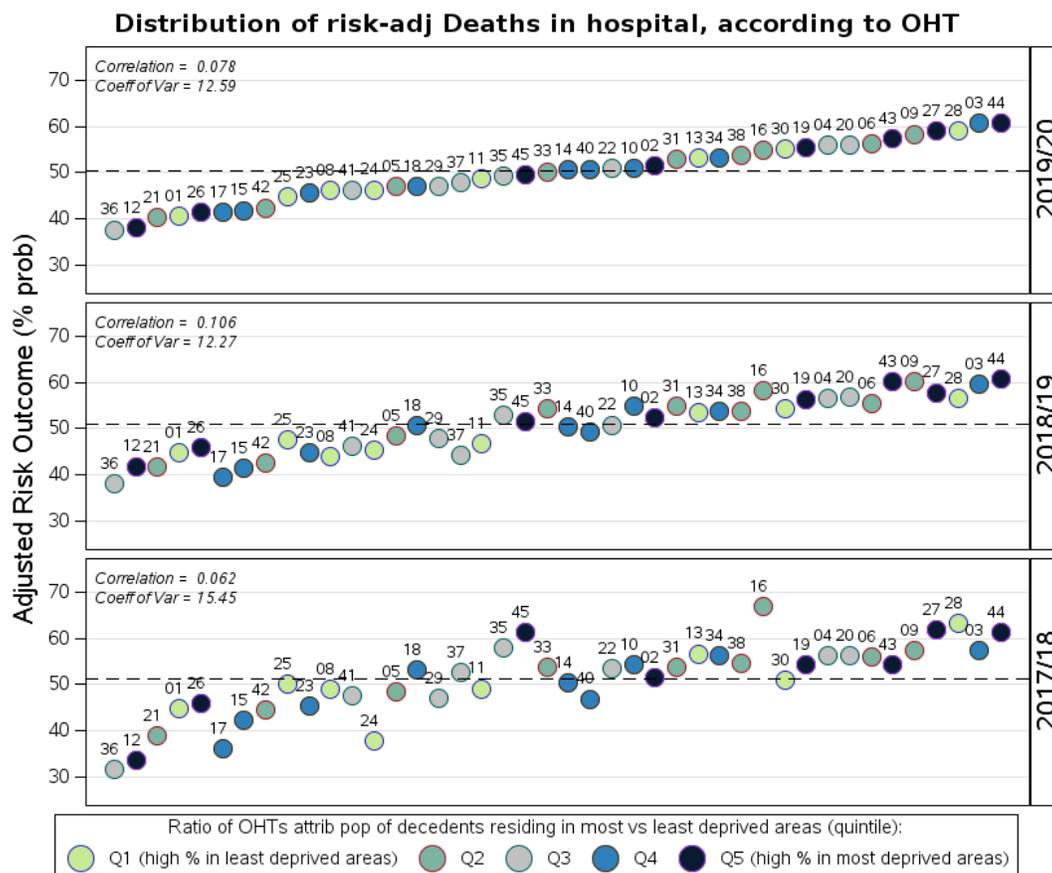
In 2019/20, the most recent reporting period, there were 105,513 deaths identified in the full attributable population and the number of deaths by OHT ranged from 241 to 5,549.

### Deaths in Hospital

The majority of people would prefer to die at home, rather than in hospital [4].

- In 2019/20, 50.5% of decedents in the attributable population died in hospital, which was marginally lower than in prior reporting periods (50.9% in 2018/19 and 51.4% in 2017/18)
- OHT-level risk-adjusted estimates ranged from 37.7% to 60.8%. The CV was 13, indicative of moderate variability across all 42 OHTs.
- The largest percent improvement (lower %) in the outcome from 2018/19 to 2019/20 was a 9% reduction (OHT 01). Few OHTs worsened (higher %) in each successive reporting period.
- The proportion of deaths reported in the hospital showed weak correlation with the concentration of the attributable population residing in the most (vs least) deprived areas ( $T_{2019/20}=0.08$ ) and weak (negative) correlation with the concentration of the attributable population residing in rural (vs urban) areas ( $T_{2019/20}=-0.33$ , figure not shown).

