

Inequities in Cancer Care

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What is meant by “inequities” in the context of cancer care?

Differences in access to care or quality of care, among groups of people who have equal needs, and who have equal entitlement to care

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Why do inequities matter?

- Equity is valuable in its own right
- Equity in cancer care is necessary to achieve optimal outcomes in the population at large
 - Inequities represent opportunities for improving overall outcomes

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How may inequities in care lead to inequities in outcomes?

- Differing access to primary care and diagnostic services
 - unequal stage at presentation
 - unequal general health
- Differing access to cancer treatment
 - unequal delays in starting treatment
 - unequal options for treatment
- Differing quality of cancer treatment
 - unequal knowledge and skill among providers

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Inequities among whom?

- different countries
- different regions of the same country
- different subgroups of residents of the same community
 - e.g. different age groups, ses groups, racial groups, disease groups

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International Variations in Age-Standardized 5-Year Relative Survival Rates (%) for Selected Cancers (1985-1989)

Cancer	US (SEER)	UK	Switzerland	Europe (Eurocare)	Japan (Osaka)	Singapore	India (Madras)	China (Shanghai)	China (Qidong)
Lung	13	7	12	9	12	7	5	6	3
Colon	60	42	53	47	43	51	39	40	27
Breast	82	67	80	73	84	71	43	70	50
Prostate	81	39	60	56	52	53	36	38	-
Pancreas	5	4	2	5	5	6	3	6	4
Stomach	21	13	25	21	44	22	8	23	13
Leukemia	44	31	41	36	21	17	17	14	-

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Chia et al, Int. J. Cancer 2000;

Sankaranarayanan et al, International Agency for Research on Cancer, 1998

Potential causes of differences in outcomes among rich countries

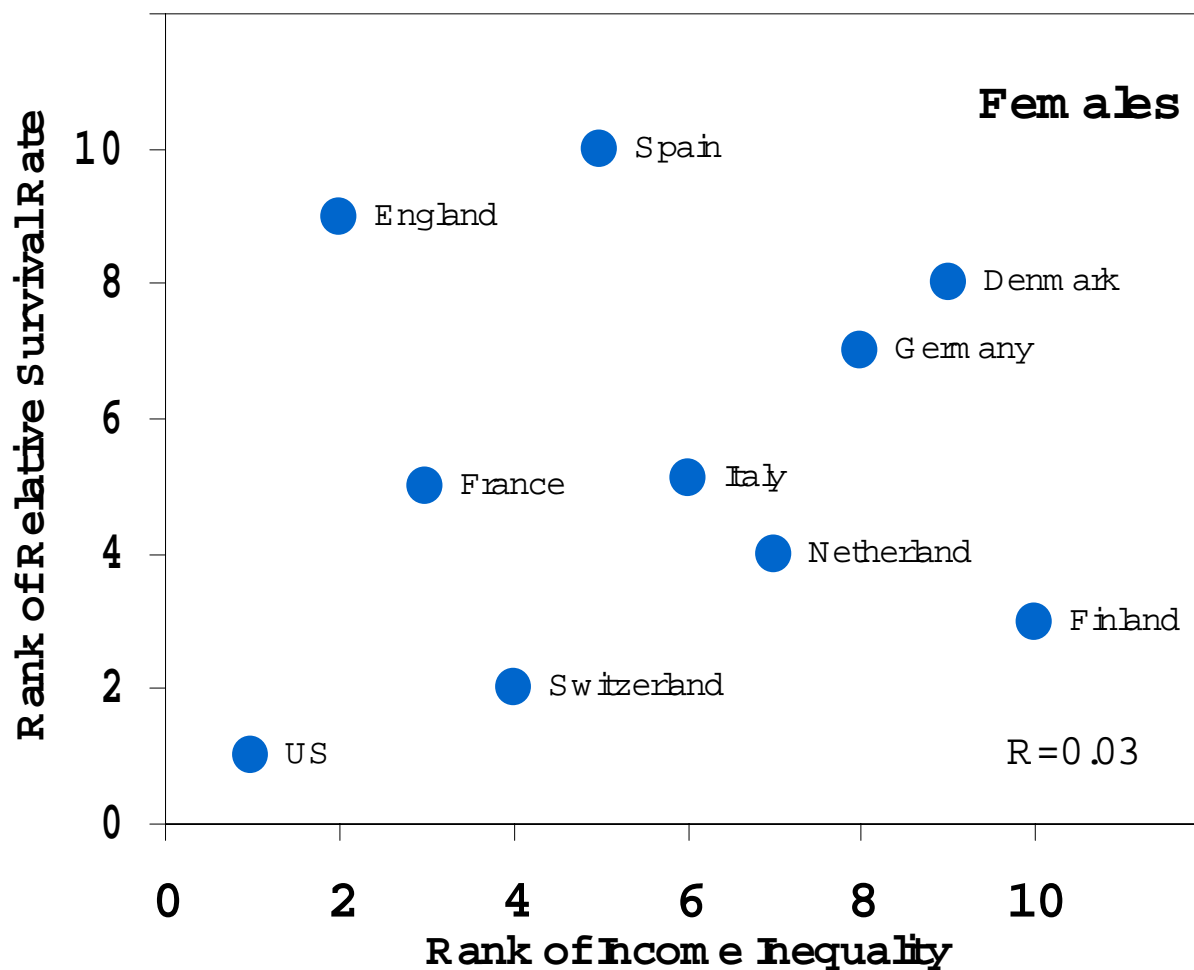
- Differences in degree of income inequality
- Differences in % GDP spent on health care
- Differences in health systems
 - Variations in universality, accessibility and/or comprehensiveness of health insurance

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Relationship between Income Inequality and Relative Survival for all cancer in females, (1989)



