Colorectal Cancer – No longer an over 50 problem?

Cailan MacPherson MD MHSc FRCSC
Clinical Instructor and DSSL UBC Island Medical Program
General & Colorectal Surgery
Victoria, BC

Surgical Oncology Network Fall Update on Colorectal Cancer
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Objectives

- Review changing incidence of early onset CRC
- Postulate explanations for this change
- Assess implications for screening & diagnosis

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Incidence of colorectal cancer

- CRC incidence rates declining for 3 decades
  - Rate of decline 3%/yr 2003-2012
- Changes in the prevalence of risk factors
- Implementation and uptake of screening

Original Investigation

Increasing Disparities in the Age-Related Incidences of Colon and Rectal Cancers in the United States, 1975-2010

Christina E. Bailey, MD, MSCI; Chung-Yuan Hu, MPH, PhD; Y. Nancy You, MD, MHSc; Brian K. Bednarski, MD; Miguel A. Rodriguez-Bigas, MD; John M. Skibber, MD; Scott B. Cantor, PhD; George J. Chang, MD, MS

ORIGINAL ARTICLE Open Access

Incidence trends and age distribution of colorectal cancer by subsite in Guangzhou, 2000–2011

Qin Zhou, Ke Li, Guo-Zhen Lin, Ji-Chuan Shen, Hang Dong, Yu-Ting Gu and Hua-Zhang Liu*

REVIEW

Rising incidence of early-onset colorectal cancer in Australia over two decades: Report and review

Joanne P Young,*[,†,‡] Aung Ko Win,[§] Christophe Rosty,[¶,**,††] Ingrid Flight,[‡‡,§§] David Roder,[¶¶] Graeme P Young,[§§] Oliver Frank,[***] Graeme K Suthers,[†††,‡‡‡] Peter J Hewett,[§§§] Andrew Ruszkiewicz,[‡,¶¶¶,****] Ehud Hauben,[†] Barbara-Ann Adelstein,[††††] Susan Parry,[‡‡‡‡] Amanda Townsend,* Jennifer E Hardingham*[,†,§§§§] and Timothy J Price*[,‡]

Increasing Incidence of Colorectal Cancer, Starting at a Younger Age for Rectal Compared to Colon Cancer in Brunei Darussalam

Vui Heng Chong[1]*, Pemasari Upali Telisinghe[2], Ian Bickle[3], Muhamad Syafiq Abdullah[1], Ediwn Lim[2], Chee Fui Chong[3]

Colorectal Cancer Incidence Patterns in the United States, 1974–2013

Rebecca L. Siegel, Stacey A. Fedewa, William F. Anderson, Kimberly D. Miller, Jiemin Ma, Philip S. Rosenberg, Ahmedin Jemal

Cancer Causes Control (2014) 25:191–201
DOI 10.1007/s10552-013-0321-y

ORIGINAL PAPER

Changes in colorectal cancer incidence rates in young and older adults in the United States: what does it tell us about screening

Harland Austin · S. Jane Henley · Jessica King · Lisa C. Richardson · Christie Eheman

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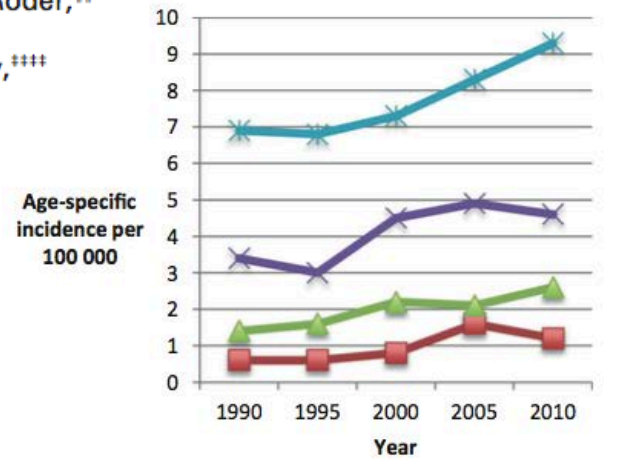
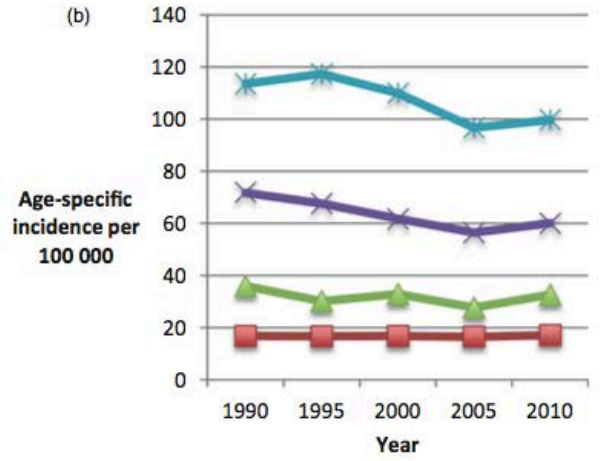
- Australian Institute of Health and Welfare database
- Incidence increasing in adults <40
- Incidence decreasing or stable in adults >40





