

Title Cost-Effectiveness Analysis of the Federal Menu Calorie Labeling and Obesity-Associated Cancer Burdens in the United States

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Supplementary Table 1. Defining population and 32 subgroups

Subgroups	Age	Sex	Race/Ethnicity
1	20-44y	Female	NHW
2	20-44y	Female	NHB
3	20-44y	Female	HISP
4	20-44y	Female	OTH
5	20-44y	Male	NHW
6	20-44y	Male	NHB
7	20-44y	Male	HISP
8	20-44y	Male	OTH
9	45-54y	Female	NHW
10	45-54y	Female	NHB
11	45-54y	Female	HISP
12	45-54y	Female	OTH
13	45-54y	Male	NHW
14	45-54y	Male	NHB
15	45-54y	Male	HISP
16	45-54y	Male	OTH
17	55-64y	Female	NHW
18	55-64y	Female	NHB
19	55-64y	Female	HISP
20	55-64y	Female	OTH
21	55-64y	Male	NHW
22	55-64y	Male	NHB
23	55-64y	Male	HISP
24	55-64y	Male	OTH
25	65+y	Female	NHW
26	65+y	Female	NHB
27	65+y	Female	HISP
28	65+y	Female	OTH
29	65+y	Male	NHW
30	65+y	Male	NHB
31	65+y	Male	HISP
32	65+y	Male	OTH

Supplementary Table 2. Relative risk estimates of etiologic relationships between body mass index (BMI) and 13 types of cancers

Cancer Type	No. of Studies	No. of Events	Source	Evidence Grading	RR (95% CI) Per 5 kg/m ²	Statistical Heterogeneity
Endometrial	26	18,717	CUP, 2013	Convincing ↑risk	1.50 (1.42-1.59)	I ² =86.2% P<0.0001
Esophageal (adenocarcinoma)	9	1,725	CUP, 2016	Convincing ↑risk	1.48 (1.35-1.62)	I ² =36.7% P=0.13
Kidney	23	15,575	CUP, 2015	Convincing ↑risk	1.30 (1.25-1.35)	I ² =38.8% P=0.03
Liver	12	14,311	CUP, 2015	Convincing ↑risk	1.30 (1.16-1.46)	I ² =78.3% P=0.000
Gallbladder	8	6,004	CUP, 2015	Probable ↑risk	1.25 (1.15-1.37)	I ² =52.3% P=0.04
Stomach (cardia)	7	2,050	CUP, 2016	Probable ↑risk	1.23 (1.07-1.40)	I ² =55.6% P=0.04
Breast (post-menopausal)	56	80,404	CUP, 2017	Convincing ↑risk	1.12 (1.09-1.15)	I ² =75% P<0.001
Pancreas	23	9,504	CUP, 2011	Convincing ↑risk	1.10 (1.07-1.14)	I ² =19% P=0.20
Multiple myeloma	20	1,388	IARC, 2016 ³⁰	Sufficient (IRAC) ↑risk	1.09 (1.03-1.16)	Not reported
Prostate (advanced)	24	11,149	CUP, 2014	Probable ↑risk	1.08 (1.04-1.12)	I ² =18.8% P=0.21
Thyroid	22	3,100	IARC, 2016 ³⁰	Sufficient (IARC) ↑risk	1.06 (1.02-1.10)	Not reported
Ovary	25	15,899	CUP, 2013	Probable ↑risk	1.06 (1.02-1.11)	I ² =55.1% P=0.001
Colorectal	38	71,089	CUP, 2017	Convincing ↑risk	1.05 (1.03-1.07)	I ² =74.2% P=0.000

Supplementary Table 3. Baseline incidence rates of 13 cancers among US adults by 32 subgroups

Subgroup	Colorectal Cancer		Endometrial Cancer		Esophageal Adeno-carcinoma		Female Breast (Postmeno.)		Gallbladder Cancer		Kidney Cancer		Liver Cancer		Multiple Myeloma		Ovarian cancer		Pancreatic Cancer		Advanced Prostate Cancer		Stomach Cancer (Gastric Cardia)		Thyroid Cancer	
	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
1	8.53	0.38	6.54	3.66	0.05	4.18	0.00	0.00	0.05	2.57	3.83	3.16	0.49	4.18	0.38	4.66	4.31	0.27	107	3.46	0.00	0.00	0.10	3.82	28.97	0.69
2	7.78	0.74	5.04	0.59	0.03	0.20	0.00	0.00	0.07	2.46	3.57	0.50	0.56	0.20	102	0.27	2.98	0.45	103	0.26	0.00	0.00	0.09	2.25	13.12	0.95
3	6.09	0.55	7.49	3.32	0.03	3.07	0.00	0.00	0.06	2.48	3.73	3.16	0.42	3.07	0.33	3.71	3.95	0.46	0.86	0.87	0.00	0.00	0.09	2.27	20.97	1.13
4	6.36	1.10	6.56	1.18	0.02	0.15	0.00	0.00	0.07	2.58	1.87	0.40	0.32	0.15	0.38	0.23	4.49	0.70	0.74	0.25	0.00	0.00	0.09	2.36	24.88	2.21
5	9.20	0.39	0.00	0.00	0.42	5.22	0.00	0.00	0.04	0.02	5.91	4.53	0.60	5.22	0.48	5.26	0.00	0.00	122	2.06	0.21	0.02	0.43	4.32	6.93	0.34
6	7.94	0.78	0.00	0.00	0.29	0.30	0.00	0.00	0.04	0.02	5.47	0.65	1.17	0.30	1.48	0.34	0.00	0.00	100	0.28	0.56	0.09	0.34	3.42	2.36	0.42
7	6.15	0.54	0.00	0.00	0.31	3.85	0.00	0.00	0.04	0.02	4.04	3.82	0.82	3.85	0.57	0.18	0.00	0.00	0.83	0.20	0.13	0.68	0.34	3.53	3.80	0.44
8	6.21	0.85	0.00	0.00	0.31	0.47	0.00	0.00	0.05	0.02	3.68	10.4	1.59	0.47	0.70	1.40	0.00	0.00	0.82	0.29	0.41	0.09	0.36	3.52	5.70	0.84
9	4127	0.76	38.53	0.73	103	0.21	124.56	1.28	0.68	5.99	14.03	0.44	3.10	0.21	3.60	0.22	17.09	0.49	7.70	0.32	0.00	0.00	0.88	6.74	37.84	0.73
10	53.14	1.92	25.73	1.34	0.59	0.60	121.73	2.88	1.54	5.87	16.08	10.6	5.17	0.60	11.29	0.89	11.75	0.90	10.91	0.87	0.00	0.00	0.94	5.38	25.80	1.34
11	33.92	1.78	33.43	1.53	0.59	0.52	77.25	3.45	2.27	1.93	16.00	10.4	3.83	0.52	4.86	0.58	14.57	1.00	6.26	0.66	0.00	0.00	0.81	5.61	37.29	1.84
12	35.77	3.15	35.84	3.07	0.65	0.66	91.82	4.82	1.70	6.05	7.78	1.92	3.27	0.66	2.55	0.70	17.07	1.51	5.17	0.81	0.00	0.00	0.85	5.53	37.73	2.90
13	53.97	0.87	0.00	0.00	5.61	0.36	0.00	0.00	0.36	7.15	29.16	0.64	9.24	0.36	5.09	0.27	0.00	0.00	10.63	0.38	10.88	0.16	3.65	0.23	13.29	0.43
14	61.29	2.20	0.00	0.00	1.50	1.02	0.00	0.00	0.47	5.07	32.82	1.61	13.29	1.02	12.34	0.99	0.00	0.00	14.12	1.05	25.31	0.58	1.90	0.33	6.41	0.71
15	38.05	1.94	0.00	0.00	2.75	1.06	0.00	0.00	0.43	4.83	24.48	1.27	16.38	1.06	5.23	0.60	0.00	0.00	7.95	0.74	6.02	0.38	1.96	0.34	8.56	0.76
16	42.81	3.85	0.00	0.00	2.88	2.28	0.00	0.00	0.37	4.93	18.63	3.06	18.71	2.28	3.70	0.82	0.00	0.00	7.62	1.05	3.70	0.50	2.51	0.17	12.57	1.36
17	59.74	0.89	90.00	1.09	2.12	0.35	305.45	2.02	1.75	0.15	26.14	0.59	9.41	0.35	8.68	0.34	26.19	0.59	21.78	0.54	0.00	0.00	1.72	0.15	34.42	0.67
18	86.11	2.62	83.71	2.60	1.30	1.21	306.22	4.92	4.08	0.57	31.53	1.58	18.22	1.21	23.28	1.37	19.79	1.25	31.37	1.58	0.00	0.00	1.92	0.39	27.72	1.48
19	58.14	2.91	69.51	3.28	1.64	1.33	218.85	7.01	4.59	0.68	29.93	1.73	17.38	1.33	9.33	0.97	21.29	1.45	17.15	1.32	0.00	0.00	1.87	0.34	39.44	1.97
20	52.83	4.48	60.22	4.45	1.49	1.97	233.48	8.33	2.44	0.50	13.91	2.72	12.58	1.97	6.13	0.96	23.98	2.79	13.44	1.43	0.00	0.00	1.57	0.13	41.74	3.08
21	88.14	1.11	0.00	0.00	15.54	0.73	0.00	0.00	0.93	0.11	53.65	0.87	37.93	0.73	13.24	0.43	0.00	0.00	29.95	0.65	47.05	0.34	9.19	0.36	16.24	0.48
22	121.39	3.41	0.00	0.00	4.30	2.72	0.00	0.00	2.06	0.41	69.05	2.57	75.50	2.72	30.69	1.71	0.00	0.00	39.72	1.95	91.41	1.22	4.87	0.68	9.12	0.92
23	84.75	3.65	0.00	0.00	8.01	2.98	0.00	0.00	1.07	0.11	51.05	2.35	61.05	2.98	13.65	1.22	0.00	0.00	23.36	1.58	32.10	1.21	5.15	0.70	11.12	1.09
24	83.77	5.72	0.00	0.00	4.97	4.85	0.00	0.00	1.22	0.11	27.95	3.81	54.13	4.85	10.32	1.39	0.00	0.00	19.14	2.87	22.70	1.31	5.16	0.96	16.04	1.75
25	147.25	1.98	86.90	1.40	4.53	0.62	429.43	3.20	5.87	0.40	42.37	1.02	15.56	0.62	20.59	0.73	38.18	0.97	55.49	1.20	0.00	0.00	4.36	0.34	24.59	0.74
26	155.86	5.74	100.81	4.21	3.10	1.98	398.07	8.74	9.68	1.43	50.03	3.07	20.61	1.98	50.31	3.20	29.78	2.45	71.93	3.94	0.00	0.00	3.41	0.52	22.57	1.98
27	117.47	5.72	66.40	4.47	3.61	3.17	285.07	11.57	11.44	1.75	45.35	3.33	38.69	3.17	24.20	2.52	32.78	2.88	51.54	3.79	0.00	0.00	3.89	0.60	29.50	2.55
28	109.32	10.15	52.12	5.29	3.51	4.72	266.14	14.52	7.02	1.70	26.14	4.17	35.77	4.72	14.41	2.43	23.90	2.89	46.15	5.64	0.00	0.00	4.11	0.28	28.15	3.08
29	181.07	2.47	0.00	0.00	29.02	1.10	0.00	0.00	3.59	0.36	88.69	1.63	40.30	1.10	34.26	1.07	0.00	0.00	72.36	1.53	80.74	0.61	19.38	0.77	17.34	0.69
30	217.23	8.36	0.00	0.00	7.29	3.98	0.00	0.00	6.24	1.14	97.13	5.16	68.31	3.98	69.18	4.66	0.00	0.00	75.66	4.94	130.67	2.34	8.81	1.55	10.03	1.60
31	182.00	9.21	0.00	0.00	15.50	5.01	0.00	0.00	6.79	1.64	87.20	5.26	78.18	5.01	33.10	3.44	0.00	0.00	61.88	4.77	66.33	2.57	11.49	1.78	15.87	2.11
32	144.37	13.43	0.00	0.00	10.56	7.52	0.00	0.00	4.75	1.02	54.45	7.24	79.16	7.52	22.48	3.35	0.00	0.00	51.45	6.82	51.84	2.78	11.34	2.12	13.86	2.28

Supplementary Table 5. Health-related quality of life among US cancer patients aged 20 years or older, by cancer type and phase of care

Cancer Type	Cancer Phase	Health Related Quality of Life	Source
		mean (SE)	
Endometrial	Overall	0.80 (0.14)	Naik et al. ³¹
Esophageal Adenocarcinoma	Overall	0.69 (0.26)	Wildi et al. ³²
Kidney	Overall	0.78 (0.14)	Pickard et al. ³³
Liver	Overall	0.79 (0.19)	Naik et al. ³¹
Gallbladder	Overall	0.79 (0.19)	Naik et al. ³¹
Stomach (gastric cardia)	Initial:	0.84 (0.25)	Zhou et al. ³⁴
	Continuous:	0.86 (0.24)	
	End of Life:	0.65 (0.33)	
Female Breast (post-menopausal)	Initial:	0.78 (0.19)	Yabroff et al. ³⁵
	Continuous:	0.81 (0.20)	
	End of Life:	0.64 (0.16)	
Pancreas	Overall	0.65 (0.30)	Müller-Nordhorn et al. ³⁶
Multiple myeloma	Overall	0.79 (0.19)	Naik et al. ³¹
Advanced Prostate	Initial:	0.78 (0.20)	Yabroff et al. ³⁵
	Continuous:	0.76 (0.19)	
	End of Life:	0.59 (0.15)	
Thyroid	Overall	0.85 (0.13)	Naik et al. ³¹
Ovary	Overall	0.77 (0.17)	Pickard et al. ³³
Colorectal	Initial:	0.760 (0.19)	Färkkilä et al. ³⁷
	Continuous:	0.835 (0.20)	
	End of Life:	0.643 (0.26)	

Supplementary Table 6. Baseline medical costs, productivity loss, and patient time costs among US cancer patients aged 20 years or older, by cancer type

Cancer type	Sex	Age	Medical costs			Productivity loss			Patient time cost		
			Initial	Continuous	End-of-life	Initial	Continuous	End-of-life	Initial	Continuous	End-of-life
Esophageal Adenocarcinoma	Female	<65	95439	6853	156417	4884	3757	15027	650	500	2001
		≥65	79532	6853	104278	6984	5372	21489	1187	913	3652
	Male	<65	95787	6450	155612	4884	3757	15027	650	500	2001
		≥65	79822	6450	103742	6984	5372	21489	1187	913	3652
Stomach (Gastric Cardia)	Female	<65	85291	3977	155636	4884	3757	15027	650	500	2001
		≥65	71076	3977	103758	6984	5372	21489	1187	913	3652
	Male	<65	94144	4282	160695	4884	3757	15027	650	500	2001
		≥65	78453	4282	107130	6984	5372	21489	1187	913	3652
Liver	Female	<65	40173	5859	95782	4884	3757	15027	650	500	2001
		≥65	40173	5859	95782	6984	5372	21489	1187	913	3652
	Male	<65	41161	7363	97473	4884	3757	15027	650	500	2001
		≥65	41161	7363	97473	6984	5372	21489	1187	913	3652
Pancreatic	Female	<65	112154	8672	164911	4884	3757	15027	650	500	2001
		≥65	93462	8672	109941	6984	5372	21489	1187	913	3652
	Male	<65	112911	11697	169673	4884	3757	15027	650	500	2001
		≥65	94092	11697	113115	6984	5372	21489	1187	913	3652
Advanced Prostate	Male	<65	23652	3201	93363	3715	2858	11432	650	500	2001
		≥65	19710	3201	62242	6549	5038	20152	1187	913	3652
Colorectal	Female	<65	61593	3159	126778	10330	7946	31784	650	500	2001
		≥65	51327	3159	84519	7479	5753	23012	1187	913	3652