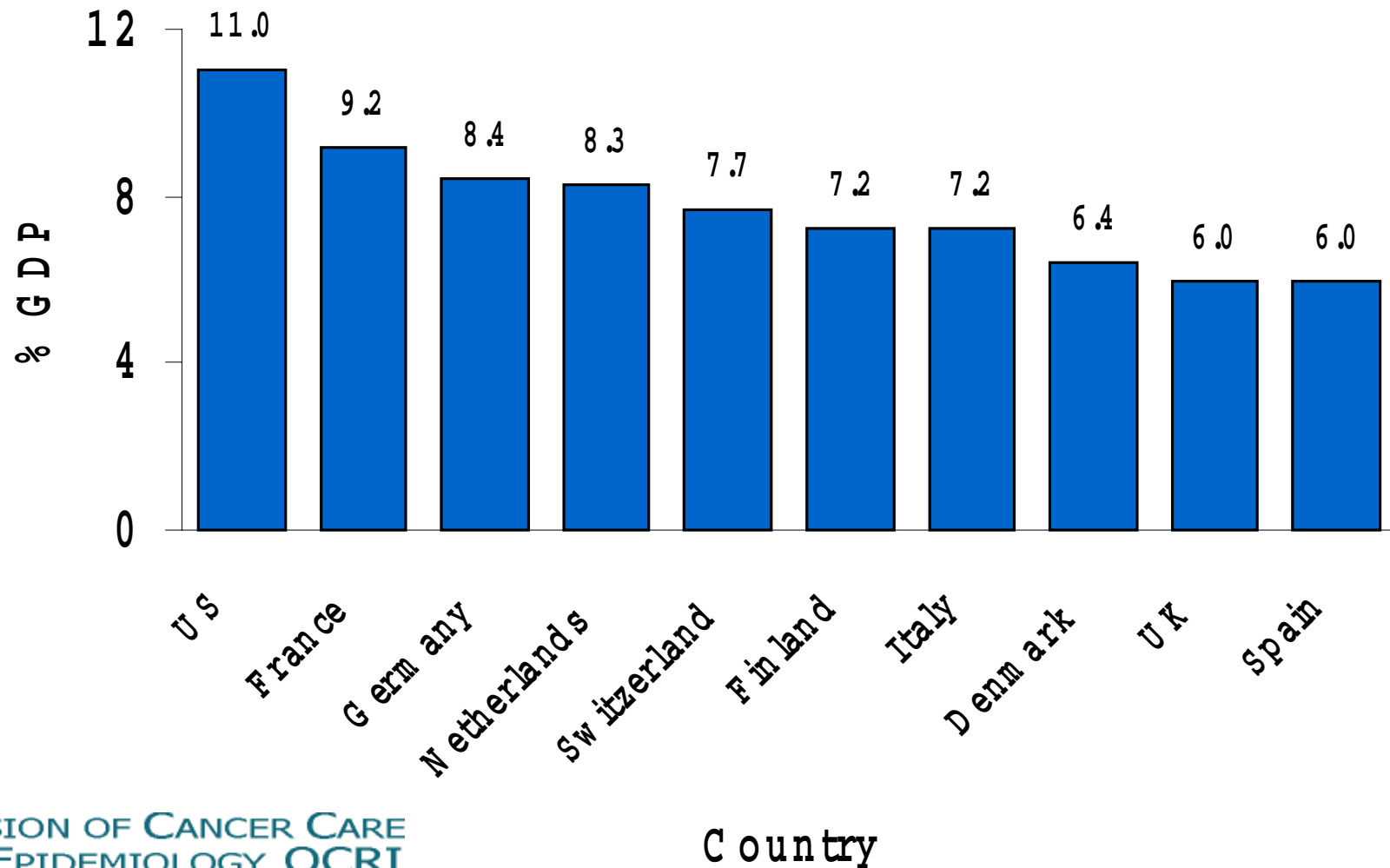
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Data from Evans et al, Public Health 2000; Lynch et al, Lancet 2001

