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Utilization of Emergency Departments by Cancer Patients in Manitoba

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Prior, Say Hong, Ankona Banerjee, Ina Koseva, Christina
Kulbaba

CAHSPR
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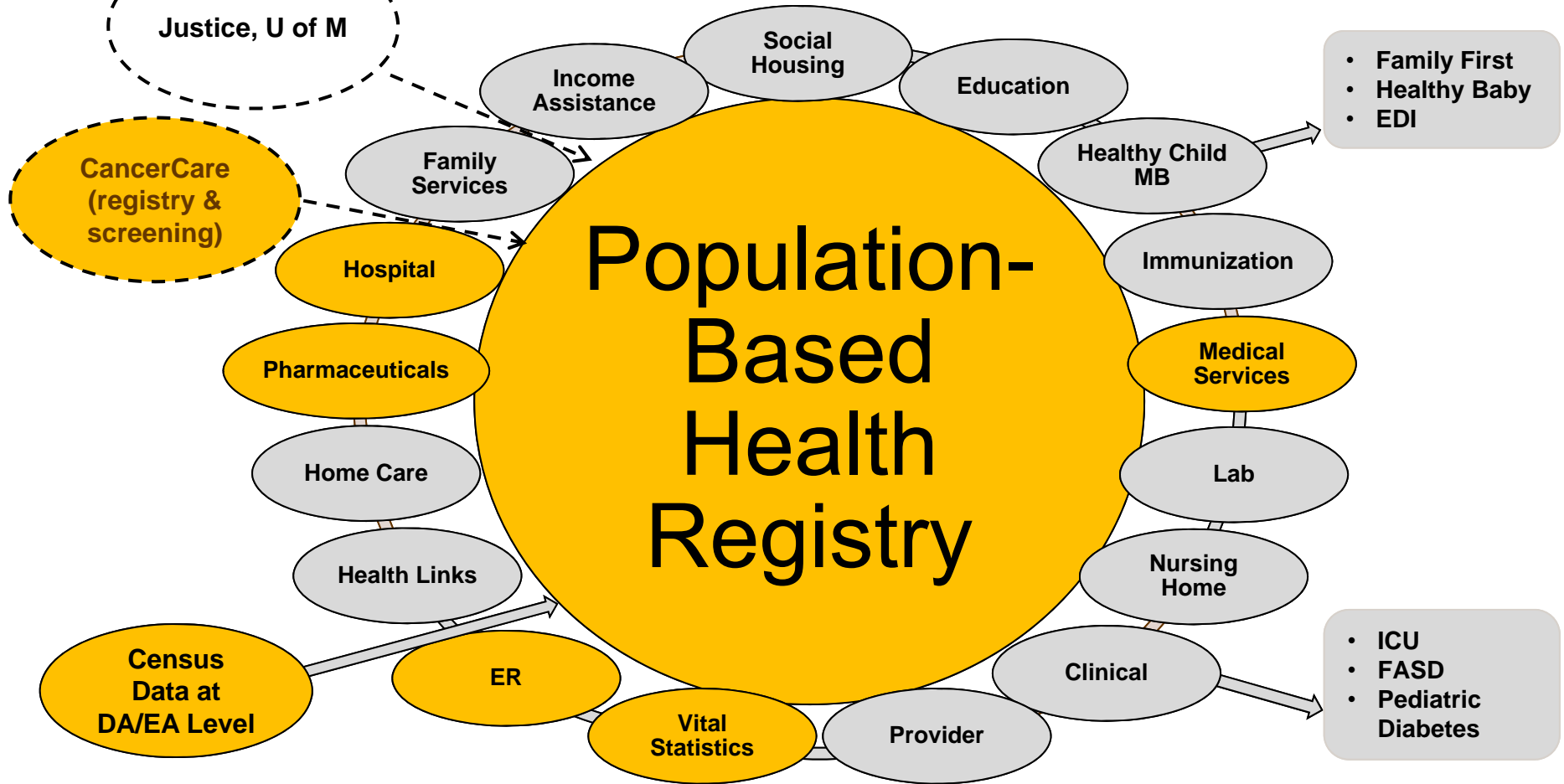
Deliverable Team

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Purpose

- To test for changes in ED use over time (pre-diagnosis, diagnosis, post-diagnosis)
- To examine reasons for ED use and changes in reasons for ED use
- To examine the relative importance of ED use for predicting time to death