Exhibit 2: Deaths in hospital by OHT, 2017/18 to 2019/20



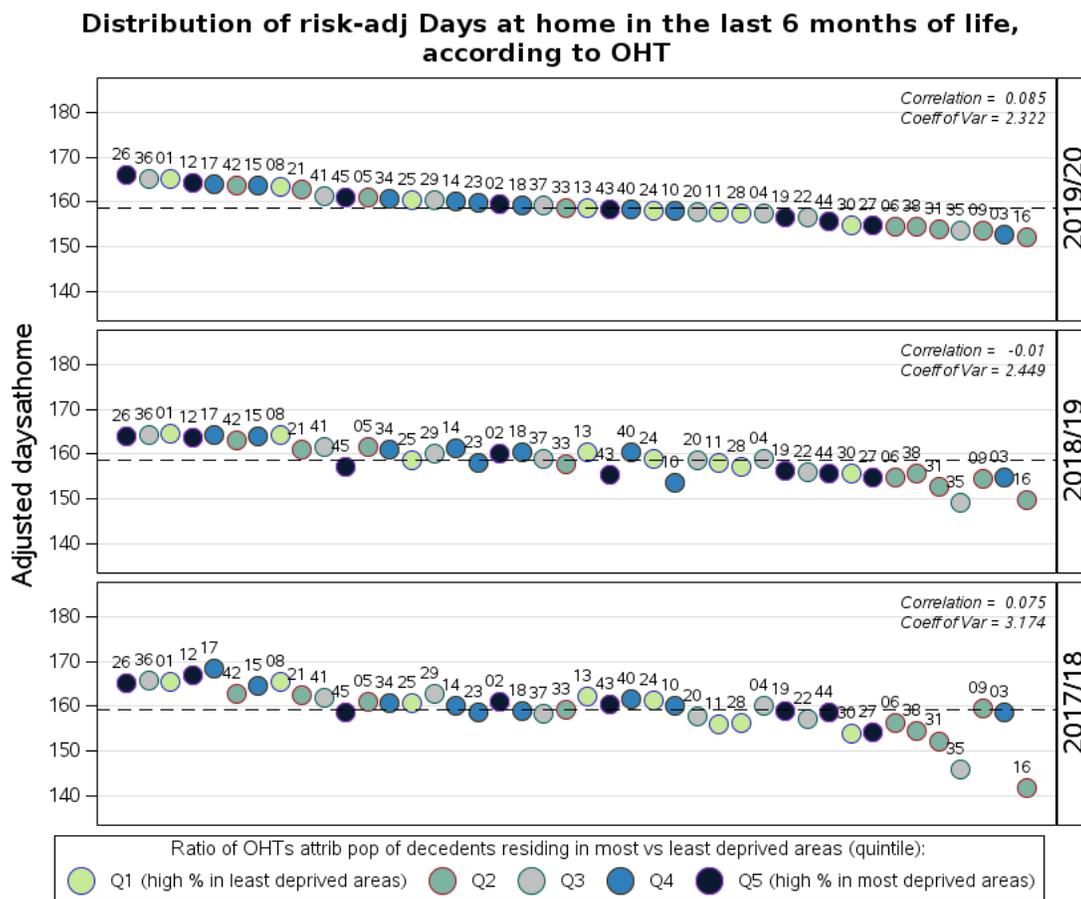
Note: Dashed lines reflect total population (crude) average in given year

## Days Spent at Home in the Last 6 Months of Life

Days spent at home is a patient-driven quality indicator. Although some hospital visits are necessary, most people would prefer to spend their time at home.

- In 2019/20, The average days at home in the last 6 months of life among decedents in the attributable population was 158 (out of a possible 180).
- The range in OHT-level risk-adjusted estimates was from 152 days to 166 days. The CV was 2.3, indicative of low variability across all OHTs.
- Across OHTs, change from the prior year was minimal (range from -1.2% to +2.9%)
- The average number of days at home in the last six months of life showed weak correlation with the concentration of the attributable population residing in the most (vs least) deprived areas ( $T_{2019/20}=0.085$ ) but moderate correlation with the concentration of the attributable population residing in rural (vs urban) areas ( $T_{2019/20}=0.41$ , figure not shown)

Exhibit 3: Days spent at home in the last 6 months of life by OHT, 2017/18 to 2019/20