Variations in %GDP Spent on Health Care among Wealthy Countries, 1989-90

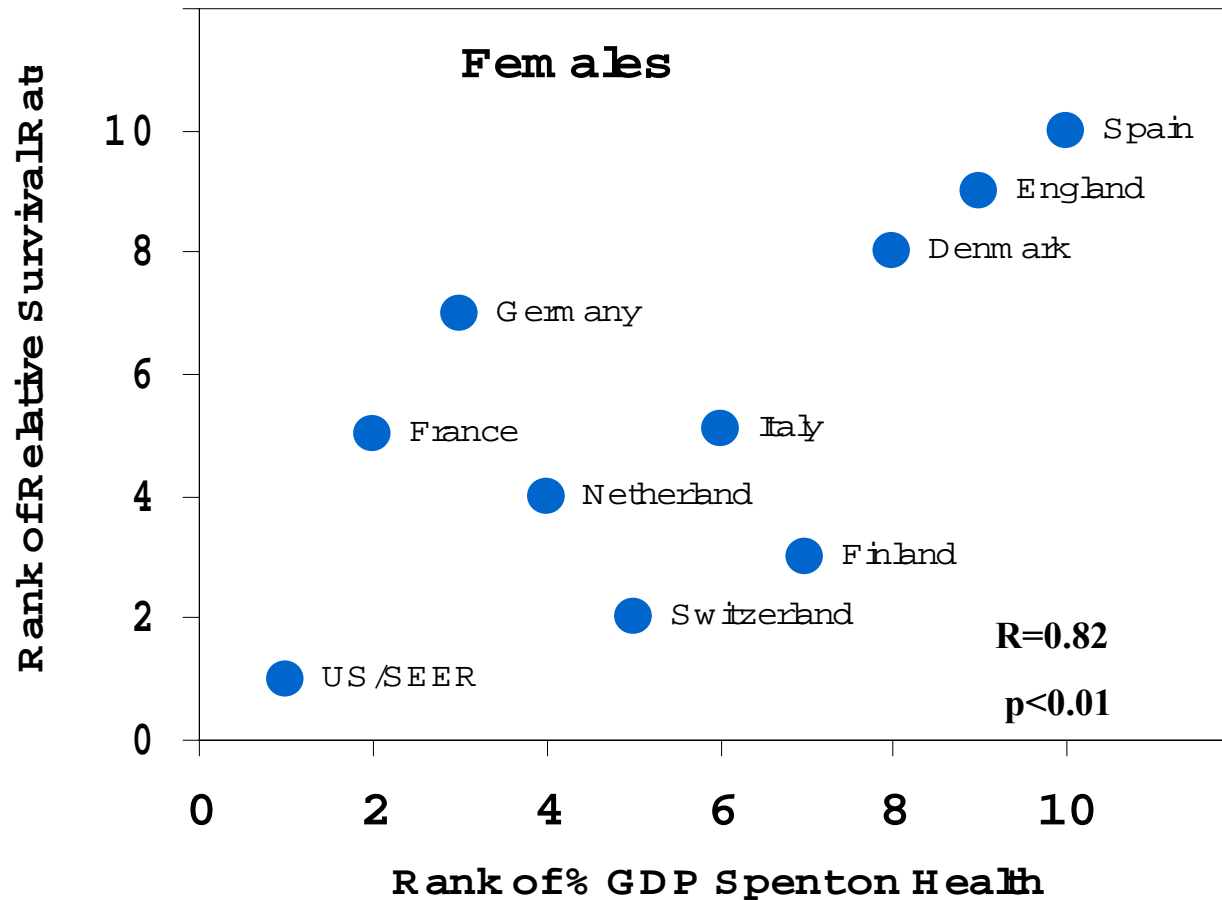


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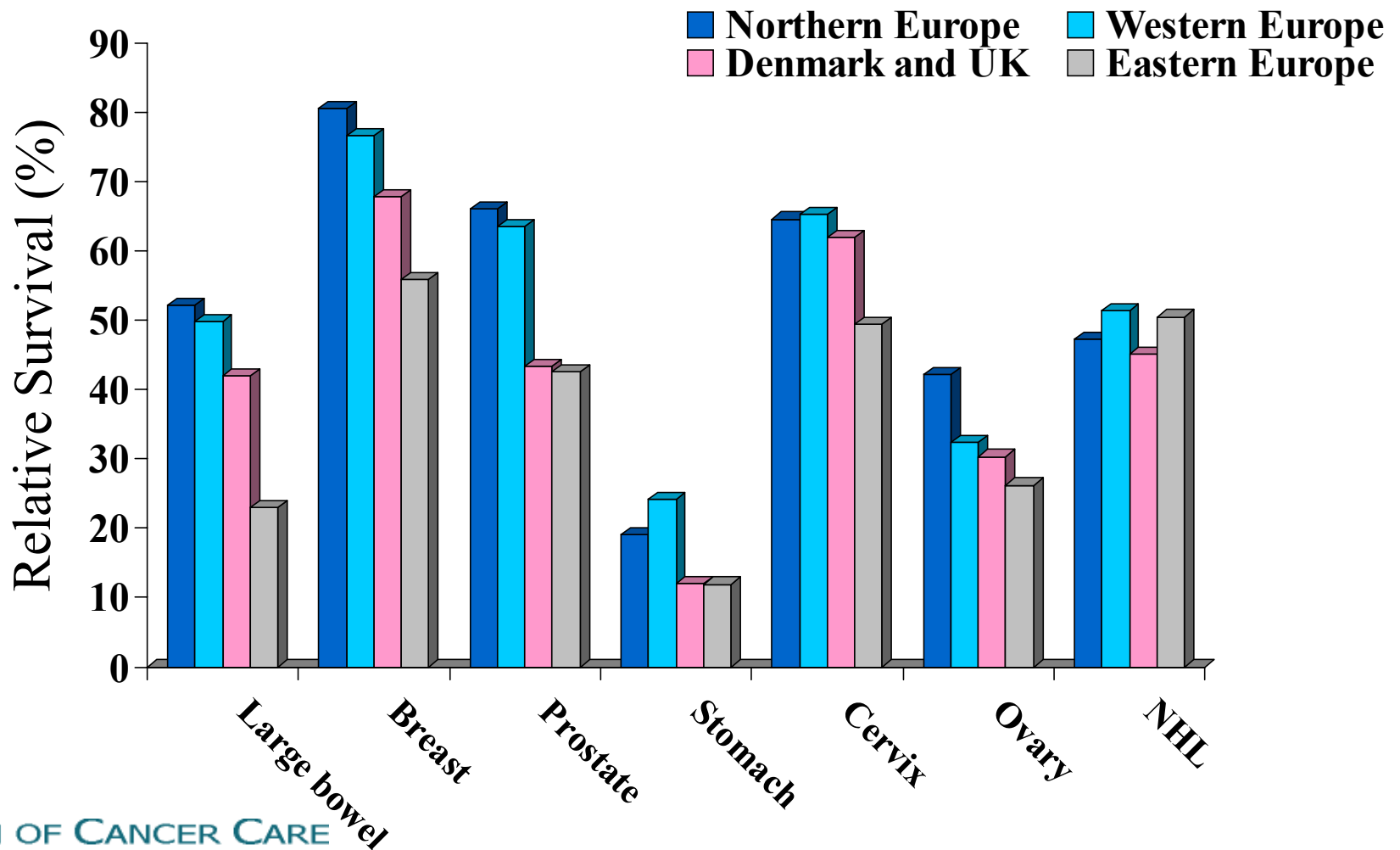
Relationship between % of GDP spent on health care, and Relative Survival for all cancers in females (1989)



Potential for bias in international comparisons of cancer outcomes

- Differences in analytic methods.
- Differences among registries
 - Definitions: rules for assigning site, date of Dx, etc
 - Data quality: proportion of DCO cases, etc
 - Completeness of follow-up
- Differences among populations
 - demographic characteristics, comorbidity, stage distribution (lead time bias)

Variations in age-standardized, 5-year relative survival for selected cancers in Europe (1987-1989)



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Sant et al, Eur. J. Ca. 2001; Gatta et al, Cancer, 2000

Conclusions from international comparisons of cancer survival

- Survival is worse in poor countries than in rich countries
- Survival is generally better in countries that devote a higher proportion of their GDP to health care.
- International differences in survival are generally greater in diseases where early diagnosis affects survival, and smaller in diseases with a more uniformly bad prognosis

The UK's “NHS Cancer Plan”

- Background: *“cancer patients in England often have poorer survival prospects than in other European countries”*
- Goal: *“by 2010 our 5 year survival rates will compare with the best in Europe”*
- Rx: *“an extra 570 million pounds a year for cancer services by 2003/4”* (US \$0.9bn),

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What do we know about international variations in other outcomes?

