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Epidemiology of Cancer and the Impact of Disparities on Cancer Outcomes for Underserved Populations

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DISCLOSURES

• None.

CANCER EPIDEMIOLOGY

- **Epidemiology**: the study of the distribution (patterns) and determinants (causes) of disease at the population level.
- **Cancer**: a constellation of over 100 diseases affecting different tissues and organs in the body.
- **Cancer Outcomes**: changes in a cancer patient's health that result from health care interventions.
- **Diagnosis**: accurate recognition of a cancer by screening or symptom evaluation.

SCIENCE OF CANCER DISPARITIES

- **Disparities**: when a cancer outcome is seen to a greater or lesser extent in between populations defined by race or ethnicity, sex, sexual identity, age, disability, socioeconomic status, or geographic location.
- Underserved populations: Certain groups in the United States experience cancer disparities because they are more likely to encounter obstacles in getting health care, including but not limited to low income, rural populations, or uninsured populations.
- **Drivers of disparities:** most factors that cause disparities between groups are social, economic, and/or geographic in nature.



EXAMPLE: LUNG CANCER DIAGNOSIS

Favorable prognosis is highly dependent on a patient's *stage of diagnosis* and receipt of *treatment* in a timely manner.

EXAMPLE: LUNG CANCER SURVIVAL BY STAGE (2010-2016)

% Who survive at least 5 years



EXAMPLE: DISPARITIES IN LUNG CANCER STAGE (2009-2016)



Offor, Obrochta, Schumacher, Thompson. "Trends in stage at diagnosis for lung cancer in the U.S., 2009-2016" *Cancer Epidemiol Biomarkers Prev* 2020;29(12 Suppl).

EXAMPLE: RECEIPT OF APPROPRIATE LUNG CANCER TREATMENT (2010-2014)

Patient Race	% Who Receive Appropriate Treatment	Odds of Receiving Appropriate Treatment
White	63%	1.0 (Reference)
Black	58%	0.82 (0.81 – 0.84)



HEALTHCARE ACROSS THE CANCER CONTINUUM

OUTCOMES



Figure 6. Common barriers to early diagnosis



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Figure source: World Health Organization

Figure S2. Potential Impact of the COVID-19 Pandemic on Future Cancer Outcomes



Coronavirus image courtesy of CDC.

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Thank You.

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