Variation in the Uptake of Practice Guidelines for Non-Small Cell Lung Cancer in Ontario

Cancer Care Ontario
Action Cancer Ontario

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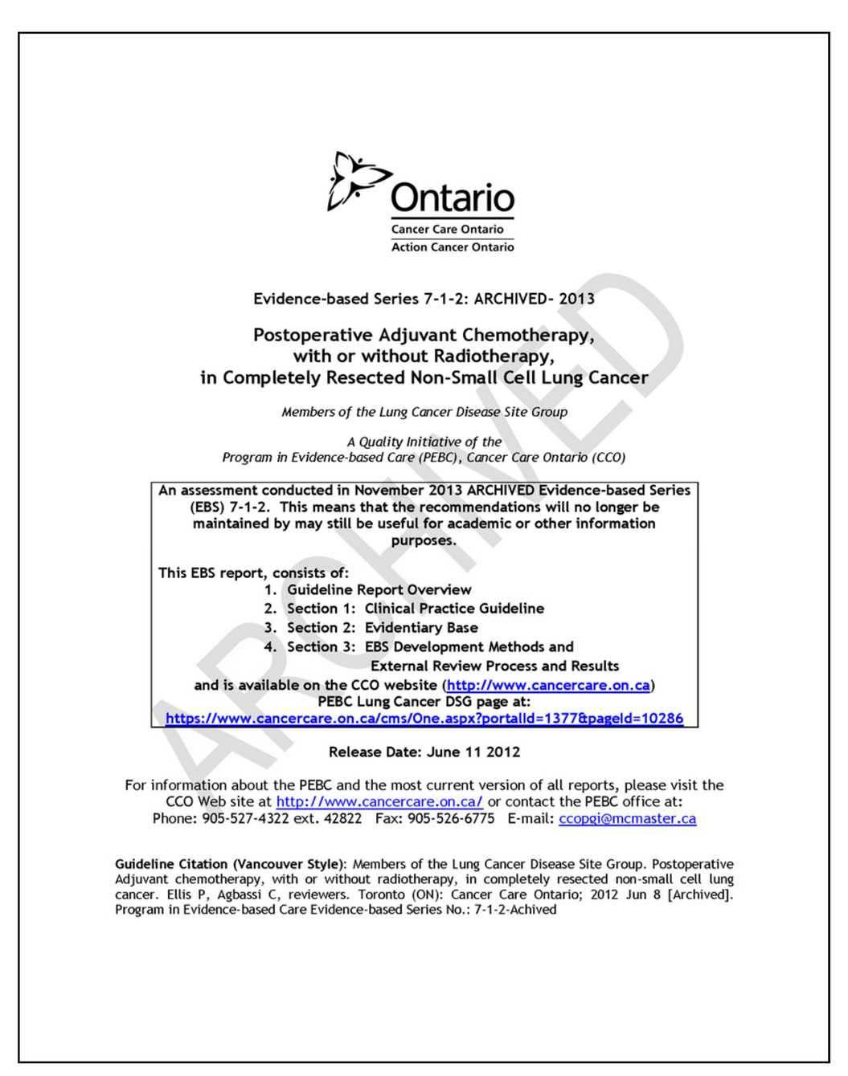
INTRODUCTION

Cancer Care Ontario (CCO) is an Ontario government agency that drives continuous quality improvement in cancer prevention, screening and care delivery. Since 1997, CCO's Program in Evidence-Based Care (PEBC), in partnership with clinical experts, has developed evidence-based guidance for all major cancers.

