

# CLOSING THE GAP

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THE BUSINESS VALUE OF  
PREVENTIVE SCREENINGS

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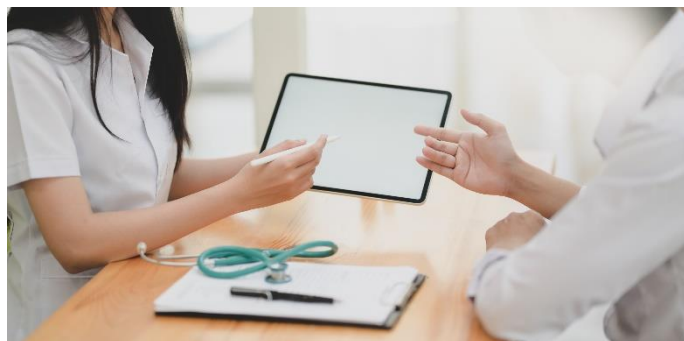
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# EXECUTIVE SUMMARY

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Screenings for serious health conditions save lives, reduce treatment recovery times, and lower healthcare costs. They may also improve workplace productivity if early detection helps avoid disability leaves. Unfortunately, screening gaps exist for several conditions with well-known recommendations. The COVID-19 pandemic has created additional barriers for screening to recommended guidelines.

To illustrate the potential productivity impact of preventive screenings, this report examines disability leave outcomes for conditions that have well-defined population screening guidelines: breast cancer, cervical cancer, colorectal cancer, hypertension, depression, diabetes, and obesity. It identifies gaps in screening rates among the populations identified by guidelines and simulates the potential disability leave cost savings from closing these screening gaps.

## Key findings:

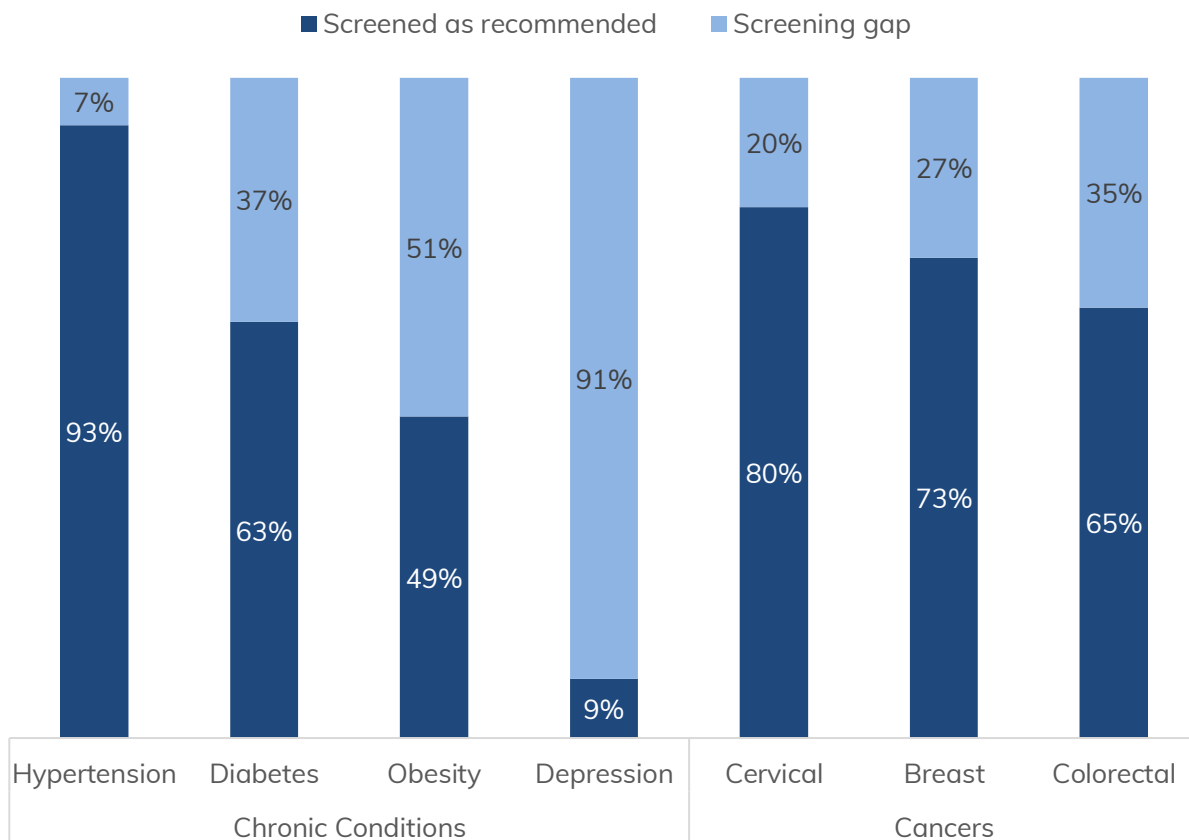
- **Depression afflicts one in eight employees and is one of the costliest conditions for employers' disability insurance policies**—\$17 on a per-employee, per-year (PEPY) basis. Yet fewer than one in 10 people get recommended depression screenings. This represents one of the greatest opportunities for productivity savings. Disability costs for conditions with higher screening rates—such as hypertension, diabetes, and obesity—were in the \$1 to \$2 PEPY range.
- Detecting chronic conditions before symptoms require time away from work for treatment and recovery is ideal but not always possible. **Average disability costs for people who take leave for a milder form of a chronic condition are between 4% lower (for diabetes) and 52% lower (for hypertension) than average costs when a leave is for a more severe form.** This suggests a productivity value for detection, treatment, and recovery early in the progression of disease.
- **Screening gaps for cancers range from 19% (cervical cancers) to 35% (colorectal cancers).** Given that many cancer treatments require some time away from work, disability claims for cancers tend to reflect employees' cancer incidence rates at different ages. The ratio of disability leaves to new incidence of colorectal and breast cancers, however, diverges at older ages. Cancer patients in their fifties and sixties may be less likely to take time off for treatment (or are not receiving treatment) or may be exiting the workforce rather than taking disability leave. Disability leave durations for cancers are also slightly longer at older claimant ages. These findings suggest the value of screening that can detect cancers at the earliest meaningful opportunity to begin treatment.

