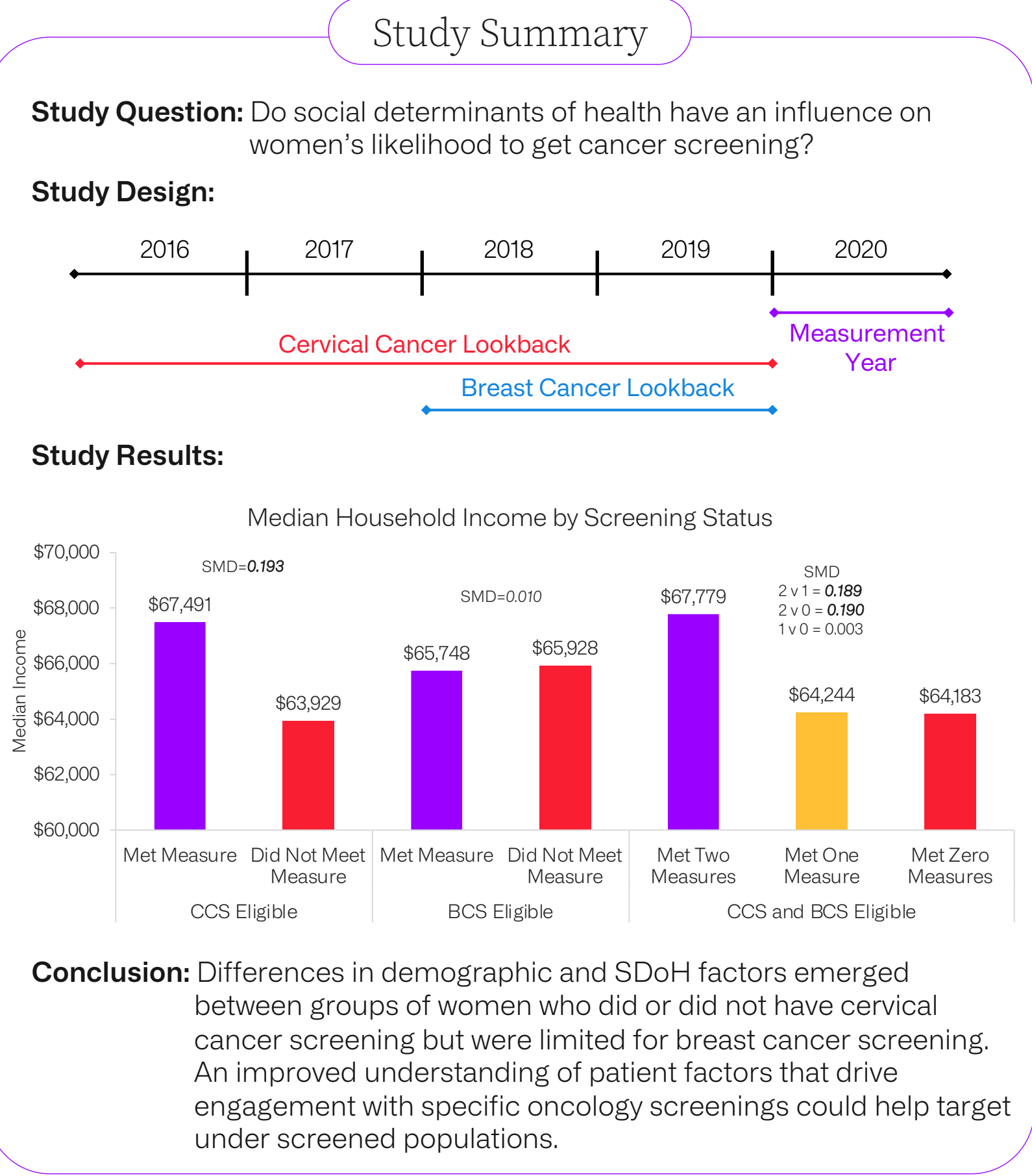


Examination of Social Determinants of Health in Women’s Health Cancer Screening

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Methods

Study Design

- National Quality Forum (NQF) Breast Cancer Screening and Cervical Cancer Screening measures were calculated in the MarketScan Database during 2020.
 - The Cervical Cancer Screening (CCS) measure assessed the percentage of women aged 21-64 who were screened for cervical cancer based on 1) cervical cytology in the last 3 years or 2) high-risk human papillomavirus (hrHPV) testing in the last 5 years for women aged 30-64. Women without a cervix are excluded from the measure sample. To ensure all cervical cancer screening tests were captured women were required to have continuous eligibility from January 1, 2016 through December 31, 2020
 - The Breast Cancer Screening (BCS) measure examined the percentage of women aged 50-74 who had a mammogram between October 1, 2018 through December 31, 2020. Women with a history of bilateral mastectomy, hospice services, or in long-term care are excluded from the measure sample. To ensure all mammograms were captured eligible women were also required to have continuous eligibility for the entire measurement period.

Outcomes and Analyses

- The number and percentage of women who received breast cancer (BC) or cervical cancer (CC) screening requirements and met the respective NQF measures were reported among populations of women eligible for either measure or both measures.
- Patient demographics and baseline clinical characteristics (derived from the MarketScan database) along with SDoH metrics (derived from the RWJF database) were compared across subgroups of women based on measure attainment using standardized mean differences (SMD), with SMDs >0.10 indicating a difference.

Results

Study Sample and Rates of Screening

- Sample sizes included:
 - Women eligible for CCS measure: 2,174,186
 - Women eligible for BCS measure: 1,743,590
 - Women eligible for BCS and CCS measures: 1,016,221
- Rates of measure attainment are reported in Figure 1.
- Patient Characteristics by Screening**
 - The greatest differences in demographic and SDoH variables were observed for the populations eligible for the CCS measure and both measures (Table 1).
 - Women who did not receive screenings tended to have the following characteristics:
 - Older (Figure 2)
 - Reside in a rural area (Table 1)
 - In worse health or have more compromising health behaviors (Table 1)
 - Less likely to have access to preventative care (Table 1)
 - Have a lower median household income (Summary figure)
 - Live in an area with increased mortality rates (Figure 3)
- There were limited differences in race between screening groups (Table 1).