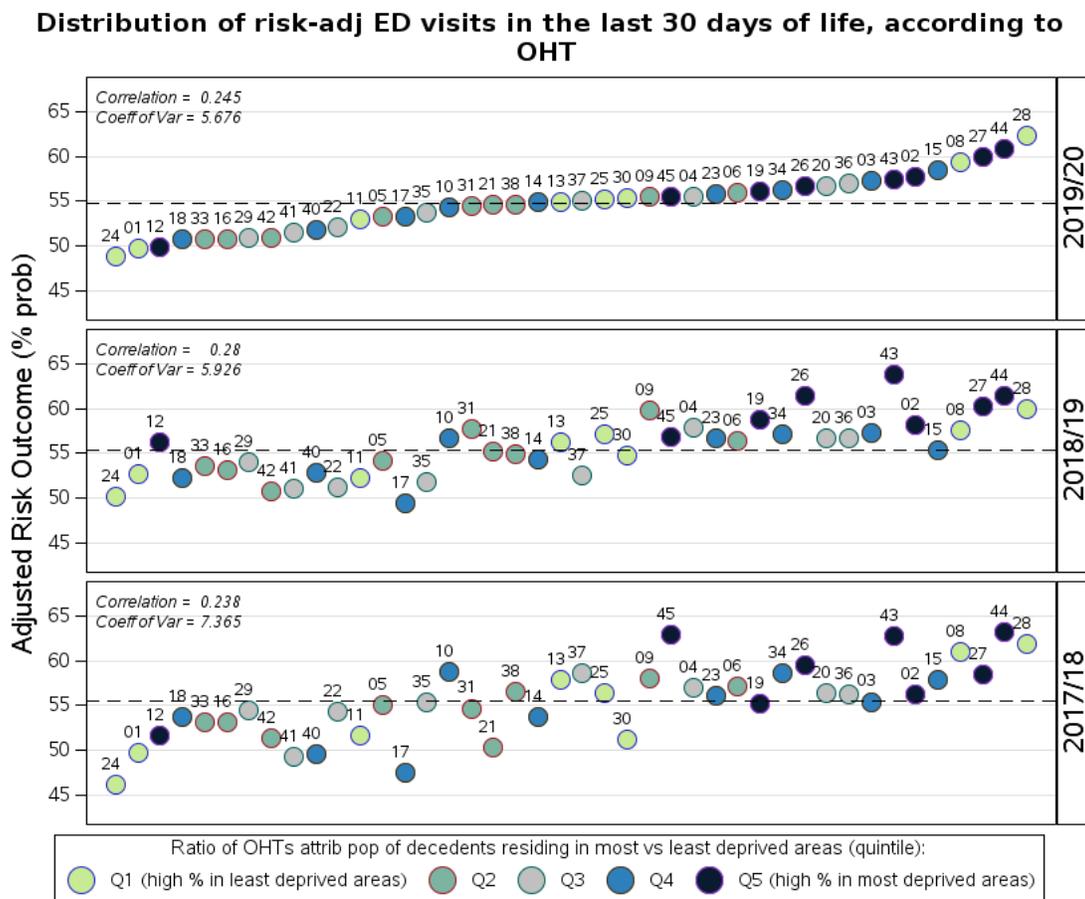
Note: Dashed lines reflect total population (crude) average in given year

## Proportion of Decedents with 1+ Emergency Department Visits in the Last 30 Days of Life

Unplanned emergency department visits can be a difficult experience for individuals at the EOL and may indicate that they did not receive the care they needed in the community.

- In 2019/20, over half (54.8%) of decedents in the attributable population had an ED visit in the last 30 days of life, which was marginally lower to prior reporting periods (55.4% in 2018/19 and 55.5% in 2017/18)
- The range in OHT-level risk-adjusted estimates was from 48.7% to 62.3%. The CV was 5.7, indicative of low variability across all OHTs.
- Change from prior years was variable. Some OHTs improved (lower %) each reporting period (for example, OHT 10) while the outcome was worse in each reporting period for other OHTs (for example, OHT 17)
- The proportion of decedents with more than one ED visit in the last 30-days of life weak correlation with the concentration of the attributable population residing in the most (vs least) deprived areas ( $T_{2019/20}=0.24$ ) and weak (negative) correlation with the concentration of the attributable population residing in rural (vs urban) areas ( $T_{2019/20}=-0.03$ , figure not shown)

Exhibit 4: Proportion of decedents with 1+ emergency department visits in the last 30 days of life by OHT, 2017/18 to 2019/20