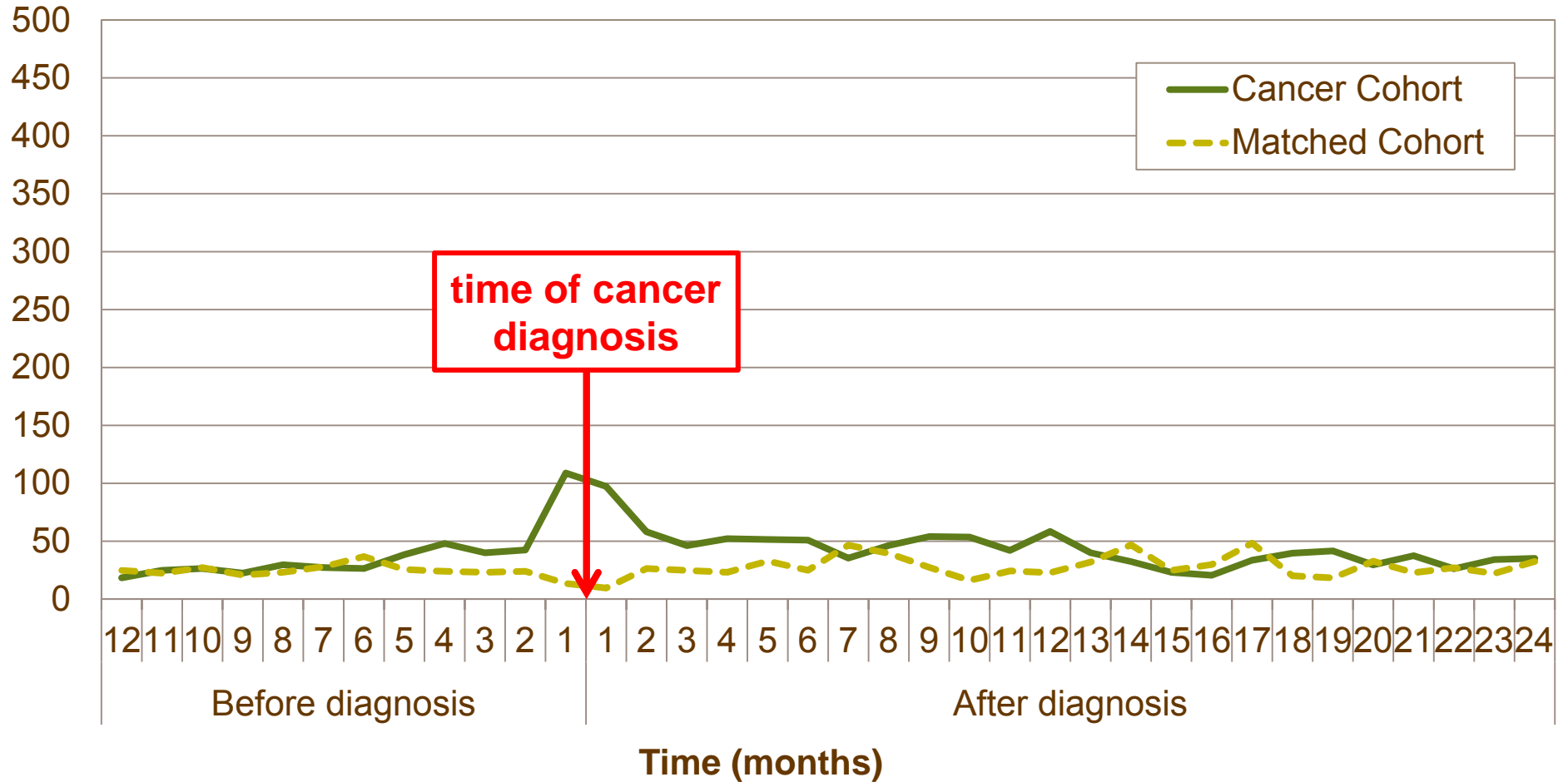
Data from the MCHP Repository



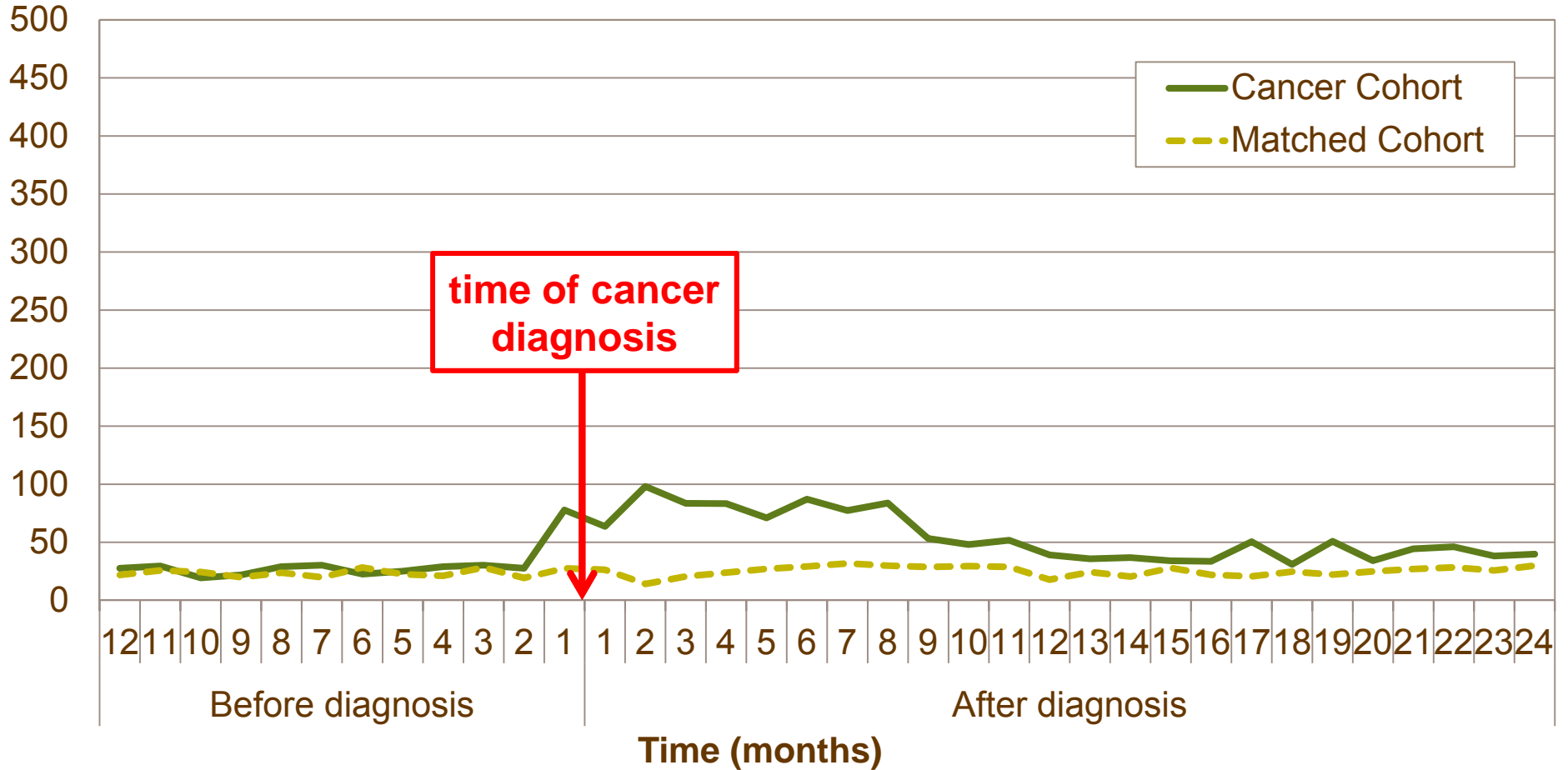
Retrospective cohort design

- Adults diagnosed with cancer in Winnipeg 2007-2011
 - breast (n=1,555)
 - colorectal (n=1,327)
 - lung (n=1,437)
 - prostate (n=1,250)
- Matched cancer-free cases based on age group, sex, and sickness level (weighted Charlson comorbidity score)