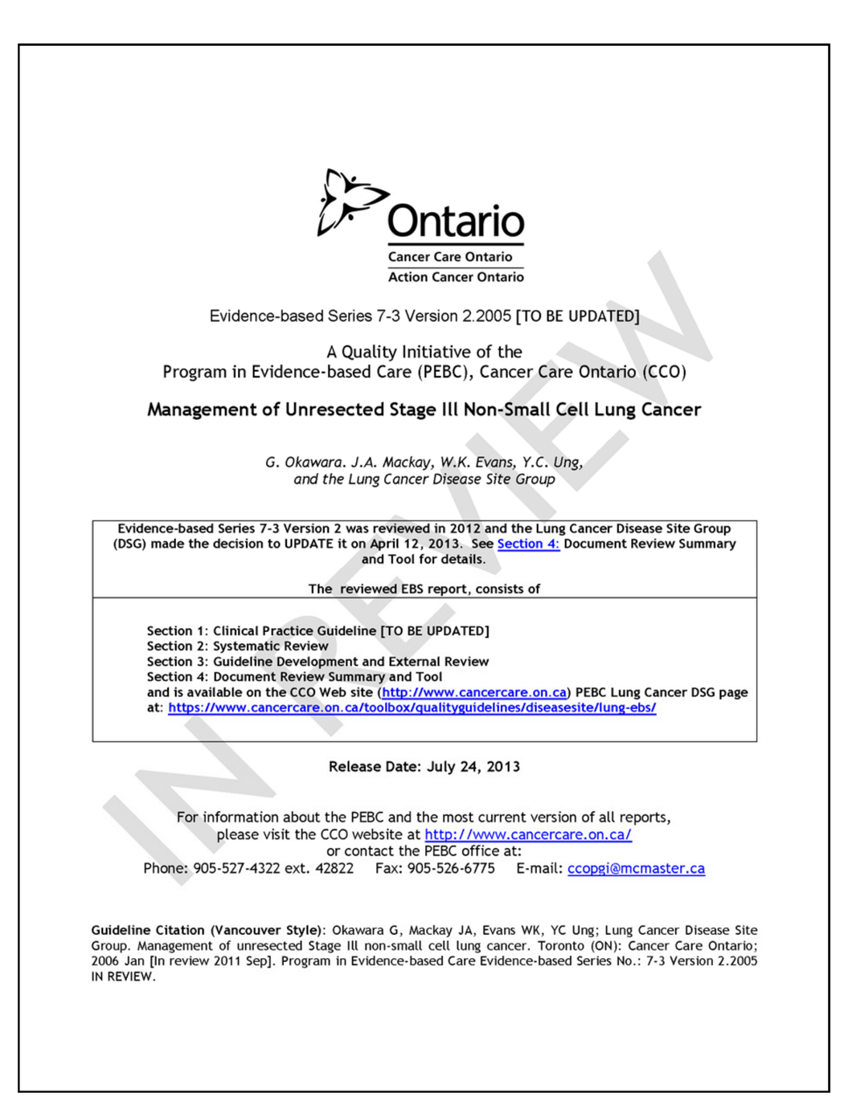
The Cancer Quality Council of Ontario (CQCO) advises CCO in their efforts to improve the quality of cancer care. In 2008, CQCO began measuring and publicly reporting on concordance with the lung cancer practice guidelines. Through this reporting, guideline concordance has been shown to vary by region and patient's age. To further understand patterns of variation, this project examined guideline concordance by measures of equity.

BACKGROUND



Two published PEBC guidelines outline evidence-based treatment recommendations for patients with stage II and III non-small cell lung cancer (NSCLC).

EBS 7-1-2 recommends the use of postoperative adjuvant cisplatin-based chemotherapy (AC) in adult patients with completely resected stage II and IIIA NSCLC.



EBS 7-3 recommends concurrent chemo-radiotherapy treatment (CCRT) for patients with unresected, clinical or pathological stage III NSCLC who have a good performance status and minimal weight loss. For patients with an ECOG performance status >1 and significant weight loss (>10% in preceding three months), palliative radiotherapy is recommended.

METHODS

This project examined guideline concordance for two cohorts of patients:

Cohort 1

- Surgically resected stage II and IIIA NSCLC patients in 2011 (n=298).
- Guideline concordance = treatment with cisplatin-based AC within 120 days of surgical resection.

Cohort 2

- Surgically unresectable stage III NSCLC patients in 2011 (n=1259).
- Guideline concordance = treatment with cisplatin-based CCRT within 180 days of diagnosis.

Guideline concordance was examined by the following measures of equity: sex, neighbourhood income, urban/rural residence , and neighbourhood immigrant population.