	Male	<65	62174	4595	128507	10330	7946	31784	650	500	2001
		≥65	51812	4595	85671	7479	5753	23012	1187	913	3652
Endometrial	Female	<65	32129	1535	105262	4884	3757	15027	650	500	2001
		≥65	26775	1535	70175	6984	5372	21489	1187	913	3652
Ovarian	Female	<65	98788	8296	149573	4884	3757	15027	650	500	2001
		≥65	82324	8296	99715	6984	5372	21489	1187	913	3652
Gallbladder	Female	<65	40173	5859	95782	4884	3757	15027	650	500	2001
		≥65	40173	5859	95782	6984	5372	21489	1187	913	3652
	Male	<65	41161	7363	97473	4884	3757	15027	650	500	2001
		≥65	41161	7363	97473	6984	5372	21489	1187	913	3652
Kidney (Renal Cell)	Female	<65	46077	6255	110765	4884	3757	15027	650	500	2001
		≥65	38397	6255	73843	6984	5372	21489	1187	913	3652
	Male	<65	46048	6018	117123	4884	3757	15027	650	500	2001
		≥65	38374	6018	78082	6984	5372	21489	1187	913	3652
Breast (Postmenopausal)	Female	<65	27693	2207	94284	5985	4604	18416	650	500	2001
		≥65	23078	2207	62856	4752	3655	14620	1187	913	3652
Thyroid	Female	<65	40173	5859	95782	4884	3757	15027	650	500	2001
		≥65	40173	5859	95782	6984	5372	21489	1187	913	3652
	Male	<65	41161	7363	97473	4884	3757	15027	650	500	2001
		≥65	41161	7363	97473	6984	5372	21489	1187	913	3652
Multiple Myeloma	Female	<65	40173	5859	95782	4884	3757	15027	650	500	2001
		≥65	40173	5859	95782	6984	5372	21489	1187	913	3652

Male	<65	41161	7363	97473	4884	3757	15027	650	500	2001
	≥65	41161	7363	97473	6984	5372	21489	1187	913	3652

Supplementary Table 7. Baseline medical costs, productivity loss, and patient time cost among general population aged 20 years or older in the US, by 32 subgroups

Age group, years	Sex	Race/ethnicity	Medical costs		Productivity loss		Patient time cost	
			Annual general costs	End-of-life costs	Annual general costs	End-of-life costs	Annual general costs	End-of-life costs
20-44	Female	NHW	4020	40000	2040	8160	226	904
		NHB	3100	40000	2040	8160	226	904
		Hispanic	2355	40000	2040	8160	226	904
		Other	2617	40000	2040	8160	226	904
	Male	NHW	2022	40000	2040	8160	226	904
		NHB	2279	40000	2040	8160	226	904
		Hispanic	1145	40000	2040	8160	226	904
		Other	1803	40000	2040	8160	226	904
45-54	Female	NHW	5371	40000	2040	8160	226	904
		NHB	5712	40000	2040	8160	226	904
		Hispanic	3196	40000	2040	8160	226	904
		Other	4082	40000	2040	8160	226	904
	Male	NHW	3812	40000	2040	8160	226	904
		NHB	3639	40000	2040	8160	226	904
		Hispanic	3612	40000	2040	8160	226	904
		Other	2560	40000	2040	8160	226	904
55-64	Female	NHW	7300	40000	2040	8160	226	904
		NHB	5479	40000	2040	8160	226	904
		Hispanic	4607	40000	2040	8160	226	904
		Other	3951	40000	2040	8160	226	904
	Male	NHW	6519	40000	2040	8160	226	904
		NHB	6455	40000	2040	8160	226	904
		Hispanic	5077	40000	2040	8160	226	904
		Other	6320	40000	2040	8160	226	904
≥65	Female	NHW	8997	40000	4409	8160	607	904
		NHB	9585	40000	4409	8160	607	904
		Hispanic	8847	40000	4409	8160	607	904
		Other	8625	40000	4409	8160	607	904
	Male	NHW	9334	40000	4409	8160	607	904
		NHB	7367	40000	4409	8160	607	904
		Hispanic	5640	40000	4409	8160	607	904
		Other	7461	40000	4409	8160	607	904

Supplementary Table 8. Characteristics of US adults aged 20 years or older participated in the NHANES, 2013-2016

Characteristics (N=10064)	Calorie Consumption, kcal/day	
Age, years	47.8 ± 0.41	
Age groups, years, N (%)		
20-44	4319 (44.5)	425 ± 4.38
25-54	1704 (18.3)	315 ± 5.39
55-64	1725 (17.3)	271 ± 4.90
≥65	2316 (19.9)	192 ± 3.83
Sex, N (%)		
Male	4829 (48.3)	388 ± 4.53
Female	5235 (51.7)	279 ± 4.04
Race/ethnicity, N (%)		
Non-Hispanic White	3944 (65.0)	320 ± 4.76
Non-Hispanic Black	2069 (11.2)	361 ± 6.55
Hispanic	2668 (14.9)	367 ± 4.44
Other	1383 (8.90)	325 ± 8.12
Education, N (%)		
Less than high school graduate	2178 (14.2)	311 ± 5.14
High school graduate	2249 (21.6)	332 ± 5.72
Some college	3070 (33.1)	341 ± 4.92
College graduate	2562 (31.0)	332 ± 7.10
Family income to poverty ratio, N (%)		
<1.30	3862 (28.3)	325 ± 4.87
1.30-1.84	2842 (26.7)	333 ± 4.55
1.85-2.99	1725 (20.4)	344 ± 6.73
≥3.00	1635 (24.5)	328 ± 7.01
Body mass index (BMI), kg/m²	29.3 ± 0.16	
Weight status, N (%)		
Underweight (BMI<18.5)	145 (1.36)	341 ± 17.5
Normal weight (BMI=18.5-24.9)	2671 (27.2)	327 ± 4.81
Overweight/Obese (BMI≥25)	7163 (71.4)	334 ± 4.01

Supplementary Table 9. Consumption of calories from full-service and fast-food restaurants among US adults participated in 2013-2016 NHANES by 32 subgroups

Age group, years	Sex	Race/ethnicity	Baseline consumption, kcal/day (mean \pm SE)
20-44	Female	NHW	357 \pm 6.47
		NHB	397 \pm 8.98
		Hispanic	364 \pm 6.77
		Other	334 \pm 11.3
	Male	NHW	485 \pm 9.00
		NHB	508 \pm 12.3
		Hispanic	500 \pm 13.7
		Other	466 \pm 14.1
45-54	Female	NHW	270 \pm 9.38
		NHB	266 \pm 7.85
		Hispanic	265 \pm 9.11
		Other	228 \pm 14.6
	Male	NHW	374 \pm 11.3
		NHB	388 \pm 17.4
		Hispanic	355 \pm 15.0
		Other	338 \pm 20.2
55-64	Female	NHW	231 \pm 5.25
		NHB	249 \pm 9.58
		Hispanic	234 \pm 7.99
		Other	216 \pm 10.2
	Male	NHW	315 \pm 9.55
		NHB	314 \pm 18.3
		Hispanic	307 \pm 9.90
		Other	298 \pm 11.1
\geq 65	Female	NHW	164 \pm 4.71
		NHB	156 \pm 6.07
		Hispanic	158 \pm 5.27
		Other	137 \pm 5.43
	Male	NHW	235 \pm 7.43
		NHB	220 \pm 7.07
		Hispanic	218 \pm 8.07

Other

198 ± 20.0

Supplementary Table 10. Estimated new cancer cases averted by the federal menu calorie labeling in the US by age, sex, race/ethnicity, and cancer type, over lifetime (U.S. population=235,162,844)¹

Cancer Type	Policy Scenario	20-44 y		45-54 y		55-64 y		65 + y		
		Female	Male	Female	Male	Female	Male	Female	Male	
Endometrial										
Age	<i>consumer behavior</i>	3300 (696 to 6090)		591 (-990 to 2160)		1140 (433 to 1940)		656 (107 to 1190)		
	<i>+industry response</i>	5960 (3360 to 8890)		1340 (-208 to 2980)		1600 (928 to 2430)		926 (396 to 1460)		
Race/Ethnicity										
Non-Hispanic White	<i>consumer behavior</i>	1630 (-711 to 4080)	0	-136 (-1590 to 1430)	0	757 (140 to 1500)	0	572 (38 to 1070)	0	
	<i>+industry response</i>	3080 (829 to 5780)	0	369 (-1100 to 1950)	0	1110 (463 to 1830)	0	780 (245 to 1290)	0	
Non-Hispanic Black	<i>consumer behavior</i>	763 (-157 to 1710)	0	258 (-23 to 543)	0	283 (73 to 528)	0	47 (-43 to 150)	0	
	<i>+industry response</i>	1240 (316 to 2200)	0	372 (93 to 668)	0	355 (146 to 604)	0	77 (-13 to 176)	0	
Hispanic	<i>consumer behavior</i>	910 (74 to 1790)	0	290 (-48 to 596)	0	42 (-83 to 185)	0	43 (-16 to 102)	0	
	<i>+industry response</i>	1460 (580 to 2340)	0	399 (66 to 703)	0	89 (-35 to 233)	0	64 (5 to 122)	0	
Other	<i>consumer behavior</i>	19 (-312 to 402)	0	165 (41 to 319)	0	54 (3 to 109)	0	-6 (-26 to 14)	0	
	<i>+industry response</i>	150 (-174 to 546)	0	191 (68 to 344)	0	68 (18 to 124)	0	0 (-21 to 21)	0	
Breast (Postmenopausal)										
Age	<i>consumer behavior</i>	2530 (263 to 5040)		373 (-1070 to 1950)		1210 (480 to 2130)		742 (137 to 1380)		
	<i>+industry response</i>	4670 (2330 to 7350)		1040 (-390 to 2680)		1710 (1010 to 2640)		1040 (433 to 1700)		
Race/Ethnicity										
Non-Hispanic White	<i>consumer behavior</i>	1370 (-659 to 3750)	0	-224 (-1570 to 1210)	0	832 (170 to 1670)	0	660 (57 to 1280)	0	
	<i>+industry response</i>	2660 (490 to 5220)	0	234 (-1130 to 1770)	0	1200 (535 to 2040)	0	902 (291 to 1570)	0	
Non-Hispanic Black	<i>consumer behavior</i>	567 (-110 to 1300)	0	182 (-34 to 431)	0	267 (89 to 487)	0	43 (-40 to 136)	0	

Hispanic	<i>+industry response</i>	912 (240 to 1680)	0	271 (55 to 536)	0	329 (149 to 554)	0	71 (-13 to 166)	0
	<i>consumer behavior</i>	581 (44 to 1200)	0	231 (-14 to 474)	0	32.9 (-72 to 154)	0	42 (-12 to 100)	0
Other	<i>+industry response</i>	934 (368 to 1600)	0	312 (71 to 563)	0	76 (-34 to 198)	0	61 (6 to 123)	0
	<i>consumer behavior</i>	1 (-310 to 384)	0	182 (40 to 353)	0	74 (9 to 148)	0	-7 (-35 to 22)	0
	<i>+industry response</i>	128 (-187 to 541)	0	210 (71 to 386)	0	94 (29 to 170)	0	1 (-27 to 31)	0
Kidney (Renal Cell)									
Age	<i>consumer behavior</i>	2930 (864 to 5040)		581 (-364 to 1540)		1180 (526 to 1810)		428 (28 to 805)	
	<i>+industry response</i>	5240 (3110 to 7390)		1230 (244 to 2210)		1590 (941 to 2250)		651 (248 to 1030)	
Race/Ethnicity									
Non-Hispanic White	<i>consumer behavior</i>	338 (-137 to 844)	1040 (-536 to 2790)	-42 (-332 to 273)	53 (-791 to 884)	172 (34 to 339)	677 (88 to 1240)	147 (18 to 280)	192 (-170 to 536)
	<i>+industry response</i>	646 (173 to 1180)	2020 (410 to 3750)	58 (-236 to 383)	379 (-452 to 1250)	251 (109 to 420)	898 (326 to 1470)	199 (72 to 335)	320 (-35 to 661)
Non-Hispanic Black	<i>consumer behavior</i>	170 (-35 to 384)	88 (-454 to 620)	60 (-5 to 128)	136 (-96 to 410)	79 (26 to 139)	85 (-81 to 258)	13 (-12 to 40)	44 (9 to 79)
	<i>+industry response</i>	280 (69 to 502)	343 (-202 to 898)	87 (22 to 157)	203 (-30 to 475)	97 (43 to 157)	119 (-45 to 295)	21 (-4 to 48)	56 (22 to 90)
Hispanic	<i>consumer behavior</i>	267 (21 to 527)	895 (-21 to 1920)	92 (-4 to 184)	230 (-25 to 503)	14 (-27 to 60)	94 (8 to 196)	15 (-6 to 36)	9 (-29 to 50)
	<i>+industry response</i>	425 (166 to 697)	1290 (371 to 2320)	123 (27 to 218)	305 (49 to 570)	29 (-12 to 76)	127 (41 to 232)	22 (2 to 44)	21 (-17 to 63)
Other	<i>consumer behavior</i>	5 (-47 to 66)	75 (-103 to 274)	34 (12 to 59)	3 (-64 to 77)	13 (2 to 25)	33 (10 to 58)	-1 (-6 to 4)	8 (-18 to 37)
	<i>+industry response</i>	27 (-26 to 89)	147 (-29 to 347)	38 (17 to 64)	17 (-52 to 91)	16 (5 to 28)	41 (19 to 67)	1 (-4 to 6)	11 (-15 to 40)
Liver									
Age	<i>consumer behavior</i>	3210 (1000 to 5540)		701 (-200 to 1760)		1000 (477 to 1580)		275 (17 to 551)	
	<i>+industry response</i>	5560 (3130 to 8130)		1340 (397 to 2480)		1340 (804 to 1950)		432 (174 to 719)	
Race/Ethnicity									