To help employers incorporate preventive screenings into their health benefits strategy, IBI sought input from experts at leading healthcare, employee benefits, and absence management firms. Their guidance focused on identifying at-risk employees, effective screening communications, maximizing access to screening through benefits plan design, and the importance of care continuity during the COVID-19 pandemic and other emergencies.

# INTRODUCTION

Screenings that detect serious diseases early save lives, reduce recovery times, and lower healthcare costs by improving the efficacy of treatments (PDQ Screening and Prevention Editorial Board, USPSTF A and B Recommendations). Yet Figure 1 shows that despite these advantages to patients, payers, and employers—as well as the affordability of tests for patients—not everyone gets recommended screenings for chronic health conditions (Healthy People 2020). Hypertension screening can serve as a model of success, with nearly all adults tested according to recommendations. One in three people do not get screened for diabetes as recommended, and only half of people are screened for obesity. Screening rates for depression are significantly worse: fewer than one in 10 people receive recommended screenings. Screening gaps represent missed opportunities in detection and treatment at early stages of cancers as well. Cervical cancer is screened for most often, missing only about one in five of those recommended for screening, whereas a little more than one in four are not screened for breast cancer and about one in three for colorectal cancer.

**Figure 1: Many people do not get recommended screenings for serious chronic health conditions—particularly depression and obesity**



Source: Healthy People 2020

## **A BUSINESS CASE FOR PREVENTIVE SCREENINGS: REDUCING DISABILITY LOSSES**

Because screenings can identify risks for chronic conditions before symptoms are present, there are potential workforce productivity implications for employers. Screenings may reduce the proportion of individuals going into the disability system by avoiding disease progression and serious health episodes. For individuals who enter the disability system, early detection may help prevent a more serious form of the condition resulting in worse outcomes for the patient. For the employer, both scenarios may result in minimizing the number of claims, duration of leave when necessary, and attributable healthcare costs.

The value proposition for cancer screening differs slightly; while screenings may detect cancers earlier, early treatment cannot prevent the disease from occurring. When cancer is detected, time off is often necessary for treatment, but the benefits of early detection are still substantial: recovery may be faster when cancer is caught both early and at a younger age, and treatment may be more successful when the cancer is small and localized.