- Outcomes of palliative care
 - Symptom control
 - Quality of life
- Other outcomes of curative therapy
 - Organ conservation
 - Complication rates

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Treatment of advanced laryngeal cancer Ca (T3,T4, Supraglottis)

Treatment	Ontario	SEER
Total laryngectomy	13.5 %	53.8 %
Conservative treatment	75.0 %	36.9 %
Radiotherapy	72.5 %	26.1 %
Conservative surgery	2.5 %	10.8 %
No treatment identified	11.5 %	9.3 %

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Groome et al, 2001

Inequities in cancer outcomes within countries

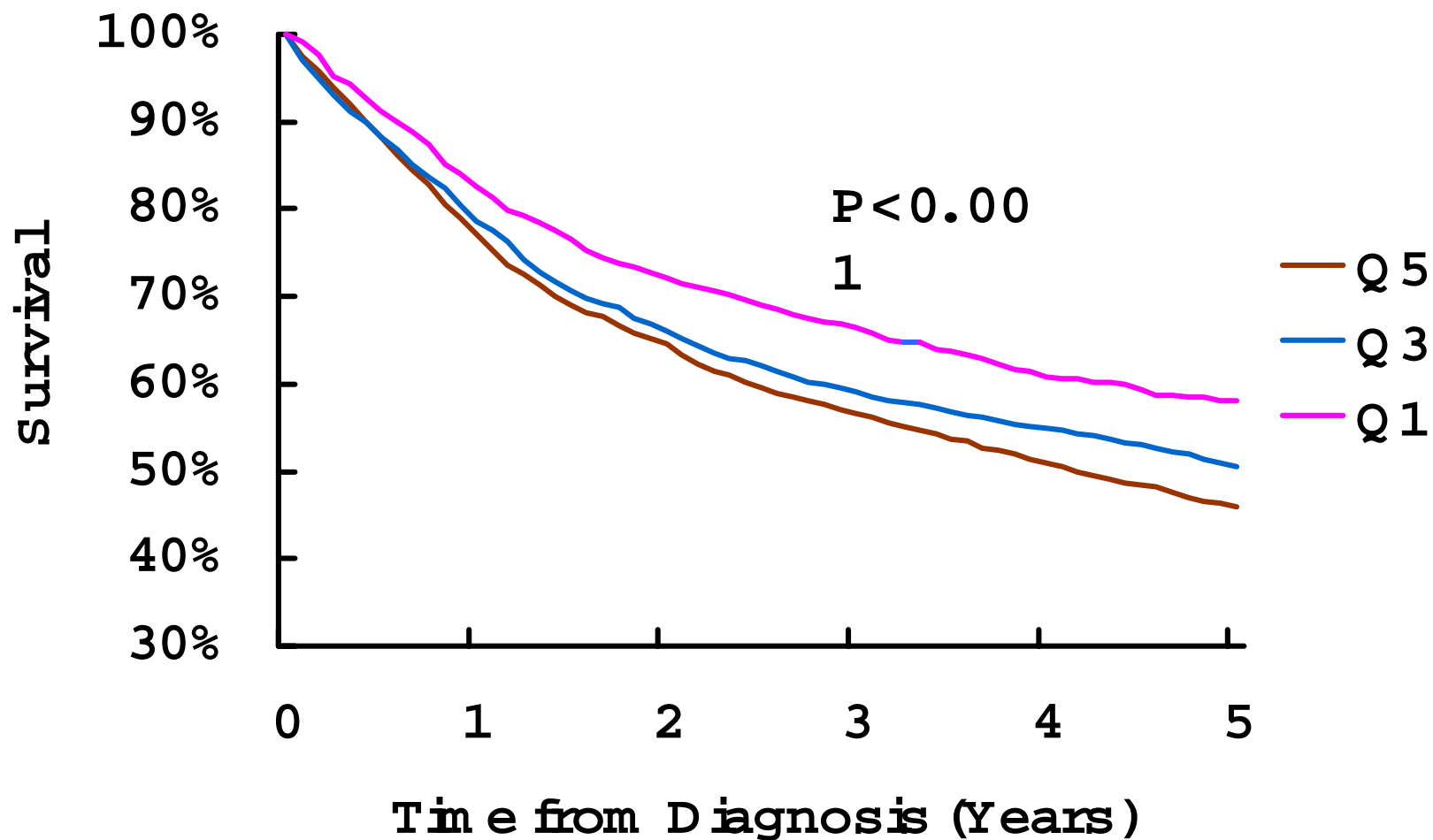
- Differences in outcomes among different subgroups of residents of the same region
- Differences in outcomes among different regions

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Head & Neck Cancer Survival in Ontario by SES (1987-92 Cohort)