Non-Hispanic White	<i>consumer behavior</i>	170 (-125 to 597)	1150 (-258 to 3130)	18 (-168 to 236)	-82 (-844 to 807)	113 (36 to 227)	520 (108 to 1020)	75 (6 to 155)	116 (-110 to 365)
	<i>+industry response</i>	367 (53 to 855)	2120 (498 to 4300)	78 (-105 to 319)	215 (-537 to 1150)	159 (77 to 280)	668 (287 to 1220)	100 (35 to 189)	198 (-26 to 454)
Non-Hispanic Black	<i>consumer behavior</i>	143 (-27 to 346)	85 (-678 to 1050)	53 (2 to 120)	213 (-146 to 705)	51 (14 to 100)	118 (-112 to 393)	7 (-7 to 26)	37 (-4 to 88)
	<i>+industry response</i>	231 (53 to 458)	429 (-312 to 1460)	74 (24 to 147)	306 (-41 to 823)	63 (28 to 115)	163 (-58 to 447)	12 (-2 to 32)	52 (11 to 107)
Hispanic	<i>consumer behavior</i>	239 (19 to 570)	1150 (93 to 2490)	99 (3 to 215)	321 (15 to 703)	14 (-30 to 72)	113 (19 to 233)	17 (-5 to 41)	8 (-33 to 54)
	<i>+industry response</i>	384 (132 to 756)	1600 (529 to 3050)	132 (36 to 257)	409 (106 to 820)	31 (-13 to 90)	150 (55 to 276)	25 (3 to 50)	20 (-19 to 70)
Other	<i>consumer behavior</i>	2 (-56 to 82)	99 (-125 to 379)	38 (9 to 77)	-1 (-101 to 125)	15 (0 to 34)	38 (5 to 76)	0 (-8 to 7)	9 (-28 to 53)
	<i>+industry response</i>	26 (-32 to 108)	183 (-31 to 483)	43 (15 to 85)	18 (-80 to 152)	19 (5 to 40)	48 (17 to 91)	2 (-5 to 10)	14 (-23 to 59)
Pancreatic									
Age	<i>consumer behavior</i>	764 (262 to 1340)		81.6 (-186 to 388)		404 (193 to 651)		148 (21 to 286)	
	<i>+industry response</i>	1350 (820 to 1990)		269 (4 to 595)		540 (327 to 793)		227 (96 to 370)	
Race/Ethnicity									
Non-Hispanic White	<i>consumer behavior</i>	121 (-44 to 367)	247 (-120 to 768)	-48 (-159 to 87)	-16 (-246 to 245)	87 (26 to 175)	218 (48 to 432)	63 (3 to 131)	58 (-54 to 189)
	<i>+industry response</i>	229 (50 to 493)	490 (99 to 1060)	-11 (-124 to 134)	73 (-154 to 363)	122 (56 to 218)	283 (115 to 507)	87 (27 to 163)	98 (-12 to 238)
Non-Hispanic Black	<i>consumer behavior</i>	60 (-10 to 158)	18 (-80 to 128)	24 (-1 to 54)	30 (-20 to 87)	32 (9 to 63)	19 (-16 to 62)	5 (-6 to 19)	10 (2 to 19)
	<i>+industry response</i>	98 (21 to 207)	64 (-36 to 184)	34 (9 to 67)	44 (-4 to 102)	39 (17 to 72)	27 (-9 to 70)	9 (-2 to 23)	13 (5 to 23)
Hispanic	<i>consumer behavior</i>	68 (5 to 150)	194 (13 to 422)	26 (-4 to 60)	46 (-5 to 105)	4 (-11 to 22)	18 (-3 to 44)	6 (-2 to 14)	2 (-8 to 12)
	<i>+industry response</i>	108 (40 to 201)	273 (92 to 518)	36 (7 to 70)	63 (11 to 124)	10 (-5 to 28)	26 (6 to 53)	8 (0 to 18)	5 (-5 to 15)
Other	<i>consumer behavior</i>	-2 (-27 to 30)	18 (-29 to 72)	17 (4 to 33)	0 (-20 to 23)	8 (1 to 16)	10 (3 to 19)	0 (-4 to 3)	2 (-6 to 13)
	<i>+industry response</i>	9 (-17 to 43)	36 (-9 to 94)	19 (7 to 36)	4 (-16 to 28)	10 (3 to 18)	13 (5 to 22)	1 (-3 to 5)	4 (-5 to 14)

Esophageal Adenocarcinoma

Age	<i>consumer behavior</i>	715 (43 to 1480)		92 (-296 to 501)		419 (136 to 719)		128 (-60 to 309)	
	<i>+industry response</i>	1300 (602 to 2100)		293 (-102 to 708)		556 (270 to 858)		206 (20 to 390)	
Race/Ethnicity									
Non-Hispanic White	<i>consumer behavior</i>	45 (-25 to 125)	406 (-228 to 1100)	-9 (-55 to 41)	26 (-368 to 419)	30 (7 to 58)	345 (64 to 630)	27 (5 to 50)	92 (-88 to 263)
	<i>+industry response</i>	91 (17 to 179)	815 (174 to 1560)	7 (-40 to 60)	179 (-210 to 578)	43 (20 to 73)	449 (174 to 739)	35 (14 to 59)	155 (-17 to 330)
Non-Hispanic Black	<i>consumer behavior</i>	10 (-2 to 22)	10 (-28 to 50)	3 (-1 to 8)	11 (-7 to 32)	5 (2 to 9)	67 (-7 to 22)	1 (-1 to 3)	4 (0 to 7)
	<i>+industry response</i>	16 (4 to 29)	28 (-11 to 69)	5 (1 to 9)	16 (-2 to 37)	6 (3 to 11)	9 (-4 to 25)	1 (0 to 3)	5 (2 to 8)
Hispanic	<i>consumer behavior</i>	28 (2 to 57)	196 (-2 to 414)	9 (-1 to 20)	46 (-7 to 112)	2 (-3 to 8)	24 (3 to 47)	2 (-1 to 4)	2 (-7 to 12)
	<i>+industry response</i>	44 (17 to 76)	280 (80 to 504)	13 (2 to 24)	63 (7 to 130)	3 (-1 to 10)	32 (11 to 56)	3 (0 to 5)	4 (-4 to 15)
Other	<i>consumer behavior</i>	-1 (-10 to 11)	10 (-16 to 41)	6 (1 to 11)	0 (-12 to 13)	2 (0 to 5)	7 (2 to 12)	0 (-1 to 1)	2 (-4 to 8)
	<i>+industry response</i>	3 (-6 to 15)	21 (-6 to 52)	75 (2 to 12)	2 (-10 to 15)	3 (1 to 6)	8 (4 to 13)	0 (-1 to 1)	2 (-3 to 9)

Colorectal

Age	<i>consumer behavior</i>	584 (183 to 1090)		79 (-90 to 289)		251 (126 to 412)		117 (19 to 224)	
	<i>+industry response</i>	1050 (605 to 1610)		201 (23 to 426)		341 (209 to 514)		175 (81 to 289)	
Race/Ethnicity									
Non-Hispanic White	<i>consumer behavior</i>	67 (-51 to 261)	169 (-107 to 569)	-35 (-106 to 64)	-17 (-151 to 163)	52 (11 to 111)	126 (21 to 262)	55 (11 to 115)	44 (-36 to 129)
	<i>+industry response</i>	144 (-2 to 382)	358 (40 to 790)	-12 (-80 to 97)	38 (-99 to 233)	75 (30 to 146)	168 (62 to 313)	73 (28 to 138)	70 (-7 to 162)
Non-Hispanic Black	<i>consumer behavior</i>	31 (-9 to 88)	38 (-48 to 144)	11 (-1 to 29)	26 (-13 to 79)	19 (7 to 36)	14 (-17 to 49)	3 (-4 to 12)	8 (1 to 17)
	<i>+industry response</i>	53 (9 to 119)	78 (-8 to 203)	17 (4 to 36)	36 (-2 to 91)	23 (11 to 41)	20 (-9 to 56)	6 (-1 to 15)	11 (3 to 21)
Hispanic	<i>consumer behavior</i>	45 (2 to 113)	185 (25 to 409)	20 (1 to 43)	57 (9 to 114)	3 (-7 to 16)	21 (2 to 44)	4 (-1 to 11)	1 (-8 to 11)

Other	<i>+industry response</i>	73 (18 to 155)	256 (84 to 504)	26 (8 to 51)	70 (23 to 129)	6 (-3 to 20)	28 (10 to 53)	6 (1 to 13)	4 (-5 to 14)
	<i>consumer behavior</i>	-2 (-21 to 26)	20 (-31 to 89)	7 (-1 to 19)	1 (-20 to 26)	4 (0 to 11)	8 (1 to 16)	-1 (-3 to 2)	3 (-6 to 13)
	<i>+industry response</i>	6 (-13 to 36)	41 (-9 to 115)	9 (1 to 21)	5 (-15 to 31)	6 (1 to 12)	10 (4 to 19)	0 (-2 to 3)	4 (-5 to 14)
Thyroid									
Age	<i>consumer behavior</i>	374 (114 to 751)		10 (-69 to 125)		84 (44 to 144)		34 (7 to 68)	
	<i>+industry response</i>	683 (349 to 1130)		67 (-17 to 200)		117 (70 to 187)		52 (22 to 91)	
Race/Ethnicity									
Non-Hispanic White	<i>consumer behavior</i>	96 (-59 to 382)	52 (-59 to 273)	-28 (-85 to 56)	-15 (-64 to 58)	21 (1 to 62)	28 (1 to 73)	20 (2 to 47)	8 (-9 to 31)
	<i>+industry response</i>	205 (-15 to 563)	131 (-26 to 395)	-8 (-63 to 92)	3 (-43 to 85)	33 (5 to 80)	40 (12 to 90)	28 (9 to 58)	14 (-3 to 40)
Non-Hispanic Black	<i>consumer behavior</i>	29 (-10 to 113)	7 (-10 to 36)	8 (-1 to 24)	3 (-3 to 12)	12 (6 to 22)	2 (-2 to 8)	1 (-2 to 5)	1 (0 to 2)
	<i>+industry response</i>	52 (-1 to 153)	16 (-4 to 50)	12 (2 to 30)	5 (-1 to 15)	14 (8 to 26)	3 (-1 to 10)	2 (0 to 7)	2 (1 to 3)
Hispanic	<i>consumer behavior</i>	68 (1 to 201)	59 (6 to 151)	15 (-5 to 39)	13 (2 to 30)	2 (-4 to 12)	4 (0 to 9)	2 (-1 to 6)	0 (-1 to 3)
	<i>+industry response</i>	113 (22 to 276)	84 (26 to 189)	21 (2 to 48)	16 (6 to 35)	4 (-2 to 15)	5 (2 to 12)	3 (0 to 8)	1 (-1 to 3)
Other	<i>consumer behavior</i>	-4 (-38 to 59)	13 (-13 to 56)	6 (-4 to 20)	1 (-7 to 12)	5 (2 to 10)	5 (3 to 8)	-1 (-2 to 1)	0 (-2 to 3)
	<i>+industry response</i>	12 (-25 to 82)	23 (-2 to 70)	8 (-1 to 23)	3 (-5 to 14)	6 (3 to 11)	6 (4 to 9)	0 (-2 to 2)	1 (-1 to 4)
Multiple Myeloma									
Age	<i>consumer behavior</i>	370 (113 to 743)		78 (-46 to 242)		181 (85 to 308)		63 (7 to 128)	
	<i>+industry response</i>	653 (327 to 1120)		164 (29 to 357)		243 (142 to 385)		97 (41 to 169)	
Race/Ethnicity									
Non-Hispanic White	<i>consumer behavior</i>	27 (-34 to 138)	102 (-61 to 375)	-14 (-50 to 50)	-4 (-96 to 139)	24 (3 to 67)	96 (25 to 204)	20 (1 to 52)	23 (-23 to 83)
	<i>+industry response</i>	64 (-22 to 204)	207 (0 to 544)	-1 (-38 to 74)	29 (-60 to 199)	36 (9 to 87)	125 (52 to 246)	28 (8 to 65)	39 (-5 to 111)

Non-Hispanic Black	<i>consumer behavior</i>	39 (-9 to 135)	22 (-63 to 178)	14 (-1 to 43)	27 (-15 to 95)	19 (4 to 45)	11 (-22 to 60)	4 (-4 to 17)	10 (2 to 22)
	<i>+industry response</i>	66 (1 to 183)	65 (-30 to 242)	22 (4 to 55)	38 (-3 to 113)	24 (9 to 54)	18 (-13 to 71)	6 (-1 to 20)	13 (5 to 26)
Hispanic	<i>consumer behavior</i>	26 (0 to 79)	111 (12 to 277)	7 (-5 to 24)	25 (-3 to 68)	2 (-4 to 11)	15 (3 to 32)	2 (-1 to 7)	0 (-5 to 7)
	<i>+industry response</i>	43 (6 to 110)	154 (50 to 340)	10 (0 to 30)	33 (6 to 82)	4 (-2 to 15)	19 (8 to 39)	3 (0 to 9)	1 (-3 to 9)
Other	<i>consumer behavior</i>	0 (-7 to 11)	8 (-11 to 41)	7 (3 to 12)	0 (-10 to 12)	1 (1 to 4)	4 (1 to 9)	-0 (-1 to 1)	1 (-3 to 6)
	<i>+industry response</i>	2 (-4 to 16)	16 (-3 to 53)	8 (4 to 13)	1 (-8 to 15)	2 (0 to 5)	5 (2 to 11)	0 (-1 to 1)	1 (-2 to 6)
Stomach (Gastric Cardia)									
Age	<i>consumer behavior</i>	338 (49 to 803)		58 (-99 to 264)		182 (70 to 347)		54 (-19 to 149)	
	<i>+industry response</i>	607 (241 to 1140)		141 (-20 to 378)		240 (129 to 420)		86 (15 to 190)	
Race/Ethnicity									
Non-Hispanic White	<i>consumer behavior</i>	18 (-19 to 77)	208 (-55 to 648)	-9 (-31 to 25)	24 (-128 to 233)	15 (4 to 37)	145 (35 to 304)	14 (3 to 28)	34 (-36 to 124)
	<i>+industry response</i>	43 (-6 to 117)	380 (51 to 886)	-1 (-24 to 38)	86 (-67 to 322)	22 (9 to 47)	187 (77 to 364)	18 (8 to 35)	58 (-9 to 160)
Non-Hispanic Black	<i>consumer behavior</i>	7 (-2 to 21)	6 (-19 to 44)	2 (0 to 6)	7 (-5 to 24)	3 (1 to 7)	3 (-6 to 15)	0 (0 to 2)	3 (1 to 5)
	<i>+industry response</i>	12 (2 to 28)	19 (-8 to 62)	3 (1 to 7)	10 (-2 to 29)	4 (2 to 8)	5 (-4 to 17)	1 (0 to 2)	3 (2 to 6)
Hispanic	<i>consumer behavior</i>	15 (1 to 39)	63 (-7 to 170)	5 (0 to 13)	16 (-4 to 45)	1 (-2 to 5)	7 (0 to 18)	1 (0 to 3)	1 (-3 to 5)
	<i>+industry response</i>	24 (6 to 52)	95 (21 to 214)	7 (2 to 16)	22 (3 to 54)	2 (-1 to 6)	10 (3 to 23)	1 (0 to 3)	2 (-2 to 7)
Other	<i>consumer behavior</i>	-1 (-7 to 10)	5 (-14 to 34)	5 (2 to 9)	0 (-8 to 12)	1 (0 to 3)	4 (1 to 9)	0 (-1 to 1)	1 (-3 to 6)
	<i>+industry response</i>	2 (-5 to 14)	12 (-7 to 46)	6 (3 to 10)	2 (-6 to 15)	2 (0 to 4)	5 (2 to 10)	0 (-1 to 1)	2 (-2 to 7)
Gallbladder									
Age	<i>consumer behavior</i>	161 (67 to 263)		51 (8 to 100)		76 (47 to 109)		29 (11 to 51)	
	<i>+industry response</i>	282 (181 to 396)		86 (43 to 138)		101 (73 to 137)		44 (25 to 66)	

