Screening outcomes tables

We replicated the screening outcomes supplemental tables from the CISNET technical report for each screening modality.[1] We wanted to reproduce CISNET model outputs as faithfully as possible, and therefore we used the modified CRC-AIM that employs period life tables. Predicted screening outcomes were simulated for a birth year cohort of 1975. The main benefits of CRC screening are life-years gained (LYG) from prevention of CRC cases and delay of CRC deaths compared with no screening. Number of colonoscopies was used to represent burden and harms. The number of tests, complications from colonoscopies, CRC cases, CRC deaths, life-years with CRC, incidence reduction, and mortality reduction were additional screening outcomes. All outcomes were reported per 1,000 individuals free of diagnosed CRC at age 40.

The screening overlay validation analysis assumed perfect adherence for CRC screening strategies. We generated screening overlay tables from CISNET publication (**Tables 1-8**) using CRC-AIM with period life tables. When no screening was conducted, the CRC-AIM model estimated that 71.1 out of 1000 individuals free of CRC at age 40 would be diagnosed with CRC during their lifetime and 31.7 would die of CRC. When screening was conducted, all strategies provided clinical benefit in terms of LYG and reductions in CRC-related incidence and mortality (**Tables 1-8**).

References

1. Zauber A, Knudsen AB, Rutter CM, Lansdorp-Vogelaar I, Kuntz KM. Technical Report: Evaluating the benefits and harms of colorectal cancer screening strategies: a collaborative modeling approach. 2015; AHRQ Publication No. 14-05203-EF-2:https://www.uspreventiveservicestaskforce.org/Home/GetFile/1/16540/cisnet-draft-modeling-report/pdf.

Table 1. Screening outcomes per 1,000 individuals aged 40 free from diagnosed CRC based on colonoscopy screening strategies. Outcomes generated using period life tables. Outcomes table modeled from Zauber et al.[1] COL, colonoscopy; SIG, flexible sigmoidoscopy; CTC, computed tomographic colonography; CRC, colorectal cancer; LY, life-years; LYG, life-years gained compared with no screening. [a]Maximum possible number with this strategy. [b]Including deaths from complications of screening. [c]Compared to no screening.

Strategy	Outcomes per 1,000 persons free of diagnosed cancer at age 40													Reductions[c] (%)	
Modality	Screening tests				Follow-up COLs	Surveillance COLs	COLs for symptoms	Total COLs	Complications	CRC cases	CRC deaths[b]	LY with CRC	LYG		
Age to begin-age to end, screening interval (# of tests[a])	Stool tests	SIGs	CTCs	COLs										Incidence	Mortality
No screening	0	0	0	0	0	0	71	71	2	71.1	31.7	560.3	0.0	0.0%	0.0%
COL 45-75, 5 (7)	0	0	0	5,098	0	1,940	3	7,041	18	5.8	1.9	72.1	326.5	91.8%	93.9%
COL 45-75, 10 (4)	0	0	0	3,087	0	1,771	4	4,862	16	7.9	2.7	94.5	317.5	88.9%	91.6%
COL 45-75, 15 (3)	0	0	0	2,398	0	1,633	6	4,037	15	10.4	3.6	120.5	305.2	85.4%	88.6%
COL 45-80, 5 (8)	0	0	0	5,451	0	1,960	2	7,414	20	5.0	1.6	70.1	328.2	93.0%	95.0%
COL 45-80, 10 (4)	0	0	0	3,087	0	1,771	4	4,862	16	7.9	2.7	94.5	317.5	88.9%	91.6%
COL 45-80, 15 (3)	0	0	0	2,398	0	1,633	6	4,037	15	10.4	3.6	120.5	305.2	85.4%	88.6%
COL 45-85, 5 (9)	0	0	0	5,688	0	1,972	2	7,662	22	4.7	1.4	70.0	328.8	93.4%	95.5%
COL 45-85, 10 (5)	0	0	0	3,347	0	1,795	3	5,145	19	7.0	2.2	93.8	319.1	90.2%	93.0%
COL 45-85, 15 (3)	0	0	0	2,398	0	1,633	6	4,037	15	10.4	3.6	120.5	305.2	85.4%	88.6%
COL 50-75, 5 (6)	0	0	0	4,225	0	1,785	5	6,015	18	8.0	2.8	115.6	304.7	88.7%	91.1%
COL 50-75, 10 (3)	0	0	0	2,409	0	1,606	8	4,023	14	11.5	4.2	139.0	293.1	83.9%	86.7%
COL 50-75, 15 (2)	0	0	0	1,762	0	1,454	12	3,228	12	15.7	6.1	163.7	277.7	78.0%	80.7%
COL 50-80, 5 (7)	0	0	0	4,580	0	1,806	4	6,389	20	7.2	2.5	113.7	306.6	89.9%	92.3%
COL 50-80, 10 (4)	0	0	0	2,796	0	1,650	5	4,451	17	9.2	3.2	133.5	297.8	87.0%	89.8%
COL 50-80, 15 (3)	0	0	0	2,179	0	1,521	7	3,707	16	11.8	4.2	157.2	286.7	83.4%	86.7%
COL 50-85, 5 (8)	0	0	0	4,816	0	1,818	3	6,637	22	6.9	2.3	113.9	306.8	90.3%	92.7%
COL 50-85, 10 (4)	0	0	0	2,796	0	1,650	5	4,451	17	9.2	3.2	133.5	297.8	87.0%	89.8%
COL 50-85, 15 (3)	0	0	0	2,179	0	1,521	7	3,707	16	11.8	4.2	157.2	286.7	83.4%	86.7%
COL 55-75, 5 (5)	0	0	0	3,406	0	1,591	7	5,004	17	11.6	4.2	176.9	273.9	83.7%	86.6%
COL 55-75, 10 (3)	0	0	0	2,201	0	1,473	8	3,682	15	13.3	4.9	193.0	267.3	81.3%	84.7%
COL 55-75, 15 (2)	0	0	0	1,642	0	1,360	11	3,014	13	16.5	6.2	211.0	256.1	76.8%	80.3%
COL 55-80, 5 (6)	0	0	0	3,759	0	1,612	6	5,378	20	10.7	3.9	175.5	275.3	84.9%	87.7%
COL 55-80, 10 (3)	0	0	0	2,201	0	1,473	8	3,682	15	13.3	4.9	193.0	267.3	81.3%	84.7%
COL 55-80, 15 (2)	0	0	0	1,642	0	1,360	11	3,014	13	16.5	6.2	211.0	256.1	76.8%	80.3%
COL 55-85, 5 (7)	0	0	0	3,997	0	1,624	6	5,626	21	10.4	3.7	174.9	275.6	85.3%	88.2%
COL 55-85, 10 (4)	0	0	0	2,461	0	1,496	7	3,965	18	12.5	4.4	193.1	268.6	82.4%	86.0%