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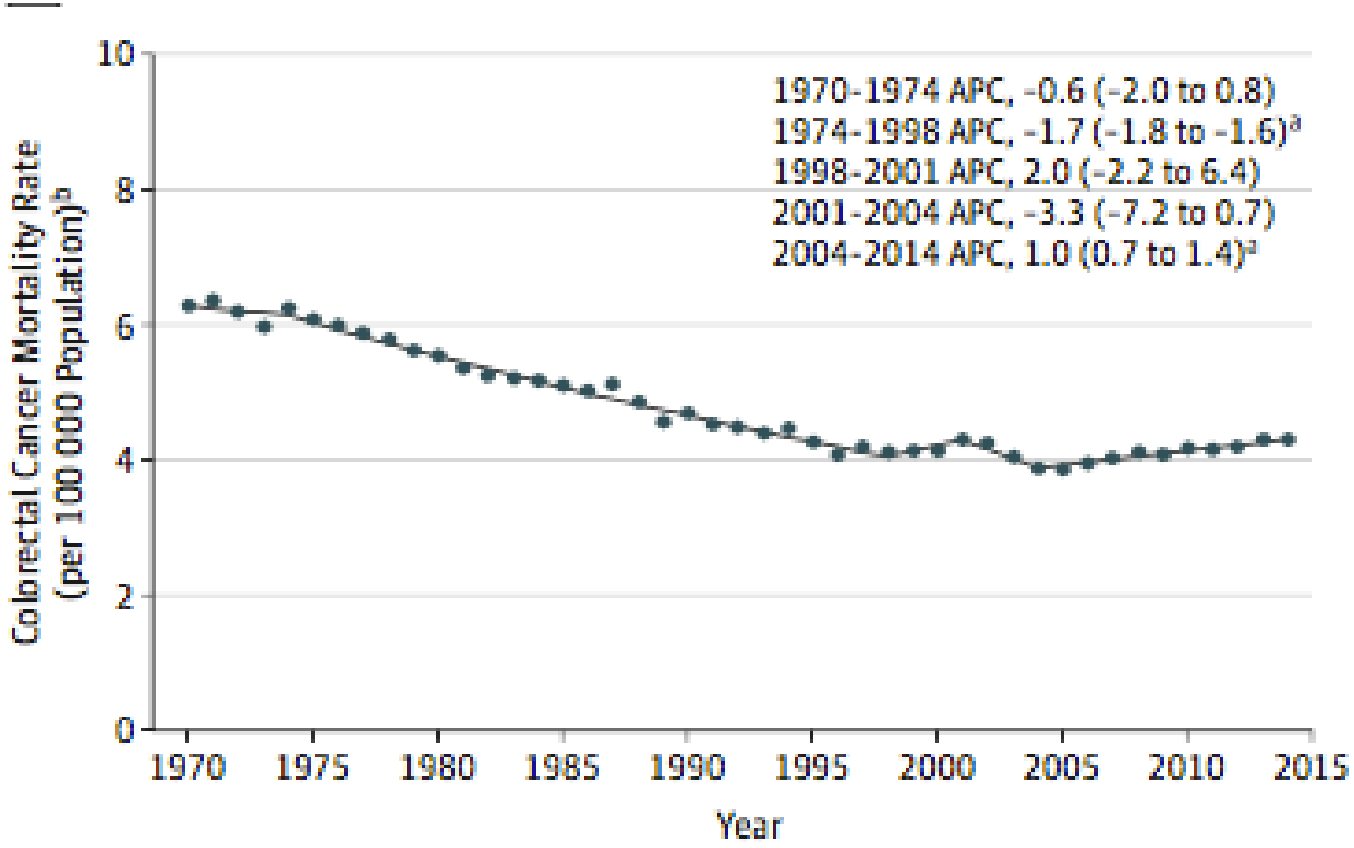
Why does this matter?