Race/Ethnicity									
Non-Hispanic White	<i>consumer behavior</i>	24 (-10 to 71)	19 (-13 to 61)	0 (-25 to 30)	1.97 (-17 to 24)	19 (5 to 38)	23 (6 to 42)	16 (3 to 31)	6 (-5 to 17)
	<i>+industry response</i>	47 (10 to 99)	39 (5 to 88)	9 (-16 to 42)	9 (-10 to 34)	27 (12 to 48)	29 (13 to 50)	21 (8 to 37)	9 (-1 to 21)
Non-Hispanic Black	<i>consumer behavior</i>	27 (-6 to 70)	2 (-17 to 26)	11 (0 to 24)	6 (-4 to 18)	14 (4 to 26)	4 (-4 to 12)	2 (-2 to 7)	2 (0 to 4)
	<i>+industry response</i>	45 (11 to 93)	11 (-8 to 38)	15 (4 to 29)	9 (-1 to 21)	17 (8 to 30)	5 (-2 to 14)	4 (-1 to 9)	3 (1 to 5)
Hispanic	<i>consumer behavior</i>	32 (2 to 73)	42 (-10 to 106)	10 (-4 to 26)	14 (-2 to 34)	3 (-5 to 11)	7 (1 to 15)	3 (-1 to 7)	0 (-3 to 4)
	<i>+industry response</i>	53 (19 to 96)	65 (11 to 130)	15 (1 to 31)	19 (3 to 39)	5 (-2 to 14)	9 (3 to 18)	4 (1 to 9)	1 (-2 to 5)
Other	<i>consumer behavior</i>	0 (-11 to 18)	3 (-6 to 15)	6 (1 to 13)	0 (-4 to 5)	3 (0 to 7)	3 (1 to 5)	0 (-1 to 1)	1 (-1 to 3)
	<i>+industry response</i>	5 (-7 to 24)	7 (-2 to 19)	7 (2 to 14)	1 (-3 to 6)	4 (1 to 8)	3 (1 to 5)	0 (-1 to 2)	1 (-1 to 3)
Advanced Prostate									
Age	<i>consumer behavior</i>	163 (9 to 360)		37 (-54 to 146)		106 (33 to 194)		35 (-14 to 91)	
	<i>+industry response</i>	300 (130 to 507)		85 (-6 to 203)		142 (67 to 240)		56 (9 to 119)	
Race/Ethnicity									
Non-Hispanic White	<i>consumer behavior</i>	0	86 (-24 to 267)	0	-1 (-80 to 98)	0	75 (9 to 162)	0	24 (-23 to 80)
	<i>+industry response</i>	0	162 (32 to 350)	0	30 (-48 to 144)	0	100 (36 to 199)	0	40 (-5 to 102)
Non-Hispanic Black	<i>consumer behavior</i>	0	3 (-61 to 97)	0	21 (-17 to 69)	0	16 (-13 to 51)	0	8 (2 to 17)
	<i>+industry response</i>	0	34 (-33 to 145)	0	31 (-5 to 83)	0	22 (-7 to 57)	0	11 (4 to 20)
Hispanic	<i>consumer behavior</i>	0	59 (8 to 133)	0	13 (-3 to 37)	0	9 (2 to 20)	0	1 (-3 to 5)
	<i>+industry response</i>	0	82 (28 to 163)	0	18 (1 to 44)	0	12 (5 to 23)	0	2 (-2 to 7)
Other	<i>consumer behavior</i>	0	3 (-10 to 21)	0	0 (-7 to 8)	0	4 (2 to 8)	0	1 (-3 to 5)
	<i>+industry response</i>	0	8 (-5 to 28)	0	1 (-5 to 9)	0	5 (3 to 9)	0	2 (-2 to 6)

Ovarian

Age	<i>consumer behavior</i>	66 (-10 to 180)		16 (-20 to 75)		31 (11 to 69)		28 (11 to 61)	
	<i>+industry response</i>	129 (16 to 277)		33 (-6 to 102)		45 (17 to 87)		37 (19 to 75)	
Race/Ethnicity									
Non-Hispanic White	<i>consumer behavior</i>	34 (-25 to 147)	0	-4 (-38 to 54)	0	20 (2 to 55)	0	25 (8 to 57)	0
	<i>+industry response</i>	71 (-23 to 220)	0	7 (-30 to 72)	0	30 (6 to 71)	0	32 (15 to 70)	0
Non-Hispanic Black	<i>consumer behavior</i>	11 (-5 to 41)	0	4 (0 to 13)	0	6 (3 to 13)	0	1 (-1 to 5)	0
	<i>+industry response</i>	19 (-3 to 56)	0	6 (0 to 17)	0	8 (4 to 16)	0	2 (0 to 6)	0
Hispanic	<i>consumer behavior</i>	21 (-2 to 67)	0	8 (-1 to 21)	0	1 (-3 to 8)	0	1 (-1 to 5)	0
	<i>+industry response</i>	34 (1 to 91)	0	11 (3 to 26)	0	3 (-1 to 10)	0	2 (0 to 6)	0
Other	<i>consumer behavior</i>	-8 (-19 to 13)	0	6 (2 to 13)	0	2 (1 to 5)	0	0 (-1 to 1)	0
	<i>+industry response</i>	-3 (-15 to 21)	0	7 (3 to 14)	0	3 (1 to 6)	0	0 (-1 to 2)	0

1. Values are the median estimates (95% uncertainty intervals) of each distribution of 1000 simulations.

Supplementary Table 11. Estimated cancer deaths reduced by the federal menu calorie labeling in the US by age, sex, race/ethnicity, and cancer type, over a lifetime (U.S. population=235,162,844)¹

Cancer Type	Policy Scenario	20-44 y		45-54 y		55-64 y		65 + y	
		Female	Male	Female	Male	Female	Male	Female	Male
Breast (Postmenopausal)									
Age	<i>consumer behavior</i>	2490 (260 to 4980)		151 (-204 to 521)		285 (129 to 479)		126 (30 to 227)	
	<i>+industry response</i>	4610 (2290 to 7240)		336 (-26 to 725)		396 (237 to 598)		178 (82 to 284)	
Race/Ethnicity									
Non-Hispanic White	<i>consumer behavior</i>	1350 (-652 to 3690)	0	-55 (-373 to 278)	0	165 (33 to 327)	0	103 (10 to 204)	0
	<i>+industry response</i>	2620 (480 to 5150)	0	54 (-264 to 419)	0	238 (105 to 401)	0	139 (47 to 244)	0
Non-Hispanic Black	<i>consumer behavior</i>	560 (-109 to 1280)	0	85 (-11 to 200)	0	95 (32 to 173)	0	13 (-12 to 40)	0
	<i>+industry response</i>	901 (238 to 1660)	0	126 (26 to 247)	0	117 (53 to 196)	0	21 (-4 to 49)	0
Hispanic	<i>consumer behavior</i>	572 (45 to 1180)	0	76 (-7 to 163)	0	9 (-21 to 44)	0	10 (-3 to 24)	0
	<i>+industry response</i>	922 (364 to 1570)	0	104 (21 to 193)	0	21 (-9 to 57)	0	15 (2 to 30)	0
Other	<i>consumer behavior</i>	0 (-306 to 378)	0	39 (9 to 76)	0	15 (2 to 31)	0	-1 (-6 to 3)	0
	<i>+industry response</i>	125 (-185 to 532)	0	45 (16 to 84)	0	19 (6 to 35)	0	0 (-5 to 5)	0
Liver									
Age	<i>consumer behavior</i>	2840 (897 to 4890)		628 (-181 to 1570)		852 (411 to 1340)		227 (18 to 455)	
	<i>+industry response</i>	4900 (2760 to 7190)		1200 (345 to 2210)		1140 (689 to 1650)		357 (146 to 587)	
Race/Ethnicity									
Non-Hispanic White	<i>consumer behavior</i>	139 (-108 to 504)	1040 (-237 to 2780)	15 (-147 to 207)	-70 (-749 to 722)	98 (31 to 196)	440 (93 to 858)	63 (6 to 130)	97 (-88 to 297)
	<i>+industry response</i>	310 (42 to 719)	1900 (449 to 3830)	67 (-93 to 276)	199 (-478 to 1040)	137 (67 to 240)	565 (241 to 1020)	85 (30 to 159)	161 (-18 to 369)

Non-Hispanic Black	<i>consumer behavior</i>	134 (-25 to 317)	72 (-601 to 932)	49 (3 to 110)	193 (-133 to 632)	43 (12 to 85)	100 (-95 to 336)	6 (-6 to 22)	29 (-4 to 69)
	<i>+industry response</i>	214 (51 to 425)	382 (-273 to 1280)	68 (23 to 133)	276 (-37 to 729)	54 (24 to 97)	139 (-49 to 377)	10 (-2 to 27)	41 (8 to 83)
Hispanic	<i>consumer behavior</i>	199 (17 to 473)	1020 (88 to 2210)	87 (2 to 189)	285 (13 to 630)	12 (-26 to 62)	99 (18 to 201)	15 (-4 to 35)	6 (-28 to 46)
	<i>+industry response</i>	316 (111 to 623)	1430 (482 to 2690)	116 (31 to 223)	365 (94 to 729)	26 (-11 to 78)	131 (48 to 242)	21 (3 to 43)	17 (-15 to 59)
Other	<i>consumer behavior</i>	2 (-47 to 68)	90 (-110 to 339)	32 (7 to 65)	-2 (-88 to 108)	12 (0 to 28)	30 (4 to 61)	0 (-6 to 6)	7 (-22 to 42)
	<i>+industry response</i>	22 (-28 to 93)	168 (-26 to 434)	36 (13 to 71)	15 (-70 to 130)	16 (4 to 32)	39 (14 to 74)	1 (-4 to 8)	11 (-18 to 46)

Endometrial

Age	<i>consumer behavior</i>	1190 (309 to 2140)		251 (-248 to 785)		394 (177 to 659)		213 (51 to 378)	
	<i>+industry response</i>	2100 (1200 to 3110)		512 (26 to 1060)		548 (325 to 817)		302 (139 to 472)	
Race/Ethnicity									
Non-Hispanic White	<i>consumer behavior</i>	440 (-210 to 1170)	0	-42 (-511 to 440)	0	206 (36 to 399)	0	173 (13 to 319)	0
	<i>+industry response</i>	858 (218 to 1620)	0	114 (-351 to 606)	0	298 (127 to 491)	0	234 (76 to 388)	0
Non-Hispanic Black	<i>consumer behavior</i>	412 (-90 to 937)	0	139 (-9 to 293)	0	157 (42 to 295)	0	26 (-24 to 83)	0
	<i>+industry response</i>	666 (177 to 1210)	0	201 (51 to 361)	0	195 (81 to 338)	0	42 (-8 to 97)	0
Hispanic	<i>consumer behavior</i>	315 (22 to 645)	0	105 (-22 to 222)	0	16 (-33 to 70)	0	19 (-7 to 44)	0
	<i>+industry response</i>	505 (197 to 854)	0	144 (21 to 261)	0	34 (-14 to 89)	0	28 (3 to 54)	0
Other	<i>consumer behavior</i>	8 (-99 to 139)	0	51 (13 to 99)	0	17 (1 to 36)	0	-3 (-10 to 5)	0
	<i>+industry response</i>	50 (-56 to 187)	0	58 (21 to 107)	0	22 (6 to 41)	0	0 (-8 to 7)	0

Kidney (Renal Cell)

Age	<i>consumer behavior</i>	1050 (284 to 1830)		263 (-153 to 695)		506 (225 to 778)		182 (20 to 338)	
	<i>+industry response</i>	1880 (1100 to 2680)		539 (106 to 977)		679 (402 to 954)		276 (112 to 429)	
Race/Ethnicity									

Non-Hispanic White	<i>consumer behavior</i>	57 (-23 to 159)	332 (-183 to 922)	-16 (-128 to 106)	26 (-351 to 396)	72 (14 to 138)	287 (42 to 525)	66 (9 to 124)	81 (-68 to 219)
	<i>+industry response</i>	111 (27 to 224)	663 (123 to 1280)	22 (-90 to 146)	168 (-199 to 552)	105 (46 to 171)	378 (138 to 623)	89 (33 to 148)	133 (-12 to 272)
Non-Hispanic Black	<i>consumer behavior</i>	67 (-16 to 162)	48 (-225 to 326)	24 (-2 to 53)	59 (-40 to 171)	30 (10 to 56)	35 (-32 to 106)	5 (-5 to 16)	16 (3 to 28)
	<i>+industry response</i>	113 (25 to 218)	174 (-96 to 461)	34 (9 to 64)	87 (-14 to 199)	37 (17 to 63)	49 (-17 to 121)	8 (-2 to 20)	20 (7 to 33)
Hispanic	<i>consumer behavior</i>	111 (9 to 229)	367 (0 to 792)	30 (-3 to 62)	118 (-15 to 261)	6 (-13 to 29)	47 (5 to 98)	7 (-2 to 17)	4 (-12 to 23)
	<i>+industry response</i>	177 (67 to 305)	522 (168 to 968)	40 (8 to 74)	157 (23 to 303)	13 (-5 to 36)	64 (22 to 116)	11 (1 to 21)	9 (-7 to 28)
Other	<i>consumer behavior</i>	3 (-23 to 34)	33 (-40 to 122)	15 (5 to 28)	0 (-28 to 33)	5 (1 to 11)	16 (5 to 29)	-1 (-3 to 2)	4 (-8 to 17)
	<i>+industry response</i>	13 (-12 to 45)	63 (-10 to 156)	17 (7 to 30)	6 (-22 to 39)	6 (2 to 12)	20 (9 to 33)	0 (-2 to 3)	5 (-6 to 18)
Pancreatic									
Age	<i>consumer behavior</i>	656 (220 to 1160)		74 (-166 to 350)		362 (175 to 581)		131 (20 to 250)	
	<i>+industry response</i>	1160 (707 to 1730)		243 (1 to 535)		483 (293 to 708)		199 (87 to 321)	
Race/Ethnicity									
Non-Hispanic White	<i>consumer behavior</i>	101 (-40 to 310)	213 (-100 to 659)	-44 (-143 to 78)	-13 (-216 to 221)	79 (24 to 158)	193 (44 to 384)	56 (3 to 117)	50 (-45 to 162)
	<i>+industry response</i>	196 (42 to 425)	420 (85 to 911)	-10 (-111 to 120)	67 (-140 to 326)	111 (51 to 198)	250 (102 to 448)	78 (25 to 146)	84 (-10 to 203)
Non-Hispanic Black	<i>consumer behavior</i>	48 (-7 to 125)	16 (-72 to 117)	22 (-1 to 49)	27 (-18 to 78)	29 (8 to 57)	18 (-15 to 56)	5 (-5 to 17)	9 (1 to 17)
	<i>+industry response</i>	78 (18 to 162)	57 (-33 to 164)	31 (9 to 62)	39 (-3 to 91)	36 (15 to 65)	24 (-8 to 63)	8 (-1 to 20)	12 (4 to 19)
Hispanic	<i>consumer behavior</i>	55 (5 to 118)	175 (13 to 374)	24 (-4 to 53)	42 (-5 to 97)	4 (-10 to 20)	16 (-2 to 40)	5 (-2 to 13)	1 (-7 to 10)
	<i>+industry response</i>	88 (33 to 158)	245 (83 to 462)	32 (6 to 63)	57 (10 to 113)	9 (-5 to 25)	23 (5 to 48)	8 (1 to 16)	4 (-4 to 13)
Other	<i>consumer behavior</i>	-2 (-23 to 25)	16 (-23 to 63)	14 (3 to 27)	0 (-18 to 20)	7 (1 to 14)	9 (3 to 17)	0 (-3 to 3)	2 (-5 to 11)
	<i>+industry response</i>	7 (-14 to 36)	32 (-7 to 82)	16 (6 to 30)	3 (-14 to 24)	9 (2 to 16)	11 (5 to 19)	1 (-2 to 4)	3 (-4 to 12)