COL 55-85, 15 (3)	0	0	0	1,925	0	1,397	9	3,331	17	15.0	5.4	209.3	258.8	79.0%	82.9%

34

Table 2. Screening outcomes per 1,000 individuals aged 40 free from diagnosed CRC based on multi-target stool DNA (mt-sDNA) screening strategies. Outcomes generated using period life tables. Outcomes table modeled from Zauber et al.[1] COL, colonoscopy; SIG, flexible sigmoidoscopy; CTC, computed tomographic colonography; CRC, colorectal cancer; LY, life-years; LYG, life-years gained compared with no screening. [a]Maximum possible number with this strategy. [b]Including deaths from complications of screening. [c]Compared to no screening.

Strategy	Outcomes per 1,000 persons free of diagnosed cancer at age 40													Reductions[c] (%)	
Modality	Screening tests				Follow-up COLs	Surveillance COLs	COLs for symptoms	Total COLs	Complications	CRC cases	CRC deaths[b]	LY with CRC	LYG	Incidence	Mortality
Age to begin-age to end, screening interval (# of tests[a])	Stool tests	SIGs	CTCs	COLs											
No screening	0	0	0	0	0	0	71	71	2	71.1	31.7	560.3	0.0	0.0%	0.0%
mt-sDNA 45-75, 1 (31)	13,168	0	0	0	1,592	1,502	8	3,103	12	13.2	4.4	154.2	305.3	81.4%	86.3%
mt-sDNA 45-75, 3 (11)	7,103	0	0	0	919	1,171	13	2,103	10	22.4	7.5	255.7	270.9	68.5%	76.2%
mt-sDNA 45-75, 5 (7)	5,212	0	0	0	702	989	18	1,708	9	29.0	10.2	314.3	236.9	59.3%	67.7%
mt-sDNA 45-80, 1 (36)	14,246	0	0	0	1,724	1,532	6	3,262	13	11.7	3.5	151.8	310.3	83.6%	89.1%
mt-sDNA 45-80, 3 (12)	7,704	0	0	0	999	1,201	10	2,210	11	20.7	6.3	255.2	278.8	70.8%	80.0%
mt-sDNA 45-80, 5 (8)	5,608	0	0	0	760	1,011	14	1,785	10	27.5	9.1	315.5	243.8	61.3%	71.3%
mt-sDNA 45-85, 1 (41)	15,022	0	0	0	1,820	1,547	4	3,371	15	11.0	3.0	153.5	312.6	84.6%	90.6%
mt-sDNA 45-85, 3 (14)	8,191	0	0	0	1,068	1,220	7	2,294	12	19.8	5.5	257.4	282.6	72.2%	82.6%
mt-sDNA 45-85, 5 (9)	5,880	0	0	0	800	1,022	12	1,834	11	27.2	8.6	318.6	245.6	61.8%	73.0%
mt-sDNA 50-75, 1 (26)	10,891	0	0	0	1,349	1,374	9	2,733	12	15.6	5.3	199.0	284.1	78.1%	83.4%
mt-sDNA 50-75, 3 (9)	5,958	0	0	0	797	1,055	14	1,866	10	25.0	8.5	298.4	250.2	64.8%	73.3%
mt-sDNA 50-75, 5 (6)	4,381	0	0	0	611	894	20	1,524	9	31.4	11.2	349.1	217.6	55.8%	64.6%
mt-sDNA 50-80, 1 (31)	11,979	0	0	0	1,483	1,402	7	2,892	13	14.1	4.4	197.6	288.4	80.2%	86.2%
mt-sDNA 50-80, 3 (11)	6,517	0	0	0	874	1,085	11	1,969	11	23.2	7.2	298.7	258.7	67.3%	77.3%
mt-sDNA 50-80, 5 (7)	4,781	0	0	0	670	914	16	1,599	10	30.0	10.1	351.6	224.4	57.9%	68.2%
mt-sDNA 50-85, 1 (36)	12,759	0	0	0	1,578	1,418	5	3,002	14	13.3	3.9	198.1	290.6	81.3%	87.6%
mt-sDNA 50-85, 3 (12)	6,957	0	0	0	933	1,099	9	2,041	12	22.5	6.5	301.7	261.6	68.3%	79.4%
mt-sDNA 50-85, 5 (8)	5,052	0	0	0	711	925	14	1,650	11	29.7	9.6	355.5	225.8	58.2%	69.7%
mt-sDNA 55-75, 1 (21)	8,752	0	0	0	1,120	1,207	12	2,339	12	19.4	6.7	259.8	253.1	72.7%	78.8%
mt-sDNA 55-75, 3 (7)	4,656	0	0	0	649	907	18	1,575	9	29.8	10.4	352.7	217.8	58.2%	67.0%
mt-sDNA 55-75, 5 (5)	3,578	0	0	0	520	770	23	1,313	9	35.3	12.8	394.3	190.3	50.4%	59.5%
mt-sDNA 55-80, 1 (26)	9,825	0	0	0	1,250	1,235	9	2,495	13	17.8	5.8	258.2	258.5	75.0%	81.8%
mt-sDNA 55-80, 3 (9)	5,411	0	0	0	753	950	13	1,716	11	27.2	8.7	352.5	227.7	61.8%	72.4%
mt-sDNA 55-80, 5 (6)	3,979	0	0	0	580	792	19	1,391	10	33.8	11.7	395.8	196.1	52.5%	63.1%
mt-sDNA 55-85, 1 (31)	10,604	0	0	0	1,347	1,252	8	2,607	14	17.1	5.3	258.8	260.9	76.0%	83.2%
mt-sDNA 55-85, 3 (11)	5,813	0	0	0	810	967	11	1,787	12	26.5	8.1	355.7	231.0	62.7%	74.4%
mt-sDNA 55-85, 5 (7)	4,252	0	0	0	622	805	16	1,443	11	33.5	11.1	401.9	199.2	52.9%	65.1%

