

04.14.2021

AN ACCREDITED CONTINUING EDUCATION SERIES WITH THE EXPERTS

# Addressing Disparities in Cancer Care and Incorporating Precision Medicine for Minority Populations

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# GI Cancers: Colorectal, Gastric, and Pancreatic Cancers



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This activity is supported by independent educational grants from

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# Faculty Disclosures

## Edith Mitchell, MD

**Consultant:** AstraZeneca, Bristol Myers Squibb, Genentech, Merck & Co., Inc., Pfizer Inc., Taiho Oncology, Inc.

**Clinical Research:** Amgen, Genentech

## Planning Committee

The following planning committee members have nothing to disclose:

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**Bio Ascend:** Chloe Dunnam; Lucja Grajkowska, PhD; Kraig Steubing

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**Research:** BMS-DMC, Astellas, Celgene Corporation, Infinity Pharmaceuticals, Merck Sharp and Dohme, Taiho Pharmaceuticals, Rafael Pharmaceuticals, Medimmune/AstraZeneca, Xencor, Bristol-Myers Squibb Data Monitoring Committee, PreECOG - Data Monitoring Committee, Astellas - Data Monitoring Committee, Amgen - Data Monitoring Committee ASCO, ECOG-ACRIN- Data Monitoring Committee, SynCore -Data Monitoring Committee, PAF & NPAF, ECOG-ACRIN, ACCC, CancerCare, The Lynx Group: AVBCC, NANETS, BMS, MJH Events (ISGIO), Merck/ MSD, Tyme, Inc DSMB

