

Expanding the scope of Paramedicine for palliative patients: Population estimates from linked administrative data

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Background

Emergency medical services are often called upon to provide care to people at home with end-of-life chronic disease. Traditionally, this has meant transport to the emergency department (ED) to receive care, even though palliative support at home is preferable.



Palliative Paramedicine in Nova Scotia

Researchers at Emergency Health Services (EHS) and Dalhousie University, of Nova Scotia, Canada, have developed an evidence based clinical practice guideline for paramedics to provide palliative care (Carter et al 2012). The guideline emphasizes providing patient-centered care to bridge gaps in community-based palliative care and focuses on better meeting patient wishes, managing symptoms, and reducing ED transport.

This palliative paramedic intervention builds on experience gained from implementation of an expanded paramedic role for nursing home residents in Capital Health. This has operated successfully to provide treat-and-release care for 70% of calls, facilitated transport for diagnostic tests or hospital admission for 23.6%, and ED transport for 6.4% (Jensen et al 2013). Only 6% of the treat-and-release patients requested emergency care again within 48 hours.

Purpose

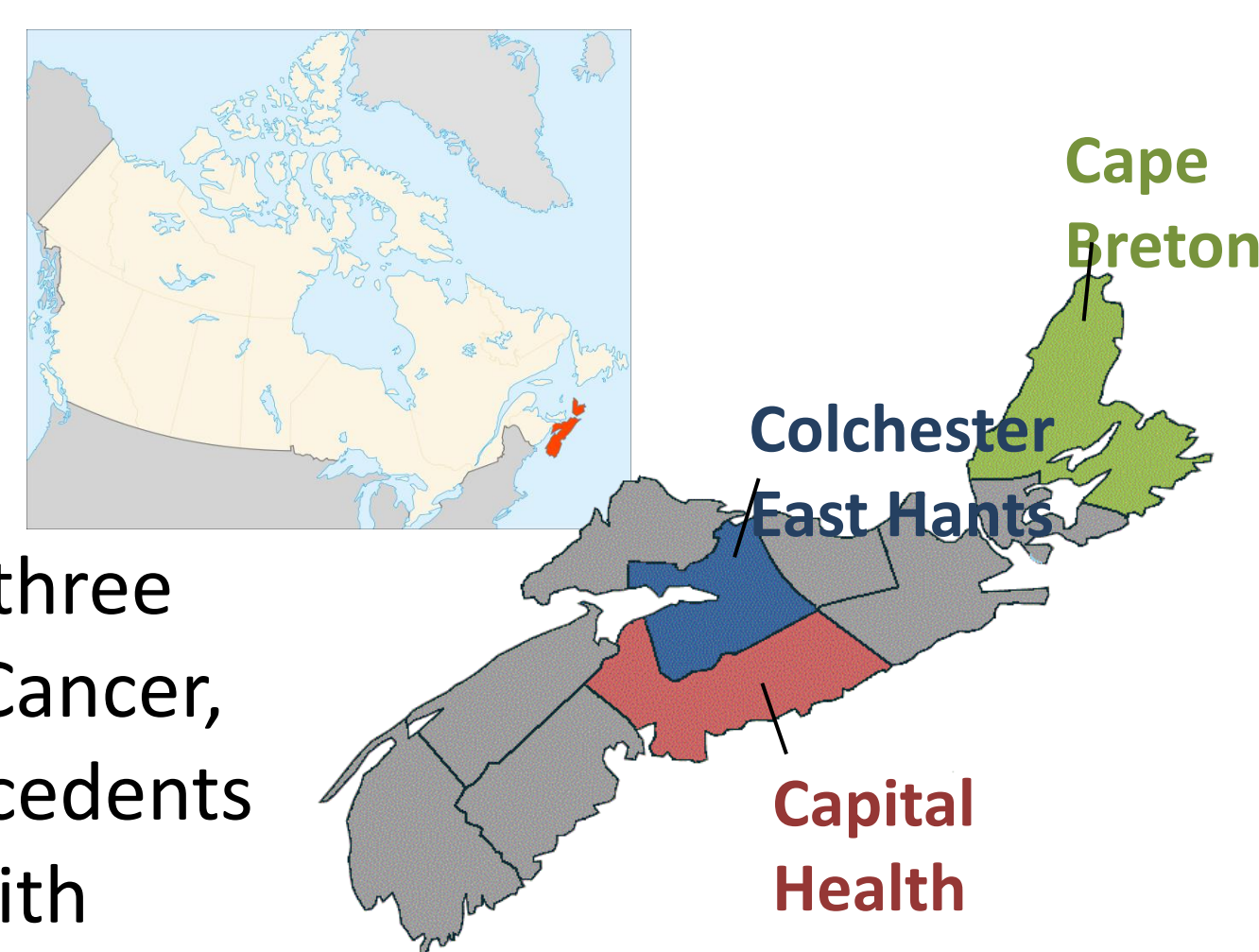
To use existing linked administrative data to describe the end-of-life population which might have benefited from home-based emergency paramedic palliative support.