Table 3. Screening outcomes per 1,000 individuals aged 40 free from diagnosed CRC based on fecal immunochemical test (FIT) screening strategies. Outcomes generated using period life tables. Outcomes table modeled from Zauber et al.[1] COL, colonoscopy; SIG, flexible sigmoidoscopy; CTC, computed tomographic colonography; CRC, colorectal cancer; LY, life-years; LYG, life-years gained compared with no screening. [a]Maximum possible number with this strategy. [b]Including deaths from complications of screening. [c]Compared to no screening.

Strategy	Outcomes per 1,000 persons free of diagnosed cancer at age 40													Reductions[c] (%)	
Modality	Screening tests				Follow-up COLs	Surveillance COLs	COLs for symptoms	Total COLs	Complications	CRC cases	CRC deaths[b]	LY with CRC	LYG		
Age to begin-age to end, screening interval (# of tests[a])	Stool tests	SIGs	CTCs	COLs										Incidence	Mortality
No screening	0	0	0	0	0	0	71	71	2	71.1	31.7	560.3	0.0	0.0%	0.0%
FIT 45-75, 1 (31)	18,887	0	0	0	918	1,258	11	2,187	10	19.5	6.1	234.0	288.2	72.6%	80.7%
FIT 45-75, 2 (16)	11,480	0	0	0	607	983	16	1,606	9	28.3	9.2	324.2	254.8	60.3%	70.9%
FIT 45-75, 3 (11)	8,345	0	0	0	463	806	21	1,291	7	34.9	12.0	377.5	222.9	50.9%	62.0%
FIT 45-80, 1 (36)	20,544	0	0	0	1,003	1,288	7	2,298	11	17.5	4.9	231.6	295.6	75.4%	84.7%
FIT 45-80, 2 (18)	12,314	0	0	0	655	1,009	12	1,676	9	26.7	8.0	326.8	262.6	62.4%	74.9%
FIT 45-80, 3 (12)	8,929	0	0	0	501	828	18	1,346	8	33.6	10.9	380.7	228.9	52.7%	65.4%
FIT 45-85, 1 (41)	21,743	0	0	0	1,065	1,305	5	2,374	12	16.9	4.2	236.9	298.8	76.2%	86.6%
FIT 45-85, 2 (21)	13,219	0	0	0	710	1,026	8	1,744	11	26.0	7.0	334.3	267.2	63.4%	78.0%
FIT 45-85, 3 (14)	9,607	0	0	0	546	847	13	1,406	9	32.7	9.7	388.4	236.2	54.0%	69.2%
FIT 50-75, 1 (26)	15,563	0	0	0	789	1,136	12	1,937	10	22.1	7.2	277.9	265.3	68.9%	77.4%
FIT 50-75, 2 (13)	9,265	0	0	0	515	869	19	1,402	8	31.6	10.7	364.3	230.2	55.6%	66.2%
FIT 50-75, 3 (9)	6,865	0	0	0	402	709	24	1,135	7	37.9	13.3	411.1	201.4	46.8%	57.9%
FIT 50-80, 1 (31)	17,225	0	0	0	874	1,169	9	2,052	11	20.2	5.8	278.2	273.4	71.5%	81.5%
FIT 50-80, 2 (16)	10,520	0	0	0	589	908	13	1,510	9	29.3	8.9	367.0	241.7	58.9%	72.0%
FIT 50-80, 3 (11)	7,677	0	0	0	455	739	18	1,213	8	35.9	11.6	416.7	212.0	49.5%	63.2%
FIT 50-85, 1 (36)	18,423	0	0	0	937	1,184	7	2,128	12	19.6	5.2	280.9	276.2	72.4%	83.5%
FIT 50-85, 2 (18)	11,130	0	0	0	625	921	10	1,557	10	28.7	8.2	371.0	244.9	59.6%	74.2%
FIT 50-85, 3 (12)	8,105	0	0	0	483	751	16	1,250	9	35.3	10.9	419.8	215.3	50.4%	65.4%
FIT 55-75, 1 (21)	12,373	0	0	0	664	980	15	1,658	10	26.4	8.7	337.1	235.3	62.9%	72.4%
FIT 55-75, 2 (11)	7,593	0	0	0	449	749	21	1,218	8	35.3	12.0	413.8	203.5	50.4%	62.2%
FIT 55-75, 3 (7)	5,305	0	0	0	329	597	28	954	7	42.3	15.4	450.2	170.6	40.6%	51.3%
FIT 55-80, 1 (26)	14,050	0	0	0	749	1,015	11	1,776	11	24.4	7.4	337.1	243.0	65.7%	76.6%
FIT 55-80, 2 (13)	8,439	0	0	0	499	777	17	1,292	9	33.6	10.6	416.3	212.0	52.7%	66.6%
FIT 55-80, 3 (9)	6,263	0	0	0	393	642	22	1,057	8	39.6	13.2	454.3	184.4	44.3%	58.2%
FIT 55-85, 1 (31)	15,246	0	0	0	813	1,033	9	1,854	12	23.7	6.8	339.3	245.9	66.7%	78.7%
FIT 55-85, 2 (16)	9,352	0	0	0	555	798	13	1,366	10	32.7	9.5	422.2	217.2	54.0%	69.9%
FIT 55-85, 3 (11)	6,851	0	0	0	434	658	18	1,110	9	39.0	12.2	462.1	189.4	45.1%	61.4%

Table 4. Screening outcomes per 1,000 individuals aged 40 free from diagnosed CRC based on guaiac-based fecal occult blood test (HSgFOBT) screening strategies. Outcomes generated using period life tables. Outcomes table modeled from Zauber et al.[1] COL, colonoscopy; SIG, flexible sigmoidoscopy; CTC, computed tomographic colonography; CRC, colorectal cancer; LY, life-years; LYG, life-years gained compared with no screening. [a]Maximum possible number with this strategy. [b]Including deaths from complications of screening. [c]Compared to no screening.