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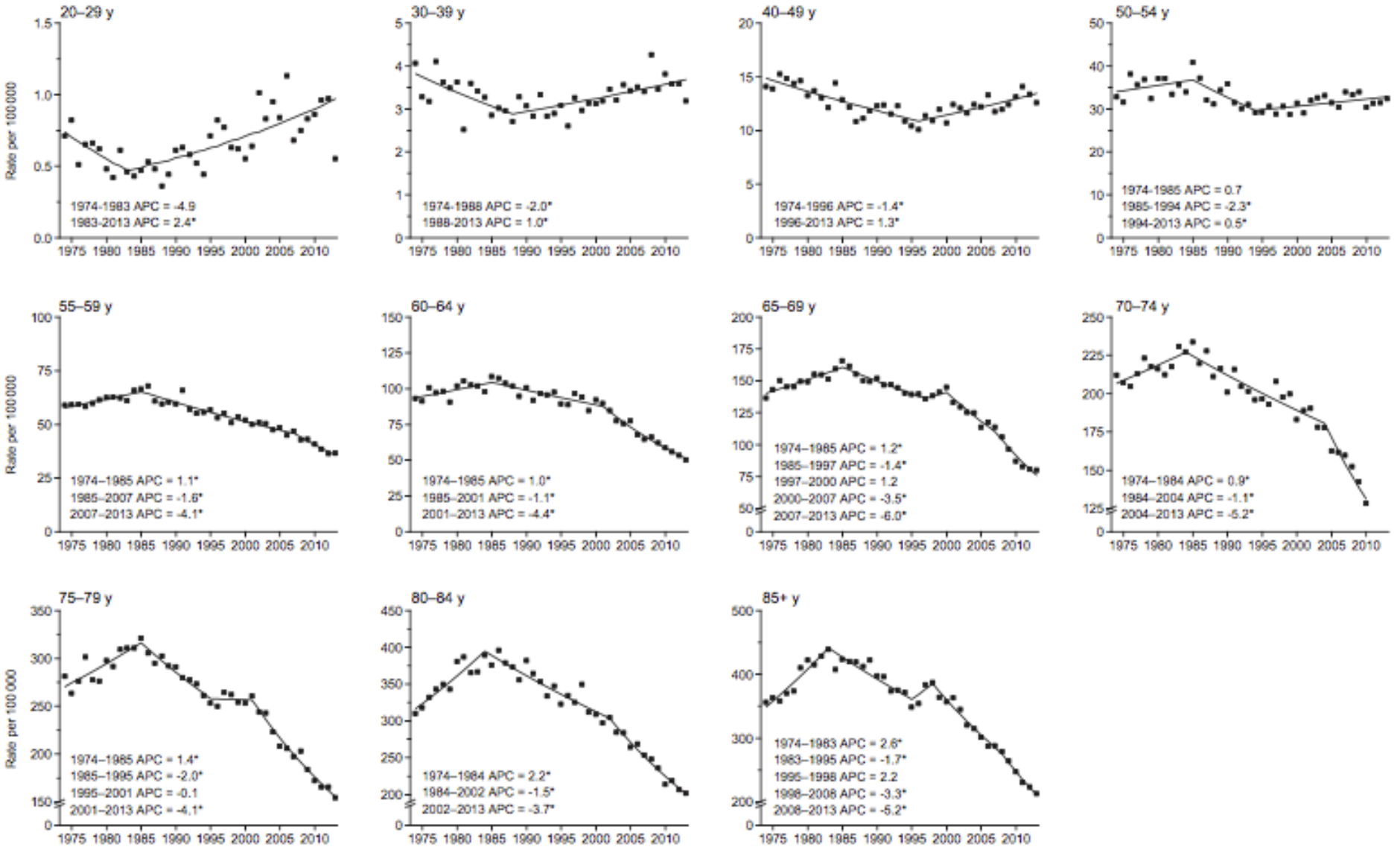

Siegel et al. JNCI. 2017: 109(8)