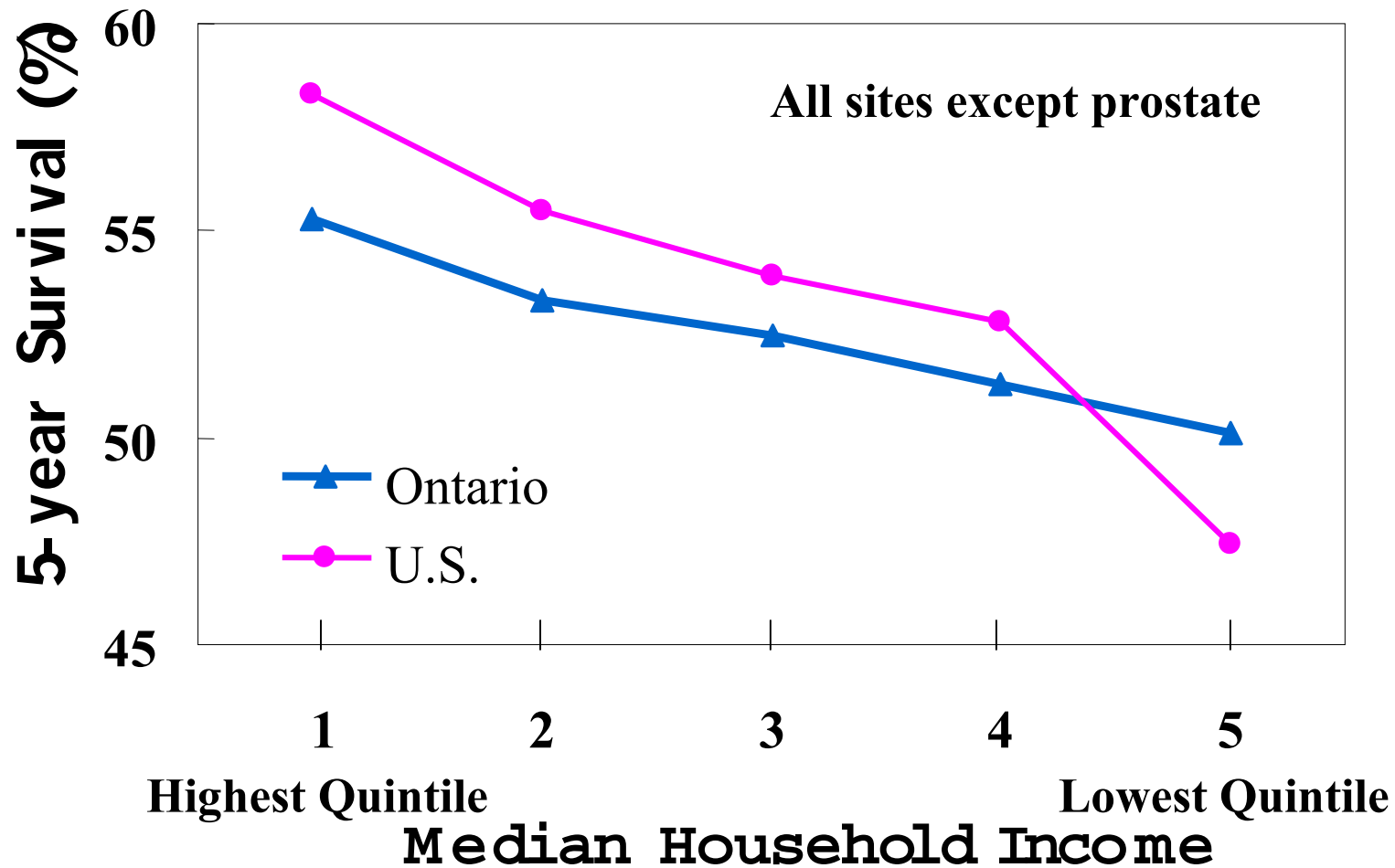
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Mackillop et al, J Clin Oncol 1997

Cause-specific Survival in Ontario and the U.S.(SEER), by Income Group (1987-92)



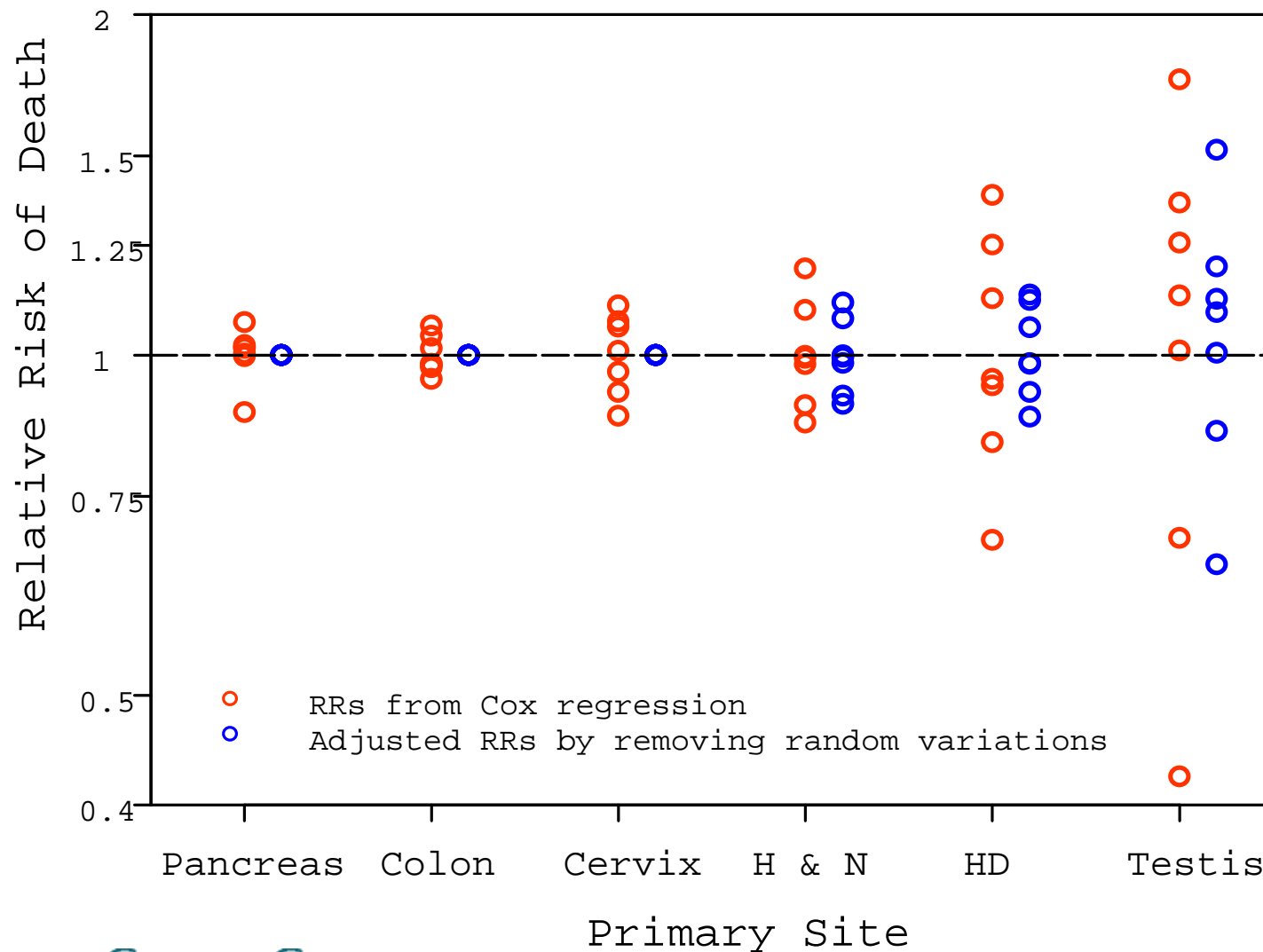
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Boyd et al, J Clin Oncol, 1999