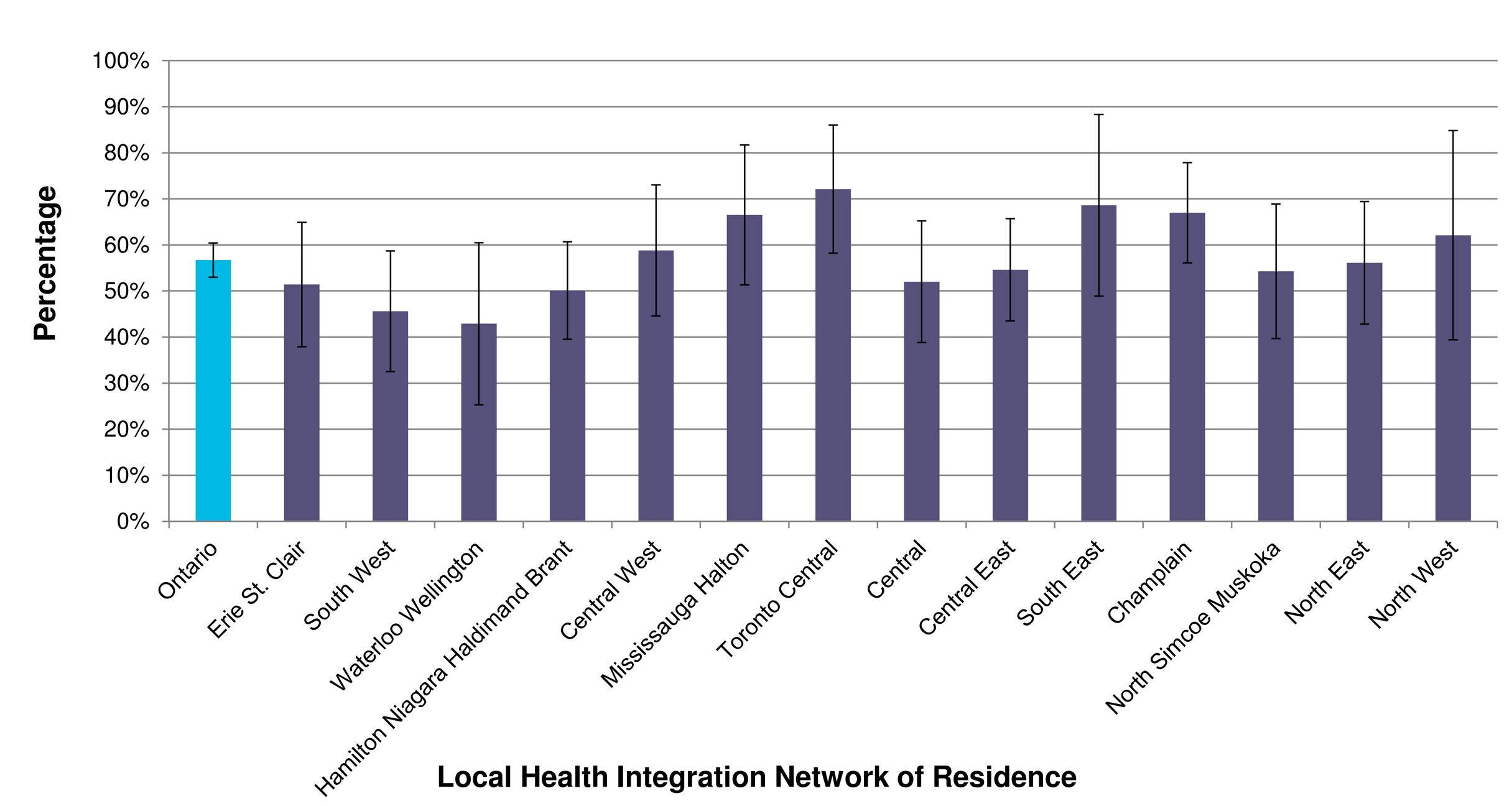
RESULTS AND KEY OBSERVATIONS

Cohort 1: Resected stage II and IIIA NSCLC

Guideline Concordance (Figure 1)

Between January 2010 and December 2011, 56.7% of patients received guideline concordant AC.

Figure 1: Age-adjusted percentage of resected Stage II or IIIA NSCLC patients (diagnosed between 2010 and 2011) treated with guideline-recommended AC following surgery, by Local Health Integration Network of patient residence