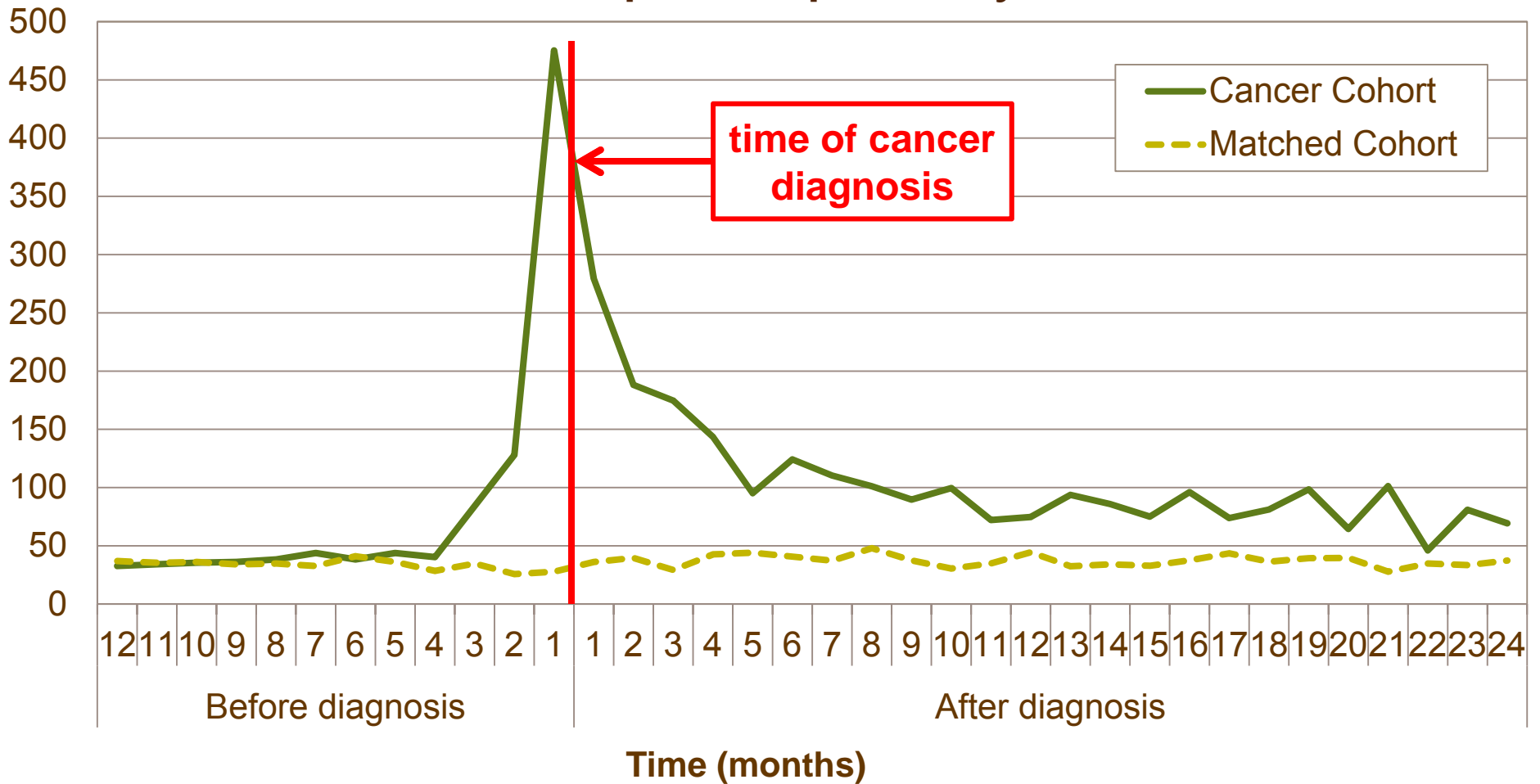
ED use before & after diagnosis of Prostate Cancer rates per 1,000 person-days