Closing screening gaps poses challenges for employers under the best of circumstances. Perhaps even more troubling, social distancing measures, fears of infection, and the curtailment of all but the most essential healthcare services during the COVID-19 pandemic have raised further barriers to routine and preventive care. Yet the advantages of screenings for both employees and their employers warrant renewed efforts to ensure that screening guidelines are followed.

To illustrate the potential productivity impact of preventive screenings, this report examines disability leave outcomes for conditions that have well-defined population screening guidelines: breast cancer, cervical cancer, colorectal cancer, hypertension, depression, diabetes, and obesity. It identifies gaps in screening rates among the populations identified by guidelines and simulates the potential disability leave cost savings from closing these screening gaps.

# METHODS

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We use the US Preventive Services Task Force (USPSTF) screening guidelines to identify chronic conditions and cancers with reasonable certainty that the benefit of screening is moderate or substantial for this analysis. The USPSTF uses scientific literature to identify relevant populations and provide targeted recommendations for public health interventions (see Appendix).

## DATA

Healthy People 2020 calculated the proportion of the target population meeting screening guidelines using data from two national data sets providing data on the employed workforce. The National Health Interview Survey 2018 was used to calculate the prevalence of each chronic condition, and the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) Program provided incidence rates of each cancer by age.

IBI's Disability and Leave Benchmarking system is used for short- and long-term disability (STD and LTD, respectively) incidence, leave duration for cancers, and disability wage replacement costs. The US Census Bureau's Current Population Survey is matched with IBI's Benchmarking data to determine claims rates for cancers by age and sex.<sup>1</sup>

## CALCULATED OUTCOMES

**Chronic conditions:** We assume that early detection and treatment can minimize the costs of leaves for serious forms of chronic conditions. We model the savings in disability wage replacement cost as a function of severity of the condition. Severity was characterized by ICD-9 and ICD-10 codes—further detail is included in the Appendix.

**Cancer:** We model SEER incidence rates and IBI Benchmarking disability claims per 100,000 population by age category for each cancer type and by sex for colorectal cancer. We represent leave durations using a logarithmic trend line to maximize the best fit for our data.

Chronic conditions and cancers are also modeled by their screening rate as a function of total disability costs per employee per year (PEPY).

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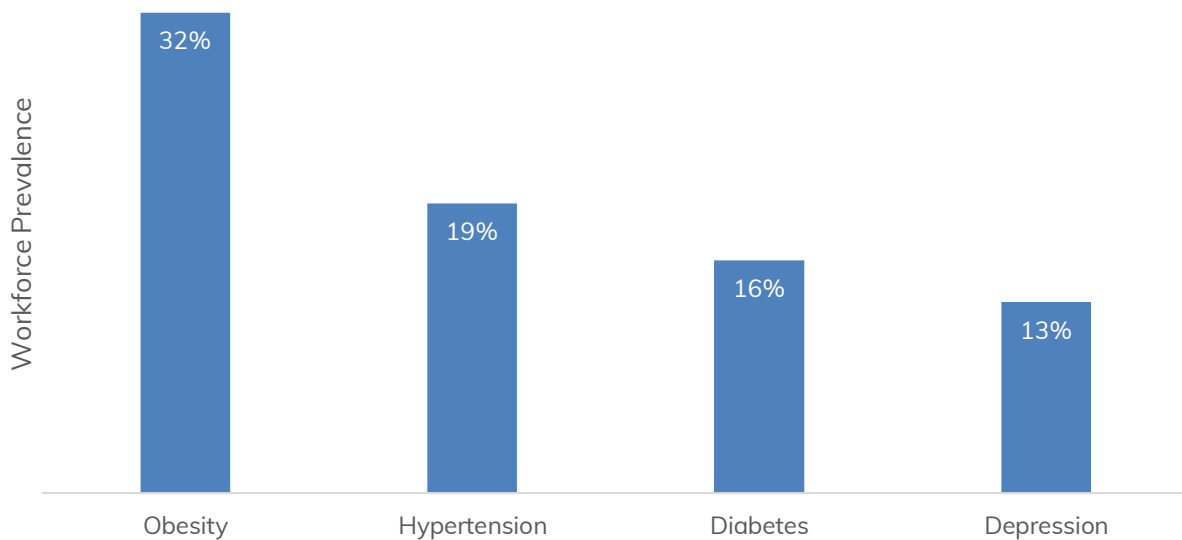
<sup>1</sup> See IBI's recently released report detailing the methodology for matching these data sources. <https://www.ibiweb.org/resource/ibi-benchmarking-analytics-short-term-disability-incidence-rates-across-demographic-groups/>