Esophageal Adenocarcinoma

Age	<i>consumer behavior</i>	631 (33 to 1320)		78 (-255 to 423)		348 (113 to 584)		101 (-42 to 239)	
	<i>+industry response</i>	1150 (520 to 1870)		246 (-96 to 601)		457 (225 to 699)		161 (19 to 302)	
Race/Ethnicity									
Non-Hispanic White	<i>consumer behavior</i>	40 (-23 to 112)	366 (-206 to 1000)	-8 (-47 to 36)	24 (-314 to 359)	24 (6 to 47)	283 (55 to 516)	22 (4 to 41)	71 (-65 to 202)
	<i>+industry response</i>	81 (15 to 160)	732 (157 to 1400)	5 (-34 to 51)	152 (-176 to 495)	35 (16 to 59)	366 (142 to 602)	28 (11 to 48)	119 (-13 to 253)
Non-Hispanic Black	<i>consumer behavior</i>	9 (-1 to 20)	9 (-25 to 45)	3 (0 to 7)	10 (-6 to 28)	4 (1 to 8)	6 (-6 to 18)	1 (-1 to 2)	3 (0 to 5)
	<i>+industry response</i>	14 (3 to 26)	25 (-10 to 62)	4 (1 to 8)	14 (-2 to 33)	5 (2 to 9)	8 (-3 to 21)	1 (0 to 3)	4 (1 to 6)
Hispanic	<i>consumer behavior</i>	25 (2 to 52)	164 (2 to 354)	3 (-1 to 13)	40 (-7 to 99)	1 (-3 to 7)	21 (3 to 42)	1 (-1 to 4)	1 (-6 to 10)
	<i>+industry response</i>	40 (15 to 68)	235 (70 to 425)	5 (0 to 16)	55 (6 to 114)	3 (-1 to 8)	28 (10 to 50)	2 (0 to 4)	4 (-4 to 12)
Other	<i>consumer behavior</i>	-1 (-9 to 10)	9 (-14 to 35)	5 (1 to 9)	-1 (-10 to 10)	2 (0 to 4)	6 (2 to 10)	0 (-1 to 1)	1 (-3 to 7)
	<i>+industry response</i>	3 (-6 to 14)	18 (-5 to 46)	6 (2 to 10)	1 (-8 to 12)	2 (1 to 5)	7 (3 to 11)	0 (-1 to 1)	2 (-3 to 7)

Colorectal

Age	<i>consumer behavior</i>	430 (139 to 779)		56 (-48 to 184)		150 (77 to 241)		63 (13 to 119)	
	<i>+industry response</i>	764 (450 to 1160)		133 (23 to 268)		203 (126 to 304)		95 (46 to 153)	
Race/Ethnicity									
Non-Hispanic White	<i>consumer behavior</i>	49 (-36 to 181)	119 (-75 to 391)	-21 (-65 to 40)	-10 (-89 to 97)	32 (7 to 67)	72 (11 to 150)	31 (6 to 63)	22 (-17 to 64)
	<i>+industry response</i>	106 (4 to 261)	248 (28 to 545)	-6 (-49 to 59)	24 (-60 to 140)	46 (20 to 85)	96 (36 to 176)	41 (16 to 76)	35 (-3 to 81)
Non-Hispanic Black	<i>consumer behavior</i>	26 (-7 to 70)	27 (-36 to 104)	8 (0 to 21)	18 (-9 to 53)	13 (4 to 24)	9 (-10 to 31)	2 (-2 to 7)	5 (0 to 10)
	<i>+industry response</i>	44 (9 to 94)	58 (-7 to 145)	12 (4 to 26)	25.1 (-1 to 61)	15 (7 to 27)	13 (-6 to 36)	3 (-1 to 9)	6 (2 to 12)
Hispanic	<i>consumer behavior</i>	36 (2 to 88)	136 (21 to 300)	13 (0 to 27)	37 (5 to 74)	2 (-4 to 10)	13 (2 to 28)	2 (-1 to 7)	1 (-5 to 6)

Other	<i>+industry response</i>	58 (17 to 120)	188 (65 to 366)	16 (5 to 32)	45 (14 to 84)	4 (-2 to 13)	18 (6 to 33)	4 (0 to 8)	2 (-3 to 8)
	<i>consumer behavior</i>	-1 (-15 to 20)	16 (-21 to 65)	5 (-1 to 11)	0 (-12 to 15)	2 (0 to 6)	5 (1 to 9)	0 (-2 to 1)	1 (-3 to 6)
	<i>+industry response</i>	5 (-9 to 27)	30 (-5 to 83)	6 (1 to 13)	2 (-9 to 17)	3 (1 to 7)	6 (2 to 11)	0 (-1 to 2)	2 (-2 to 7)
Stomach (Gastric Cardia)									
Age	<i>consumer behavior</i>	286 (45 to 672)		50 (-84 to 224)		149 (58 to 282)		42 (-14 to 113)	
	<i>+industry response</i>	513 (196 to 965)		120 (-14 to 321)		196 (105 to 342)		67 (13 to 145)	
Race/Ethnicity									
Non-Hispanic White	<i>consumer behavior</i>	14 (-16 to 63)	178 (-46 to 545)	-7 (-26 to 20)	21 (-109 to 194)	13 (4 to 30)	118 (29 to 248)	11 (3 to 22)	27 (-26 to 95)
	<i>+industry response</i>	34 (-5 to 95)	322 (43 to 766)	-1 (-19 to 30)	74 (-58 to 270)	18 (7 to 38)	152 (63 to 296)	14 (6 to 27)	45 (-6 to 121)
Non-Hispanic Black	<i>consumer behavior</i>	5 (-1 to 17)	2 (-11 to 29)	2 (0 to 5)	6 (-5 to 22)	2 (1 to 5)	3 (-5 to 13)	0 (0 to 1)	2 (1 to 4)
	<i>+industry response</i>	9 (2 to 22)	7 (-5 to 43)	2 (1 to 6)	9 (-2 to 26)	3 (2 to 6)	4 (-3 to 15)	1 (0 to 2)	3 (1 to 5)
Hispanic	<i>consumer behavior</i>	13 (1 to 35)	57 (-6 to 154)	5 (0 to 12)	14 (-3 to 38)	1 (-1 to 4)	6 (0 to 15)	1 (0 to 2)	0 (-2 to 4)
	<i>+industry response</i>	22 (5 to 47)	86 (20 to 194)	6 (2 to 14)	19 (3 to 46)	1 (-1 to 5)	8 (2 to 19)	1 (0 to 3)	1 (-1 to 6)
Other	<i>consumer behavior</i>	-1 (-5 to 7)	4 (-9 to 25)	4 (2 to 8)	0 (-7 to 10)	1 (0 to 3)	3 (1 to 7)	0 (-1 to 1)	1 (-2 to 5)
	<i>+industry response</i>	1 (-3 to 9)	9 (-4 to 34)	4 (2 to 8)	2 (-5 to 12)	1 (0 to 3)	4 (2 to 8)	0 (0 to 1)	1 (-2 to 5)
Multiple Myeloma									
Age	<i>consumer behavior</i>	220 (65 to 441)		51 (-29 to 150)		112 (54 to 186)		42 (6 to 84)	
	<i>+industry response</i>	380 (202 to 657)		105 (20 to 215)		151 (89 to 232)		63 (27 to 111)	
Race/Ethnicity									
Non-Hispanic White	<i>consumer behavior</i>	11 (-13 to 52)	59 (-34 to 221)	-8 (-32 to 31)	-3 (-59 to 83)	15 (2 to 41)	58 (15 to 123)	14 (1 to 35)	15 (-14 to 54)

	<i>+industry response</i>	26	122	-1	19	22	75	19	26
	<i>consumer behavior</i>	(-7 to 81)	(1 to 321)	(-23 to 45)	(-37 to 123)	(6 to 53)	(32 to 147)	(6 to 44)	(-3 to 71)
Non-Hispanic Black	<i>+industry response</i>	17	14	10	17	12	7	2	6
	<i>consumer behavior</i>	(-4 to 63)	(-40 to 115)	(0 to 29)	(-10 to 59)	(3 to 28)	(-14 to 38)	(-3 to 11)	(1 to 12)
	<i>+industry response</i>	29	44	15	24	15	11	4	7
Hispanic	<i>consumer behavior</i>	(1 to 83)	(-20 to 159)	(3 to 37)	(-1 to 70)	(6 to 34)	(-8 to 45)	(-1 to 13)	(3 to 15)
	<i>+industry response</i>	16	72	5	15	1	10	2	0
	<i>consumer behavior</i>	(0 to 51)	(9 to 193)	(-3 to 17)	(-2 to 42)	(-3 to 8)	(2 to 22)	(-1 to 5)	(-3 to 5)
	<i>+industry response</i>	28	100	7	21	3	13	3	1
Other	<i>consumer behavior</i>	(5 to 71)	(31 to 244)	(0 to 21)	(4 to 51)	(-1 to 10)	(5 to 26)	(0 to 6)	(-2 to 6)
	<i>+industry response</i>	0	5	4	0	1	3	0	1
	<i>consumer behavior</i>	(-3 to 6)	(-7 to 27)	(2 to 7)	(-6 to 7)	(0 to 2)	(1 to 6)	(-1 to 1)	(-2 to 4)
	<i>+industry response</i>	1	10	4	1	1	4	0	1
	<i>consumer behavior</i>	(-2 to 8)	(-2 to 36)	(2 to 8)	(-5 to 9)	(0 to 3)	(2 to 7)	(-1 to 1)	(-1 to 4)

Gallbladder

Age	<i>consumer behavior</i>	136 (58 to 229)		44 (7 to 86)		65 (40 to 93)		24 (9 to 41)	
	<i>+industry response</i>	239 (153 to 341)		74 (36 to 119)		86 (61 to 117)		36 (20 to 53)	
Race/Ethnicity									
Non-Hispanic White	<i>consumer behavior</i>	22	15	0	2	16	19	13	5
	<i>+industry response</i>	(-10 to 64)	(-10 to 52)	(-23 to 27)	(-14 to 19)	(4 to 32)	(6 to 36)	(2 to 25)	(-4 to 14)
	<i>consumer behavior</i>	43	32	8	8	23	24	17	8
Non-Hispanic Black	<i>+industry response</i>	(9 to 90)	(4 to 72)	(-15 to 37)	(-8 to 27)	(10 to 40)	(11 to 42)	(6 to 30)	(-1 to 18)
	<i>consumer behavior</i>	24	2	10	4	12	3	2	2
	<i>+industry response</i>	(-5 to 61)	(-14 to 21)	(0 to 21)	(-3 to 14)	(4 to 23)	(-3 to 10)	(-2 to 6)	(0 to 3)
	<i>consumer behavior</i>	40	9	14	6	15	4	3	2
Hispanic	<i>+industry response</i>	(10 to 80)	(-7 to 31)	(4 to 27)	(-1 to 17)	(7 to 26)	(-2 to 12)	(0 to 7)	(1 to 4)
	<i>consumer behavior</i>	28	33	9	12	2	6	2	0
	<i>+industry response</i>	(2 to 63)	(-8 to 85)	(-4 to 23)	(-2 to 30)	(-4 to 10)	(1 to 13)	(-1 to 6)	(-2 to 3)
	<i>consumer behavior</i>	45	51	13	16	4	8	4	1
Other	<i>+industry response</i>	(16 to 83)	(9 to 106)	(1 to 28)	(3 to 35)	(-2 to 13)	(3 to 16)	(0 to 8)	(-1 to 4)
	<i>consumer behavior</i>	0	2	5	0	3	2	0	0
	<i>+industry response</i>	(-10 to 16)	(-5 to 12)	(1 to 11)	(-2 to 2)	(0 to 6)	(1 to 4)	(-1 to 1)	(-1 to 2)
	<i>consumer behavior</i>	4	5	6	0	4	3	0	1
	<i>+industry response</i>	(-6 to 21)	(-2 to 15)	(2 to 12)	(-1 to 3)	(1 to 7)	(1 to 5)	(-1 to 2)	(-1 to 2)

Advanced Prostate

Age	<i>consumer behavior</i>	101 (13 to 214)		18 (-17 to 58)		33 (11 to 58)		15 (-4 to 38)	
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	<i>+industry response</i>	174 (80 to 304)		37 (1 to 83)		43 (22 to 71)		24 (6 to 48)	
Race/Ethnicity									
Non-Hispanic White	<i>consumer behavior</i>	0	43 (-13 to 140)	0	0 (-29 to 35)	0	20 (3 to 42)	0	10 (-9 to 32)
	<i>+industry response</i>	0	82 (16 to 192)	0	11 (-17 to 50)	0	27 (10 to 51)	0	16 (-2 to 40)
Non-Hispanic Black	<i>consumer behavior</i>	0	2 (-31 to 51)	0	9 (-7 to 30)	0	7 (-5 to 20)	0	4 (1 to 9)
	<i>+industry response</i>	0	17 (-16 to 75)	0	13 (-2 to 36)	0	9 (-3 to 23)	0	6 (2 to 11)
Hispanic	<i>consumer behavior</i>	0	47 (7 to 103)	0	7 (-2 to 20)	0	4 (1 to 9)	0	0 (-1 to 3)
	<i>+industry response</i>	0	64 (23 to 127)	0	10 (1 to 25)	0	6 (2 to 11)	0	1 (-1 to 3)
Other	<i>consumer behavior</i>	0	1 (-4 to 12)	0	0 (-2 to 3)	0	1 (0 to 2)	0	0 (-1 to 2)
	<i>+industry response</i>	0	2 (-1 to 16)	0	0 (-2 to 3)	0	1 (1 to 2)	0	1 (-1 to 2)
Ovarian									
Age	<i>consumer behavior</i>	45 (-3 to 114)		13 (-14 to 54)		24 (9 to 51)		21 (8 to 46)	
	<i>+industry response</i>	87 (19 to 175)		25 (-4 to 75)		34 (14 to 64)		28 (15 to 56)	
Race/Ethnicity									
Non-Hispanic White	<i>consumer behavior</i>	21 (-15 to 89)	0	-3 (-29 to 38)	0	15 (2 to 41)	0	19 (6 to 43)	0
	<i>+industry response</i>	45 (-10 to 131)	0	5 (-21 to 52)	0	22 (5 to 51)	0	25 (11 to 52)	0
Non-Hispanic Black	<i>consumer behavior</i>	7 (-3 to 27)	0	3 (0 to 11)	0	5 (2 to 11)	0	1 (-1 to 4)	0
	<i>+industry response</i>	13 (-1 to 38)	0	5 (1 to 13)	0	7 (3 to 13)	0	1 (0 to 5)	0
Hispanic	<i>consumer behavior</i>	15 (0 to 48)	0	6 (-1 to 16)	0	1 (-2 to 6)	0	1 (-1 to 4)	0
	<i>+industry response</i>	25 (2 to 64)	0	8 (2 to 20)	0	2 (-1 to 8)	0	2 (0 to 5)	0
Other	<i>consumer behavior</i>	-5 (-13 to 9)	0	5 (1 to 10)	0	2 (0 to 4)	0	0 (-1 to 1)	0
	<i>+industry response</i>	-1 (-9 to 15)	0	5 (2 to 11)	0	2 (1 to 4)	0	0 (0 to 1)	0