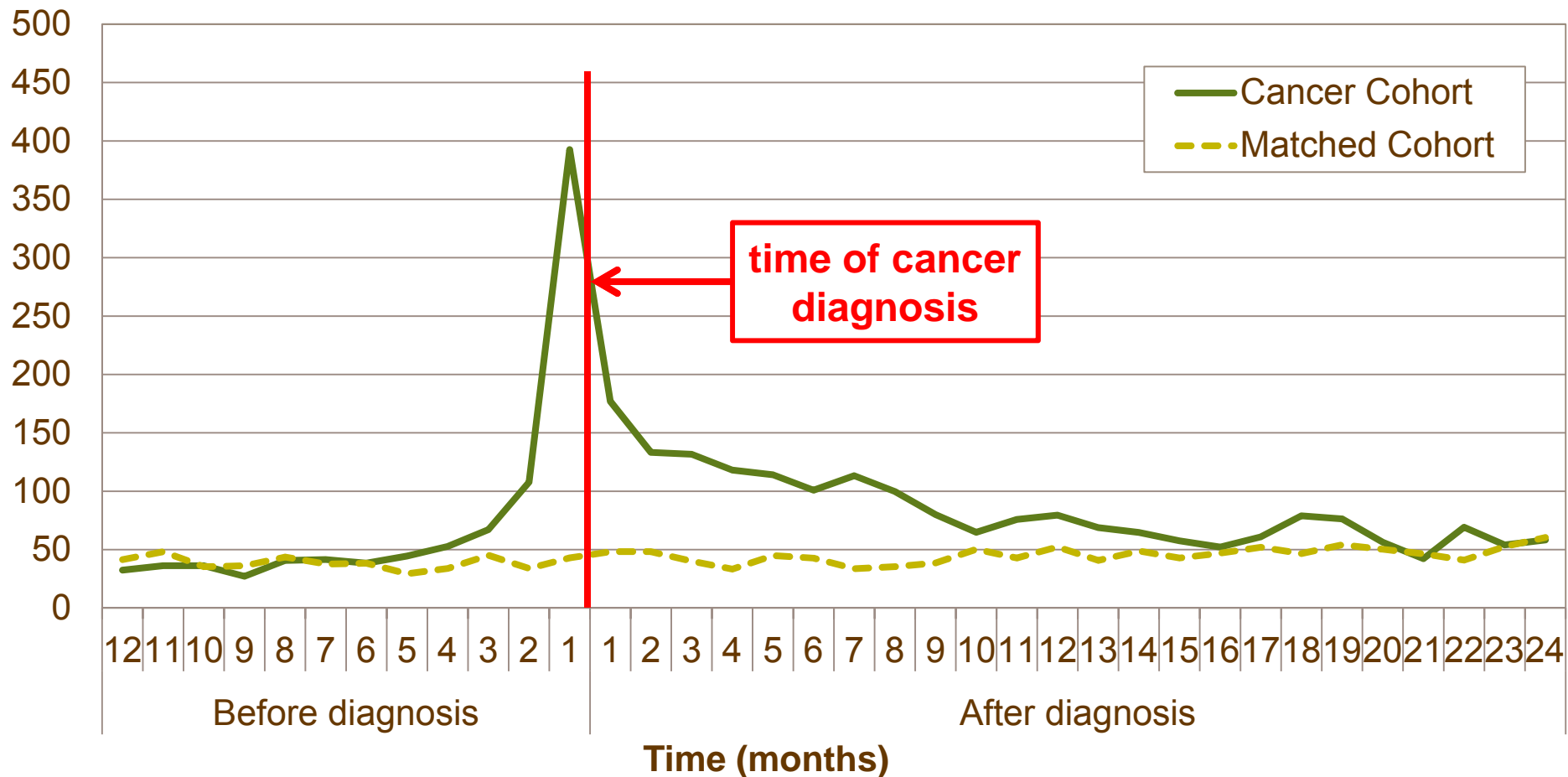
ED use before & after diagnosis of Breast Cancer rates per 1,000 person-days



ED use before & after diagnosis of Lung Cancer rates per 1,000 person-days



ED use before & after diagnosis of Colorectal Cancer rates per 1,000 person-days



ED Use of Cancer Patients vs. Matched Cohort

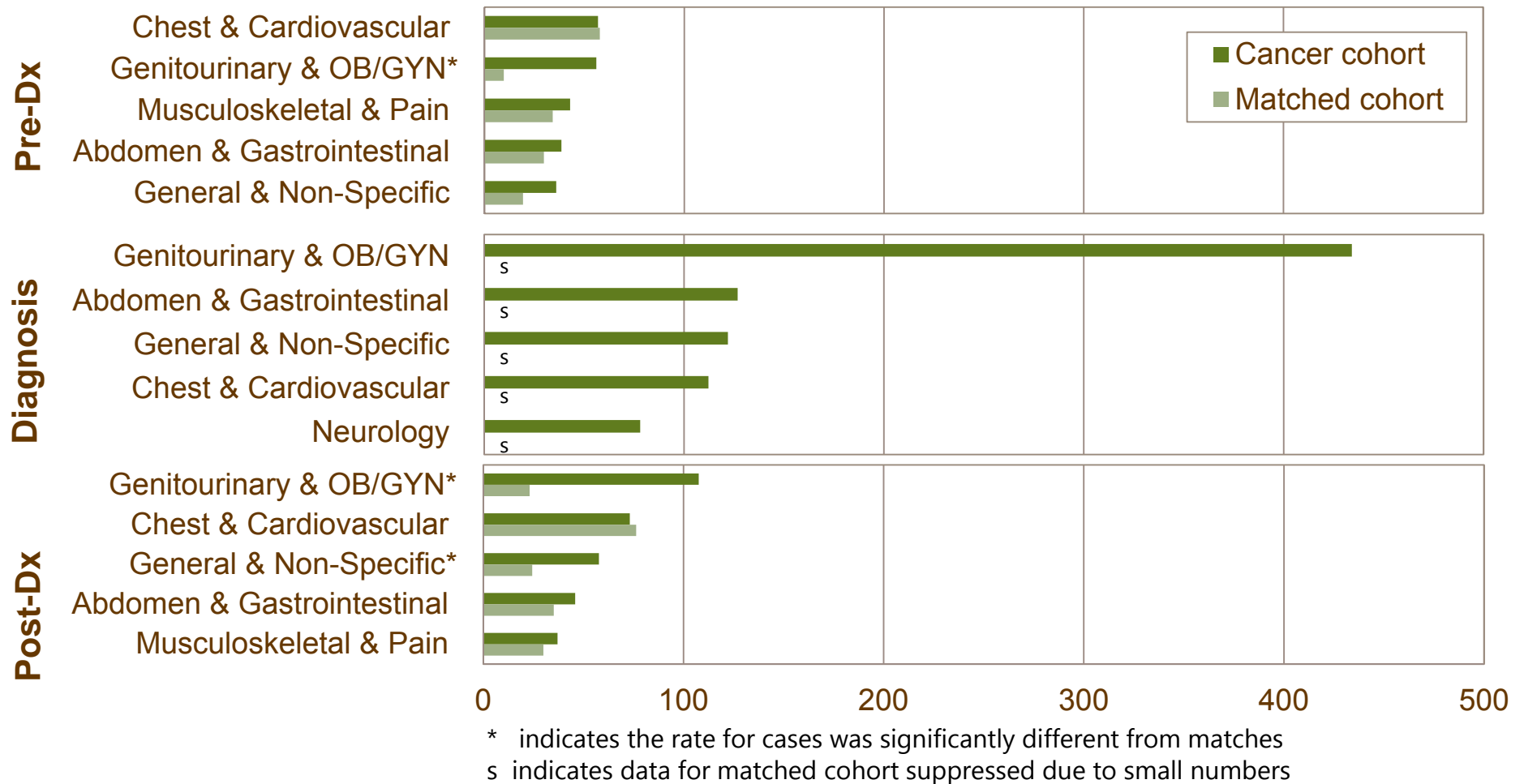
Cancer Site	Time Period	Relative Rate (95% CI)	p-value
Breast	Before diagnosis period	1.000 (1.000, 1.000)	s
	Diagnosis period	1.891 (1.517, 2.358)	<.0001
	After diagnosis period	2.214 (1.724, 2.844)	<.0001
Colorectal	Before diagnosis period	1.000 (1.000, 1.000)	s
	Diagnosis period	2.969 (2.579, 3.419)	<.0001
	After diagnosis period	1.931 (1.612, 2.313)	<.0001
Lung	Before diagnosis period	1.000 (1.000, 1.000)	s
	Diagnosis period	4.073 (3.509, 4.728)	<.0001
	After diagnosis period	2.360 (1.907, 2.921)	<.0001
Prostate	Before diagnosis period	1.000 (1.000, 1.000)	s
	Diagnosis period	1.831 (1.521, 2.206)	<.0001
	After diagnosis period	1.200 (0.949, 1.517)	0.1272
All Others	Before diagnosis period	1.000 (1.000, 1.000)	s
	Diagnosis period	1.891 (1.517, 2.358)	<.0001
	After diagnosis period	2.214 (1.724, 2.844)	<.0001