Strategy	Outcomes per 1,000 persons free of diagnosed cancer at age 40													Reductions[c] (%)	
Modality	Screening tests				Follow-up COLs	Surveillance COLs	COLs for symptoms	Total COLs	Complications	CRC cases	CRC deaths[b]	LY with CRC	LYG	Incidence	Mortality
Age to begin-age to end, screening interval (# of tests[a])	Stool tests	SIGs	CTCs	COLs											
No screening	0	0	0	0	0	0	71	71	2	71.1	31.7	560.3	0.0	0.0%	0.0%
HSgFOBT 45-75, 1 (31)	15,781	0	0	0	1,329	1,264	10	2,603	11	18.2	5.9	213.9	290.5	74.5%	81.5%
HSgFOBT 45-75, 2 (16)	10,436	0	0	0	911	1,013	15	1,939	9	26.3	8.7	299.7	258.9	63.0%	72.4%
HSgFOBT 45-75, 3 (11)	7,801	0	0	0	697	840	21	1,558	8	33.1	11.7	353.0	225.3	53.5%	63.2%
HSgFOBT 45-80, 1 (36)	17,149	0	0	0	1,444	1,294	7	2,745	12	16.4	4.7	213.3	297.2	77.0%	85.3%
HSgFOBT 45-80, 2 (18)	11,180	0	0	0	978	1,038	12	2,028	10	24.7	7.6	300.6	265.3	65.2%	76.2%
HSgFOBT 45-80, 3 (12)	8,434	0	0	0	757	865	17	1,639	9	31.6	10.4	356.1	233.3	55.6%	67.1%
HSgFOBT 45-85, 1 (41)	18,122	0	0	0	1,529	1,310	5	2,844	13	15.6	4.1	214.8	299.6	78.1%	87.0%
HSgFOBT 45-85, 2 (21)	11,992	0	0	0	1,053	1,057	8	2,118	11	23.9	6.6	305.6	270.3	66.4%	79.3%
HSgFOBT 45-85, 3 (14)	9,034	0	0	0	815	884	13	1,713	10	30.6	9.4	361.2	239.0	56.9%	70.3%
HSgFOBT 50-75, 1 (26)	13,084	0	0	0	1,124	1,148	12	2,285	11	20.9	6.9	261.0	268.2	70.6%	78.3%
HSgFOBT 50-75, 2 (13)	8,462	0	0	0	757	901	18	1,676	9	29.7	10.2	341.7	233.7	58.2%	67.8%
HSgFOBT 50-75, 3 (9)	6,502	0	0	0	597	746	23	1,366	8	35.7	12.8	388.3	205.2	49.7%	59.7%
HSgFOBT 50-80, 1 (31)	14,447	0	0	0	1,241	1,180	9	2,429	12	19.1	5.7	259.4	274.3	73.2%	81.9%
HSgFOBT 50-80, 2 (16)	9,583	0	0	0	859	940	13	1,812	10	27.3	8.5	343.3	244.8	61.6%	73.3%
HSgFOBT 50-80, 3 (11)	7,196	0	0	0	664	774	18	1,456	9	33.9	11.3	391.6	214.2	52.4%	64.5%
HSgFOBT 50-85, 1 (36)	15,430	0	0	0	1,325	1,197	7	2,528	13	18.2	5.1	261.4	277.5	74.4%	84.0%
HSgFOBT 50-85, 2 (18)	10,127	0	0	0	909	952	11	1,872	11	26.8	7.8	346.6	247.1	62.4%	75.3%
HSgFOBT 50-85, 3 (12)	7,661	0	0	0	709	785	16	1,510	9	33.4	10.6	396.8	217.3	53.1%	66.6%
HSgFOBT 55-75, 1 (21)	10,504	0	0	0	928	999	15	1,942	10	25.0	8.4	319.4	237.4	64.9%	73.4%
HSgFOBT 55-75, 2 (11)	6,969	0	0	0	644	780	20	1,444	9	33.5	11.5	394.6	206.2	53.0%	63.6%
HSgFOBT 55-75, 3 (7)	5,055	0	0	0	479	630	28	1,136	7	40.5	15.0	431.4	172.9	43.1%	52.7%
HSgFOBT 55-80, 1 (26)	11,872	0	0	0	1,044	1,030	11	2,086	12	23.1	7.2	318.9	244.5	67.6%	77.3%
HSgFOBT 55-80, 2 (13)	7,723	0	0	0	714	807	16	1,538	10	31.8	10.3	395.2	213.5	55.3%	67.4%
HSgFOBT 55-80, 3 (9)	5,941	0	0	0	565	672	21	1,259	8	37.8	12.8	435.2	187.2	46.8%	59.6%
HSgFOBT 55-85, 1 (31)	12,862	0	0	0	1,129	1,048	9	2,186	13	22.3	6.5	320.3	247.3	68.7%	79.4%
HSgFOBT 55-85, 2 (16)	8,542	0	0	0	789	828	13	1,630	11	30.8	9.2	400.3	219.4	56.7%	70.9%
HSgFOBT 55-85, 3 (11)	6,442	0	0	0	616	689	18	1,323	9	37.0	11.9	439.7	191.2	48.0%	62.4%

Table 5. Screening outcomes per 1,000 individuals aged 40 free from diagnosed CRC based on sigmoidoscopy screening strategies. Outcomes generated using period life tables. Outcomes table modeled from Zauber et al.[1] COL, colonoscopy; SIG, flexible sigmoidoscopy; CTC, computed tomographic colonography; CRC, colorectal cancer; LY, life-years; LYG, life-years gained compared with no screening. [a]Maximum possible number with this strategy. [b]Including deaths from complications of screening. [c]Compared to no screening.