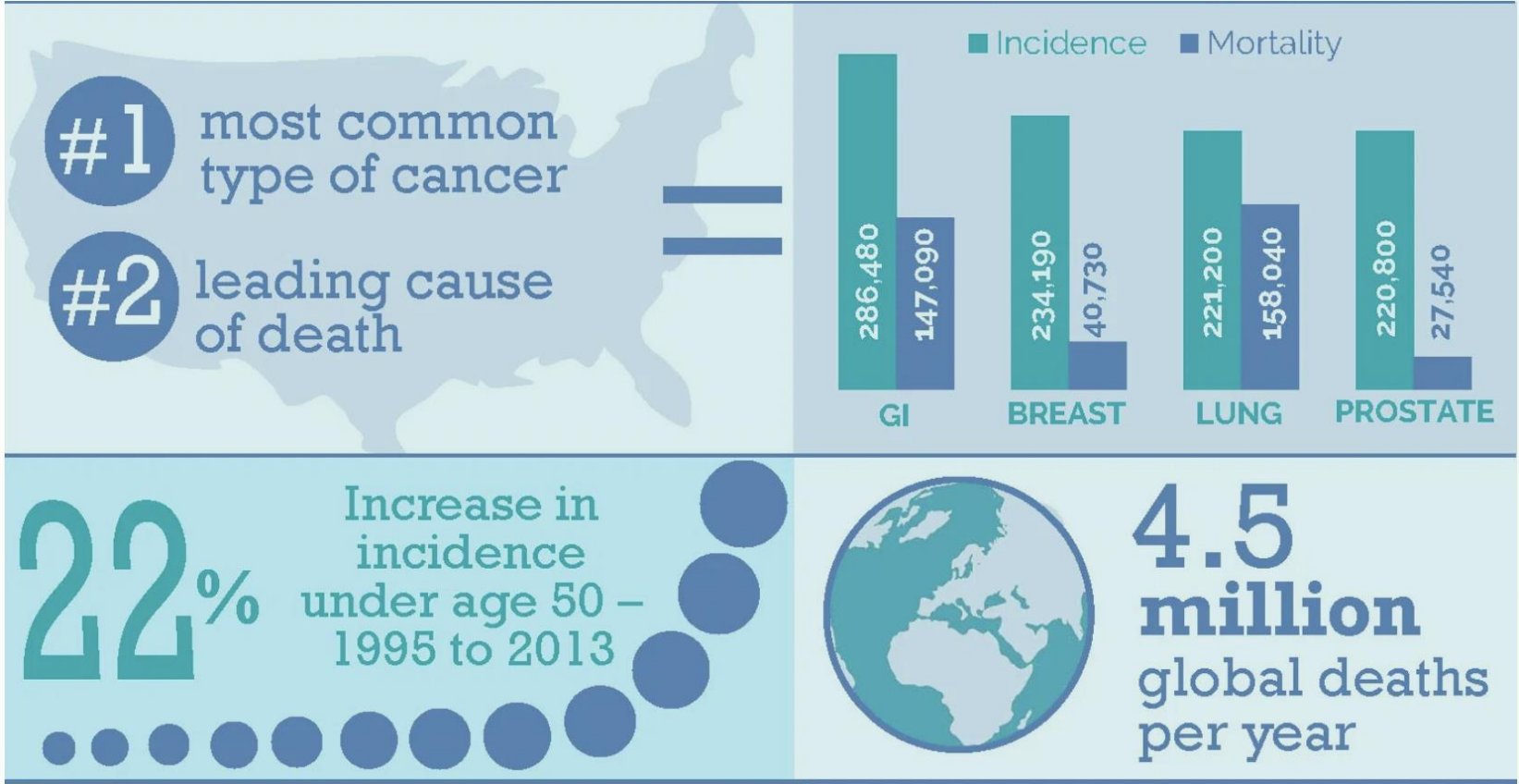
# Learning Objectives

- Review racial difference in the outcomes in patients with cancer, including patients with both hematologic and solid tumors
- Evaluate sociodemographic, physician, and hospital factors that can help identify potentially modifiable patient and health care system factors that may underlie persistent racial disparities in receipt and quality of therapy
- Develop efforts to improve access to care, enhance diversity in the healthcare workforce, navigate minority cancer patients through the healthcare system, and enhance adherence to cancer-specific best practice