Bolded values indicate a significant difference between cases and matches ($\alpha= 0.05$)

Diagnosis period = 1 month before diagnosis date + 1 month after diagnosis date

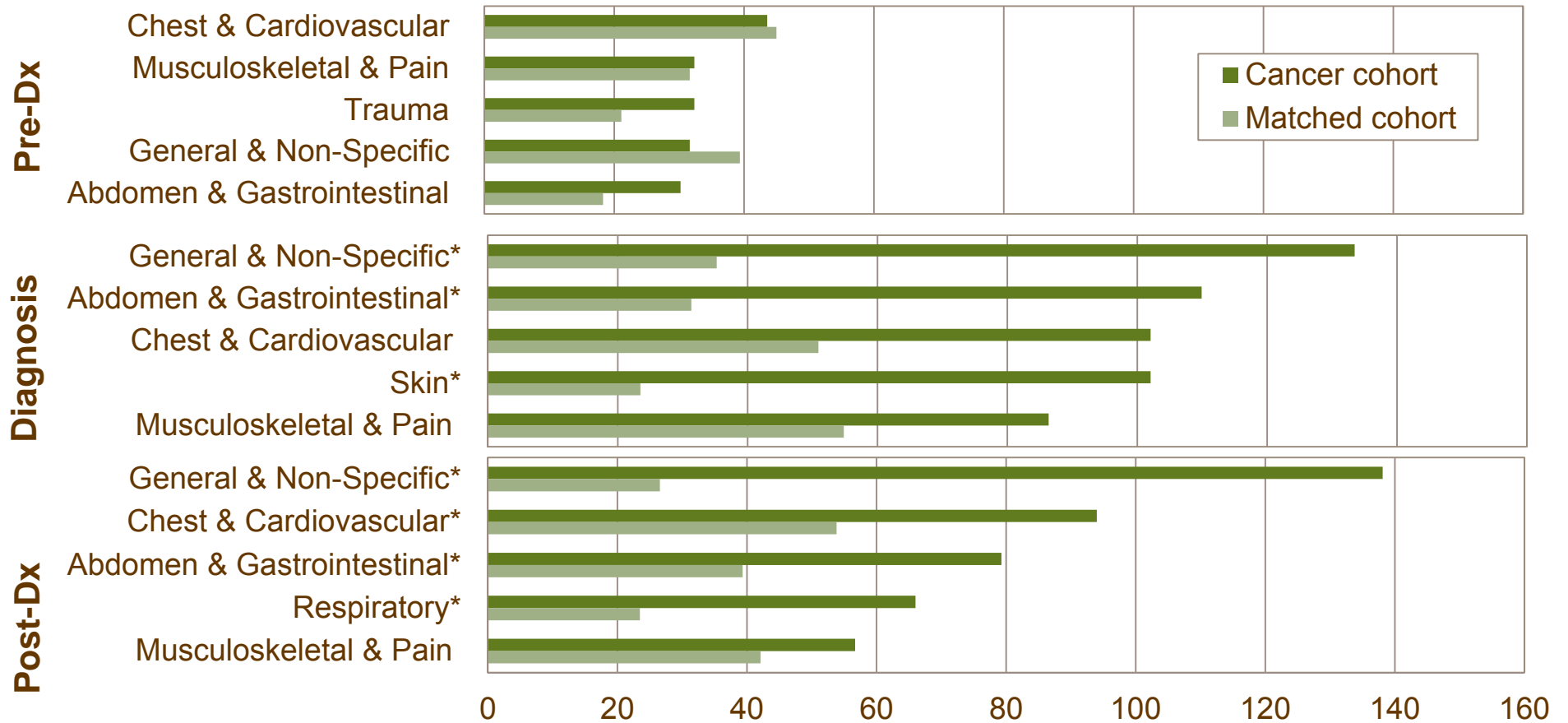
Top 5 Reasons for ED Visits for Prostate Cancer

