# Factors associated with prescription of opioid analgesics among older persons with colorectal cancer in two district Palliative Care Programs

CIHR/CCNS TEAM: ACCESS in Nova Scotia
Access to Colorectal Cancer Services

NELS Network for End of Life Studies
ICE Interdisciplinary Capacity Enhancement

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## Background

Prescription of opioid analgesics, e.g. morphine and hydromorphone, is a key component of pain management among patients with terminal cancer.

Access within the community to appropriate analgesics may impact whether patients remain in the community during the weeks prior to death.

## Objective

To examine factors associated with use of opioids within the community among older persons with colorectal cancer (CRC) in the 26 weeks prior to death.

## Methods

### Data source

Data derived from a retrospective study of persons diagnosed with CRC between January 1, 2001 and April 1, 2005, in Nova Scotia (NS), Canada

- CRC was defined according to ICD-10: C18 (excluding appendix cancer cases, C18.1); C19; and C20
- Excludes diagnosis of CRC based on death certificate only, or on autopsy
- Linked to health administrative databases

Prescriptions from NS Pharmacare Program database maintained by Population Health Research Unit at Dalhousie University

- Includes prescriptions filled in community pharmacies for individuals living in their own homes, and in long term care or assisted-living facilities
- Medications classified according to World Health Organization Anatomical Therapeutic and Chemical Classification system, Canadian version

### Analysis

Medications filled in 26 weeks prior to death

Opioids categorized as: plain opioids (hydromorphone, morphine, oxycodone, fentanyl, meperidine); and opioid compounds, e.g. acetaminophen + codeine

Frequencies and relative proportions of medication use, and socio-demographic and health characteristics

Factors associated with opioid use were examined using multivariate logistic regression

### Limitations

Only captures prescription medications that are benefits under NS Pharmacare program

Excludes individuals covered by other prescription insurance, e.g. Department of Veterans' Affairs, Non-insured Health Benefits for First Nations, private insurance, and out-of-pocket payment

Does not capture in-hospital opioid use

- Captures filled prescriptions, not actual use
- No information on level of pain or other symptoms

### Study Population

CRC cohort age 66+ at diagnosis who

- Died between January 1, 2001 and April 1, 2008
- Lived in Capital Health or Cape Breton health district

### Characteristics of Study Population

| | | |
|---|---|---|
| Male (n,%) | 334 | (50.8) |
| Age (years) | | |
| At diagnosis (mean, sd) | 78.6 | (7.3) |
| At death (mean, sd) | 80.5 | (7.3) |
| Urban residence (n,%) | 589 | (89.7) |
| Long term care resident (n,%) | 93 | (14.2) |
| Colon cancer diagnosis (n,%) | 471 | (71.7) |
| Stage IV at diagnosis (n,%) | 214 | (32.6) |
| Elixhauser Comorbidity Index (n,%) | | |
| 0 | 268 | (40.8) |
| 1 | 153 | (23.3) |
| 2+ | 236 | (35.9) |
| Specific chronic conditions (n,%) | | |
| Cardiovascular disease | 212 | (32.3) |
| Diabetes | 85 | (12.9) |
| Chronic pulmonary disease | 70 | (10.7) |
| Weeks from diagnosis to death | | |
| Mean (sd) | 74.5 | (7.3) |
| Median | 49.0 | |
| Death within 6 weeks (n,%) | 107 | (16.3) |
| Days in hospital in 26 weeks prior to death | | |
| Mean (sd) | 26.6 | (33.3) |
| Median | 15.0 | |
| Palliative Care Program referral (n,%) | 367 | (55.9) |
| CRC listed as cause of death (n,%) | 428 | (65.1) |
| Died in hospital (n,%) | 412 | (62.7) |
| At least one prescription for any opioid during 26 weeks prior to death (n,%) | 242 | (36.7) |

