

The controversial improvement in LC survival—Cautionary note about the “value” of new technology

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Two Very Different Views of why LC survival is higher

Who gets the credit for better survival?

- Howlander N: Advances in therapy have improved survival. There's not enough LC screening to have mattered
 - The effect of advances in lung-cancer treatment on population mortality. *N Engl J Med*. 2020

VS

- Flores R: Most of the improvement was generated by shift to earlier stage. Better follow-up to indeterminate pulmonary nodules is likely cause of stage shift. There was also some improvement in late-stage survival, which likely reflects better therapy.
 - Association of Stage Shift and Population Mortality among Patients with Non–Small Cell Lung Cancer. *JAMA Network Open Oncology* 2021
 - Disclosure: I am a co-author

Lung Cancer Mortality Has Declined!

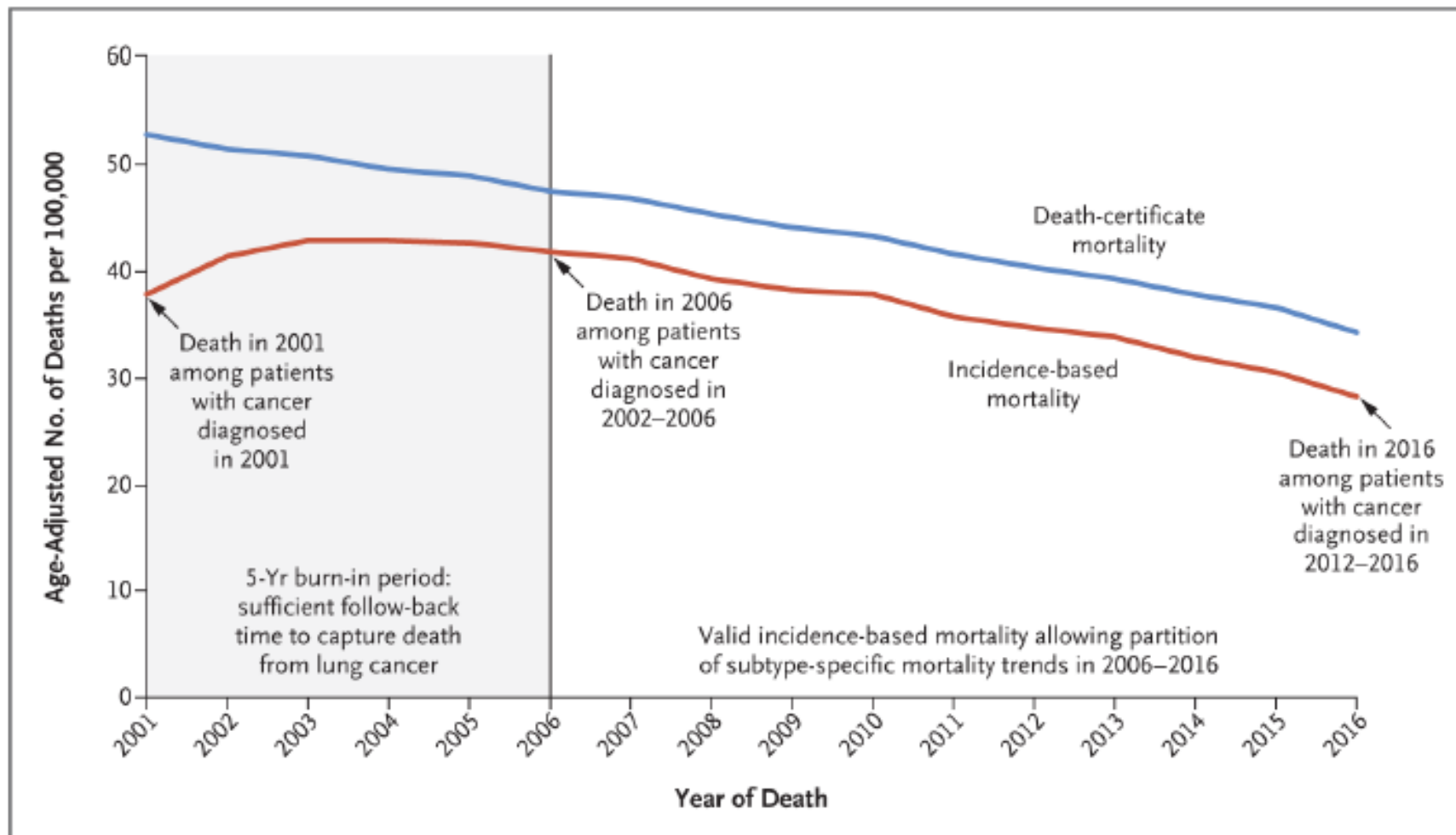


Figure 1. Mortality Estimates Based on Data from Death Certificates and on Incidence among Patients with Lung or Bronchus Cancer.