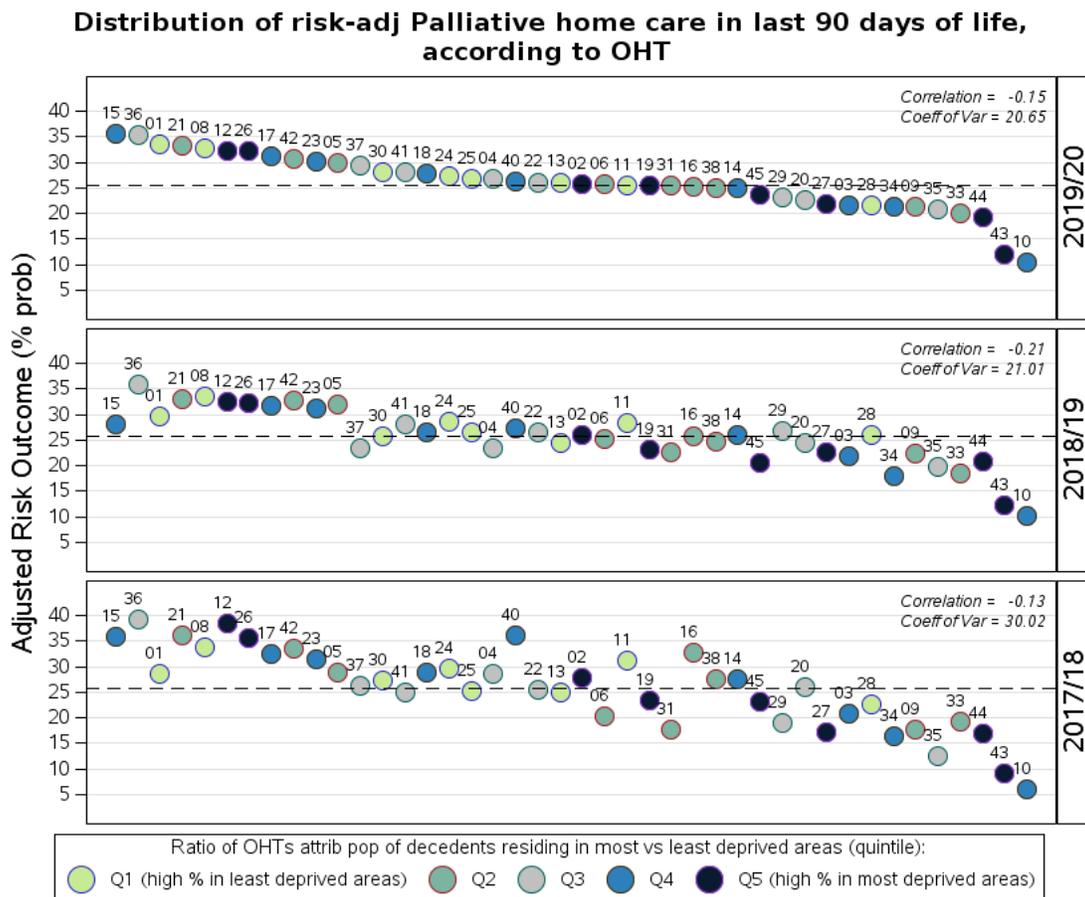
Note: Dashed lines reflect total population (crude) average in given year

## Proportion of Decedents with Palliative Home Care in the Last 90 Days of Life

### Increasing in-home palliative care at the EOL may improve community home death percentages

- In 2019/20, 25.5% of decedents in the attributable population had a palliative home care in the last 90 days, which was similar to prior reporting periods
- The range in OHT-level risk-adjusted estimates was from 10.5 % to 35.5%, more than a 3-fold difference. The CV was 21, indicative of high variability across all 42 OHTs.
- Large improvements (higher %) over the 3 reporting periods were observed in OHTs 31 (12% increase from 2018/19) and 34 (20% increase from 2018/19), in particular. Other OHTs worsened over time (OHT 11, for example)
- The proportion of decedents receiving palliative home care in the last 90-days of life showed weak (negative) correlation with the concentration of the attributable population residing in the most (vs least) deprived areas ( $T_{2019/20}=-0.15$ ) and weak correlation with the concentration of the attributable population residing in rural (vs urban) areas ( $T_{2019/20}=0.23$ , figure not shown)

Exhibit 5: Proportion of decedents with palliative home care in the last 90 days of life by OHT, 2017/18 to 2019/20