rates per 1,000 person-days; 1 year before & after diagnosis



Top 5 Reasons for ED Visits for Breast Cancer

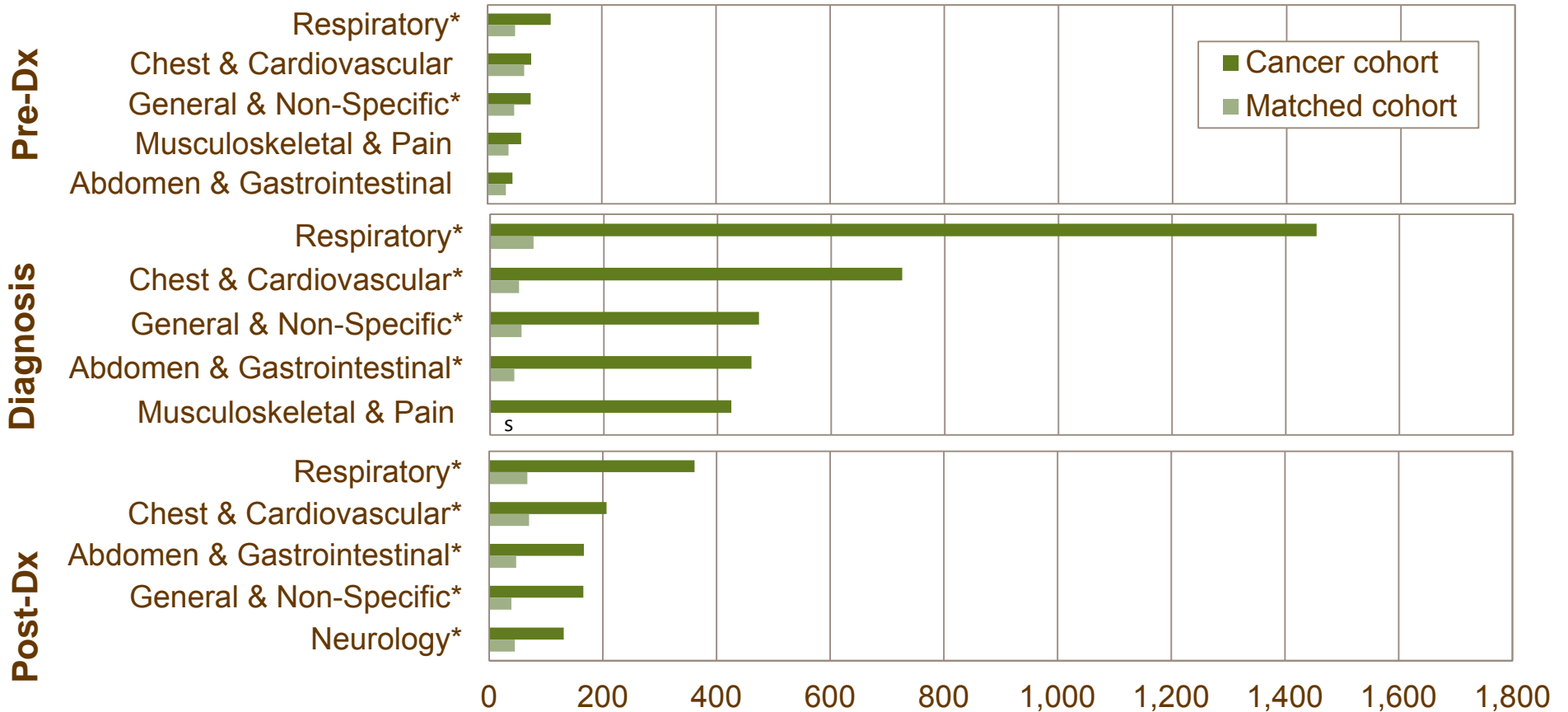
rates per 1,000 person-days; 1 year before & after diagnosis