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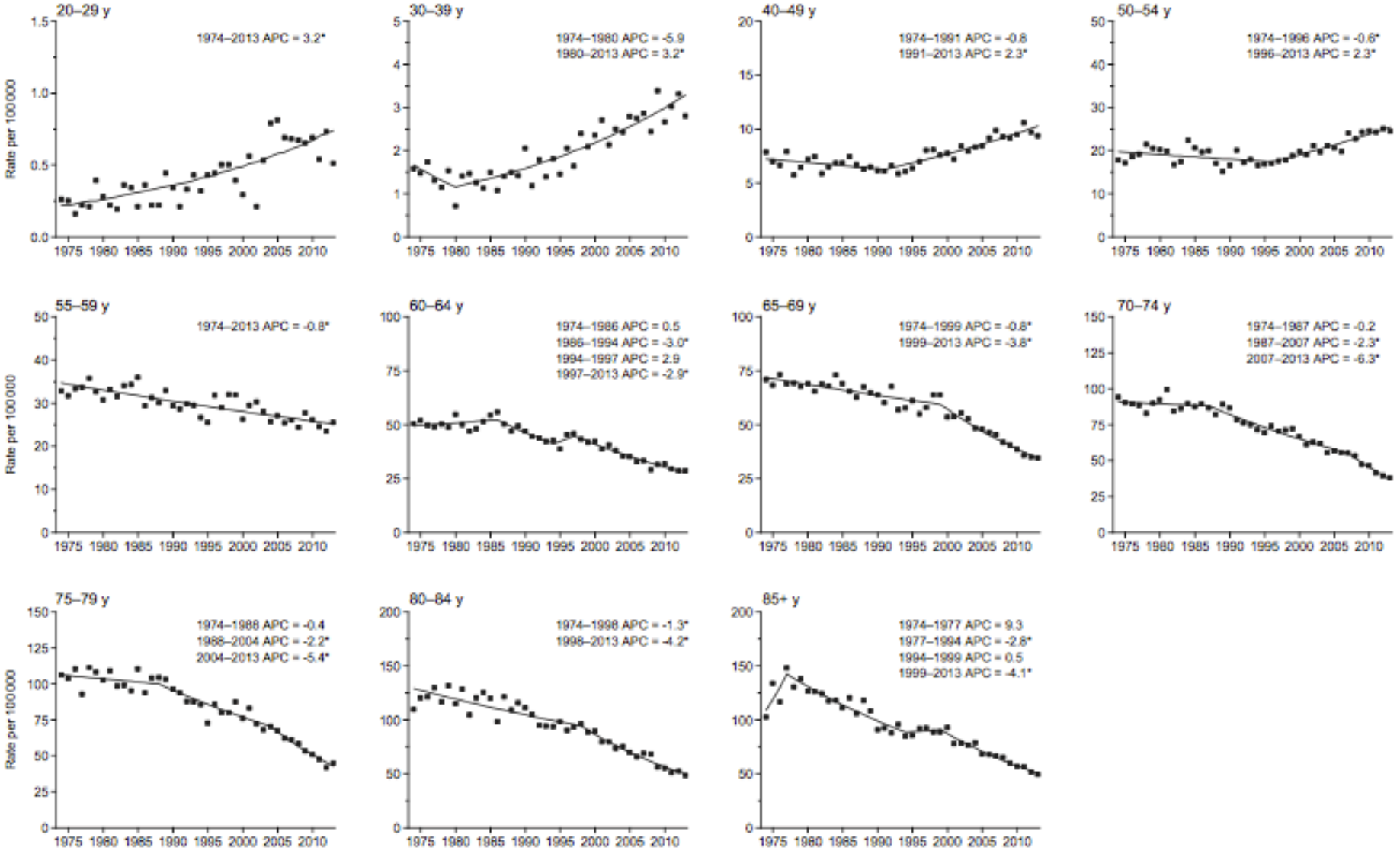