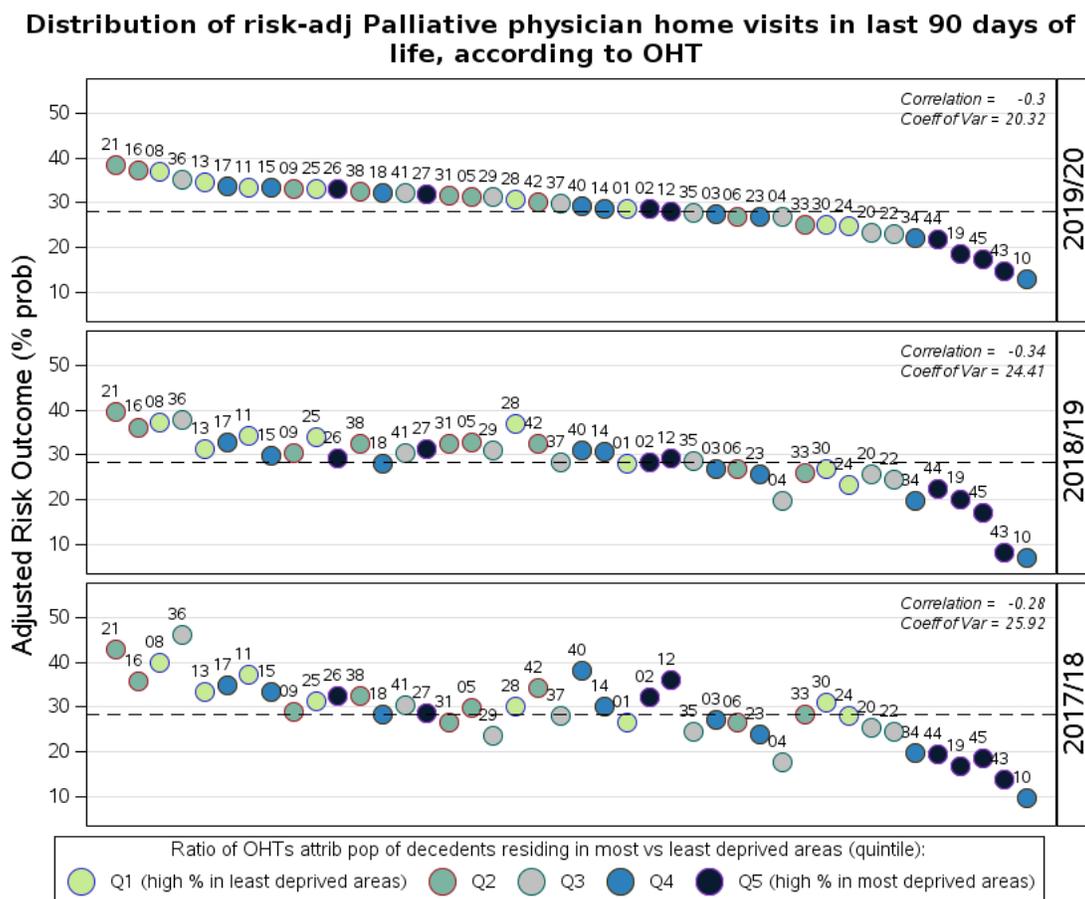
Note: Dashed lines reflect total population (crude) average in given year

## Proportion of Decedents with Palliative Physician Home Visits in the Last 90 Days of Life

### Increasing in-home palliative care at the EOL may improve community home death percentages

- In 2019/20, 28.2% of decedents in the attributable population had a palliative physician in-home visit in the last 90 days, which was similar to prior reporting periods
- The range in OHT-level risk-adjusted estimates was from 12.9% to 38.3%, a 3-fold difference. The CV was 20, indicative of high variability across all 42 OHTs.
- Large improvements (higher %) over the 3 reporting periods were observed in OHT 04 (36% increase from 2018/19), in particular. Other OHTs worsened over time
- The proportion of decedents with palliative physician home visits in the last 90-days of life showed weak (negative) correlation with the concentration of the attributable population in the most (vs least) deprived areas ( $T_{2019/20}=-0.30$ ) and weak (negative) correlation with the concentration of the attributable population residing in rural (vs urban) areas ( $T_{2019/20}=-0.07$ , figure not shown)

Exhibit 6: Proportion of decedents with palliative physician home visits in the last 90 days of life by OHT, 2017/18 to 2019/20