# RESULTS: CHRONIC CONDITIONS

## CHRONIC CONDITIONS HAVE A HIGH IMPACT ON THE WORKFORCE

The prevalence of chronic conditions in the working population is high: approximately one in three employees has at least one of the chronic conditions examined in this study (Figure 2). This burden is especially high for obesity, which affects about one-third of the US workforce. Fortunately, these conditions are identifiable with screening that can detect the pre-disease state, allowing for early and effective intervention.

Figure 2: Chronic conditions have a high impact on the working population



Source: Healthy People 2020

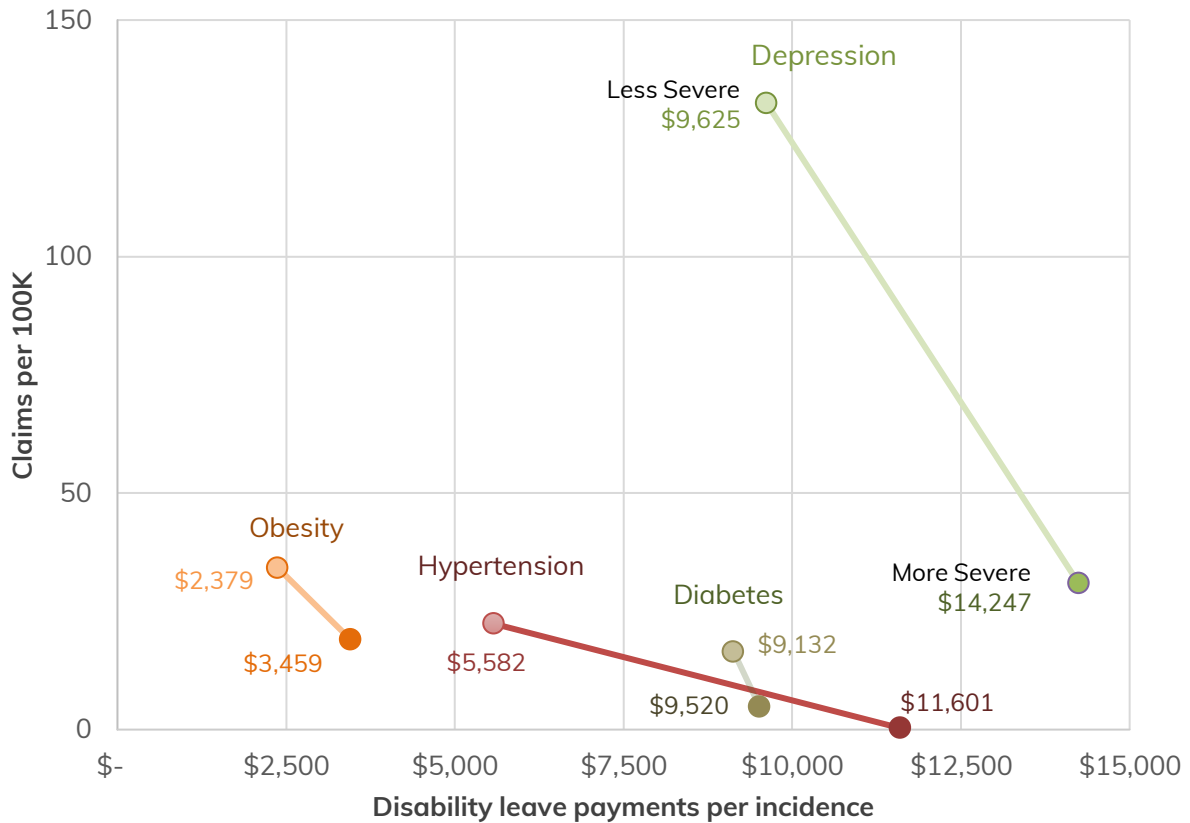
## HIGH DISABILITY RATES FOR DEPRESSION OFFER AN OPPORTUNITY FOR SCREENING

Although the least prevalent of the four chronic conditions, there are more claims made for depression than for obesity, hypertension, and diabetes combined. For every 100,000 employees, 163 STD claims are made for depression, significantly higher than for obesity (53 claims), hypertension (23 claims), and diabetes (21 claims).