Thyroid

Age	<i>consumer behavior</i>	9 (2 to 22)		3 (-4 to 11)		6 (3 to 12)		4 (1 to 7)	
	<i>+industry response</i>	16 (7 to 33)		6 (0 to 16)		9 (5 to 15)		5 (3 to 9)	
Race/Ethnicity									
Non-Hispanic White	<i>consumer behavior</i>	0 (0 to 2)	0 (-1 to 5)	0 (-1 to 1)	-2 (-7 to 5)	0 (0 to 1)	3 (0 to 8)	1 (0 to 4)	1 (-1 to 3)
	<i>+industry response</i>	0 (0 to 3)	1 (0 to 9)	0 (-1 to 2)	0 (-5 to 9)	1 (0 to 2)	4 (1 to 10)	2 (1 to 4)	1 (0 to 4)
Non-Hispanic Black	<i>consumer behavior</i>	1 (0 to 5)	1 (-2 to 7)	0 (0 to 1)	0 (0 to 2)	1 (0 to 2)	0 (0 to 1)	0 (0 to 1)	0 (0 to 1)
	<i>+industry response</i>	2 (0 to 7)	2 (-1 to 10)	0 (0 to 2)	0 (0 to 2)	1 (0 to 2)	0 (0 to 1)	0 (0 to 1)	0 (0 to 1)
Hispanic	<i>consumer behavior</i>	3 (0 to 10)	1 (0 to 9)	1 (0 to 3)	2 (0 to 5)	0 (0 to 1)	1 (0 to 2)	0 (0 to 1)	0 (0 to 1)
	<i>+industry response</i>	5 (1 to 14)	2 (0 to 12)	1 (0 to 4)	2 (1 to 7)	0 (0 to 1)	1 (0 to 3)	1 (0 to 2)	0 (0 to 1)
Other	<i>consumer behavior</i>	0	0 (-1 to 3)	0 (0 to 1)	0 (-1 to 1)	0 (0 to 1)	0 (0 to 1)	0	0 (0 to 1)
	<i>+industry response</i>	0	0 (0 to 4)	0 (0 to 1)	0 (-1 to 2)	0 (0 to 1)	0 (0 to 1)	0	0 (0 to 1)

1. Values are the median estimates (95% uncertainty intervals) of each distribution of 1000 simulations.

Supplementary Table 12. Estimated health gains and costs associated with the federal menu calorie labeling on reducing cancer burdens in the US over a lifetime, one-way sensitivity analyses at 25% and 75% calorie compensation outside restaurant settings (US population=235,162,844)¹

	Menu Calorie Labeling Policy			
	75% Compensation		25% Compensation	
	Consumer Behavior Median (2.5% to 97.5%)	Consumer Behavior + Industry Response Median (2.5% to 97.5%)	Consumer Behavior Median (2.5% to 97.5%)	Consumer Behavior + Industry Response Median (2.5% to 97.5%)
New Cancer Cases Averted, N (95% UI)				
Liver cancer	2550 (265 to 5030)	4280 (2000 to 6770)	7760 (5160 to 10500)	12800 (9790 to 16000)
Endometrial cancer	2490 (-633 to 5890)	4640 (1570 to 8070)	8890 (5500 to 12700)	15100 (11800 to 19100)
Kidney cancer	2360 (65 to 4510)	4160 (1900 to 6410)	7810 (5230 to 10000)	13000 (10400 to 15300)
Breast cancer (postmenopausal)	2060 (-616 to 5280)	3930 (1260 to 7200)	7640 (4560 to 11400)	13000 (9700 to 17200)
Pancreatic cancer	638 (51 to 1280)	1140 (536 to 1800)	2140 (1490 to 2890)	3590 (2840 to 4460)
Esophageal adenocarcinoma	598 (-239 to 1400)	1100 (262 to 1930)	2130 (1200 to 3000)	3560 (2600 to 4520)
Colorectal cancer	480 (56 to 940)	851 (423 to 1330)	1600 (1060 to 2140)	2660 (2030 to 3310)
Multiple myeloma	343 (61 to 674)	576 (281 to 950)	1050 (677 to 1480)	1730 (1240 to 2340)
Stomach cancer (cardia)	312 (-42 to 736)	533 (192 to 998)	994 (555 to 1530)	1640 (1060 to 2300)
Thyroid cancer	185 (-70 to 498)	406 (128 to 749)	851 (473 to 1310)	1470 (963 to 2100)
Gallbladder cancer	165 (70 to 274)	266 (167 to 378)	468 (348 to 602)	758 (626 to 912)
Advanced prostate cancer	162 (-28 to 360)	282 (87 to 493)	519 (304 to 768)	868 (603 to 1160)
Ovarian cancer	65 (-17 to 179)	119 (26 to 245)	228 (96 to 398)	384 (196 to 617)
Total	12700 (2430 to 24200)	22600 (12400 to 34100)	42800 (30400 to 53900)	71500 (59100 to 82800)
Cancer Deaths Prevented, N (95% UI)				
Liver cancer	2200 (199 to 4450)	3750 (1720 to 5970)	6790 (4490 to 9270)	11200 (8570 to 14100)
Breast cancer (postmenopausal)	1140 (-958 to 3640)	2420 (281 to 4990)	4980 (2540 to 7860)	8670 (6030 to 12000)
Endometrial cancer	980 (-69 to 2030)	1710 (675 to 2770)	3160 (2020 to 4450)	5270 (4120 to 6630)
Kidney cancer	939 (94 to 1820)	1630 (795 to 2520)	3020 (2080 to 3930)	4990 (4020 to 6020)
Pancreatic cancer	561 (54 to 1120)	996 (473 to 1590)	1870 (1300 to 2510)	3130 (2480 to 3890)
Esophageal adenocarcinoma	503 (-224 to 1190)	932 (203 to 1640)	1820 (1010 to 2580)	3050 (2220 to 3890)
Colorectal cancer	323 (41 to 640)	571 (280 to 910)	1080 (724 to 1440)	1800 (1390 to 2240)
Stomach cancer (cardia)	264 (-32 to 623)	446 (159 to 838)	824 (454 to 1280)	1360 (887 to 1910)
Multiple myeloma	213 (45 to 411)	350 (178 to 576)	635 (419 to 897)	1040 (757 to 1370)
Gallbladder cancer	141 (60 to 234)	226 (142 to 320)	398 (300 to 512)	644 (531 to 777)
Advanced prostate cancer	80 (-12 to 179)	135 (44 to 239)	246 (144 to 373)	410 (278 to 563)
Ovarian cancer	49 (-7 to 123)	87 (26 to 170)	162 (76 to 270)	272 (155 to 415)
Thyroid cancer	11 (1 to 24)	19 (8 to 33)	34 (21 to 53)	56 (39.9 to 81.8)
Total	7760 (1280 to 13900)	13600 (7160 to 20100)	25600 (17900 to 32300)	42500 (34600 to 49600)
Life Years Gained	34700 (5070 to 66300)	62200 (32500 to 93500)	118000 (82400 to 151000)	197000 (161000 to 232000)

QALYs Gained	51400 (9690 to 95700)	90500 (49300 to 135000)	171000 (119000 to 218000)	284000 (234000 to 334000)
Changes in Health-Related Costs, Cancer Only (\$, millions)^{2,3}				
Healthcare (medical) cost	-693 (-1250 to -138)	-1210 (-1770 to -660)	-2270 (-2850 to -1640)	-3760 (-4360 to -3140)
Patient time cost	-47.9 (-90.0 to -11.9)	-83.6 (-126 to -47.3)	-155 (-198 to -113)	-258 (-302 to -215)
Productivity loss	-279 (-527 to -56.6)	-490 (-743 to -271)	-929 (-1170 to -673)	-1550 (-1800 to -1290)
Policy Implementation Costs (\$, millions)^{2,3}				
Government cost	18.5 (14.5 to 25.1)	18.5 (14.4 to 25.5)	18.5 (14.5 to 25.1)	18.5 (14.4 to 25.5)
Administration	9.07 (8.61 to 9.56)	9.09 (8.62 to 9.55)	9.07 (8.61 to 9.56)	9.09 (8.62 to 9.55)
Monitoring	9.40 (5.45 to 16.1)	9.38 (5.30 to 16.3)	9.40 (5.45 to 16.1)	9.38 (5.30 to 16.3)
Industry cost	820 (762 to 889)	1120 (1040 to 1210)	820 (762 to 889)	1120 (1040 to 1210)
Compliance	820 (762 to 889)	823 (757 to 889)	820 (762 to 889)	823 (757 to 889)
Reformulation	-----	296 (249 to 353)	-----	296 (249 to 353)
Net Costs, Cancer Only (\$, millions)^{2,3,4}				
Societal perspective	-174 (-1032 to 639)	-653 (-1510 to 164)	-2520 (-3390 to -1590)	-4430 (-5310 to -3510)
Healthcare perspective	-674 (-1229 to -120)	-1190 (-1750 to -639)	-2250 (-2830 to -1620)	-3740 (-4350 to -3120)
ICER (dollars/QALY)⁵				
Societal perspective	Dominant	Dominant	Dominant	Dominant
Healthcare perspective	Dominant	Dominant	Dominant	Dominant

Abbreviations: ICER, Incremental Cost-Effectiveness Ratio; QALY, quality-adjusted life years.

1. Values are the median estimates (95% uncertainty intervals) of each distribution of 1000 simulations.

2. Health-related costs were inflated to 2015 US dollars using the Personal Health Care (PHC) index. Policy intervention costs were inflated to 2015 US dollars using the Consumer Price Index. Negative costs represent savings.

3. Costs are medians from 1000 simulations so may not add up to totals.

4. Net costs were calculated as policy costs minus health-related costs from reduced cancer burden. Societal perspective includes healthcare cost, patient time costs, productivity costs, and policy implementation costs; government perspective included policy costs relevant to policy implementation and program monitoring and evaluation and medical costs.

5. ICER threshold was evaluated at \$150,000/QALY. Dominant represents less costly and more effective than the "no-policy intervention" scenario.

Supplementary Table 13. Estimated health gains and costs associated with the federal menu calorie labeling on reducing cancer burdens in the US over a lifetime, one-way sensitivity analysis, assuming all full-service and fast-food restaurants were covered by the policy (US population=235,162,844)¹

	Menu Calorie Labeling Policy	
	Consumer Behavior Median (2.5% to 97.5%)	Consumer Behavior + Industry Response Median (2.5% to 97.5%)
New Cancer Cases Averted, N (95% UI)		
Liver cancer	7280 (4690 to 10100)	11400 (8480 to 14400)
Kidney cancer	6820 (4180 to 9460)	11100 (8470 to 13700)
Endometrial cancer	5340 (1540 to 9220)	10400 (6690 to 14300)
Breast cancer (postmenopausal)	4920 (1580 to 8420)	9380 (5960 to 13100)
Esophageal adenocarcinoma	2060 (1170 to 3060)	3260 (2310 to 4330)
Pancreatic cancer	1810 (1150 to 2600)	3000 (2290 to 3870)
Colorectal cancer	1320 (772 to 1910)	2200 (1600 to 2880)
Stomach cancer (cardia)	938 (531 to 1510)	1480 (985 to 2140)
Thyroid cancer	746 (430 to 1180)	1270 (850 to 1820)
Multiple myeloma	710 (377 to 1150)	1270 (879 to 1820)
Advanced prostate cancer	430 (208 to 681)	715 (461 to 1010)
Gallbladder cancer	329 (201 to 457)	568 (435 to 708)
Ovarian cancer	133 (20.9 to 292)	263 (109 to 468)
Total	32900 (20300 to 46000)	56400 (43700 to 69300)
Cancer Deaths Prevented, N (95% UI)		
Liver cancer	6460 (4170 to 8980)	10000 (7480 to 12800)
Breast cancer (postmenopausal)	3410 (701 to 6280)	6440 (3560 to 9750)
Kidney cancer	2620 (1610 to 3620)	4250 (3210 to 5300)
Endometrial cancer	1890 (654 to 3140)	3610 (2390 to 4900)
Esophageal adenocarcinoma	1800 (1030 to 2670)	2840 (2010 to 3750)
Pancreatic cancer	1580 (976 to 2250)	2620 (1990 to 3380)
Colorectal cancer	923 (560 to 1310)	1520 (1110 to 1970)
Stomach cancer (cardia)	785 (437 to 1270)	1240 (812 to 1790)
Multiple myeloma	431 (234 to 709)	762 (524 to 1100)
Gallbladder cancer	275 (170 to 385)	479 (366 to 601)
Advanced prostate cancer	219 (117 to 351)	353 (233 to 506)
Ovarian cancer	94 (18 to 197)	185 (91 to 317)
Thyroid cancer	27 (13 to 45)	45 (28 to 68)
Total	7760 (1280 to 13900)	34400 (26800 to 42400)
Life Years Gained	97300 (62300 to 135000)	162000 (126000 to 201000)
QALYs Gained	20500 (13100 to 28500)	230000 (178000 to 287000)
Changes in Health-Related Costs, Cancer Only (\$, millions)^{2,3}		

Healthcare (medical) cost	-1820 (-2500 to -1180)	-3060 (-3740 to -2400)
Patient time cost	-112 (-160 to -62.7)	-197 (-245 to -148)
Productivity loss	-692 (-976 to -401)	-1210 (-1490 to -916)
Policy Implementation Costs (\$, millions)^{2,3}		
Government cost	18.4 (14.7 to 25.7)	18.4 (14.7 to 25.7)
Administration	9.06 (8.56 to 9.52)	9.07 (8.60 to 9.56)
Monitoring	9.32 (5.61 to 16.5)	9.37 (5.64 to 16.6)
Industry cost	821 (764 to 888)	1120 (1040 to 1200)
Compliance	821 (764 to 888)	821 (763 to 886)
Reformulation	-----	297 (248 to 350)
Net Costs, Cancer Only (\$, millions)^{2,3,4}		
Societal perspective	-1780 (-2790 to -831)	-1030 (-1590 to -549)
Healthcare perspective	-1800 (-2470 to -1160)	-1670 (-2120 to -1270)
ICER (dollars/QALY)⁵		
Societal perspective	Dominant	Dominant
Healthcare perspective	Dominant	Dominant

Abbreviations: ICER, Incremental Cost-Effectiveness Ratio; QALY, quality-adjusted life years.