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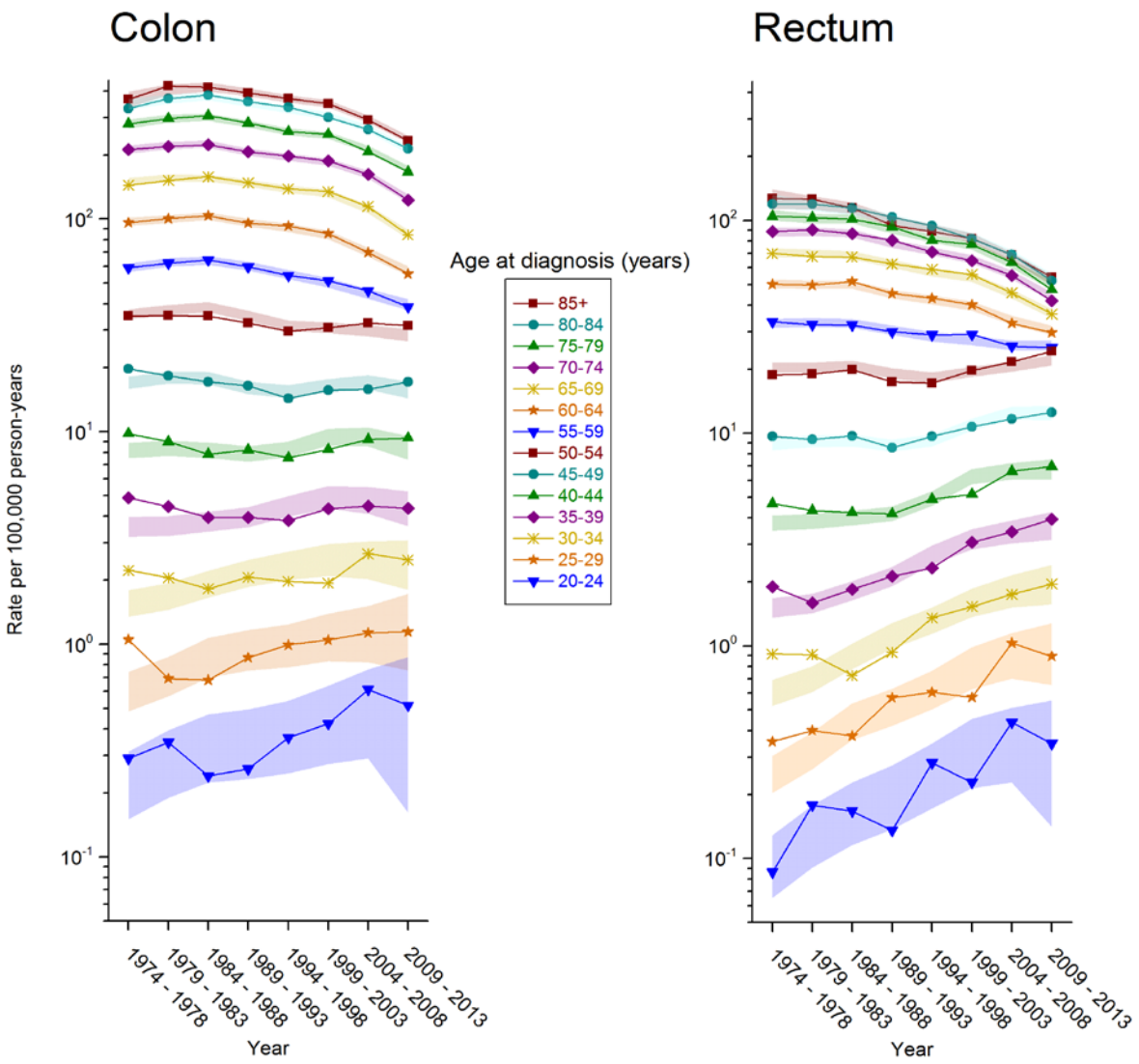