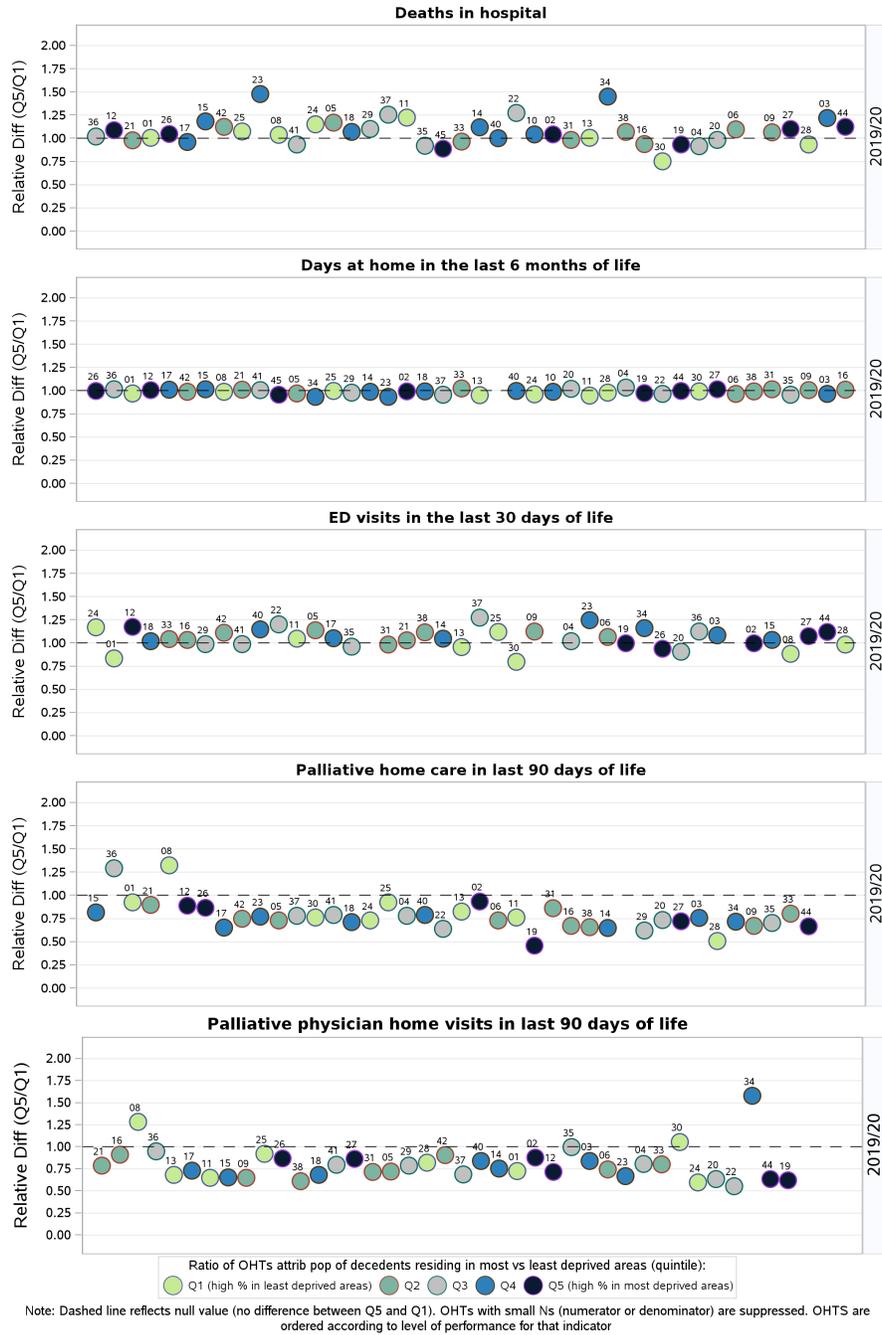
Note: Dashed lines reflect total population (crude) average in given year

### Differences by Highest vs Lowest Deprivation Quintile within OHTs

The following exhibit shows the relative difference in the risk-adjusted estimates for decedents residing in the most vs least (materially) deprived areas within each OHT for each EOL indicator. Values >1 indicate that the outcome is higher or more common for those in the most deprived areas and values <1 indicate that the outcome is lower among those in the most deprived areas. For average days at home in the last 6 months of life, there is almost no relative difference comparing deprivation quintile 5 vs 1. Other indicators, in general, show that inequities are present. However, the direction and magnitude of association varies considerably by OHT.

*Exhibit 7: Difference in EOL indicator results in the highest vs lowest deprivation quintile within each OHT, 2019/20 data*

HSPN OHT EVALUATION – OHT Priority Populations: End-of-Life Improvement Indicators



## Limitations

There are limitations of this work requiring comment. We quantified a series of indicators specific to EOL care measurable with routinely collected health administrative data in Ontario, selected through a modified Delphi approach. Other indicators specific to the quadruple aim framework and relevant to integrated care for this target population were not quantified. Some OHTs may have indicators specific to their local populations that are considered more sensitive to change. Individual-level socioeconomic status is not captured in health administrative data, and area-based measures (including ONMARG material deprivation index) are subject to ecological fallacy. The OHTAM dataset we analyzed encompassed the attributable population based on health care utilization patterns from 2017 but is a closed cohort. Because of this, without regular updates of the OHTAM data, results further from 2017/18 are subject to increasing bias. Last, we report on correlations between ranks of the concentration of the population in highest vs lowest quintile of deprivation and indicator results which should only be interpreted general associations.