Strategy	Outcomes per 1,000 persons free of diagnosed cancer at age 40													Reductions[c] (%)	
Modality	Screening tests				Follow-up COLs	Surveillance COLs	COLs for symptoms	Total COLs	Complications	CRC cases	CRC deaths[b]	LY with CRC	LYG	Incidence	Mortality
Age to begin-age to end, screening interval (# of tests[a])	Stool tests	SIGs	CTCs	COLs											
No screening	0	0	0	0	0	0	71	71	2	71.1	31.7	560.3	0.0	0.0%	0.0%
SIG 45-75, 5 (7)	0	5,170	0	0	754	835	28	1,618	8	31.0	12.6	274.5	207.6	56.4%	60.1%
SIG 45-75, 10 (4)	0	3,275	0	0	538	743	30	1,311	8	33.9	13.8	302.3	193.2	52.4%	56.5%
SIG 45-80, 5 (8)	0	5,587	0	0	811	852	26	1,689	9	29.6	11.9	271.3	210.9	58.4%	62.3%
SIG 45-80, 10 (4)	0	3,275	0	0	538	743	30	1,311	8	33.9	13.8	302.3	193.2	52.4%	56.5%
SIG 45-85, 5 (9)	0	5,876	0	0	852	861	25	1,738	10	29.0	11.6	271.9	212.3	59.2%	63.3%
SIG 45-85, 10 (5)	0	3,606	0	0	594	760	28	1,382	9	32.7	13.0	302.6	196.3	54.0%	58.8%
SIG 50-75, 5 (6)	0	4,335	0	0	650	774	29	1,452	8	32.4	13.2	300.7	193.8	54.5%	58.2%
SIG 50-75, 10 (3)	0	2,527	0	0	430	670	33	1,133	7	36.9	15.3	327.5	176.1	48.1%	51.7%
SIG 50-80, 5 (7)	0	4,751	0	0	707	791	27	1,525	9	31.0	12.5	298.1	197.4	56.4%	60.4%
SIG 50-80, 10 (4)	0	3,003	0	0	509	700	29	1,239	8	34.2	13.9	324.6	182.7	51.9%	56.2%
SIG 50-85, 5 (8)	0	5,039	0	0	747	800	26	1,573	10	30.5	12.2	298.1	198.8	57.2%	61.5%
SIG 50-85, 10 (4)	0	3,003	0	0	509	700	29	1,239	8	34.2	13.9	324.6	182.7	51.9%	56.2%
SIG 55-75, 5 (5)	0	3,524	0	0	549	694	30	1,274	8	34.6	14.2	335.9	174.4	51.3%	55.2%
SIG 55-75, 10 (3)	0	2,337	0	0	414	624	32	1,070	7	37.1	15.2	356.6	163.3	47.8%	52.1%
SIG 55-80, 5 (6)	0	3,941	0	0	606	711	29	1,345	9	33.3	13.5	334.0	177.7	53.2%	57.5%
SIG 55-80, 10 (3)	0	2,337	0	0	414	624	32	1,070	7	37.1	15.2	356.6	163.3	47.8%	52.1%
SIG 55-85, 5 (7)	0	4,230	0	0	646	720	27	1,393	10	32.7	13.2	333.8	179.0	54.0%	58.4%
SIG 55-85, 10 (4)	0	2,668	0	0	470	642	30	1,142	9	36.0	14.5	357.3	166.6	49.4%	54.4%

Table 6. Screening outcomes per 1,000 individuals aged 40 free from diagnosed CRC based on sigmoidoscopy plus fecal immunochemical test (SIG+FIT) screening strategies. Outcomes generated using period life tables. Outcomes table modeled from Zauber et al.[1] COL, colonoscopy; SIG, flexible sigmoidoscopy; CTC, computed tomographic colonography; CRC, colorectal cancer; LY, life-years; LYG, life-years gained compared with no screening. [a]Maximum possible number with this strategy. [b]Including deaths from complications of screening. [c]Compared to no screening.