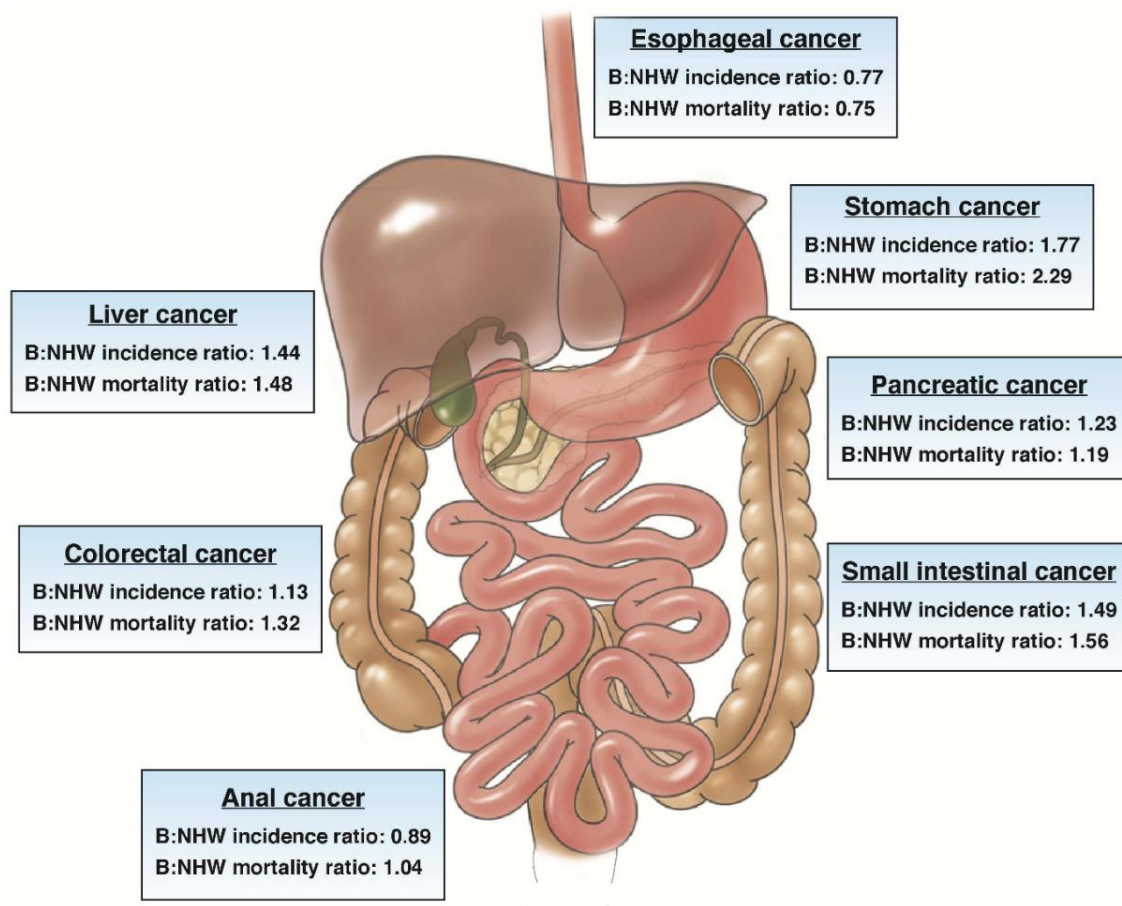
# Gastrointestinal Cancer

Gastrointestinal cancer is responsible for 27% of all cancer deaths in the US<sup>1</sup> – even small racial disparities have a large impact



1. American Cancer Society. Cancer Facts & Figures 2021. <https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/annual-cancer-facts-and-figures/2021/cancer-facts-and-figures-2021.pdf> 2. <https://www.gicancersalliance.org/resources/gastrointestinal-cancers-an-urgent-need/>

# Racial Disparities in Gastrointestinal Cancer



Disparities in incidence are influenced by inequalities in exposure to risk factors like diet, infectious disease

Disparities in mortality rates are influenced by access to screening, access to standard of care, and tumor biology

Ratio greater than 1 indicates higher incidence or mortality for African American population compared to white Americans

# Racial Disparities in Gastrointestinal Cancer Care

- Black patients are more likely to be diagnosed with more advanced stage disease
- The operative rates for Black patients were low relative to White patients. Adjustment for age, stage, and comorbidities revealed even lower odds of receiving surgery<sup>1</sup>
- Receipt of surgery and socioeconomic factors had greatest influence on the survival disparity of gastrointestinal cancers<sup>2</sup>
- Other social determinants of health affect survival (social injustice, living environments, education, etc)

1. Ashktorab H, Kupfer SS, Brim H, Carethers JM. Racial Disparity in Gastrointestinal Cancer Risk. *Gastroenterology*. 2017;153(4):910-923. doi:10.1053/j.gastro.2017.08.018. 2. Bliton JN, Parides M, Muscarella P, Papalezova KT, In H. Understanding Racial Disparities in Gastrointestinal Cancer Outcomes: Lack of Surgery Contributes to Lower Survival in African American Patients. *Cancer Epidemiol Biomarkers Prev*. Published online December 10, 2020:cebp.0950.2020. doi:10.1158/1055-9965.epi-20-0950

# Esophageal Cancer

## Esophageal cancer

B:NHW incidence ratio: 0.77

B:NHW mortality ratio: 0.75

### **Esophageal adenocarcinoma**

- Most common sub-type in the U.S. and Northern Europe
- 68% of esophageal cancer among white Americans
- Risk factors: age, male gender, gastroesophageal reflux disease (GERD) especially erosive esophagitis, Barrett's esophagus, obesity and tobacco use

### **Esophageal squamous cell carcinoma**

- Most common sub-type worldwide especially in East Asia, Africa and Southern Europe
- 80% of esophageal cancer among African Americans
- Primary risk factors: alcohol and tobacco use
- Variants in genes involved in alcohol metabolism confer increased risk of SCC among Asians

**Population-specific screening and prevention programs are warranted for esophageal SCC in Black men exposed to alcohol and tobacco**