Study Subjects

121,458 deaths in Nova Scotia from from 1995 to 2009.

Methods

Study subjects were linked to palliative care service (PCS) enrollee data from three districts (see map) and three provincial disease registries (Cancer, Cardiovascular, Diabetes). Decedents were subdivided into those with cancer and those who did not have cancer as a cause of death. The Rosenwax et al (2005) method was applied to estimate the minimal and maximal population which could have benefited from palliative support.



Acknowledgement

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Results

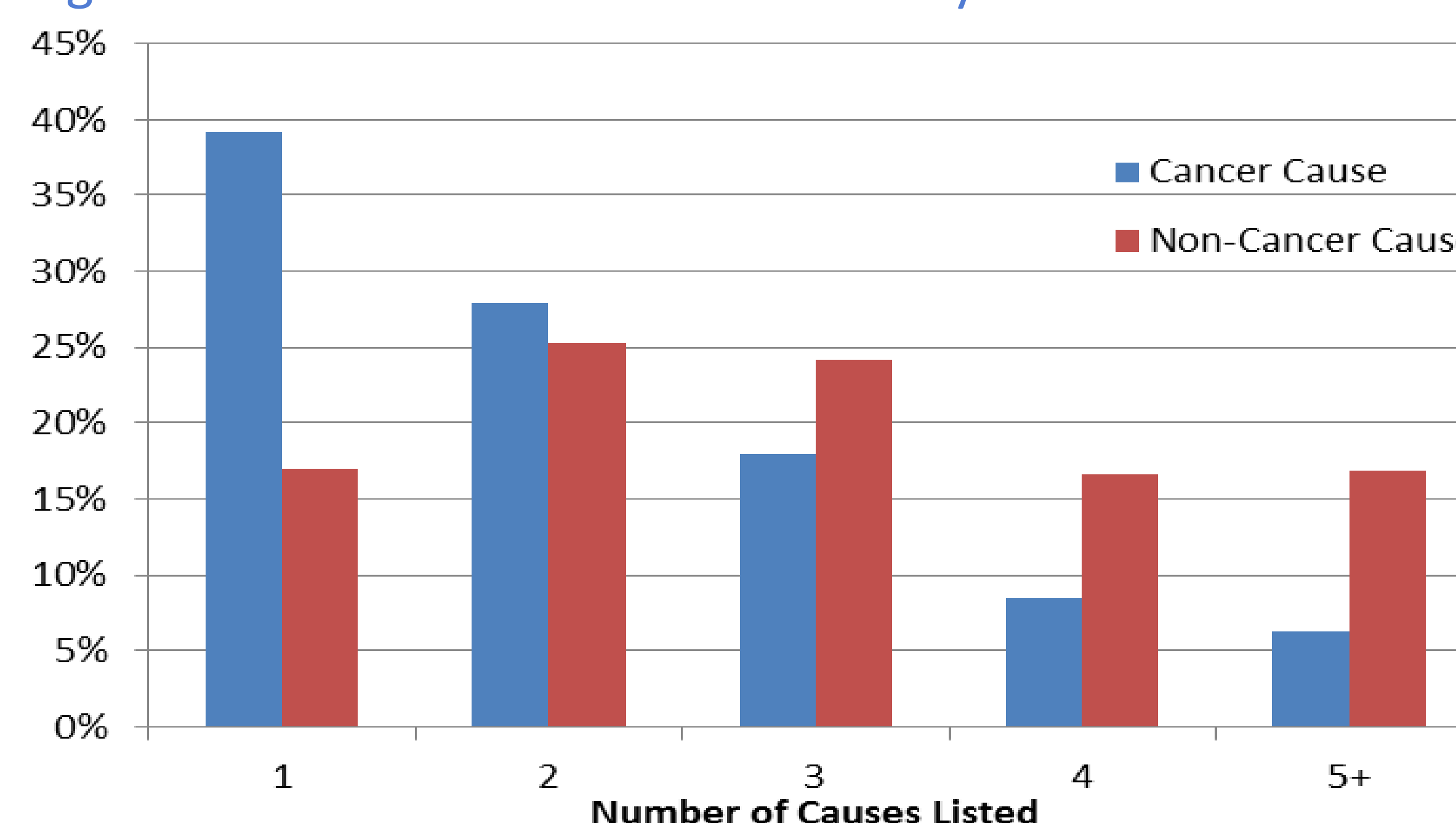
Among all decedents, mean age at death was 74.5 years and 50.5% were male. Cancer decedents were younger and more likely to be male, than non-cancer decedents. PCS enrollment was considerably higher for cancer decedents. Among PCS enrollees, late enrollment (within two weeks of death) was higher for non-cancer than cancer decedents.