* indicates the rate for cases was significantly different from matches

Top 5 Reasons for ED Visits for Lung Cancer

rates per 1,000 person-days; 1 year before & after diagnosis

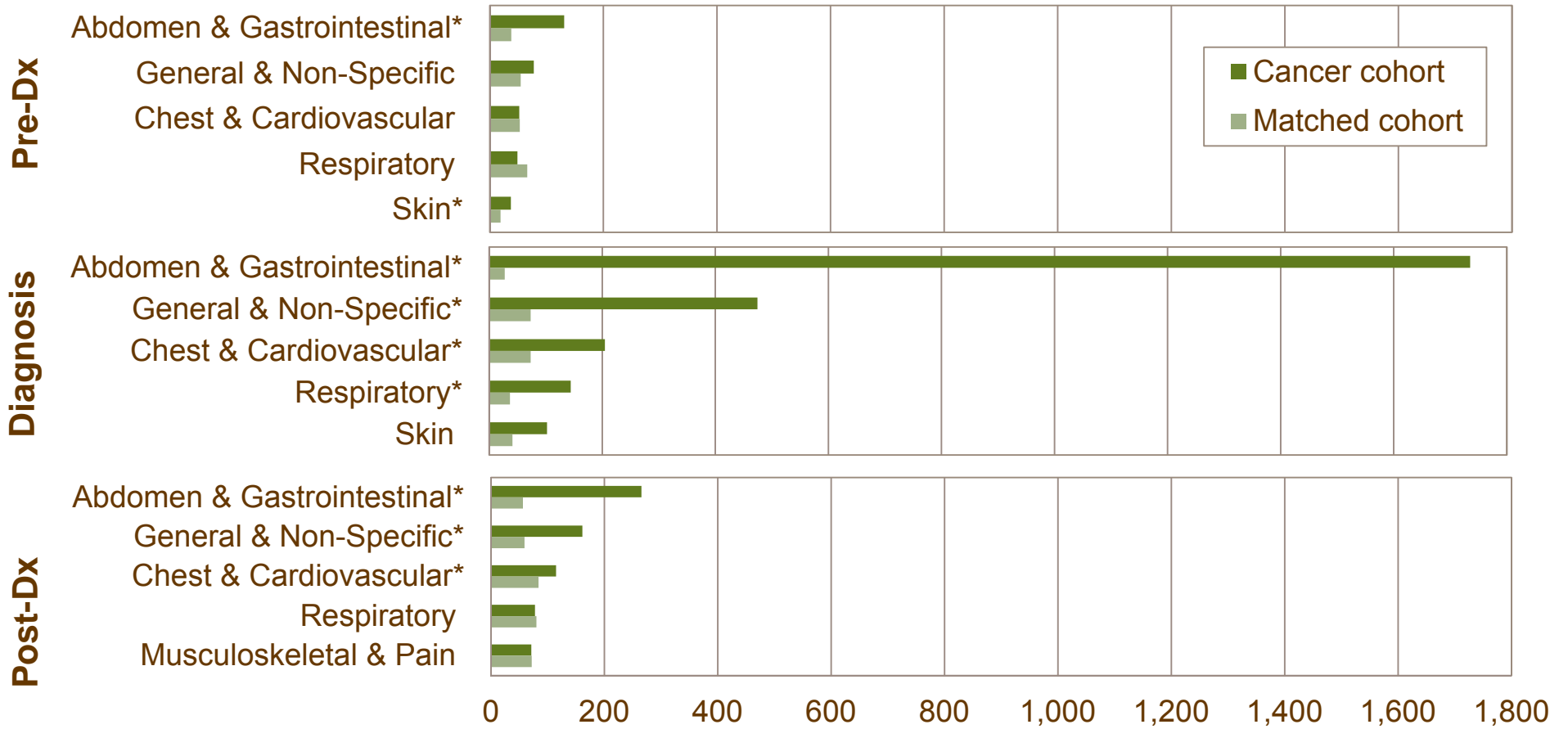


* indicates the rate for cases was significantly different from matches

s indicates data for matched cohort suppressed due to small numbers

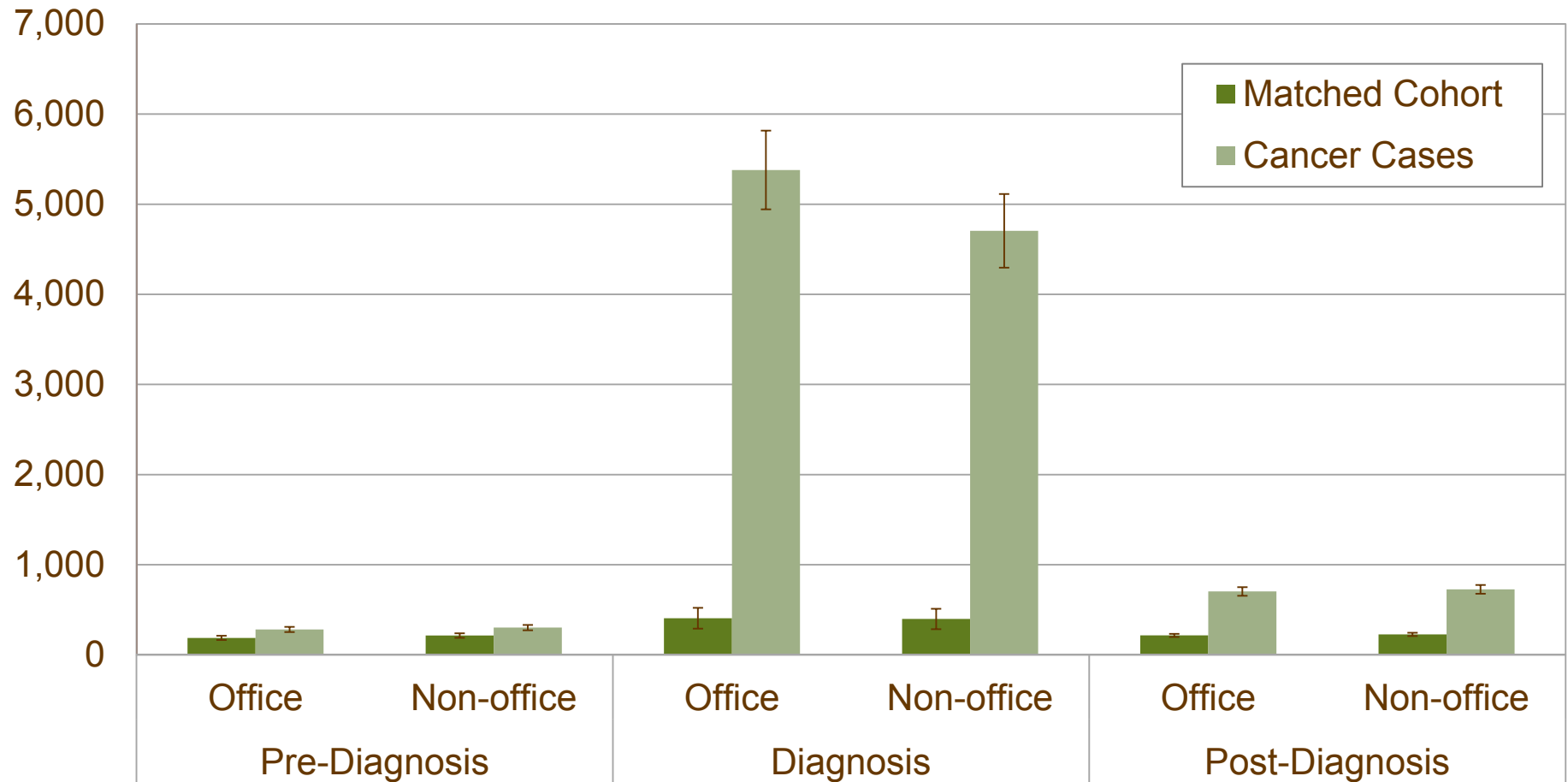
Top 5 Reasons for ED Visits for Colorectal Cancer