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Data source: Ontario Cancer Registry, Collaborative Staging Database, Activity Level Reporting, Discharge Abstract Database, National Ambulatory Care Reporting System
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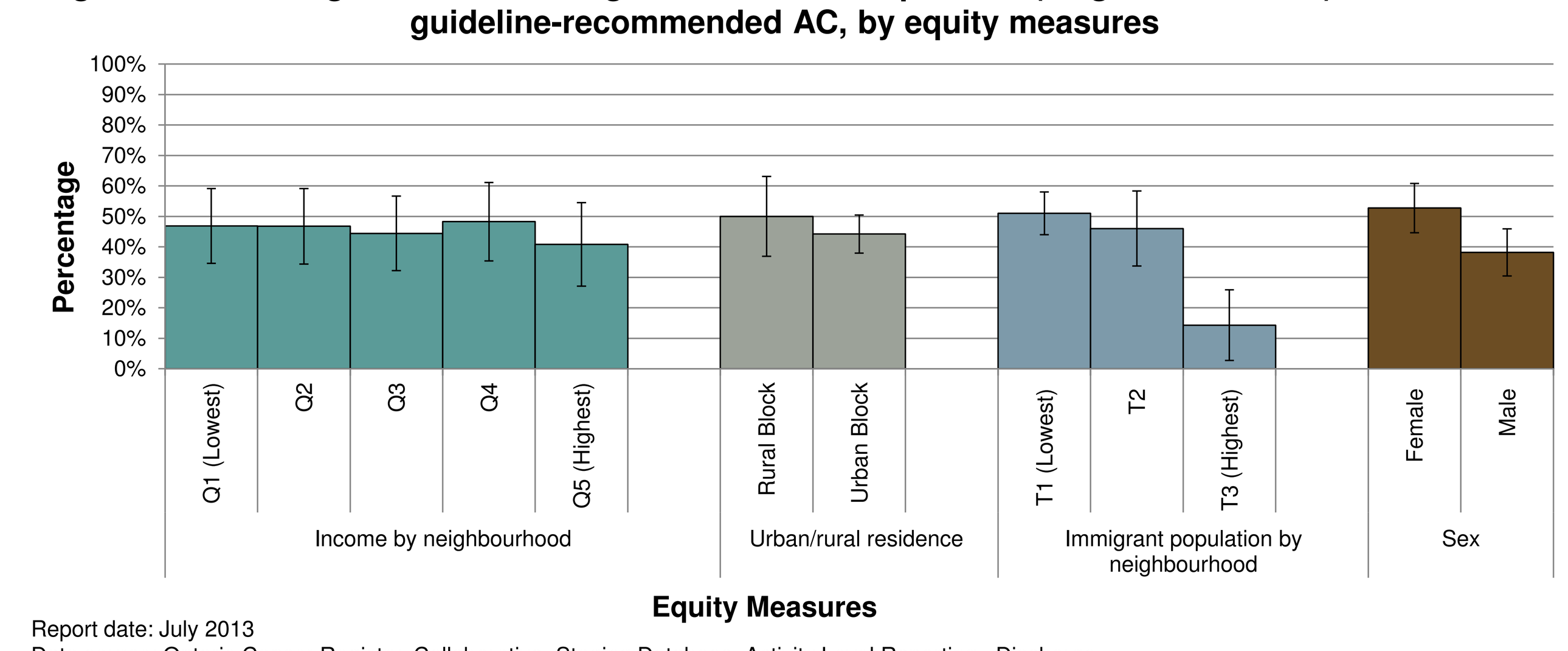
Equity Measures & Variation in Concordance (Figure 2)

- More female patients received AC than males (females: 52.7%, CI 44.6-60.8; males: 38.2%, CI 30.4-45.9),
- Less AC was administered to patients in neighbourhoods with the highest percentage of immigrants (T3: 14.3%, CI 2.7-25.9) as compared to patients in neighbourhoods with lower percentages of immigrants (T2: 46.0%, CI 33.7-58.3; T1: 51.0%, CI 44.0-58.0)

No variation in guideline concordance was found based on rural vs. urban residence (rural: 50.0%, CI 36.9-63.1; urban: 44.2%, CI 38.0-50.5) or income quintile (Q1: 46.9%; Q2: 46.8%; Q3: 44.4%; Q4: 48.3%; Q5: 40.8%).

Figure 3: Percentage of resected Stage II or IIIA NSCLC patients (diagnosed in 2011) treated with guideline-recommended AC, by equity measures