Table 1: Demographic Characteristics, Palliative Care Enrollment, and average number of causes of death

Characteristic	Overall	Cancer	Non-Cancer
Mean age (years)	74.5	72.1	75.7
Males (%)	50.5	53.6	49.0
PCS enrollment (%)	28.8	66.1	9.2
PCS enrollment in final two weeks of life (%)	29.3	22.9	49.9
Average number of causes of death	2.9	2.5	3.0

Overall, there were on average, 2.9 causes death listed on death certificates. Multiple causes of death were more common for non-cancer decedents.

Figure 1: Number of Causes of Death by Cancer or not



Sudden death rates were low (Table 2). Using the Rosenwax et al (2005) method, a minimum of 59.6% and maximum of 94.5% of the decedents could have benefitted from palliative support.

Table 2: Causes of Death*

Causes of Death	All Deaths	Cancer Deaths	Non-Cancer Deaths
Sudden Death	5.5%	0.8%	7.7%
Cardiovascular Disease	31.6%	11.6%	41.0%
COPD	11.5%	7.9%	13.2%
Dementia	10.2%	3.4%	13.5%
Diabetes	10.6%	6.0%	12.7%
Renal Disease	8.7%	4.6%	10.7%
Cancer	32.2%	100%	--

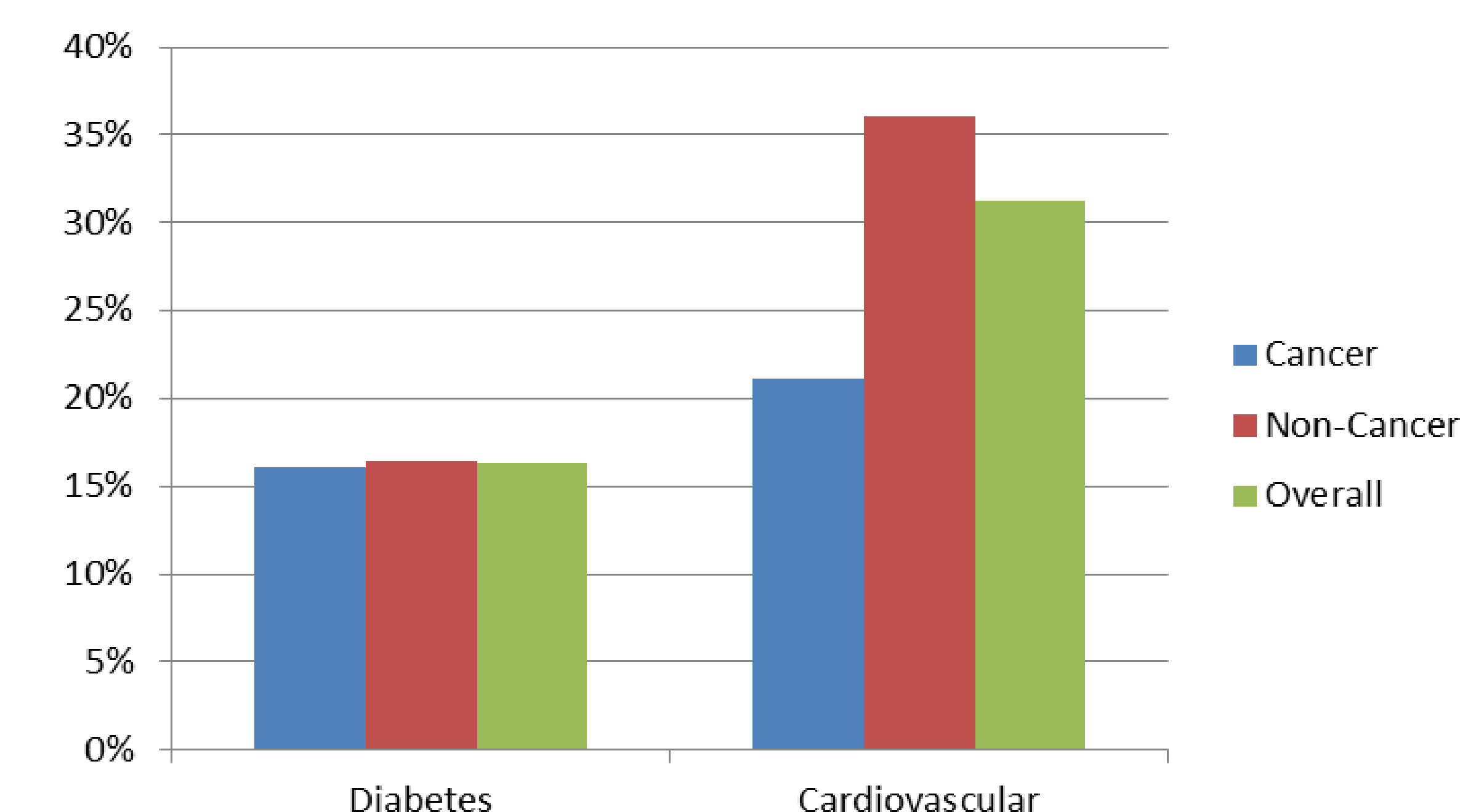
*Since decedents can have more than one cause of death, causes are not mutually exclusive