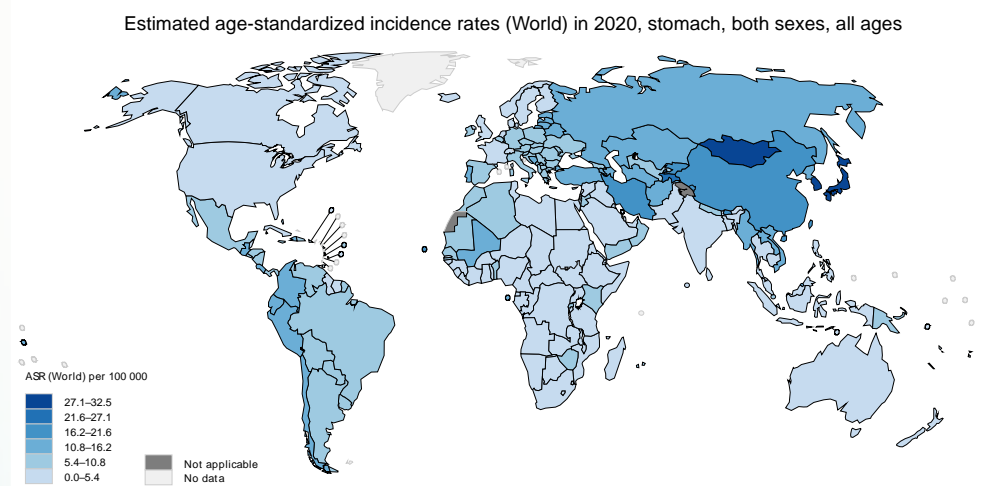
Increased risk of mortality may be influenced by decreased likelihood of receiving surgical intervention for resectable disease, in part because of between-hospital differences<sup>2</sup>

1. Ashktorab H, Kupfer SS, Brim H, Carethers JM. Racial Disparity in Gastrointestinal Cancer Risk. *Gastroenterology*. 2017;153(4):910-923. doi:10.1053/j.gastro.2017.08.018. 2. Savitch SL, Grenda TR, Scott W, et al. Racial Disparities in Rates of Surgery for Esophageal Cancer: a Study from the National Cancer Database. *J Gastrointest Surg*. 2020;25(3):581-592. doi:10.1007/s11605-020-04653-z

# Gastric Cancer

## Documented disparities in gastric cancer:

- Native Asians from specific countries have a high incidence of gastric cancer
- Asian and Pacific Islanders living in the U.S. have higher incidence and mortality
- African Americans have a higher incidence and mortality than white Americans
- Patients with disabilities, especially severe disabilities, were diagnosed with GC at a later stage, received less staging evaluation and treatment, and their overall survival rate was slightly worse compared to those without disabilities<sup>2</sup>



Consider where a patient has lived when assessing risk for gastric cancer



# Gastric Cancer – In the U.S.

- Asian/Pacific Islander males displayed the highest incidence and mortality when compared to all other groups and genders, with 14.0 new cases/100,000 and 7.1 deaths per 100,000.
- Blacks developed gastric cancer at nearly the same rate as Asian/Pacific Islanders
- Risk Factors: H. Pylori infection, tobacco use, obesity
- Black patients are more likely to have more aggressive disease

## Stomach cancer

B:NHW incidence ratio: 1.77

B:NHW mortality ratio: 2.29



# Liver Cancer

## Liver cancer

**B:NHW incidence ratio: 1.44**

**B:NHW mortality ratio: 1.48**

Highest incidence and death rates for HCC in the U.S. are among

- Asian Americans - due to the prevalence of HBV vertical transmission
  - Hispanics, likely due to NAFLD (non-alcoholic fatty liver disease) and HCV
  - American Indian/Alaskan natives and Blacks
- 
- Influences such as HBV vaccination and treatment, HCV treatment, HCC surveillance in high-risk populations, and societal efforts to curb obesity and treat metabolic syndrome with statins and metformin may alter these populations' risk projections

# Pancreatic Cancer

## **Pancreatic cancer**

**B:NHW incidence ratio: 1.23**

**B:NHW mortality ratio: 1.19**

Risk factors for pancreatic adenocarcinoma : Family history (not linked to race/ethnicity), tobacco use, diabetes, obesity and chronic pancreatitis<sup>1</sup>

In addition to their highest incidence, Blacks also have the worst pancreatic cancer prognosis of all U.S. populations<sup>1</sup>

- Black patients with pancreatic cancer present with more advanced disease, are less likely to receive standard-of-care treatment, and have worse unadjusted survival<sup>2</sup>
- Geographic region, income, education level, insurance status, and facility type, but not race/ethnicity, were associated with survival in a multivariable model where all variables were analyzed<sup>2</sup>

1. Ashktorab H, Kupfer SS, Brim H, Carethers JM. Racial Disparity in Gastrointestinal Cancer Risk. *Gastroenterology*. 2017;153(4):910-923. doi:10.1053/j.gastro.2017.08.018. 2. Gold JS. Linking Disparities to Outcomes in Pancreatic Cancer: Inching Toward Answers. *JAMA Surg*. 2020;155(2). doi:10.1001/jamasurg.2019.5082

# Small Intestine Cancer

## **Small intestinal cancer**

**B:NHW incidence ratio: 1.49**

**B:NHW mortality ratio: 1.56**

Rare cancer, but NH Blacks have the highest rates.