Strategy	Outcomes per 1,000 persons free of diagnosed cancer at age 40													Reductions[c] (%)	
Modality	Screening tests				Follow-up COLs	Surveillance COLs	COLs for symptoms	Total COLs	Complications	CRC cases	CRC deaths[b]	LY with CRC	LYG		
Age to begin-age to end, screening interval (# of tests[a])	Stool tests	SIGs	CTCs	COLs										Incidence	Mortality
No screening	0	0	0	0	0	0	71	71	2	71.1	31.7	560.3	0.0	0.0%	0.0%
SIG+FIT 45-75, 10_1 (4_31)	16,639	2,281	0	0	1,149	1390.73	8.78	2,549	11	15.0	4.9	171.6	301.0	78.9%	84.6%
SIG+FIT 45-75, 10_2 (4_16)	10,081	2,626	0	0	928	1237.57	10.60	2,176	10	18.5	6.0	210.1	287.4	74.0%	81.0%
SIG+FIT 45-75, 5_2 (7_16)	9,327	4,216	0	0	1,091	1284.61	10.23	2,386	11	17.2	5.7	193.8	290.7	75.8%	82.1%
SIG+FIT 45-75, 5_3 (7_11)	6,772	4,469	0	0	1,009	1200.27	12.27	2,221	10	19.5	6.7	211.5	278.8	72.6%	78.9%
SIG+FIT 45-80, 10_1 (4_36)	17,984	2,424	0	0	1,238	1419.94	6.22	2,664	12	13.4	3.9	169.6	305.9	81.2%	87.6%
SIG+FIT 45-80, 10_2 (4_18)	10,711	2,709	0	0	974	1256.05	8.50	2,239	11	17.4	5.2	211.0	291.4	75.5%	83.4%
SIG+FIT 45-80, 5_2 (8_18)	10,005	4,534	0	0	1,174	1308.89	7.66	2,490	12	15.8	4.8	194.3	295.5	77.8%	85.0%
SIG+FIT 45-80, 5_3 (8_12)	7,309	4,779	0	0	1,083	1225.58	9.46	2,318	11	17.9	5.7	211.1	284.9	74.8%	82.1%
SIG+FIT 45-85, 10_1 (5_41)	19,068	2,512	0	0	1,307	1434.63	4.50	2,747	13	12.8	3.4	171.5	308.7	82.1%	89.3%
SIG+FIT 45-85, 10_2 (5_21)	11,510	2,874	0	0	1,046	1275.44	5.91	2,328	13	16.5	4.5	212.6	295.1	76.8%	85.7%
SIG+FIT 45-85, 5_2 (9_21)	10,654	4,723	0	0	1,238	1327.49	5.60	2,572	13	14.9	4.1	194.1	299.1	79.1%	87.1%
SIG+FIT 45-85, 5_3 (9_14)	7,783	5,003	0	0	1,144	1241.42	7.36	2,393	12	17.1	5.0	211.5	287.4	75.9%	84.1%
SIG+FIT 50-75, 10_1 (3_26)	13,586	1,936	0	0	984	1277.35	10.50	2,271	11	17.3	5.9	211.1	279.4	75.6%	81.5%
SIG+FIT 50-75, 10_2 (3_13)	8,073	2,132	0	0	775	1120.50	13.58	1,910	10	21.7	7.5	248.5	262.6	69.5%	76.3%
SIG+FIT 50-75, 5_2 (6_13)	7,568	3,567	0	0	936	1174.80	12.07	2,123	11	19.6	6.7	231.5	268.8	72.5%	78.9%
SIG+FIT 50-75, 5_3 (6_9)	5,625	3,752	0	0	870	1098.80	13.81	1,983	10	21.6	7.6	247.0	258.5	69.7%	76.1%
SIG+FIT 50-80, 10_1 (4_31)	15,094	2,101	0	0	1,085	1305.98	7.54	2,399	12	15.6	4.8	210.5	285.1	78.1%	85.0%
SIG+FIT 50-80, 10_2 (4_16)	9,179	2,403	0	0	881	1159.31	9.14	2,049	11	19.1	5.9	246.5	271.6	73.1%	81.3%
SIG+FIT 50-80, 5_2 (7_16)	8,503	3,849	0	0	1,028	1206.09	8.82	2,243	12	17.7	5.6	230.7	275.3	75.1%	82.5%
SIG+FIT 50-80, 5_3 (7_11)	6,201	4,080	0	0	951	1125.73	10.76	2,088	11	19.9	6.5	246.3	264.1	72.0%	79.4%
SIG+FIT 50-85, 10_1 (4_36)	16,050	2,209	0	0	1,152	1322.14	5.91	2,480	13	14.8	4.2	209.6	287.5	79.2%	86.6%
SIG+FIT 50-85, 10_2 (4_18)	9,636	2,466	0	0	916	1168.43	7.83	2,092	12	18.7	5.6	248.4	273.2	73.7%	82.5%
SIG+FIT 50-85, 5_2 (8_18)	8,993	4,070	0	0	1,088	1219.52	7.17	2,314	13	17.1	5.1	231.4	277.7	76.0%	84.0%
SIG+FIT 50-85, 5_3 (8_12)	6,591	4,294	0	0	1,005	1138.27	9.04	2,152	12	19.3	6.0	246.8	267.3	72.9%	81.1%
SIG+FIT 55-75, 10_1 (3_21)	10,820	1,686	0	0	845	1130.96	12.48	1,988	11	20.6	7.1	265.1	250.6	71.1%	77.7%
SIG+FIT 55-75, 10_2 (3_11)	6,646	1,907	0	0	695	1003.67	14.56	1,713	10	24.0	8.3	297.1	238.0	66.2%	73.9%
SIG+FIT 55-75, 5_2 (5_11)	6,180	2,913	0	0	797	1041.80	14.19	1,853	11	22.9	8.0	284.2	241.5	67.8%	74.9%

SIG+FIT 55-75, 5_3 (5_7)	4,399	3,059	0	0	728	968.88	16.89	1,713	10	25.3	9.1	297.4	230.0	64.4%	71.3%
SIG+FIT 55-80, 10_1 (3_26)	12,206	1,778	0	0	927	1158.79	10.16	2,096	12	19.1	6.2	263.7	255.7	73.2%	80.5%
SIG+FIT 55-80, 10_2 (3_13)	7,307	1,956	0	0	740	1022.34	12.56	1,775	11	23.0	7.6	297.8	242.3	67.7%	76.2%
SIG+FIT 55-80, 5_2 (6_13)	6,850	3,222	0	0	879	1068.12	11.54	1,959	12	21.3	7.0	282.0	246.2	70.1%	78.0%
SIG+FIT 55-80, 5_3 (6_9)	5,097	3,390	0	0	818	1003.52	13.22	1,834	11	23.2	7.8	295.5	237.3	67.4%	75.3%
SIG+FIT 55-85, 10_1 (4_31)	13,292	1,891	0	0	1,000	1174.91	8.36	2,184	13	18.4	5.6	265.9	258.3	74.1%	82.2%
SIG+FIT 55-85, 10_2 (4_16)	8,111	2,141	0	0	814	1043.96	9.78	1,868	12	22.0	6.7	298.6	245.4	69.1%	78.7%
SIG+FIT 55-85, 5_2 (7_16)	7,527	3,415	0	0	945	1083.62	9.54	2,038	13	20.6	6.4	284.7	249.0	71.0%	79.7%
SIG+FIT 55-85, 5_3 (7_11)	5,513	3,616	0	0	875	1018.11	11.25	1,904	12	22.6	7.3	298.0	239.5	68.3%	77.0%

65

Table 7. Screening outcomes per 1,000 individuals aged 40 free from diagnosed CRC based on sigmoidoscopy plus guaiac-based fecal occult blood test (SIG+HSgFOBT) screening strategies. Outcomes generated using period life tables. Outcomes table modeled from Zauber et al.[1] COL, colonoscopy; SIG, flexible sigmoidoscopy; CTC, computed tomographic colonography; CRC, colorectal cancer; LY, life-years; LYG, life-years gained compared with no screening. [a]Maximum possible number with this strategy. [b]Including deaths from complications of screening. [c]Compared to no screening.