Howlander, 2020

Incidence-based Survival Has Improved

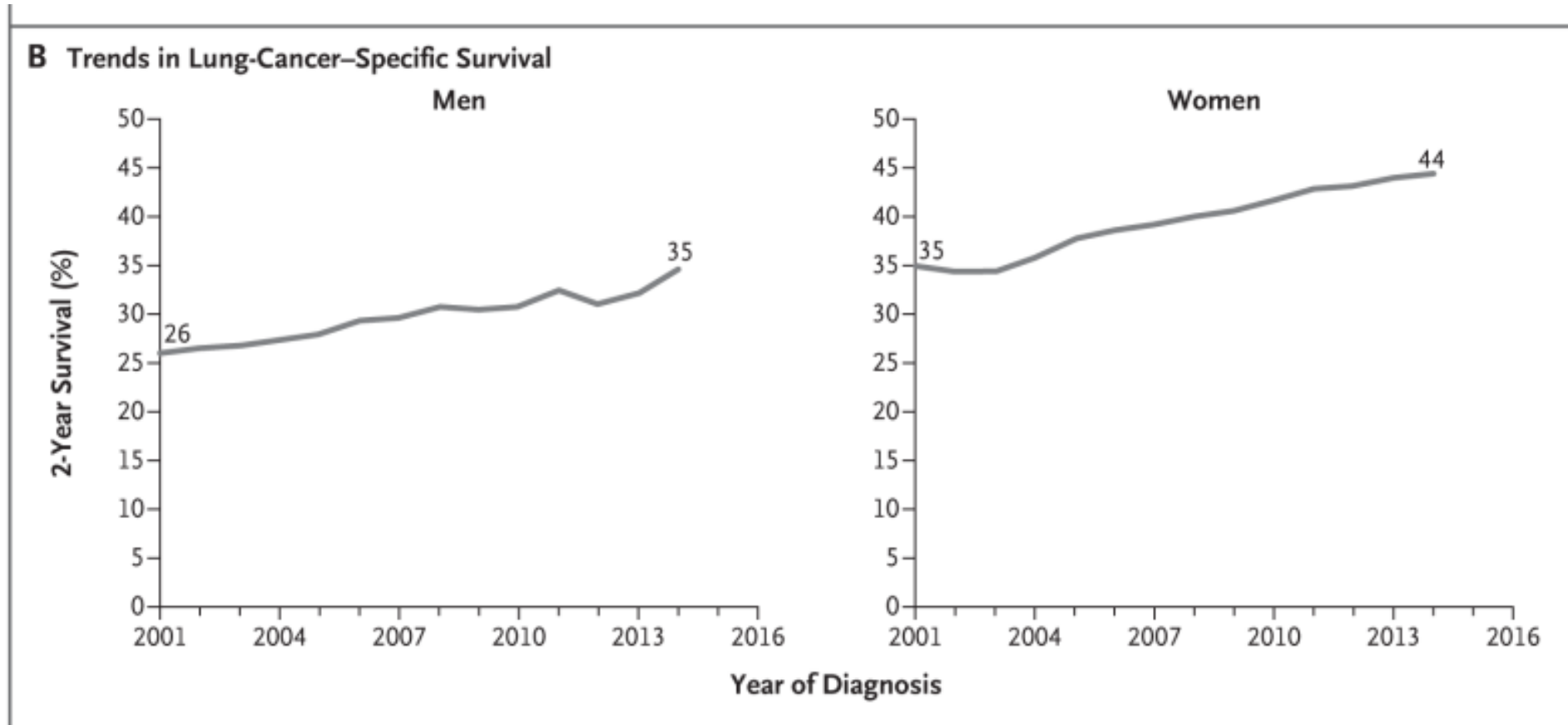
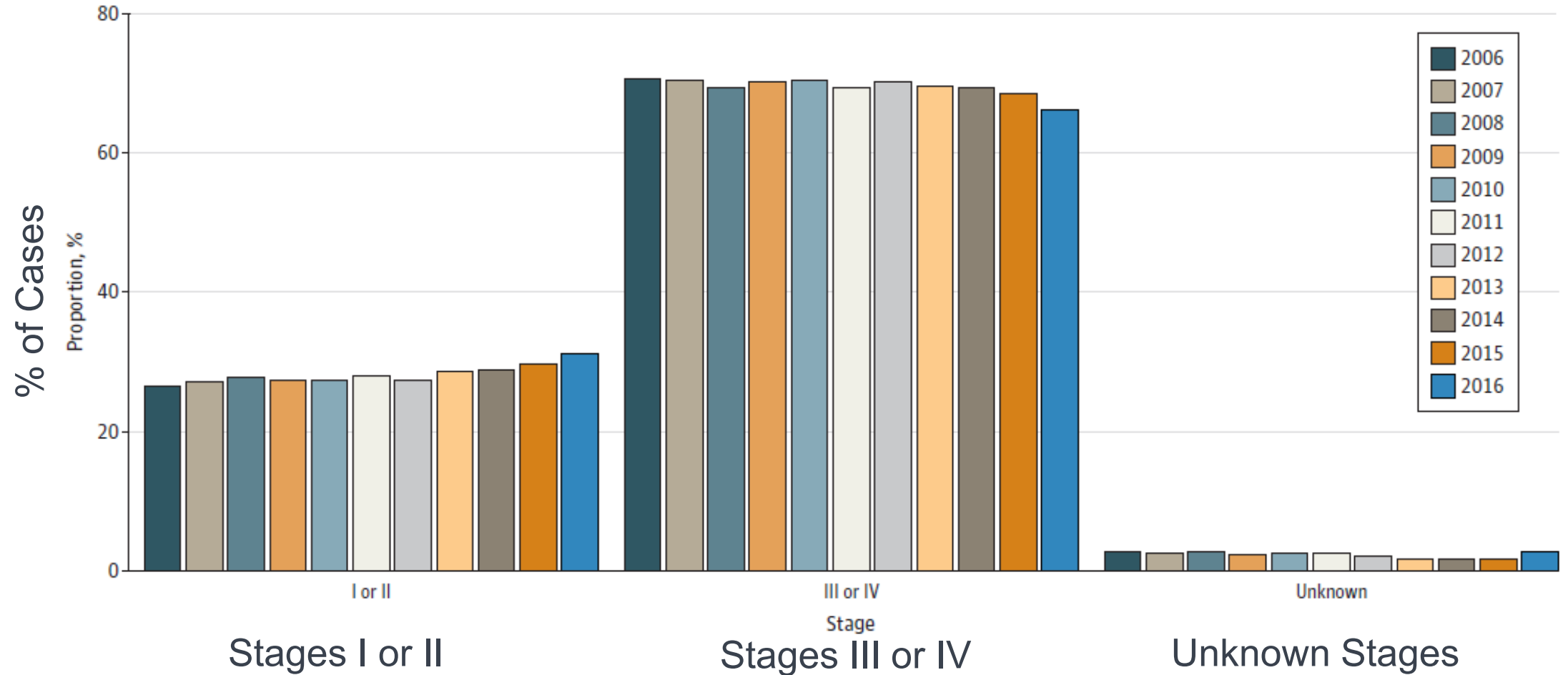