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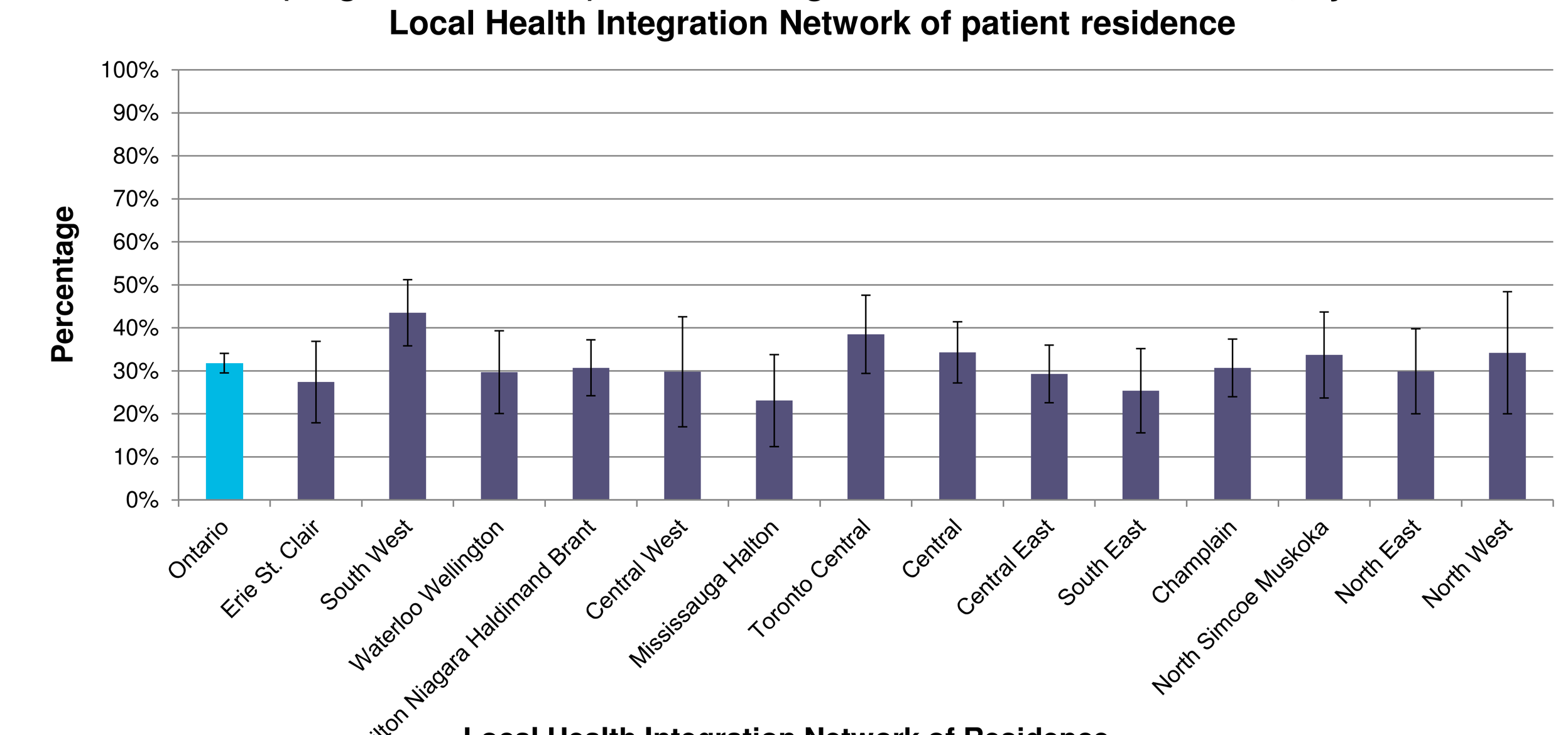
Cohort 2: Unresected stage III NSCLC

Guideline Concordance (Figure 3)

In 2011, 31.8% of patients received guideline concordant CCRT.

Figure 3: Age-adjusted percentage of unresected Stage IIIA or IIIB NSCLC patients (diagnosed in 2011) treated with guideline-recommended CCRT, by Local Health Integration Network of patient residence