Although screenings that detect chronic conditions before symptoms require time away from work for treatment and recovery is ideal, this is not always possible. Even when symptoms manifest, identifying a disease at an earlier, less severe stage can represent a savings opportunity. Figure 3 shows that when individuals enter the claims system for a milder form of disease, average costs are lower than when the disease is more severe (although the number of claims associated with more severe forms are lower across

all four conditions—see Appendix). This cost difference ( $\Delta$ ) between severe and mild stages is most dramatic for those with hypertension (a cost difference  $\Delta$  of \$6,019 per incidence) and depression ( $\Delta$  \$4,622) and shows the lowest impact for diabetes ( $\Delta$  \$387).

**Figure 3: Disability leaves due to milder forms of chronic conditions represent an additional opportunity for savings**



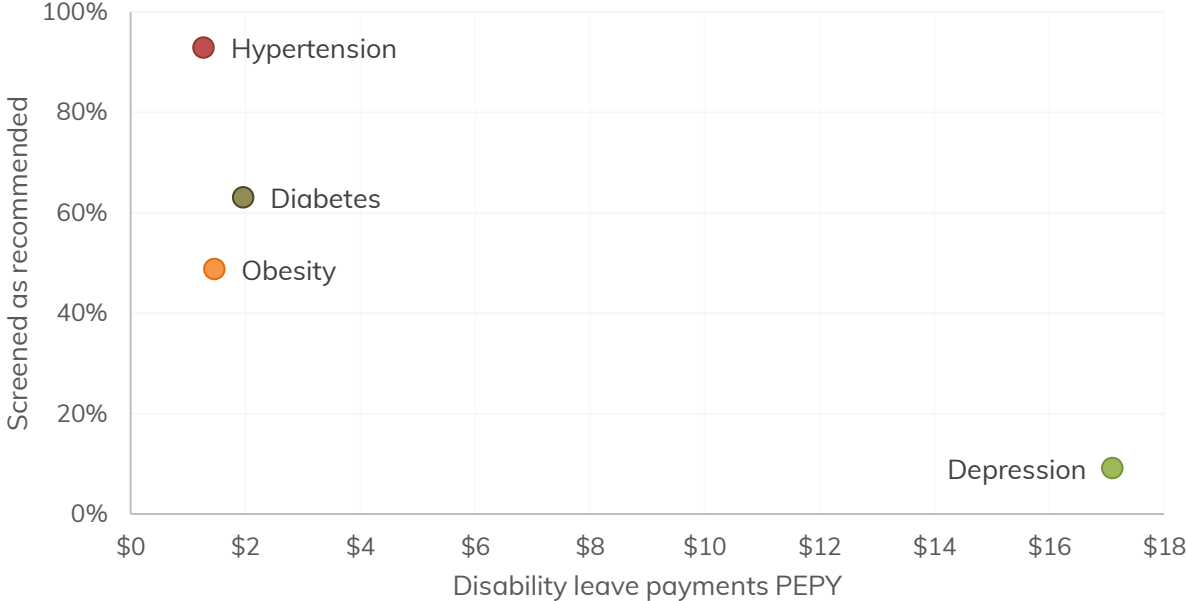
Source: IBI Disability and Leave Benchmarking system

**SCREENING GAPS UNDERSCORE A LOST-PRODUCTIVITY COST FOR EMPLOYERS AND DISEASE BURDEN ON EMPLOYEES**

Figure 4 shows that when we account for the number of individuals entering the disability system for a condition, depression represents a disproportionately high cost to employers: averaging \$17.11 PEPY compared with \$1.97 for diabetes, the next-highest condition—not to mention suffering of employees. Potentially related to the high cost of depression on a PEPY basis is the low rate of screening.