Inter-regional Variations in Cancer Survival in Ontario



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Zhang-Salomons, 2002

Potential causes of inequities in outcomes within countries

- Unequal access to care
- Unequal quality of care

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Potential causes of inequities in outcomes within countries

- Unequal access to care
 - A case study, RT in Ontario
- Unequal quality of care

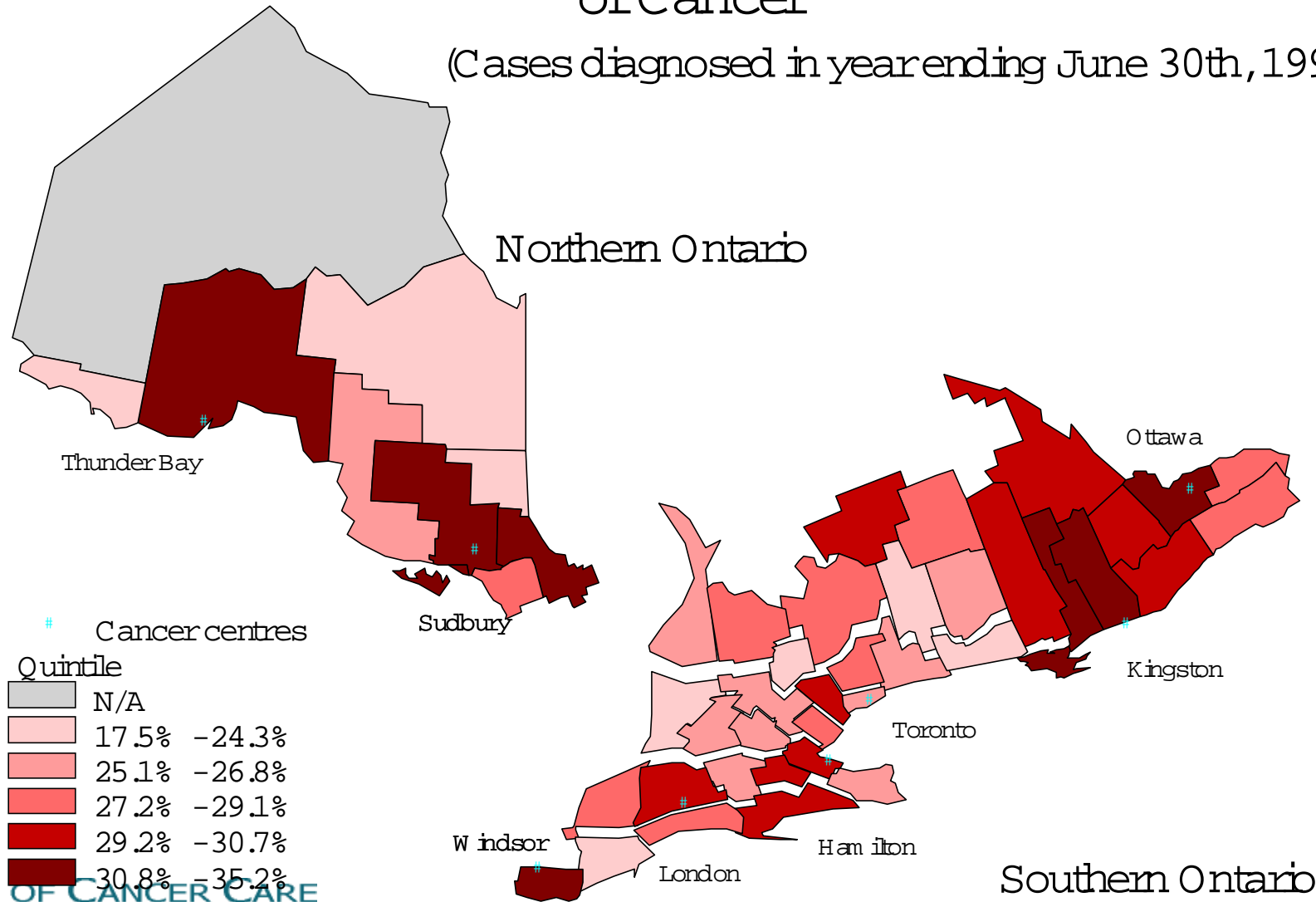
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Use of Radiotherapy Within 1 Year of Diagnosis of Cancer

(Cases diagnosed in year ending June 30th, 1997)