References

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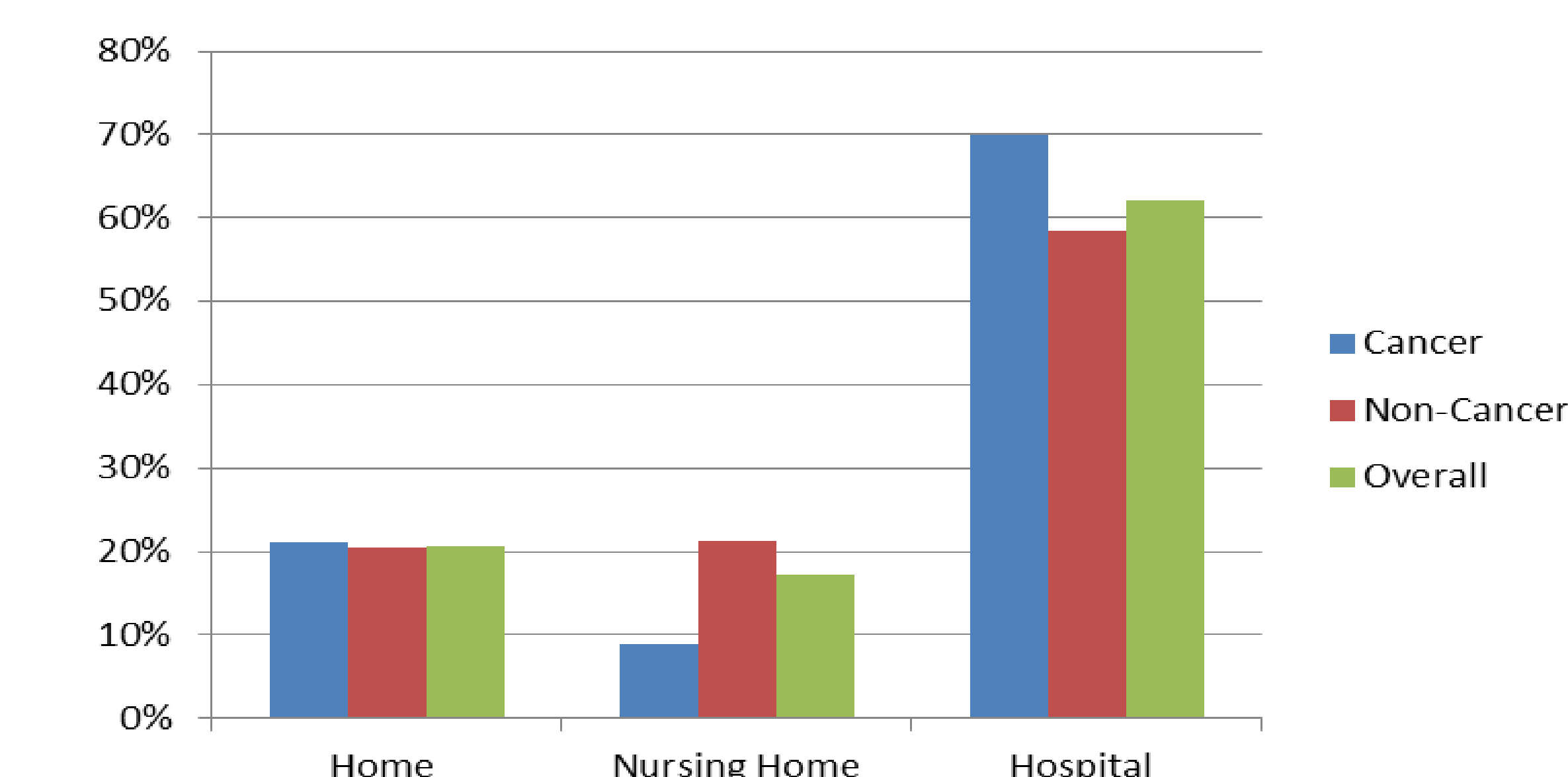
Enrollment in the provincial diabetes and cardiovascular disease registries was higher among non-cancer than cancer decedents. Greater variation in enrollment rates existed in the cardiovascular disease registry than in the diabetes registry.

Figure 2: Chronic disease registries enrollment



Location of death data indicate that cancer decedents died in hospital more frequently than non-cancer decedents. Cancer decedents were less likely to die in a nursing home. The percentage dying in their own home was similar for cancer and non-cancer decedents.

Figure 3: Location of death



Discussion

Other data (NELS News, 2011) indicate that approximately 70% of persons at end of life wish to die at home. Hopefully, implementation of emergency paramedic palliative support will reduce the rate of persons dying in hospital as well as reduce ED use for those at end of life.

Linking deaths to PCS enrollment, disease registry, and other service data estimates the value of partnering with others to implement emergency paramedic palliative support. Planning for non-cancer (versus cancer) deaths requires adjustments for persons of older age, a higher percentage of nursing home residents, more co-morbidities, and lower PCS enrollment.

Conclusions

Death data can be used to help describe the need for emergency paramedic palliative support. Results suggest that collaboration with PCSs is important for implementing emergency paramedic palliative support. As well, collaboration with provincial chronic disease registries and others is advised due to frequent late PCS enrollment and the large proportion of non-cancer decedents.