Figure 1. Proportion of Eligible Women Meeting NQF Screening Measures

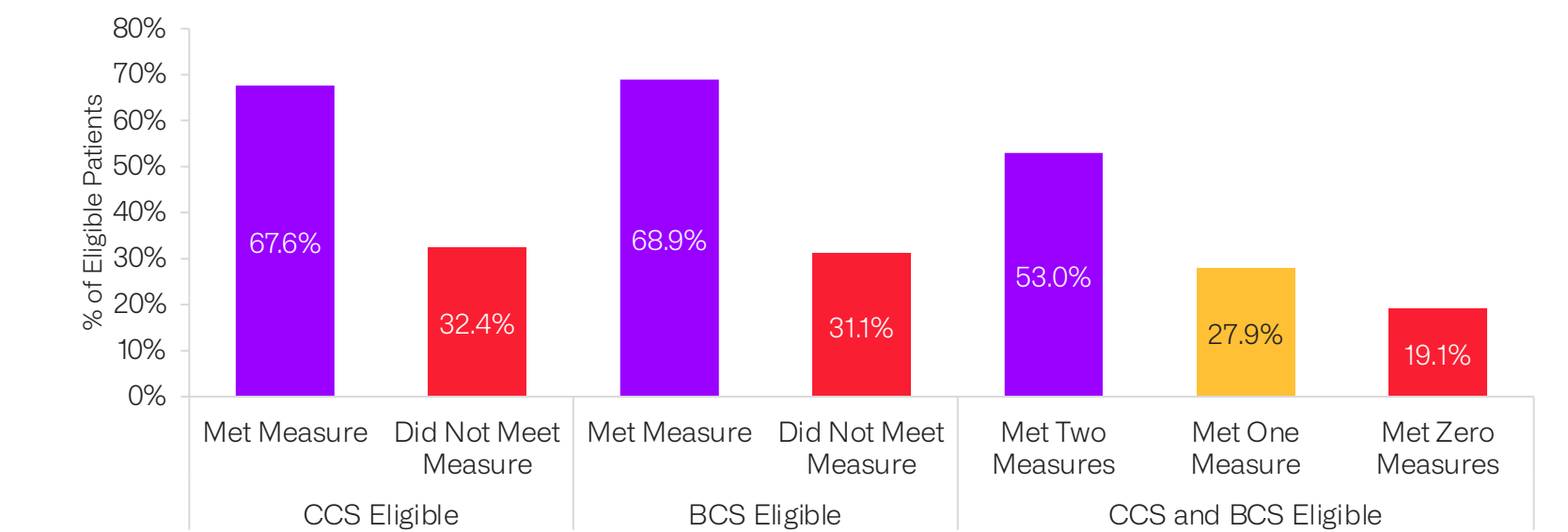


Table 1. Patient Characteristics by Screening Over the Measurement Year												
	CCS Eligible			BCS Eligible			CCS and BCS Eligible			SMD	SMD	SMD
	Met Measure	Did Not Meet Measure	SMD	Met Measure	Did Not Meet Measure	SMD	Met Two Measures	Met One Measure	Met Zero Measures			
Race												
Black	15.3%	15.3%	0.005	14.7%	14.5%	0.017	15.1%	15.4%	15.3%	0.021	0.015	0.006
Hispanic	12.8%	12.1%	0.063	12.0%	12.7%	0.060	12.5%	11.8%	12.3%	0.053	0.017	0.035
White	64.8%	66.0%	0.065	66.6%	66.0%	0.031	65.4%	66.2%	65.9%	0.043	0.026	0.017
Asian	4.8%	4.2%	0.145	4.4%	4.5%	0.025	4.8%	4.2%	4.2%	0.131	0.126	0.003
American Indian/Alaskan Native	0.7%	0.8%	0.044	0.8%	0.8%	0.020	0.7%	0.8%	0.8%	0.044	0.052	0.007
Native Hawaiian/Pacific Islander	0.1%	0.1%	0.031	0.1%	0.1%	0.025	0.1%	0.1%	0.1%	0.036	0.031	0.004
Population density			0.129			0.012				0.105	0.125	0.019
Urban	89.4%	85.1%		86.8%	86.4%		88.9%	85.4%	84.7%			
Rural	10.6%	14.9%		13.2%	13.6%		11.1%	14.6%	15.3%			
Health Factors												
Fair/Poor Health	16.2%	16.7%	0.129	16.2%	16.4%	0.035	16.1%	16.6%	16.7%	0.122	0.171	0.050
Smoking	15.6%	16.1%	0.153	15.8%	15.7%	0.024	15.6%	16.0%	16.1%	0.142	0.166	0.025
Obesity	29.5%	30.4%	0.180	29.9%	29.8%	0.027	29.4%	30.3%	30.3%	0.166	0.173	0.007
Charlson Comorbidity Index	0.4	0.5	0.054	0.7	0.7	0.042	0.6	0.7	0.5	0.093	0.028	0.116
Healthcare Access												
# PCPs/100k Residents	0.00078	0.00073	0.154	0.00077	0.00075	0.047	0.00079	0.00074	0.00073	0.144	0.182	0.038
Education												
High School Grad	87.3%	87.1%	0.024	87.3%	87.0%	0.048	87.3%	87.1%	87.1%	0.041	0.041	0.000
Some College	66.9%	65.1%	0.176	66.2%	65.6%	0.058	66.8%	65.3%	64.8%	0.152	0.202	0.049