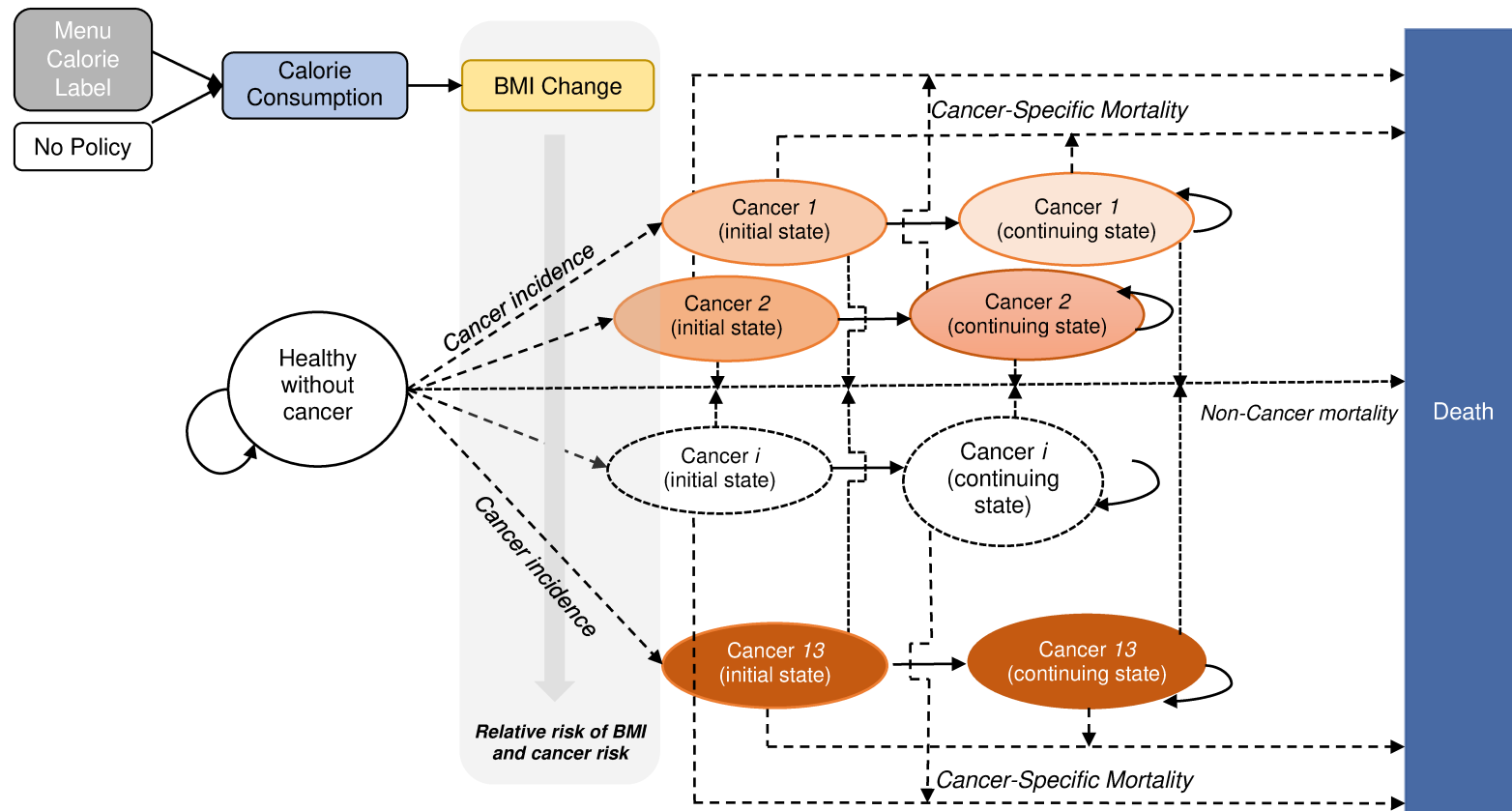
1. Values are the median estimates (95% uncertainty intervals) of each distribution of 1000 simulations.

2. Health-related costs were inflated to 2015 US dollars using the Personal Health Care (PHC) index. Policy intervention costs were inflated to 2015 US dollars using the Consumer Price Index. Negative costs represent savings.

3. Costs are medians from 1000 simulations so may not add up to totals.

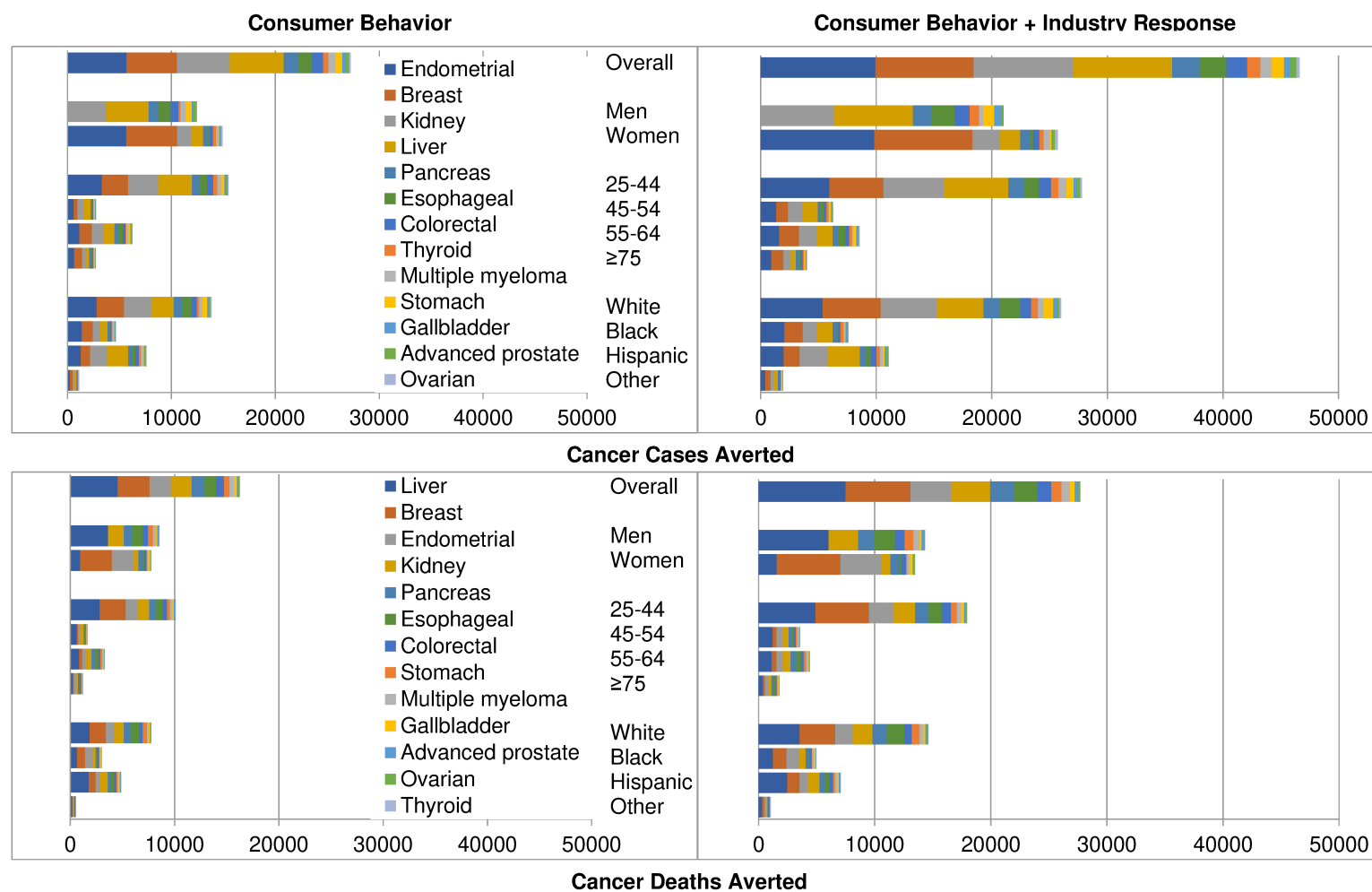
4. Net costs were calculated as policy costs minus health-related costs from reduced cancer burden. Societal perspective includes healthcare cost, patient time costs, productivity costs, and policy implementation costs; government perspective included policy costs relevant to policy implementation and program monitoring and evaluation and medical costs.

5. ICER threshold was evaluated at \$150,000/QALY. Dominant represents less costly and more effective than the "no-policy intervention" scenario.

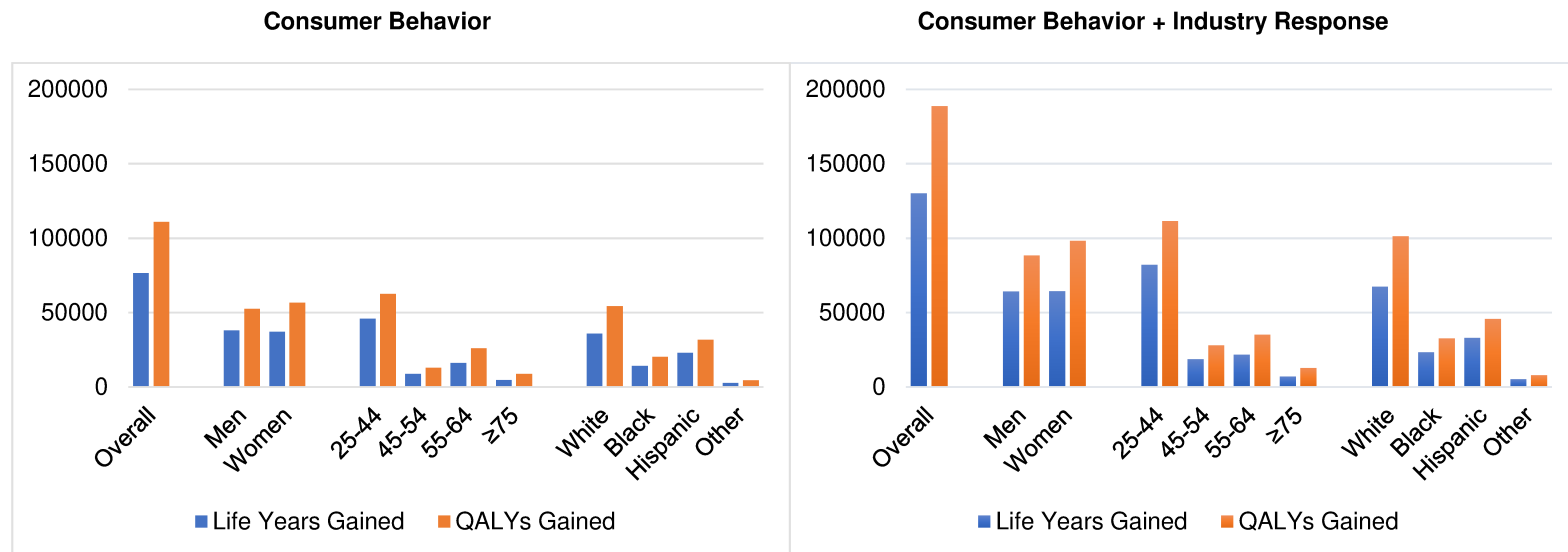


Supplementary Figure 1. Diet and Cancer Outcome Model (DiCOM)

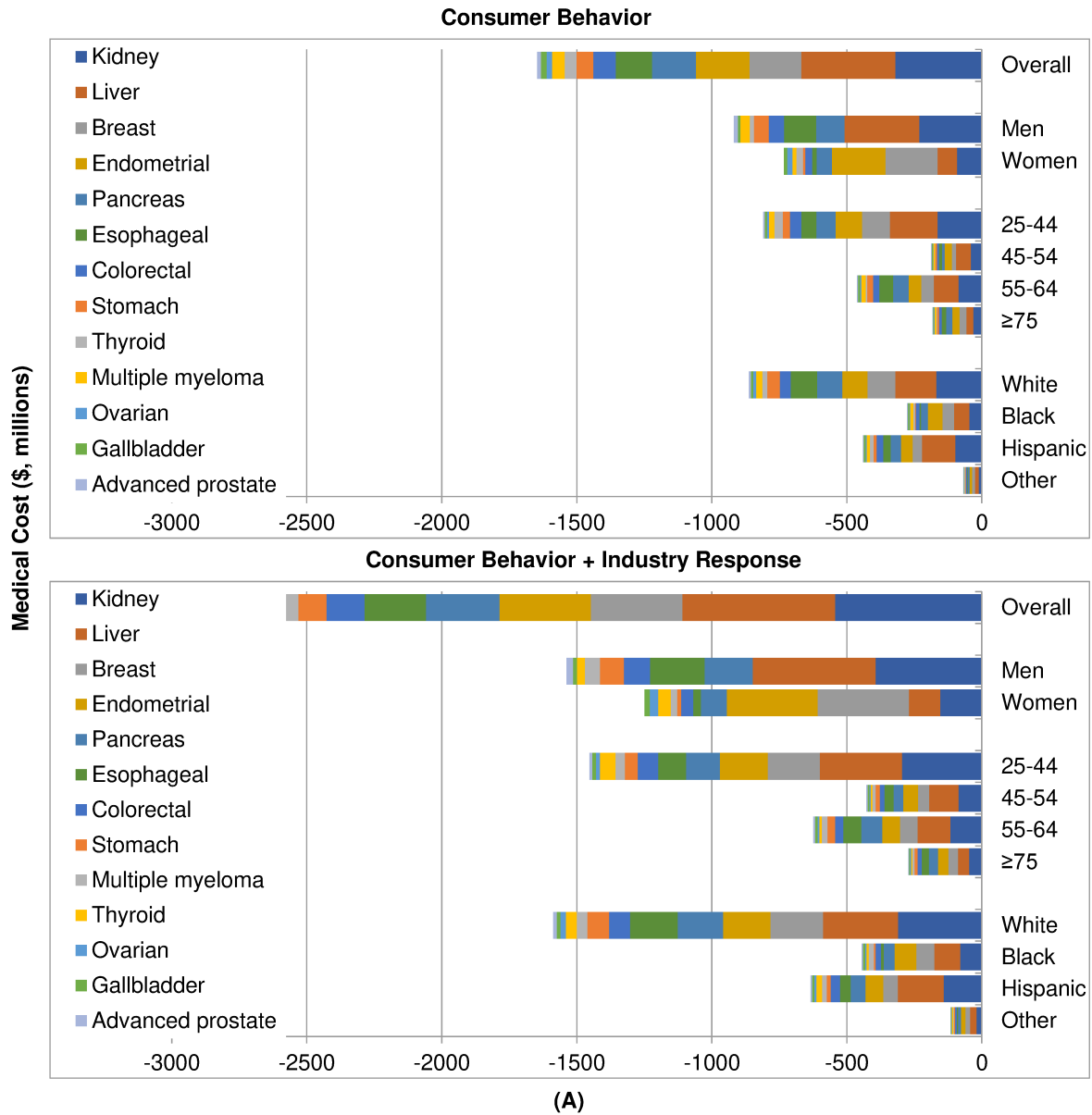
The model consists of four general health states: (a) healthy without cancer (healthy state); (b) initial cancer diagnosis (initial state) for each cancer type i ; (c) continuing care (continuing state) for each cancer type i ; and (d) death state. Transitions between states are based on national cancer incidence and cancer-specific mortality rates from SEER (for individual with cancer) and lifetable-based mortality rates (for individuals without cancer). The model simulates the policy impact on the number of new cases and deaths of 13 obesity-associated cancers, health-related quality of life (HRQOL), and health-related costs among U.S. adults over a lifetime by comparing a policy scenario (menu calorie label) to a non-policy scenario (status quo).