Strategy	Outcomes per 1,000 persons free of diagnosed cancer at age 40													Reductions[c] (%)	
Modality	Screening tests				Follow-up COLs	Surveillance COLs	COLs for symptoms	Total COLs	Complications	CRC cases	CRC deaths[b]	LY with CRC	LYG		
Age to begin-age to end, screening interval (# of tests[a])	Stool tests	SIGs	CTCs	COLs										Incidence	Mortality
No screening	0	0	0	0	0	0	71	71	2	71.1	31.7	560.3	0.0	0.0%	0.0%
SIG+HSgFOBT 45-75, 10_1 (4_31)	14,074	1,894	0	0	1,478	1,382	9	2,868	11	14.9	5.0	163.6	300.3	79.1%	84.3%
SIG+HSgFOBT 45-75, 10_2 (4_16)	9,216	2,312	0	0	1,160	1,242	11	2,413	11	18.2	6.0	201.3	286.9	74.5%	80.9%
SIG+HSgFOBT 45-75, 5_2 (7_16)	8,615	3,728	0	0	1,291	1,289	10	2,590	11	16.8	5.6	185.3	291.2	76.4%	82.3%
SIG+HSgFOBT 45-75, 5_3 (7_11)	6,416	4,087	0	0	1,162	1,209	12	2,383	11	18.9	6.5	202.8	280.1	73.5%	79.4%
SIG+HSgFOBT 45-80, 10_1 (4_36)	15,173	2,067	0	0	1,597	1,411	6	3,014	13	13.0	3.9	161.5	306.4	81.8%	87.6%
SIG+HSgFOBT 45-80, 10_2 (4_18)	9,747	2,440	0	0	1,228	1,264	9	2,500	11	16.7	5.2	198.7	291.5	76.5%	83.5%
SIG+HSgFOBT 45-80, 5_2 (8_18)	9,205	4,017	0	0	1,385	1,315	8	2,707	12	15.1	4.7	183.4	296.4	78.7%	85.2%
SIG+HSgFOBT 45-80, 5_3 (8_12)	6,973	4,359	0	0	1,250	1,234	9	2,494	12	17.3	5.6	200.5	285.7	75.7%	82.4%
SIG+HSgFOBT 45-85, 10_1 (5_41)	16,091	2,108	0	0	1,681	1,427	5	3,113	14	12.3	3.4	162.0	308.2	82.7%	89.2%
SIG+HSgFOBT 45-85, 10_2 (5_21)	10,477	2,547	0	0	1,311	1,282	6	2,599	13	15.9	4.5	201.7	294.8	77.7%	85.9%
SIG+HSgFOBT 45-85, 5_2 (9_21)	9,819	4,178	0	0	1,463	1,330	6	2,798	13	14.4	4.1	184.8	299.4	79.8%	87.1%
SIG+HSgFOBT 45-85, 5_3 (9_14)	7,404	4,564	0	0	1,320	1,252	7	2,579	13	16.5	5.0	201.5	288.4	76.9%	84.2%
SIG+HSgFOBT 50-75, 10_1 (3_26)	11,544	1,680	0	0	1,258	1,275	10	2,543	11	16.9	5.8	204.0	279.5	76.2%	81.7%
SIG+HSgFOBT 50-75, 10_2 (3_13)	7,399	1,940	0	0	969	1,132	13	2,115	10	20.9	7.3	238.0	263.9	70.6%	76.9%
SIG+HSgFOBT 50-75, 5_2 (6_13)	6,997	3,184	0	0	1,095	1,182	12	2,289	11	19.1	6.6	224.4	269.5	73.1%	79.1%
SIG+HSgFOBT 50-75, 5_3 (6_9)	5,385	3,447	0	0	1,000	1,110	14	2,123	10	21.1	7.4	239.9	259.5	70.4%	76.6%
SIG+HSgFOBT 50-80, 10_1 (4_31)	12,814	1,765	0	0	1,378	1,304	8	2,690	12	15.2	4.7	201.7	285.4	78.6%	85.0%
SIG+HSgFOBT 50-80, 10_2 (4_16)	8,410	2,132	0	0	1,089	1,168	9	2,266	12	18.5	5.8	236.8	272.6	74.0%	81.5%
SIG+HSgFOBT 50-80, 5_2 (7_16)	7,867	3,419	0	0	1,207	1,213	9	2,429	12	17.3	5.5	223.0	275.5	75.6%	82.5%
SIG+HSgFOBT 50-80, 5_3 (7_11)	5,890	3,745	0	0	1,088	1,135	11	2,234	11	19.4	6.4	238.8	265.8	72.8%	79.7%