SMDs >0.10 indicate differences between groups – values are bolded

Figure 3. Patient Age by Screening Status

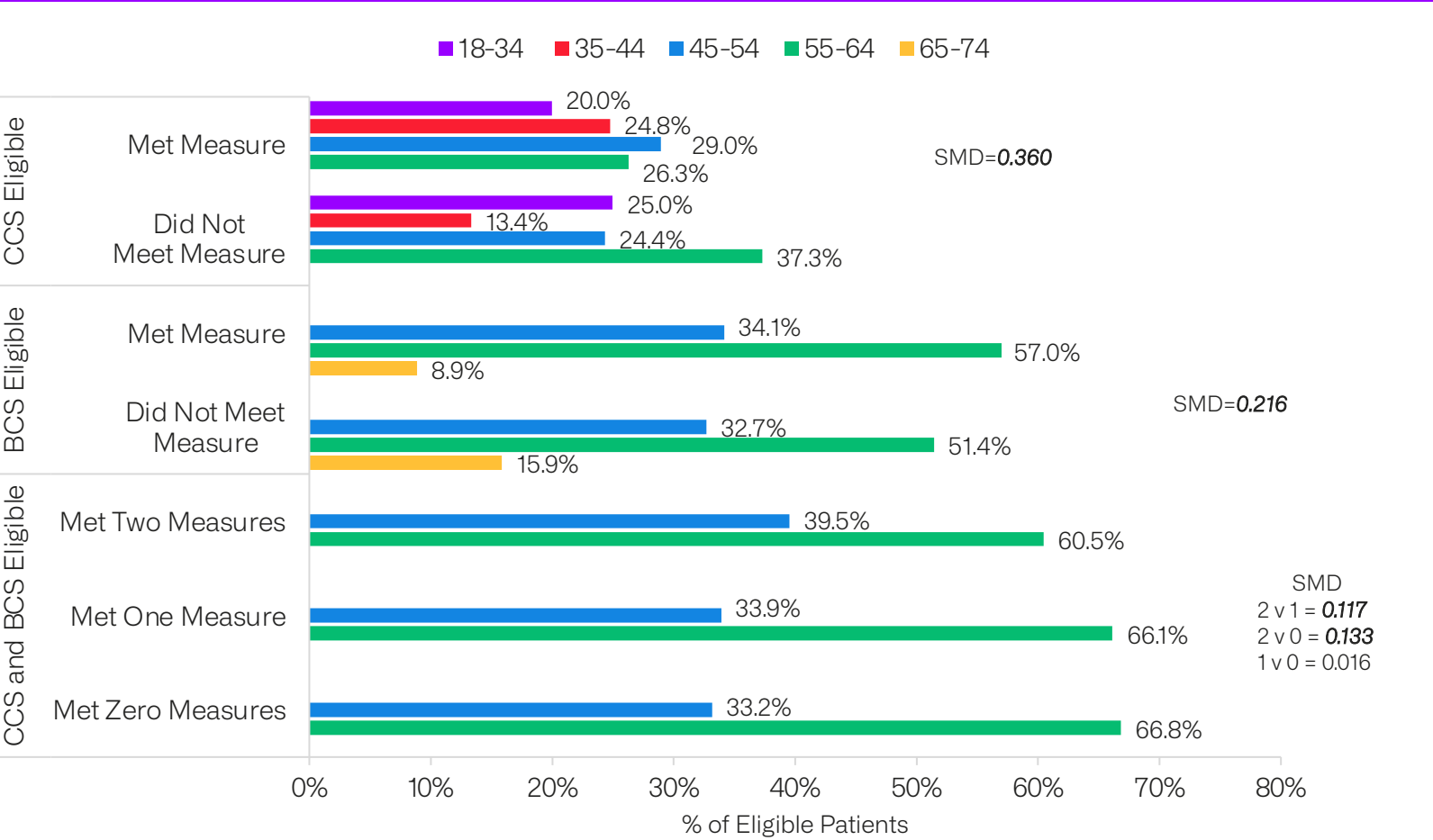
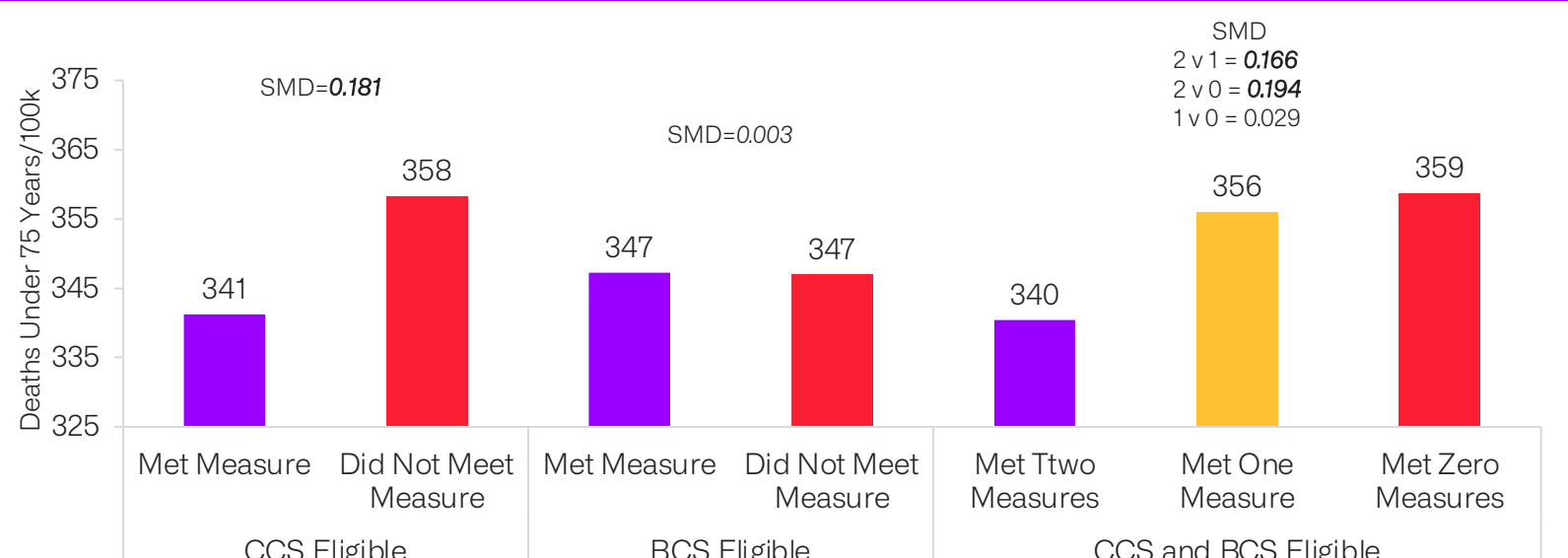