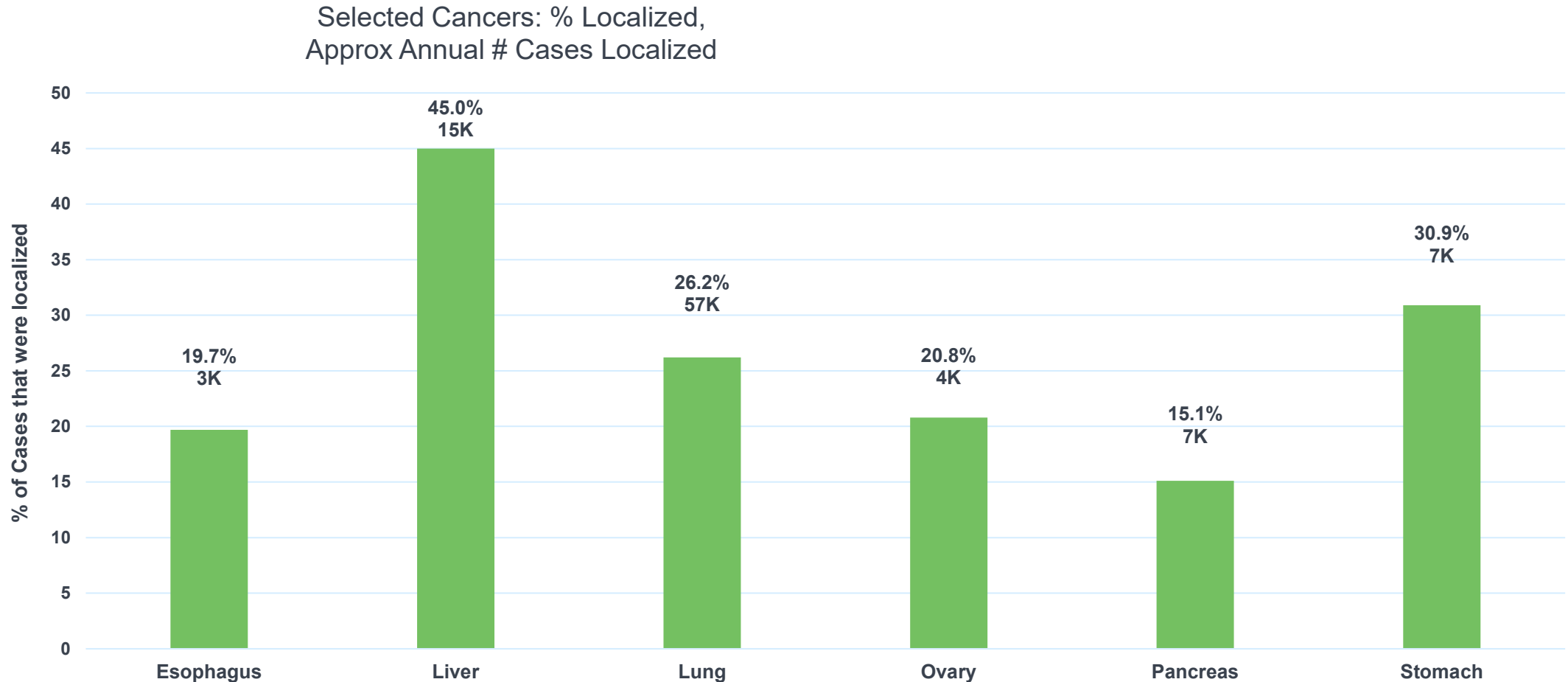
Figure 3. Non-Small-Cell Lung-Cancer (NSCLC) Incidence, Incidence-Based Mortality, and Survival Trends among Men and Women. Howlander, 2020

Lung Cancer Stage Shift: 2006 to 2016 (from Flores R)

Figure 2. Shift in Stage at Diagnosis Over Time, 2006-2016



Selected Cancers: How are Early-Stage Cases Found without Screening? CDC Data 2015-2019



Source: U.S. Cancer Statistics Working Group. U.S. Cancer Statistics Data Visualizations Tool, based on 2021 submission data (1999-2019): U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; www.cdc.gov/cancer/dataviz, released in June 2022.

COVID and the “lucky” early-stage diagnoses.

Debate: Value of Early Detection vs Better Treatment

- Early stage cancers are often “bonus findings” of other medical events and imaging
 - Especially for cancers where screening is under-used or unavailable
 - “Incidental findings” often misrepresents the significance, especially in a high-risk individual
 - Early stage findings may point to new screening opportunities
- COVID led to a dramatic decline in imaging and medical interactions
- Will we see a shift toward later stage diagnoses?
- Will we see cancer mortality get worse over next few years?