Figure 4: Missed opportunities for detection that result in lost-productivity costs for employers are particularly high for those suffering from depression



Source: IBI Disability and Leave Benchmarking system

# RESULTS: CANCERS

## CANCERS ARE LESS PREVALENT IN THE WORKFORCE, BUT GAPS IN CANCER LEAVE-TAKING RAISE CONCERNS ABOUT DELAYED TREATMENTS, JOB PERFORMANCE, AND EXITS FROM WORK

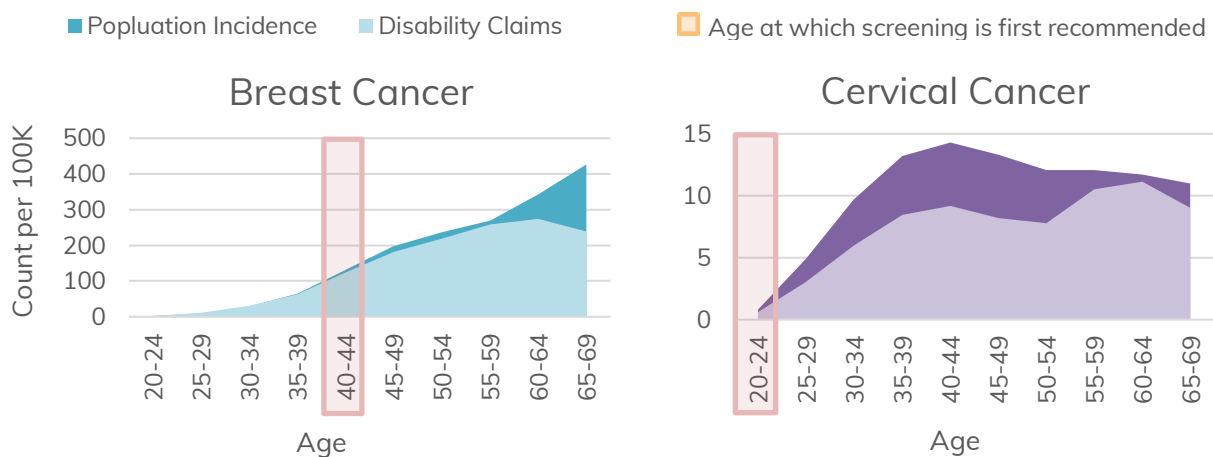
Many cancer patients need time off from work to undergo treatment. For that reason, rates of disability leave should roughly track cancer incidence rates in employed populations—unless newly diagnosed patients are not obtaining treatment, are not taking needed time off, or are leaving the workforce. Diverging incidence and leave rates would then raise concerns about patients' health, their performance on the job as they try to work through treatment, their financial well-being, and the retention of their value as employees.

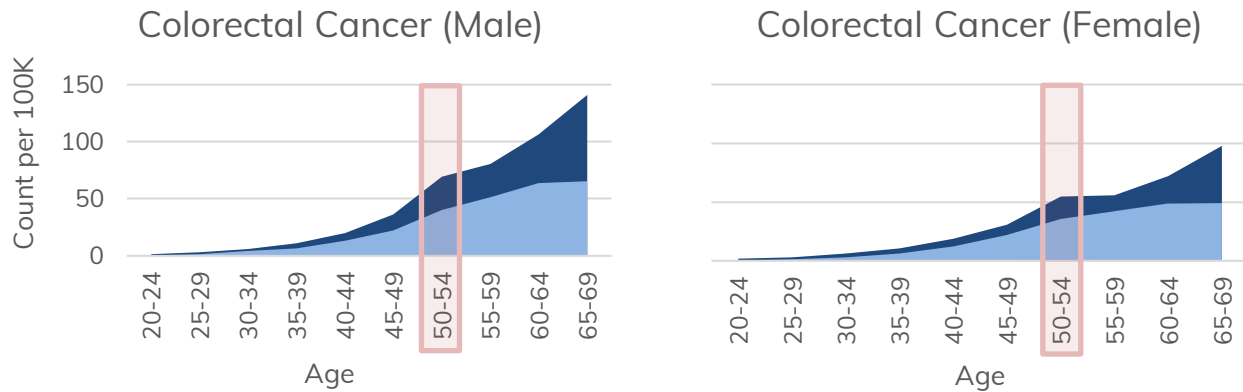
Figure 5 shows that while both incidence and claims rates increase at the recommended screening age, these metrics diverge at older ages (as indicated by the darker shaded area); it is most prominent for those diagnosed with breast cancer over 60, with colorectal cancer over 50, and with cervical cancer through their mid-fifties.