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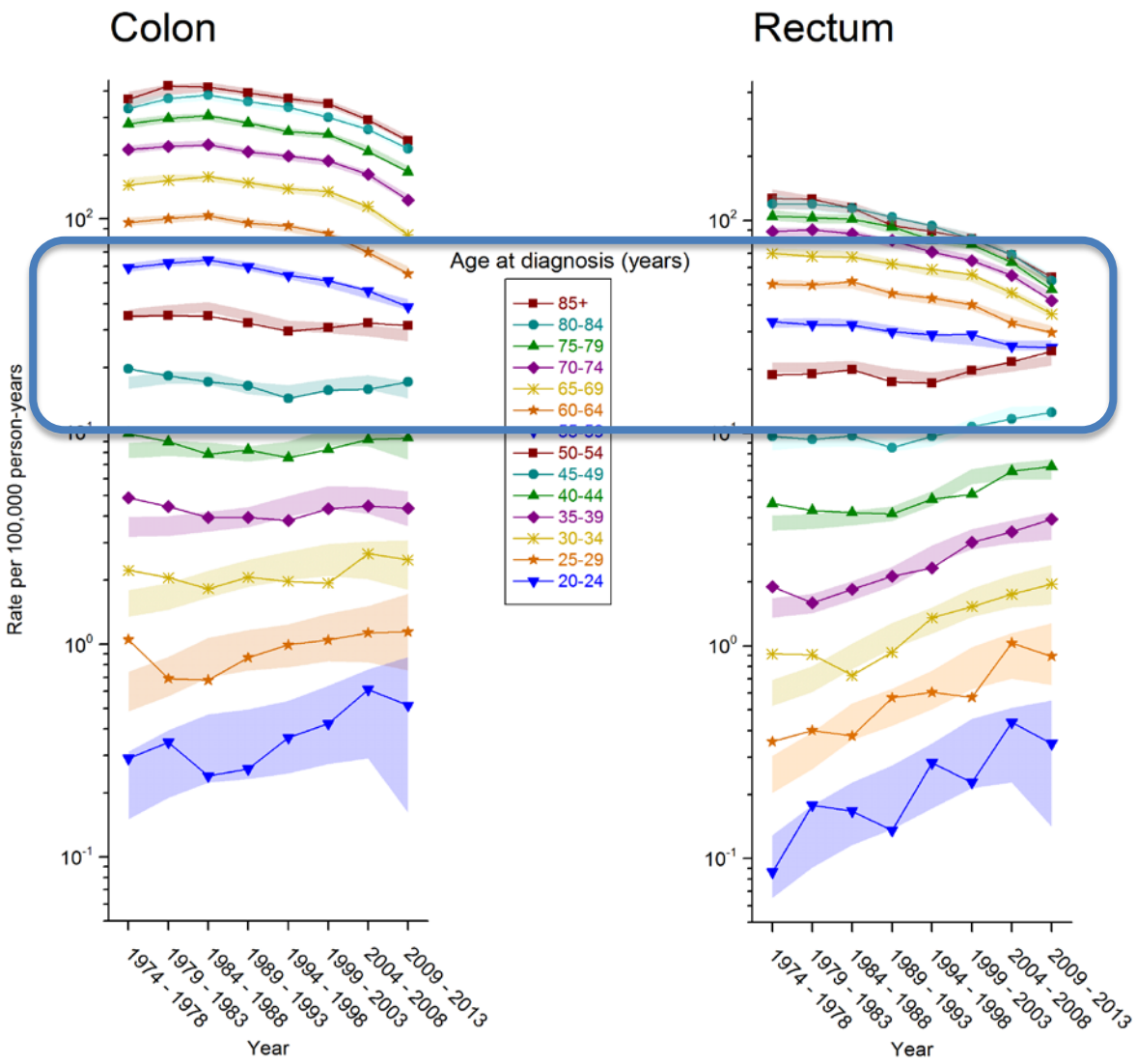

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Figure 2. Annual Percentage Change–Based Predicted Incidence Rates of Colon Cancer by Age Compared With Incidence Rate in 2010

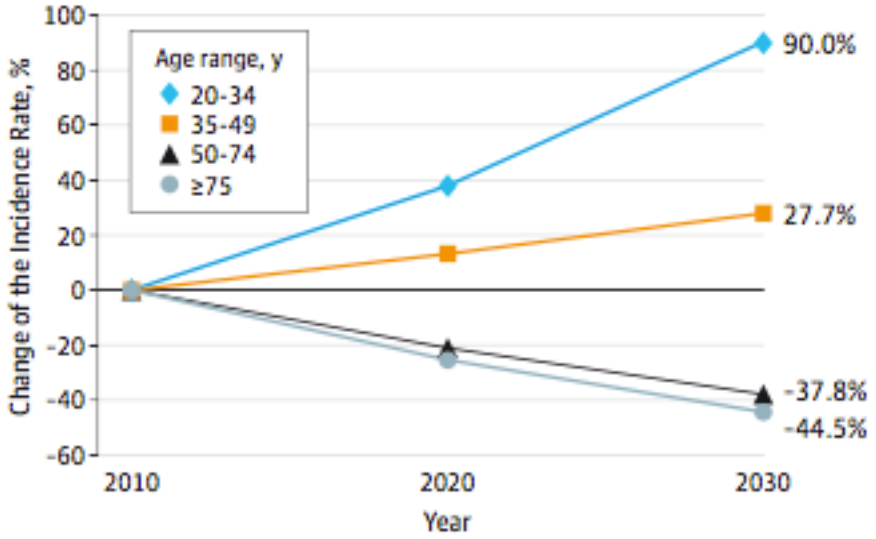
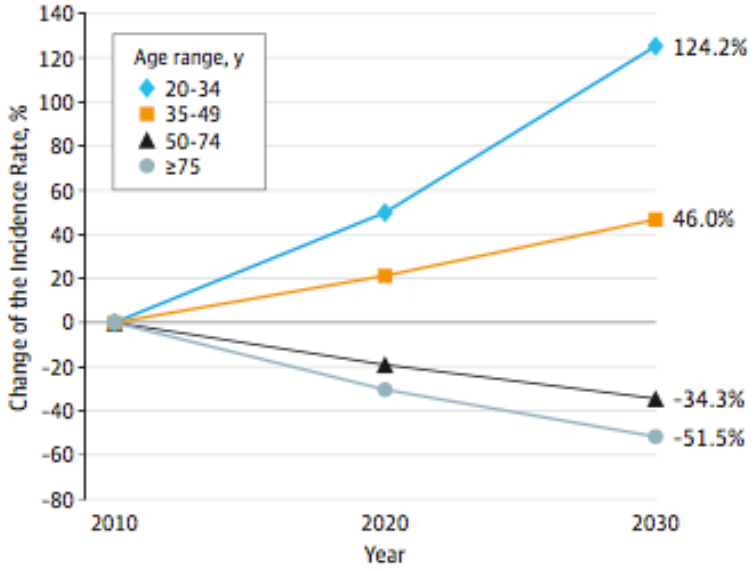