Figure 2. Age Adjusted Mortality by Screening Status



Background

- Oncology screening programs are an important part of preventative care and have been shown to help reduce cancer related morbidity and mortality through early detection.¹⁻⁴
- There are multiple barriers to healthcare access including socioeconomic factors such as income, region of residence, transportation, and health literacy that can impact patients access to preventative care.⁵

Objective

- To investigate the potential influence of social determinants of health (SDoH) may influence women’s completion of recommended breast and cervical cancer screening.

Methods

Data Sources

- Merative™ MarketScan® Commercial and Medicare Database from January 1, 2016 through December 31, 2020
 - The MarketScan administrative claims databases contain data on the full healthcare experience (inpatient, outpatient, and outpatient pharmacy) for individuals with employer sponsored commercial or Medicare insurance
- Robert Wood Johnson Foundation (RWJF) County Health Rankings Database
 - The RWJF database provides county level health rankings data for a variety of metrics including income, race, education, and access to healthcare. SDoH data are linked to patients in the MarketScan Database based on 5-digit zip.

Limitations

- This study included patients with commercial or private Medicare insurance; results may not extend to patients with other types or the uninsured
- As administrative claims data do not contain information on many SDoH variables, the RWJF data was used to examine SDoH factors.
 - The linkage occurs at the geographic level and thus represents characteristics based on patient region of residence.
 - Characteristics may not reflect those of individual patients, especially in highly diverse areas.

Conclusions

- There remains room for improvement in both CC and BC screening programs as fewer than 70% of eligible women received screening.
- As there are differences in SDoH based on screening, especially for the CCS measure, interventions that target specific populations at highest risk of not receiving screening will likely be required.
 - SDoH patterns did not necessarily hold across the CCS and BCS measures, indicating that SDoH factors associated with receiving one type of cancer screening may not extend to other cancer types
- Further research to better understand SDoH factors that influence engagement with cancer screening programs is warranted to improve preventative care in the United States.

References

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Disclosure

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