## Conclusions

In 2019/20, there were 105,513 deaths identified across the 42 OHTs and the number of deaths ranged from 241 to 5,549. Half of all deaths occurred in hospital (50.5%) but this varied from 37.7% to 60.8% across OHTs. On average, in the last six months of life, 87% of the last 180 days of life were spent at home (158 days), with little variability across OHTs. OHT performance was weakly correlated with the concentration of the attributable population in the most vs least deprived areas. However, days at home in the last 6 months of life was moderately correlated with rurality (i.e., OHTs with a higher proportion of rural patients spent more days at home at the EOL).

These baseline findings illustrate where there are opportunities for OHTs to focus their implementation activities to improve patient outcomes. For example, with the exception of days at home in the last 6 months of life, **within** each OHT, there was up to a 1.5-fold difference between the indicator rate in the highest vs lowest levels of material deprivation. The approaches OHTs implement will likely vary depending on geography, other demographics, and community resources available. Nonetheless lessons should be shared where improvements are being observed. Although most of these indicators have relatively stable overall historical trend, movement of these indicators among OHTs who have selected EOL/ palliative care can be expected in the near future (1-2 years). Evidence from Ontario's Integrated Funding Model pilot program showed that well-specified interventions focused on specific target populations were able to improve patient outcomes [5].

OHTs that have selected palliative or EOL care for their priority population will need to build capacity to be able to measure, monitor and report on most of these indicators in order to evaluate their new integrated care models to determine whether they are having an impact.

## References

1. Ontario Ministry of Health. Ontario Health Teams: Guidance for Health Care Providers and Organizations. Queen's printer of Ontario; 2019: [http://health.gov.on.ca/en/pro/programs/connectedcare/oht/docs/guidance\\_doc\\_en.pdf](http://health.gov.on.ca/en/pro/programs/connectedcare/oht/docs/guidance_doc_en.pdf).
2. Sibbald SL, Hall RE, Embuldeniya GE, et al. Ontario Health Team Central Evaluation – Formative Evaluation: Document Analysis. Toronto, ON: Health System Performance Network. 2020: <http://hspn.ca/wp-content/uploads/2020/05/HSPN-Provincial-level-OHT-Document-Analysis-Extraction-Results.pdf>
3. Stukel TA, Glazier RH, Schultz SE, et al. Multispecialty physician networks in Ontario. *Open Med.* 2013;7(2):e40-55.
4. Gomes B, Calanzani N, Gysels M, et al. Heterogeneity and changes in preferences for dying at home: a systematic review. *BMC Palliat Care* 2013; 12(7): <https://bmcpalliatcare.biomedcentral.com/articles/10.1186/1472-684X-12-7>
5. Walker K, Embuldeniya G, Hall RE, et al. Integrated Funding Models Central Evaluation. HSPRN; 2019: <http://hspn.ca/wp-content/uploads/2020/01/Integrated-Funding-Models-Central-Evaluation-Report.pdf>

## Appendix: Indicator Technical Specifications

Deaths in hospital	
Rationale:	The majority of people would prefer to die at home, rather than in hospital.
Indicator Reference:	Ontario Palliative Care Network. The Ontario Palliative Care Network performance summary report: Technical appendix. May 2020.
Data Sources:	CCC, CCRS, DAD, NACRS, NRS, OHTAM, OMHRS, RPDB
Numerator (a subset of the denominator):	The number of decedents with a death recorded in DAD (discharge_disposition = 07, 66, 67, 72, 73, 74), NACRS (visit_disposition = 10, 11, 72, 73, 74, 71), OMHRS (discharge_reason = 2 or 3), NRS (discharge_reason_code = 8) or CCC (discharge_to_facility_type = 11) datasets
Denominator:	The number of OHT attributed patients that died in the reporting period
Exclusions:	n/a
Standardization:	Model-based risk-adjusted via logistic regression using individual-level data, controlling for age (continuous) and sex.
Notes and Limitations:	<ul style="list-style-type: none"> <li>• Data on each decedent’s preferred place of death is not available</li> <li>• A lower value (%) is desirable for this indicator</li> </ul>