Figure 4. Annual Percentage Change–Based Predicted Incidence Rates of Rectosigmoid and Rectal Cancers by Age Compared With Incidence Rate in 2010



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- Percentage of colorectal cancer diagnosed before age 50
  - 2010
    - Colon 4.8%
    - Rectum 9.5%
  - 2030
    - Colon 10.9%
    - Rectum 22.9%

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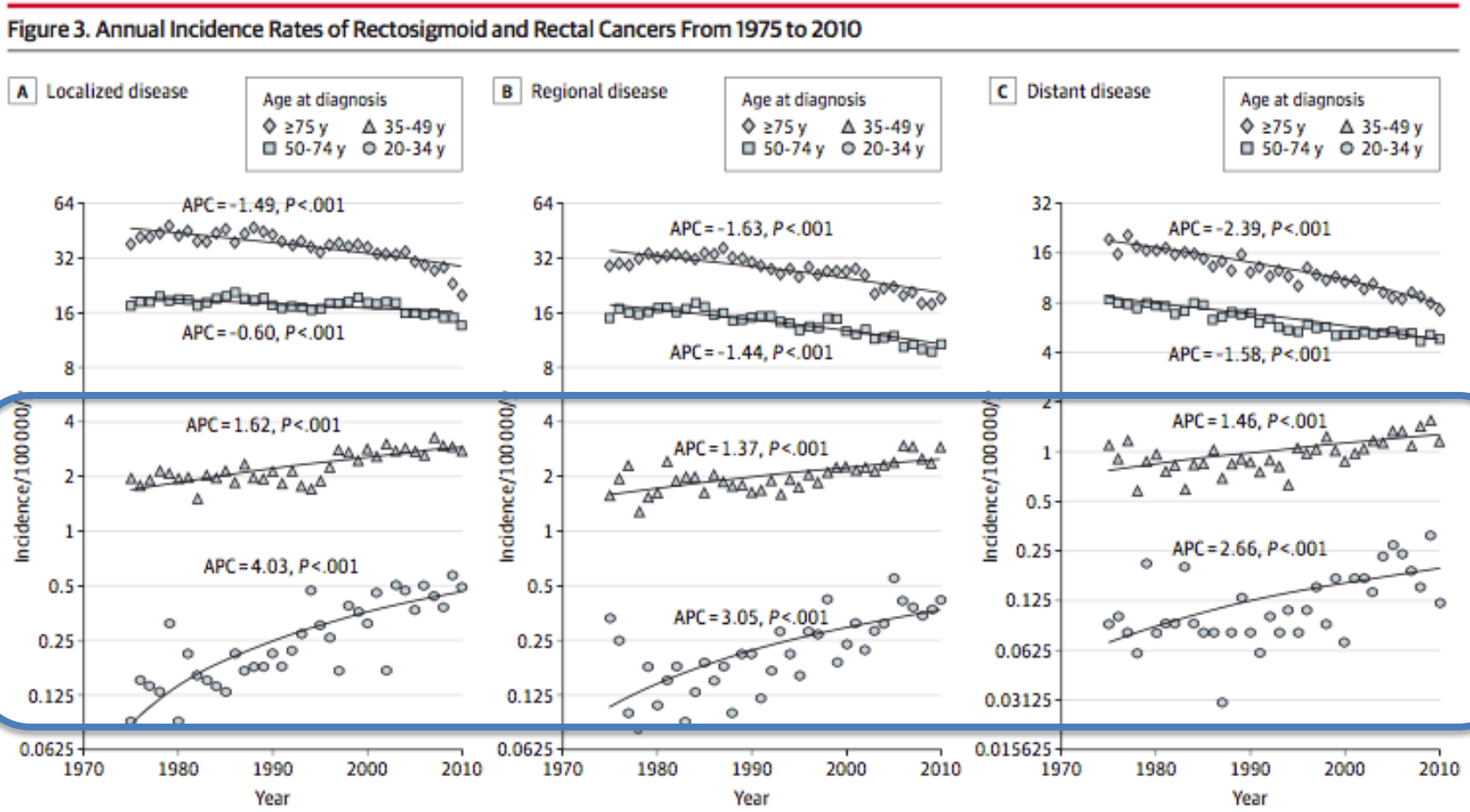
What is driving this change?