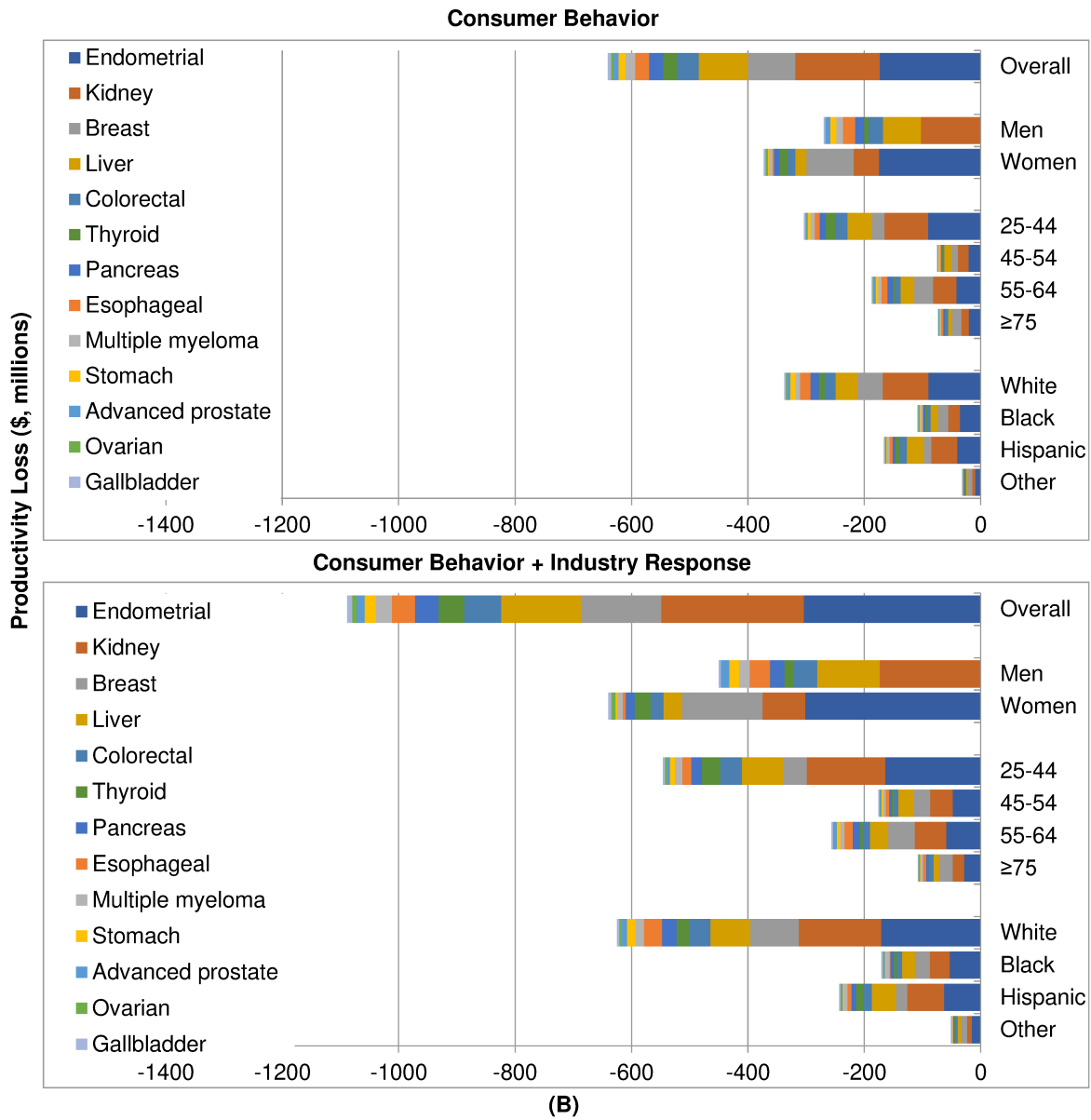


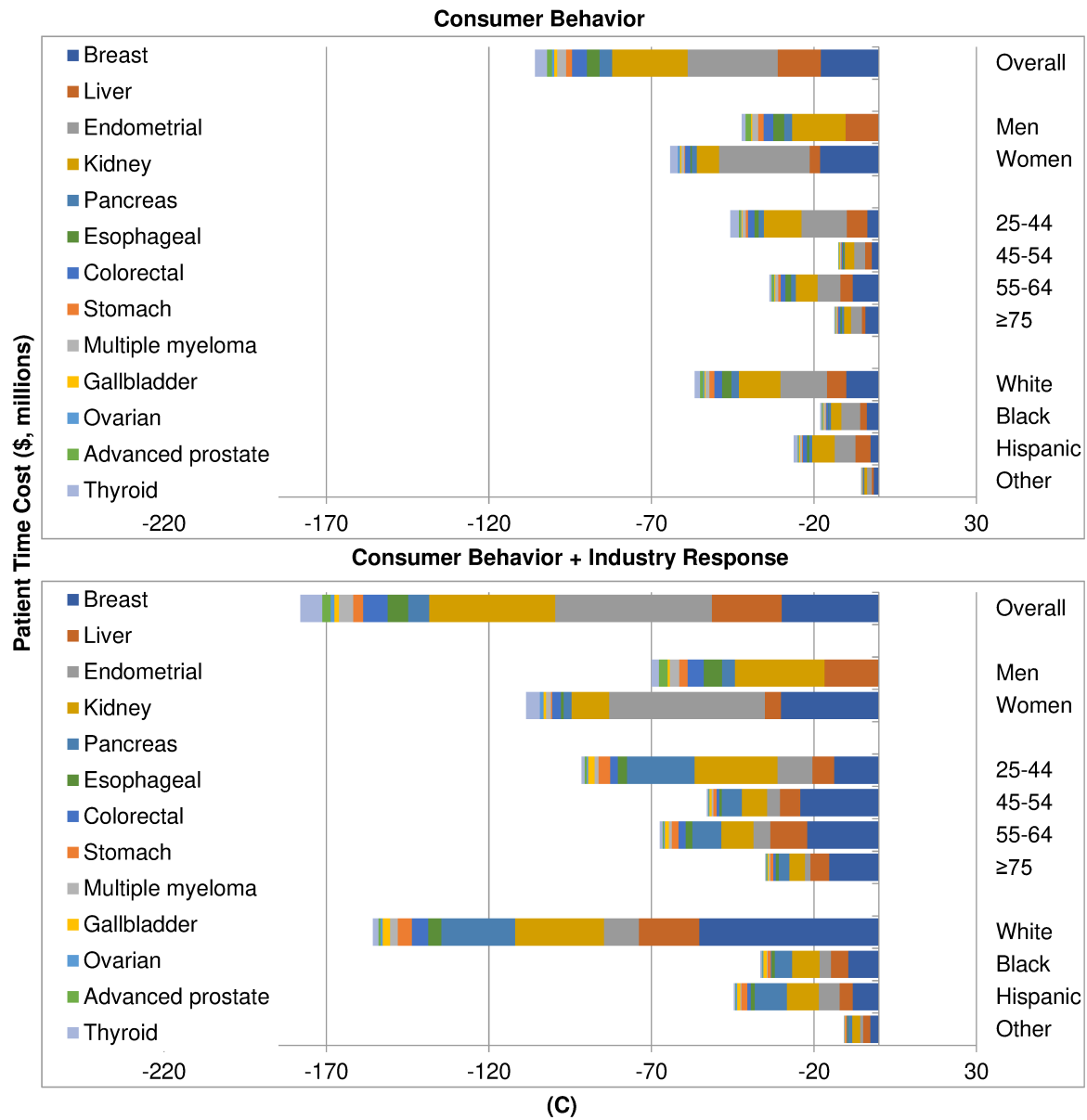
Supplementary Figure 2. Estimated reduced new cancer cases and deaths associated with the federal menu calorie labeling in the US by age, sex, race/ethnicity, and cancer type, over lifetime



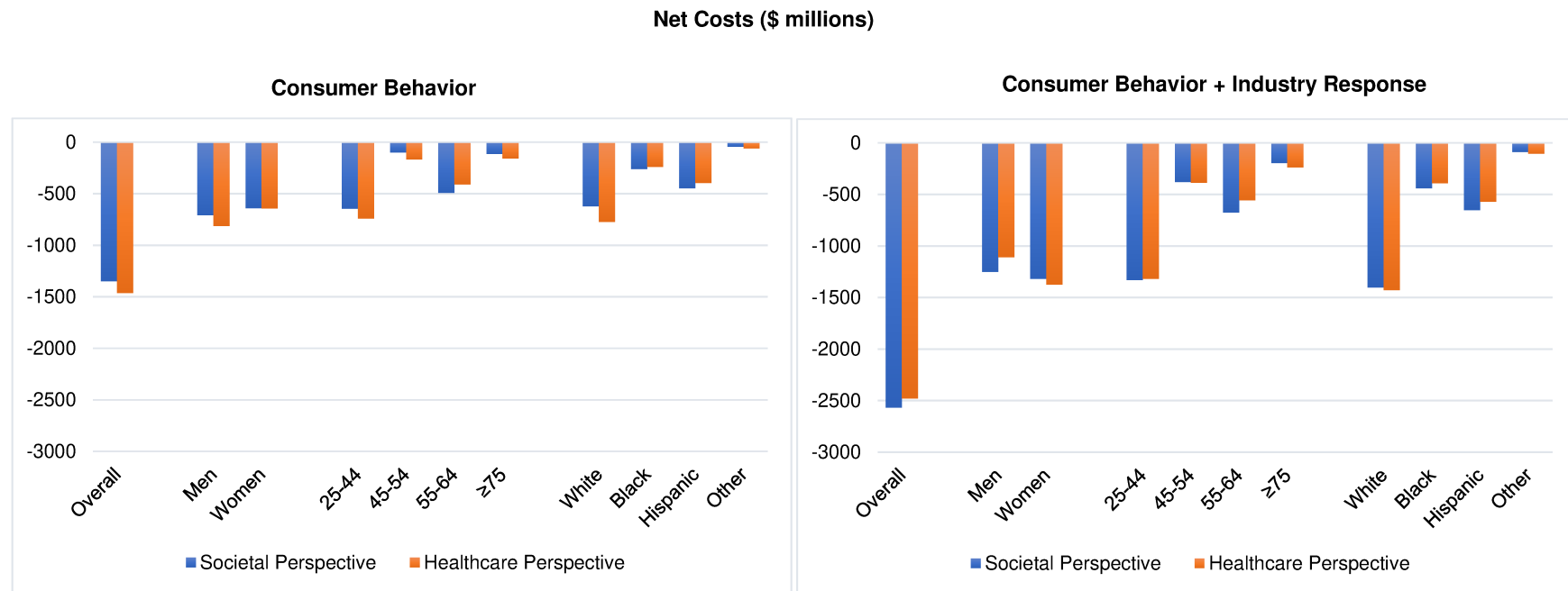
Supplementary Figure 3. Estimated life years and QALYs gained associated with the federal menu calorie labeling in the US by age, sex, and race/ethnicity, over a lifetime



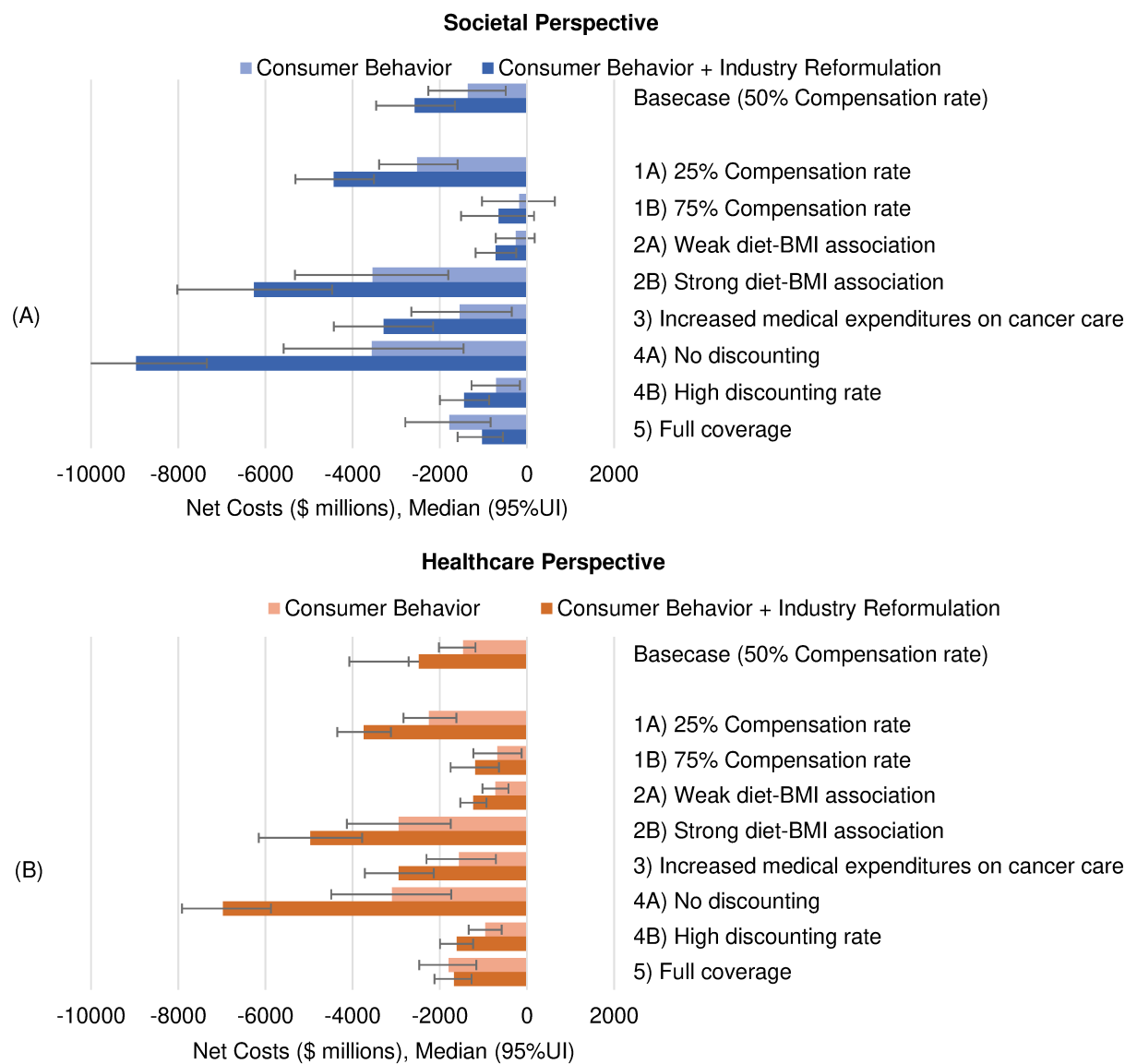




Supplementary Figure 4. Estimated changes of health-related costs associated with the federal menu calorie labeling in the US by age, sex, race/ethnicity, and cancer type, over lifetime



Supplementary Figure 5. Estimated net costs from societal and government perspectives associated with the federal menu calorie labeling policy in the US by age, sex, and race/ethnicity, over a lifetime



Supplementary Figure 6. One-Way Sensitivity Analysis of Net Costs of Menu Calorie Labeling and Obesity-Associated Cancer Rates by Varying Assumptions of Key Input Parameters From (A) Societal Perspective and (B) Healthcare Perspective

1a) assumed that only 25% of calorie reduction as a result of industry response would translate into long-term reductions in daily calories; 1b) assumed that only 75% of calorie reduction as a result of industry response would translate into long-term reductions in daily calories; 2a) weaker diet-BMI association assumed half of the base-case diet-BMI association; 2b) stronger diet-BMI association assumed two times of the base-case diet-BMI association; 3) 2% annual increase in medical expenditure on cancer care; 4a) lower discounting rate assumed 0% discounting rate; 4b) higher discounting rate assumed 5% discounting rate; and 5) assumed the coverage of the FDA's final rule increasing from 56.5% to 100% of the calories from full-service restaurants. Under base-case scenario (policy effect assumed consumer behavior: -7.3%, and industry reformulation: -5.0%; assumed that only 50% of calorie reduction as a result of industry response would translate into long-term reductions in daily calories; diet-BMI association assumed healthy-weight: 0.0015 kg/m² per kcal, and overweight/obese: 0.003 kg/m² per kcal; medical expenditure on cancer care assumed 0% annual increase; discounting rate assumed 3%; policy coverage would affect 56.5% of calories consumed at full-service restaurants and 100% of calories consumed at fast-food restaurants), the policy was cost-saving from both societal and healthcare perspectives. The policy remained cost-saving for all sensitivity analyses from the healthcare perspective and from societal perspective with additional industry reformulation. With consumer behavior alone, the policy was cost-saving under all scenarios.