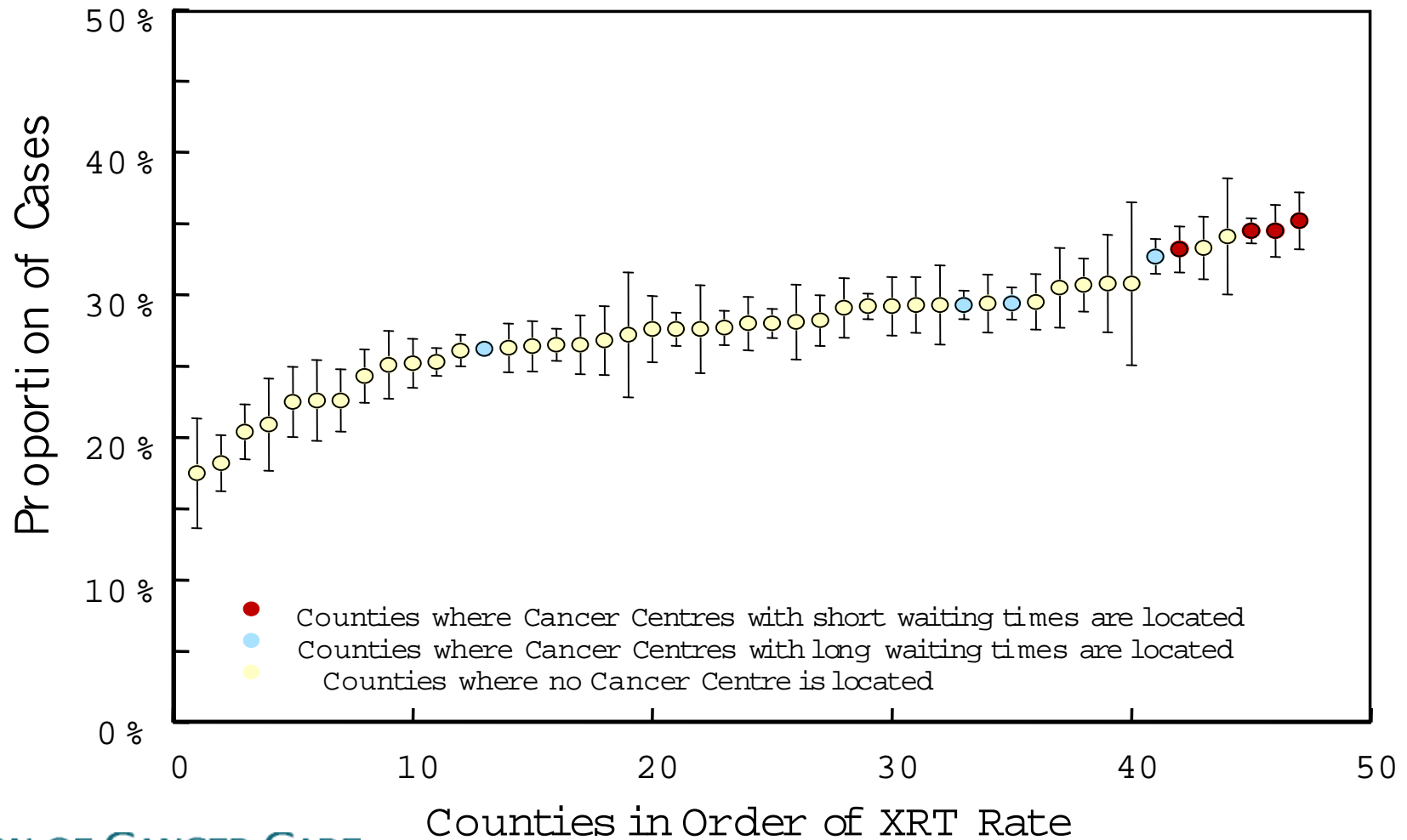
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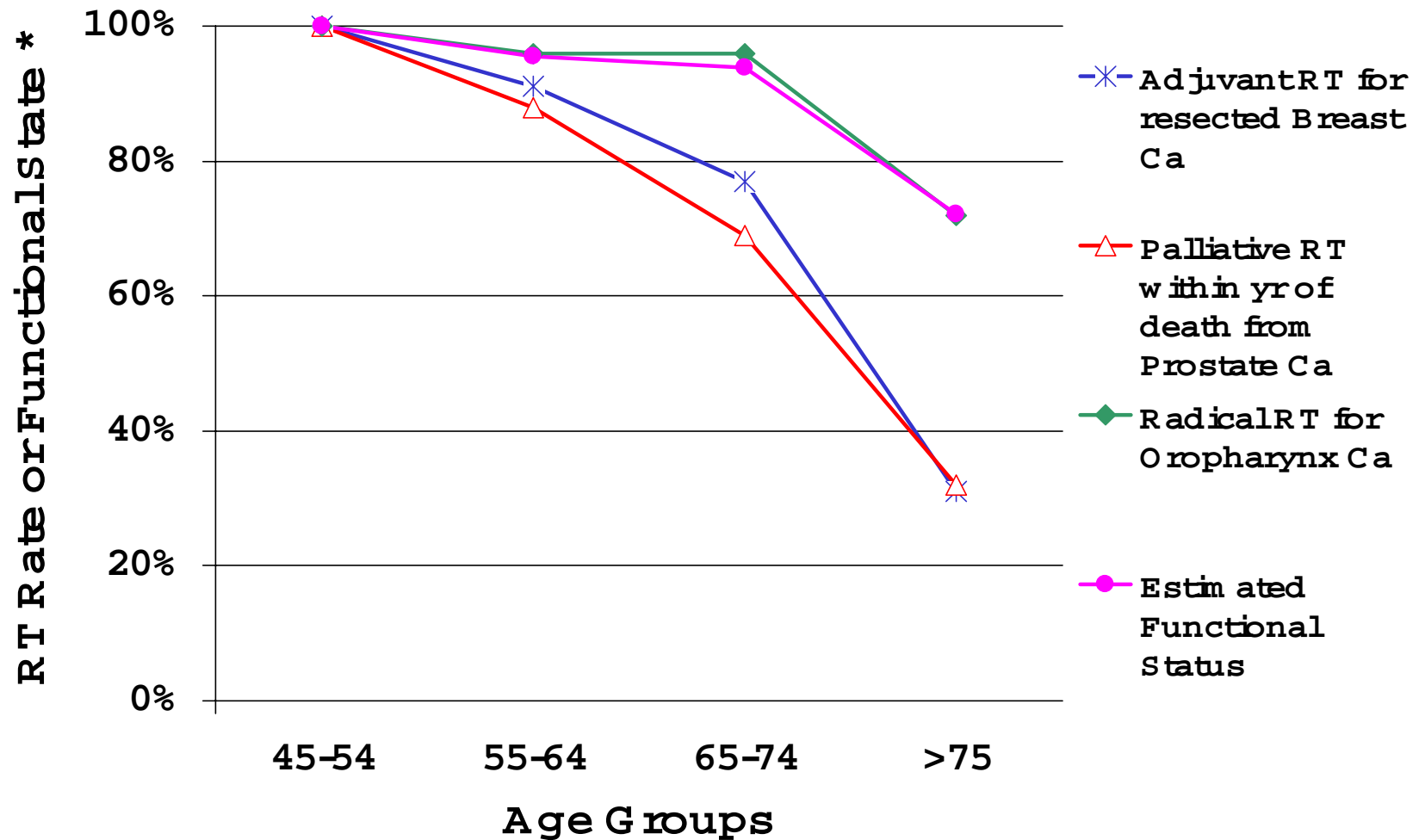
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Proportion of cancer cases treated with radiotherapy
 within one year of diagnosis in Ontario
 (cases diagnosed in year ending June 30th 1997)