Risk factors for small bowel adenocarcinoma: familial adenomatous polyposis (especially in the duodenum), Lynch syndrome, Peutz-Jeghers syndrome, juvenile polyposis syndrome, Crohn's disease and celiac disease

# Colorectal Cancer

## Colorectal cancer

**B:NHW incidence ratio: 1.13**

**B:NHW mortality ratio: 1.32**

- Blacks have the highest incidence and death rates for CRC, whereas Hispanics and Asian/Pacific Islanders have the lowest rates<sup>1</sup>
- Blacks have a distribution of CRC that favors metastatic disease compared to NHWs<sup>1</sup>
- Disparities in incidence and mortality can be attributed to social determinants of health
- Black patients display a higher frequency of KRAS mutations in tumors, increasing the aggressiveness of the CRC<sup>1</sup>
- Black patients are more likely to be diagnosed at an earlier age, with more advanced, and more aggressive disease<sup>1</sup>
- The age of diagnosis has been decreasing across all races, which is likely to lead to increased incidence for African Americans<sup>2</sup>

1. Ashktorab H, Kupfer SS, Brim H, Carethers JM. Racial Disparity in Gastrointestinal Cancer Risk. *Gastroenterology*. 2017;153(4):910-923. doi:10.1053/j.gastro.2017.08.018.

2. Virostko J, Capasso A, Yankeelov TE, Goodgame B. Recent trends in the age at diagnosis of colorectal cancer in the US National Cancer Data Base, 2004-2015. *Cancer*. 2019;125(21):3828-3835. doi:10.1002/cncr.32347

# Anal Cancer

## Anal cancer

B:NHW incidence ratio: 0.89

B:NHW mortality ratio: 1.04

- Ninety percent of anal SCCs are caused by HPV infection
- Smoking is reported as a risk factor that correlates with anal cancer, especially in those with HPV infections<sup>1</sup>
- Communities with a higher proportion of individuals living in poverty and a higher proportion of racial/ethnic minority groups bear the highest incidence of disease<sup>2</sup>

1. Ashktorab H, Kupfer SS, Brim H, Carethers JM. Racial Disparity in Gastrointestinal Cancer Risk. *Gastroenterology*. 2017;153(4):910-923. doi:10.1053/j.gastro.2017.08.018. 2. Oliveira CR, Niu YS, Einarsdottir HM, Niccolai LM, Shapiro ED. Disparities in the Epidemiology of Anal Cancer: A Cross-Sectional Time Series. *Health Equity*. 2020;4(1):382-385. Published 2020 Sep 16. doi:10.1089/heq.2020.0021

# Addressing Disparities

## Patient Navigators & Community Outreach to Increase access to screening

- Patient navigators intervened on the social and community context by providing support to vulnerable populations in overcoming the anxiety and barriers faced when navigating through the complexities of the healthcare system<sup>1</sup>
- Investing in navigation services throughout the continuum of preventive care has been shown to improve successful screening uptake, diagnosis, and follow-up, resulting in earlier diagnoses and treatment and eventually contributing to gains in QALY<sup>1</sup>