<b>Days spent at home in the last 6 months (180 days) of life</b>	
Rationale:	Days spent at home is a patient-driven quality indicator. Although some hospital visits are necessary, most people would prefer to spend their time at home.
Indicator Reference:	Ontario Palliative Care Network. The Ontario Palliative Care Network performance summary report: Technical appendix. May 2020.
Data Sources:	CCC, CCRS, DAD, NACRS, NRS, OHTAM, OMHRS, RPDB
Numerator (a subset of the denominator):	For each decedent, calculated as 180 minus the sum of days spent in hospital (DAD and OMHRS data), emergency department (NACRS), inpatient rehab (NRS), and complex continuing care (CCC)
Denominator:	The number of OHT attributed patients that died in the reporting period
Exclusions:	n/a
Standardization:	Model-based risk-adjusted via generalized regression (assuming a normal distribution and identity link function) using individual-level data, controlling for age (continuous) and sex.
Notes and Limitations:	<ul style="list-style-type: none"> <li>• A higher value (mean days) is desirable for this indicator</li> </ul>

<b>Proportion of decedents with one or more emergency department visits in the last 30 days of life</b>	
Rationale:	Unplanned emergency department visits can be a difficult experience for individuals at the end-of-life and may indicate that they did not receive the care they needed in the community.
Indicator Reference:	Ontario Palliative Care Network. The Ontario Palliative Care Network performance summary report: Technical appendix. May 2020.
Data Sources:	CCC, CCRS, DAD, NACRS, NRS, OHTAM, OMHRS, RPDB
Numerator (a subset of the denominator):	The number of decedents who had one or more unplanned emergency department visits in their last 30 days of life
Denominator:	The number of OHT attributed patients that died in the reporting period
Exclusions:	Decedents that were hospitalized in an acute care facility for the last 30 days of life
Standardization:	Model-based risk-adjusted via logistic regression using individual-level data, controlling for age (continuous) and sex.
Notes and Limitations:	<ul style="list-style-type: none"> <li>• A lower value (%) is desirable for this indicator</li> </ul>

<b>Proportion of decedents receiving palliative home care in the last 90 days of life</b>	
Rationale:	Increasing in-home palliative care at the end-of-life may improve community home death percentages
Indicator Reference:	Ontario Palliative Care Network. The Ontario Palliative Care Network performance summary report: Technical appendix. May 2020.
Data Sources:	CCC, CCRS, DAD, HCD, NACRS, NRS, OHTAM, OMHRS, RPDB
Numerator (a subset of the denominator):	All decedents who had at least one palliative home care service (HCD: service_rpc, src_admission or src_discharge=95 and home care service [excluding case management and placement services] in the reporting period) in their last 90 days of life
Denominator:	The number of OHT attributed patients that died in the reporting period
Exclusions:	Decedents that were hospitalized in an acute care facility or long-term care for the last 90 days of life
Standardization:	Model-based risk-adjusted via logistic regression using individual-level data, controlling for age (continuous) and sex.
Notes and Limitations:	<ul style="list-style-type: none"> <li>• A higher value (%) is desirable for this indicator</li> </ul>

<b>Proportion of decedents receiving palliative physician home visits in the last 90 days of life</b>	
Rationale:	Increasing in-home palliative care at the end-of-life may improve community home death percentages
Indicator Reference:	Ontario Palliative Care Network. The Ontario Palliative Care Network performance summary report: Technical appendix. May 2020.
Data Sources:	CCC, CCRS, DAD, NACRS, NRS, OHIP, OHTAM, OMHRS, RPDB
Numerator (a subset of the denominator):	All decedents with one or more physician consults/ visits in the reporting period with a corresponding palliative in-home visit code (G511, B966 [billed with B998.B996], B998, B997, A901, B990, B992, B993, B994, B996, A900, B960, B961, B962, B963, B964, B986, B987, B988) in their last 90 days of life
Denominator:	The number of OHT attributed patients that died in the reporting period
Exclusions:	Decedents that were hospitalized in an acute care facility or long-term care for the last 90 days of life
Standardization:	<ul style="list-style-type: none"> <li>• Model-based risk-adjusted via logistic regression using individual-level data, controlling for age (continuous) and sex.</li> </ul>
Notes and Limitations:	<ul style="list-style-type: none"> <li>• A higher value (%) is desirable for this indicator</li> </ul>