## Results

### Factors associated with prescription of at least one plain opioid analgesic in 26 weeks prior to death

| | Plain opioids | |
|---|---|---|
| | Odds Ratio | 95% CI |
| Male sex | 0.59 | 0.40, 0.86 |
| Age at death (per year) | 0.97 | 0.95, 0.99 |
| Long term care resident | 2.16 | 1.22, 3.89 |
| Palliative care referral | 3.21 | 2.12, 4.88 |
| CRC listed as cause of death | 1.78 | 1.13, 2.20 |
| Diagnosis less than 26 weeks prior to death | 0.62 | 0.41, 0.93 |
| Days in hospital during 26 weeks prior to death | 0.99 | 0.99, 1.02 |
| In hospital death | 0.34 | 0.23, 0.51 |

Likelihood of filling a prescription for an opioid analgesic in the community during 26 weeks prior to death

***increases*** with:

- Being a resident in a long term care facility
- Referral to palliative care program
- CRC listed as cause of death

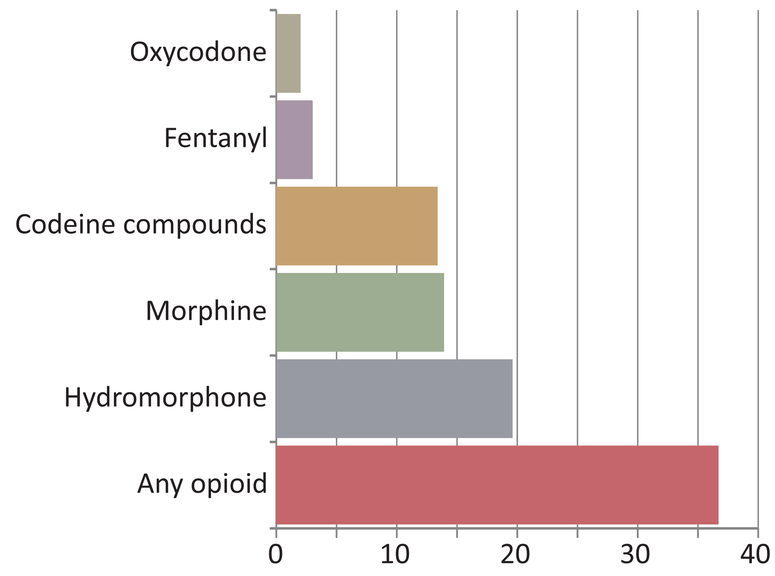
***decreases*** with:

- Male sex
- Diagnosis less than 26 weeks prior to death
- In-hospital death
- Older age

More than one-third (37%) filled at least one prescription for an opioid analgesic during 26 weeks prior to death

- Most common was hydromorphone (19.6%)

### Percentage of individuals who filled at least one prescription for any opioid and specific opioids during the 26 weeks prior to death




## Discussion

### Reasons to be encouraged

- Persons dying of CRC access opioid analgesics within the community prior to death
- Referral to a Palliative Care Program may facilitate this access. However, individuals with most severe need may be those who receive referrals
- Long term care residents with CRC receive opioid analgesics at end of life. However, persons diagnosed with CRC by death certificate only were excluded and they are often long term care residents

### Causes for concern

- More than half did not fill an opioid prescription during the 26 weeks prior to death
  - May have accessed opioids on hospital admission
  - May also reflect other data limitations
- Oldest persons may not be receiving needed opioid therapy
- Without measures of pain severity and detailed information regarding the presence and severity of comorbid conditions, the extent of access and appropriateness of specific opioids and opioids in total is difficult to determine

## Conclusions

Positive relationship between filling a prescription for an opioid analgesic and referral to palliative care programs highlight their role in enabling access to end of life care within the community.

Some sub-populations may be at risk of inadequate pain management: elderly persons; and those diagnosed at an advanced stage (i.e. less than 26 weeks prior to death).

Need further research that includes all opioid use including in-hospital, younger ages, and paid by private insurance or individuals; measures of pain severity; and detailed information regarding comorbid conditions.

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