## Access to Standard of Care

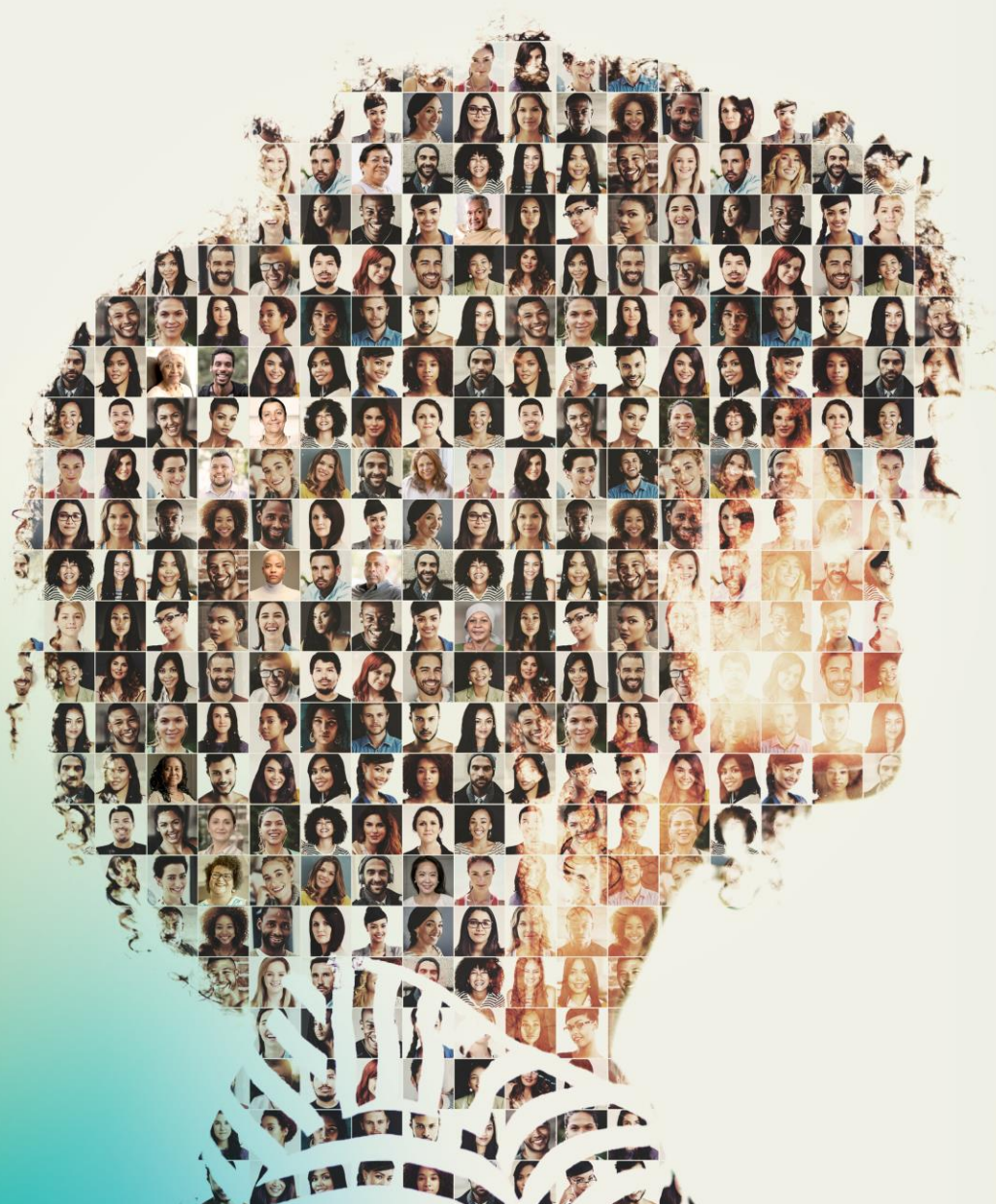
- Receipt of surgery and socioeconomic factors had greatest influence on the survival disparity of gastrointestinal cancers<sup>3</sup>
- Centralize esophageal, gastric and pancreatic cancer care to high-performing centers<sup>2</sup>

## Social Determinants of Health

- A construct to address social determinants of health promotes recognition of structural inequities, institutional environments, living environments, risk factors and the spectrum of cancer co-morbidities (ACS)

1. Mohan G, Chattopadhyay S. Cost-effectiveness of Leveraging Social Determinants of Health to Improve Breast, Cervical, and Colorectal Cancer Screening: A Systematic Review. *JAMA Oncol.* 2020;6(9):1434-1444. doi:10.1001/jamaoncol.2020.1460. 2. Gold JS. Linking Disparities to Outcomes in Pancreatic Cancer: Inching Toward Answers. *JAMA Surg.* 2020;155(2). doi:10.1001/jamasurg.2019.5082. 3. Bliton JN, Parides M, Muscarella P, Papalezova KT, In H. Understanding Racial Disparities in Gastrointestinal Cancer Outcomes: Lack of Surgery Contributes to Lower Survival in African American Patients. *Cancer Epidemiol Biomarkers Prev.* Published online December 10, 2020;cebp.0950.2020. doi:10.1158/1055-9965.epi-20-0950





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