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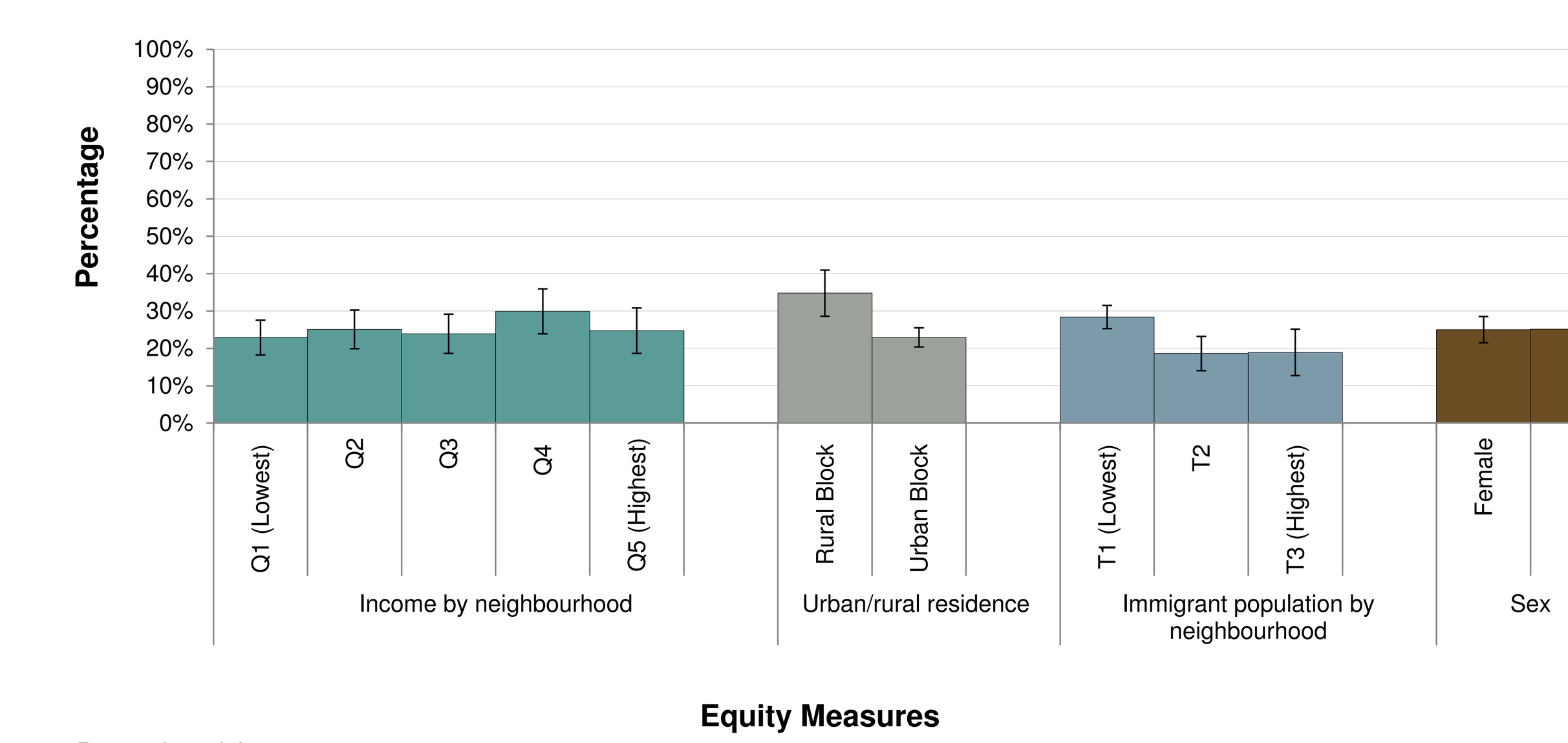
Equity Measures & Variation in Concordance (Figure 4)

The percentage of patients treated with CCRT was less in the:

- Lowest income quintile (Q1: 22.9%, CI 18.3-27.6) compared to Q4 (29.9%, CI 23.9-35.9),
- Urban (22.9%, CI 20.4-25.5) versus rural populations (34.8%, CI 28.6-40.9) and,
- Neighbourhoods with higher percentages of immigrants (T2: 18.6%, CI 14.1-23.2; T3: 19.0%, CI 12.7-25.2) compared to neighbourhoods with the lowest percentage of immigrants (T1: 28.4%, CI 25.3-31.5)

No variation in guideline concordance was found based on sex (female: 25.0%, CI 21.5-28.5; male: 25.2%, CI 21.9-28.4).

Figure 4: Percentage of unresected Stage IIIA or IIIB NSCLC patients (diagnosed in 2011) treated with guideline-recommended CCRT, by equity measures



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CONCLUSION

Concordance with lung cancer practice guidelines is low and variation exists across a number of equity measures. In the absence of information on key patient characteristics, such as performance status or weight loss, it is not possible to know whether the low level of adherence to guideline recommendations is appropriate. The variation in concordance however does support the need for further investigations aimed at understanding guideline discordance. Such work could help to identify appropriate discordance and strategies to mitigate inappropriate discordance.

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