- Poorly understood
- Paucity of data

- Early onset CRC more likely to be familial
  - But majority of cases are sporadic (78%)

- Lifestyle factors to blame?
  - Increasing BMI
  - High consumption of processed meats and low fibre
  - Sedentary lifestyle

Screening effect?



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Outcomes in early onset CRC

- Early onset CRC associated with poor outcomes
  - 5 year DFS 48% vs. 78%

Khan et al. J Ped Surg. 2016

  - Diagnostic delays?
  - Tumour biology?

Outcomes in early onset CRC

- Early onset CRC assoc with poor outcomes
  - Diagnostic delays
    - Low suspicion
    - Failure to work up symptoms – patient/physician

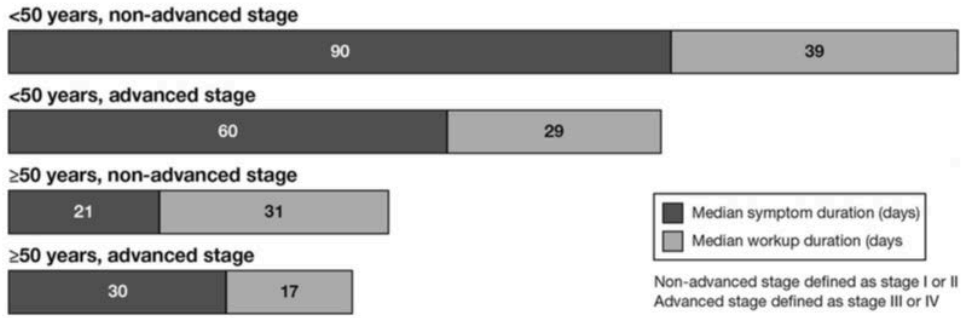

Figure 2. Median symptom and work-up durations by age and stage.

Chen. Clin Gastro and Hepatol. 2017

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Outcomes in early onset CRC

- Tumour biology
  - Higher proportion advance stage tumors
  - High grade cancers and signet cell carcinomas
  - Strong prevalence of MSI
  - More distributed pattern of gene loss
    - <50 years: MLH1 50%, MSH2 29%, MSH6 7%, PMS2 14%
    - >50 years: MLH1 79%, PMS2 16%

Khan et al. J Ped Surg. 2016

Expand screening <50?

- 10-15% of CRC currently diagnosed <50
- Current evidence scarce
- Rates are still low in the youngest populations
  - 20-24 years → 0.85/100,000
  - 45-49 years → 28.8/100,000
- Does not yet support earlier screening

Where do we go from here?

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Educational outreach

- Educational outreach to public
  - Awareness of the problem
  - Awareness of risk/protective factors
    - Lifestyle modification: ½ of overall decline in CRC since 1975 (Edwards. Cancer 2010)

If not earlier screening, then…

- Educational outreach to HCPs
  - Awareness of the problem
  - Screen for family history
  - Encourage earlier investigations for symptoms
    - BPR
    - Change in bowel habits
    - Unexplained weight loss
    - Unexplained anemia

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6 month delay
15-50% initially misdiagnosed

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Selective <50 screening?

- Age 40-49 → 75% of young onset CRC
  - Demographic risk factors
    - African/Caribbean Canadians?
  - High risk occupations
    - Firefighters?
  - High risk comorbidities
    - Obesity, DM
  - Lifestyle factors
    - Smoking, sedentary habits

Quality improvement

- Optimize adherence
  - 50-59 years

- Optimize uptake

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Going forward

- The goalpost is moving for screening
- Will we be able to move it back?

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Thank you

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