rates per 1,000 person-days; 1 year before & after diagnosis

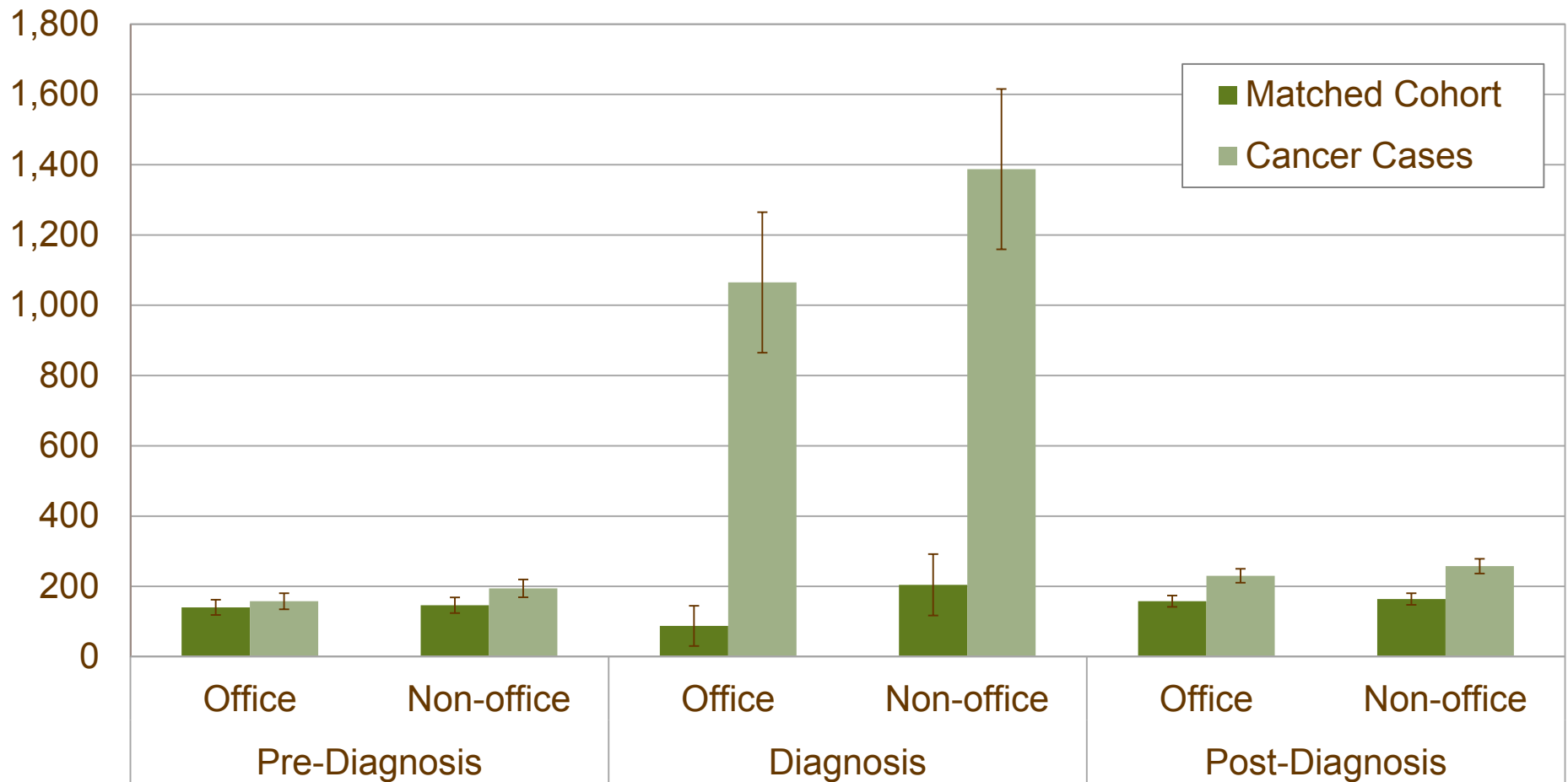


* indicates the rate for cases was significantly different from matches

ED Use during vs. outside office hours for Lung Cancer rates per 1,000 person-days



ED Use during vs. outside office hours for Prostate Cancer rates per 1,000 person-days



Survival of cancer patients after diagnosis

Cancer Site	Timing of ED Visits	Hazard Ratio (95% CI)	p-value
Breast	Before diagnosis	0.983 (0.931, 1.038)	0.5425
	After diagnosis	1.272 (1.179, 1.372)	<.0001
Colorectal	Before diagnosis	1.042 (0.990, 1.097)	0.1182
	After diagnosis	1.108 (1.041, 1.179)	0.0012
Lung	Before diagnosis	1.036 (0.997, 1.077)	0.0713
	After diagnosis	1.096 (1.056, 1.137)	<.0001
Prostate	Before diagnosis	1.124 (1.020, 1.238)	0.0178
	After diagnosis	1.024 (0.905, 1.159)	0.7018
All Other	Before diagnosis	1.002 (0.984, 1.021)	0.817
	After diagnosis	1.165 (1.133, 1.197)	<.0001

Bolded values indicate a significant association with patient survival ($\alpha = 0.05$)

Demonstration Project #1: Conclusions

- Except for lung cancer, no difference in ED use prior to diagnosis
- ED use was significantly higher around the time of diagnosis for all four cancer sites.
- Increases remained high for periods ranging from 9 to 24 months (except prostate).
- Similar increases in hospital and ambulatory visits, except prostate.

Demonstration Project #1: Conclusions

- Most emergency department use seems elevated for issues related to either the site of diagnosis or treatment effects
- No difference in rates of ED use between office and non-office hours

Thank You/Questions

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