RT Use in Older Patients



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*Relative to 45-54 years *Tyldesley et al, 2000*

Factors Affecting the Use of Palliative RT

Selected Regions

Hamilton 1.20 (1.14, 1.26)

Ottawa 1.00

Toronto 0.88 (0.84, 0.92)

Diagnosing Hospital

Affiliated with a cancer centre 1.35 (1.30, 1.40)

Not affiliated with a cancer centre 1.00

Median household income, Can\$

High (>50,000) 1.17 (1.11, 1.24)

Medium (20,000 - 50,000) 1.09 (1.04, 1.15)

Low (< 20,000) 1.00

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Controlling for disease site, gender & age

Huang et al, DCCE 2001

Potential causes of inequities in outcomes within countries

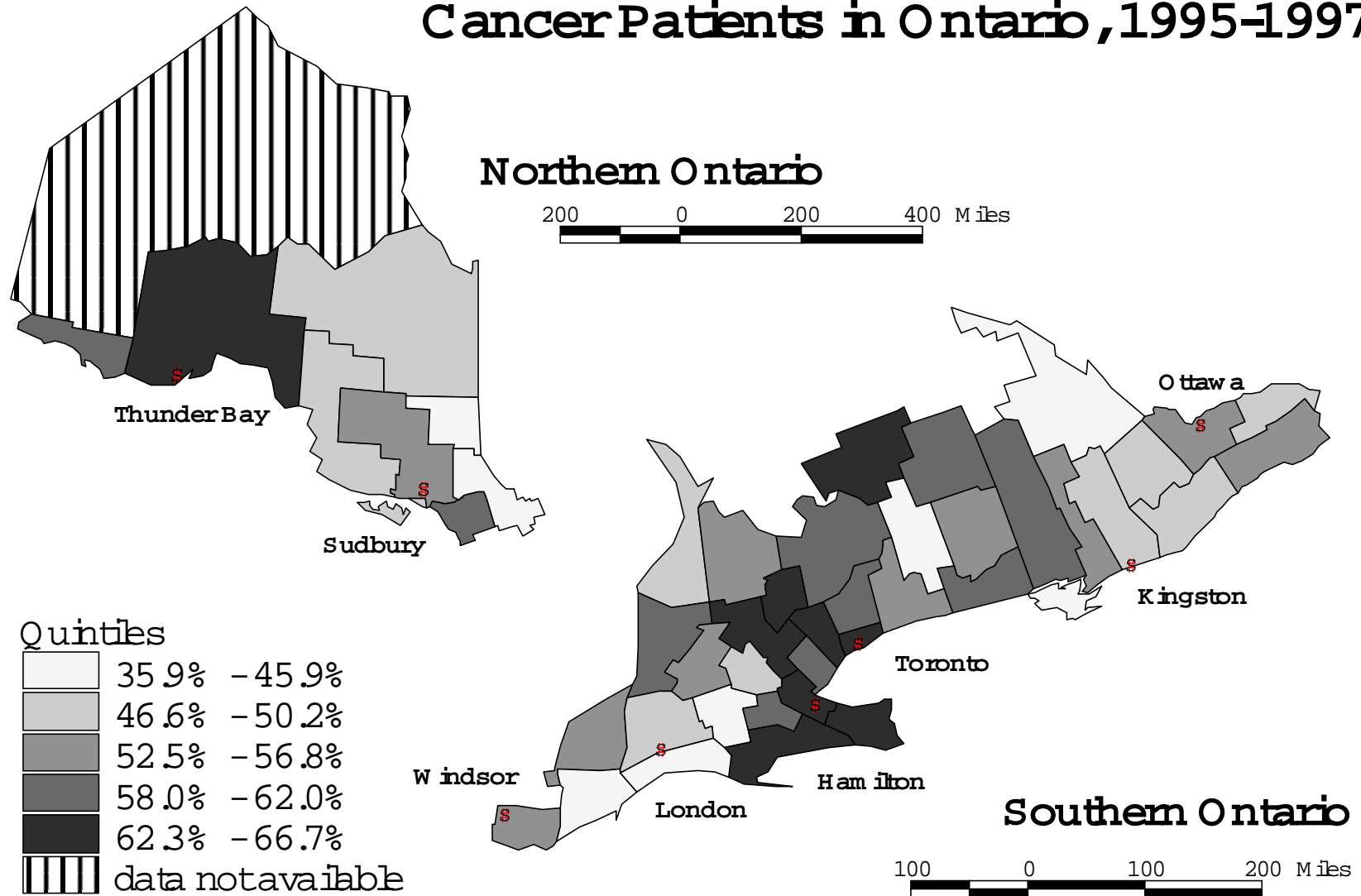
- Unequal access to care
- Unequal quality of care
 - Variations in appropriateness of treatment decisions
 - differences in individual knowledge among doctors
 - differences in decision processes
 - Variations in skill in implementing treatments
 - The “volume effect”

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Rate of Lumpectomy Use Among Breast Cancer Patients in Ontario, 1995-1997



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Elements of a strategy for diminishing internal inequities

- A societal commitment to equity in health care is necessary, but not sufficient
- Other requirements are:
 - Set standards
 - Provide necessary resources
 - Monitor structure, access, quality and outcomes
 - Create accountability
 - informed, caring, and capable governance

The role of the central registries in diminishing inequities in outcome

- Creating awareness of the problem!
- Quantifying it
 - Complete, accurate case identification, universal definitions, common practices, well trained personnel
- Explaining its causes
 - additional information may be needed
- Monitoring progress

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