SIG+HSgFOBT 50-85, 10_1 (4_36)	13,592	1,896	0	0	1,467	1,320	6	2,793	14	14.4	4.2	202.3	287.7	79.8%	86.7%
SIG+HSgFOBT 50-85, 10_2 (4_18)	8,789	2,227	0	0	1,140	1,179	8	2,327	13	18.0	5.4	237.5	273.9	74.8%	82.8%
SIG+HSgFOBT 50-85, 5_2 (8_18)	8,296	3,626	0	0	1,274	1,227	7	2,508	13	16.5	5.0	223.5	278.3	76.7%	84.2%
SIG+HSgFOBT 50-85, 5_3 (8_12)	6,291	3,932	0	0	1,152	1,149	9	2,311	12	18.7	5.9	240.2	267.5	73.7%	81.3%
SIG+HSgFOBT 55-75, 10_1 (3_21)	9,287	1,430	0	0	1,055	1,133	13	2,200	11	20.3	7.1	259.6	250.5	71.4%	77.6%
SIG+HSgFOBT 55-75, 10_2 (3_11)	6,144	1,708	0	0	847	1,014	15	1,875	11	23.5	8.3	288.6	237.9	66.9%	73.9%
SIG+HSgFOBT 55-75, 5_2 (5_11)	5,756	2,614	0	0	929	1,051	14	1,994	11	22.3	7.9	277.0	241.4	68.7%	75.2%
SIG+HSgFOBT 55-75, 5_3 (5_7)	4,229	2,823	0	0	828	980	17	1,825	10	24.8	9.0	290.4	230.0	65.1%	71.5%
SIG+HSgFOBT 55-80, 10_1 (3_26)	10,409	1,554	0	0	1,169	1,161	10	2,340	12	18.6	6.2	256.3	255.9	73.9%	80.5%
SIG+HSgFOBT 55-80, 10_2 (3_13)	6,714	1,786	0	0	911	1,035	13	1,959	11	22.3	7.5	288.4	242.5	68.6%	76.3%
SIG+HSgFOBT 55-80, 5_2 (6_13)	6,345	2,889	0	0	1,021	1,077	12	2,109	12	20.8	7.0	275.0	246.4	70.8%	78.0%
SIG+HSgFOBT 55-80, 5_3 (6_9)	4,885	3,124	0	0	931	1,014	13	1,958	11	22.7	7.8	289.6	236.9	68.1%	75.4%
SIG+HSgFOBT 55-85, 10_1 (4_31)	11,324	1,611	0	0	1,256	1,177	8	2,442	14	17.8	5.6	256.7	258.4	74.9%	82.3%
SIG+HSgFOBT 55-85, 10_2 (4_16)	7,449	1,917	0	0	997	1,054	10	2,061	13	21.4	6.7	290.0	246.1	70.0%	78.9%
SIG+HSgFOBT 55-85, 5_2 (7_16)	6,977	3,052	0	0	1,101	1,093	10	2,203	13	20.0	6.4	276.4	249.4	71.9%	79.9%
SIG+HSgFOBT 55-85, 5_3 (7_11)	5,249	3,332	0	0	996	1,028	11	2,035	12	22.0	7.2	290.9	239.9	69.0%	77.2%

72

Table 8. Screening outcomes per 1,000 individuals aged 40 free from diagnosed CRC based on computed tomography colonography (CTC) screening strategies. Outcomes generated using period life tables. Outcomes table modeled from Zauber et al.[1] COL, colonoscopy; SIG, flexible sigmoidoscopy; CTC, computed tomographic colonography; CRC, colorectal cancer; LY, life-years; LYG, life-years gained compared with no screening. [a]Maximum possible number with this strategy. [b]Including deaths from complications of screening. [c]Compared to no screening.

Strategy	Outcomes per 1,000 persons free of diagnosed cancer at age 40													Reductions[c] (%)	
Modality	Screening tests				Follow-up COLs	Surveillance COLs	COLs for symptoms	Total COLs	Complications	CRC cases	CRC deaths[b]	LY with CRC	LYG		
Age to begin-age to end, screening interval (# of tests[a])	Stool tests	SIGs	CTCs	COLs										Incidence	Mortality
No screening	0	0	0	0	0	0	71	71	2	71.1	31.7	560.3	0.0	0.0%	0.0%
CTC 45-75, 5 (7)	0	0	5,031	0	805	1,175	11	1,991	10	17.0	6.1	174.4	285.0	76.1%	80.8%
CTC 45-75, 10 (4)	0	0	3,232	0	576	994	16	1,586	9	22.6	8.4	227.8	255.2	68.2%	73.4%
CTC 45-80, 5 (8)	0	0	5,405	0	869	1,198	9	2,076	11	15.3	5.2	172.9	289.5	78.4%	83.6%
CTC 45-80, 10 (4)	0	0	3,232	0	576	994	16	1,586	9	22.6	8.4	227.8	255.2	68.2%	73.4%
CTC 45-85, 5 (9)	0	0	5,662	0	914	1,209	7	2,130	12	14.7	4.7	174.5	291.7	79.3%	85.1%
CTC 45-85, 10 (5)	0	0	3,540	0	640	1,019	13	1,672	11	21.2	7.4	228.7	259.6	70.2%	76.6%
CTC 50-75, 5 (6)	0	0	4,204	0	705	1,099	13	1,817	10	19.0	7.0	210.4	264.9	73.3%	78.0%
CTC 50-75, 10 (3)	0	0	2,500	0	464	904	21	1,389	8	26.6	10.5	259.0	231.3	62.6%	66.9%
CTC 50-80, 5 (7)	0	0	4,580	0	769	1,122	10	1,902	11	17.2	6.0	207.5	270.7	75.8%	81.1%
CTC 50-80, 10 (4)	0	0	2,949	0	556	949	15	1,520	10	23.0	8.5	254.5	241.1	67.6%	73.2%
CTC 50-85, 5 (8)	0	0	4,837	0	813	1,133	8	1,955	12	16.7	5.6	209.2	271.6	76.6%	82.5%
CTC 50-85, 10 (4)	0	0	2,949	0	556	949	15	1,520	10	23.0	8.5	254.5	241.1	67.6%	73.2%
CTC 55-75, 5 (5)	0	0	3,412	0	608	992	15	1,615	10	22.2	8.3	260.1	237.1	68.8%	73.8%
CTC 55-75, 10 (3)	0	0	2,300	0	458	855	19	1,333	9	26.9	10.2	296.4	215.3	62.2%	67.7%
CTC 55-80, 5 (6)	0	0	3,788	0	672	1,016	12	1,700	11	20.4	7.3	257.6	242.1	71.4%	76.9%
CTC 55-80, 10 (3)	0	0	2,300	0	458	855	19	1,333	9	26.9	10.2	296.4	215.3	62.2%	67.7%
CTC 55-85, 5 (7)	0	0	4,045	0	717	1,028	11	1,756	12	19.7	6.8	258.0	244.0	72.2%	78.4%
CTC 55-85, 10 (4)	0	0	2,609	0	524	880	16	1,420	11	25.4	9.2	297.8	220.0	64.3%	71.0%