For example, breast cancer incidence rates are 5% higher than leave rates at ages 40–44 (the recommended screening age for women). By ages 60–64, the leave rates are 20% of incidence; by ages 65–69, they are 44%. At all ages, the gaps are generally wider for men and women with colorectal cancer and grow sharply from age 55 onward (after the recommended screening ages of 50–54). Cervical cancer leave rates follow the nonlinear pattern of incidence rates, with the gap peaking at ages 45–49, when leave rates are 38% lower than incidence rates.

These patterns could reflect differences in disease progression of these types of cancers and the necessity of leave at the time of diagnosis. They could also reflect population discrepancies in access to disability leave benefits, although why eligibility for benefits would decline with age is not clear. The large differences in the highest age categories for breast and colorectal cancers could reflect individuals' leaving the workforce or entering the Social Security disability system.

**Figure 5: Incidence outpaces claims at older ages, especially for those diagnosed with breast and colorectal cancers**



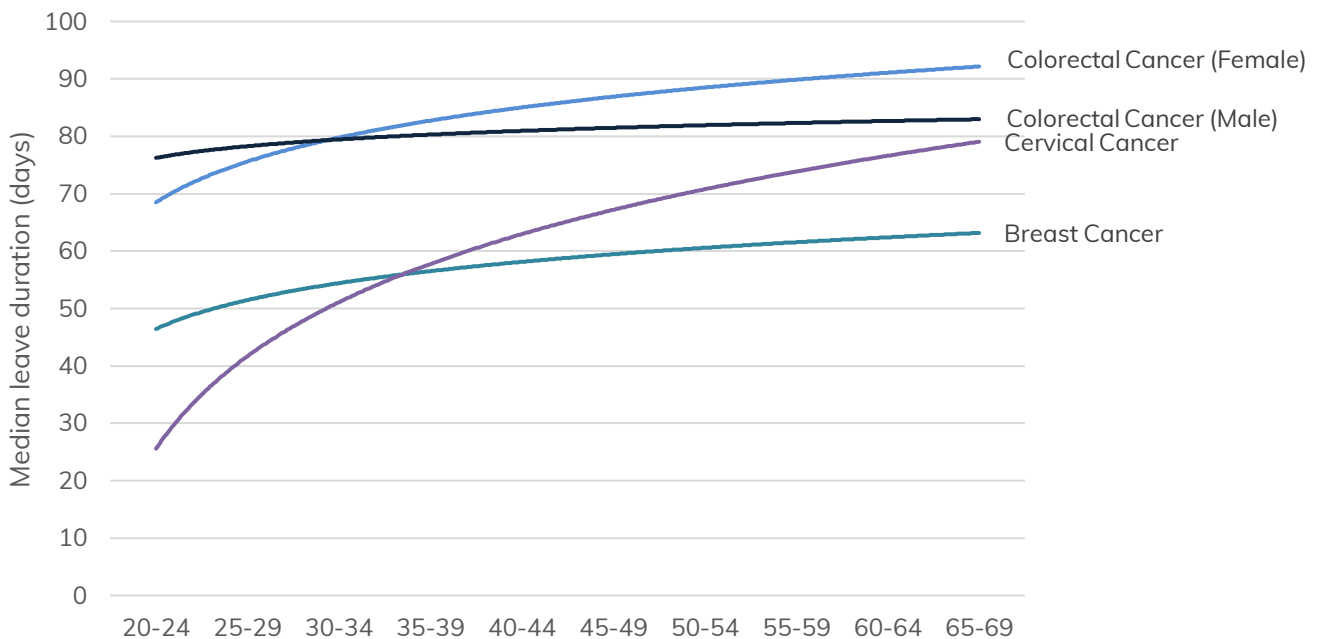


Source: IBI Disability and Leave Benchmarking system

### TREATMENT FOR CANCER OFTEN REQUIRES EXTENDED TIME AWAY FROM WORK

Considering the intensity of many cancer treatments, older employees may require more time away from work to recover from treatment. Figure 6 shows that people who take a leave for cancer at earlier ages take less time off from work than those who enter the disability system at a later age. This finding is observed for breast and cervical cancers for women, and colorectal cancer for both men and women. For example, women who take STD leave for colorectal cancer at age 50–54 (the recommended age of screening) are absent an average of 82 days, compared with 90 days at age 65–69 (a difference of about a week).

**Figure 6: Undergoing treatment at a later age may require additional time off the job**



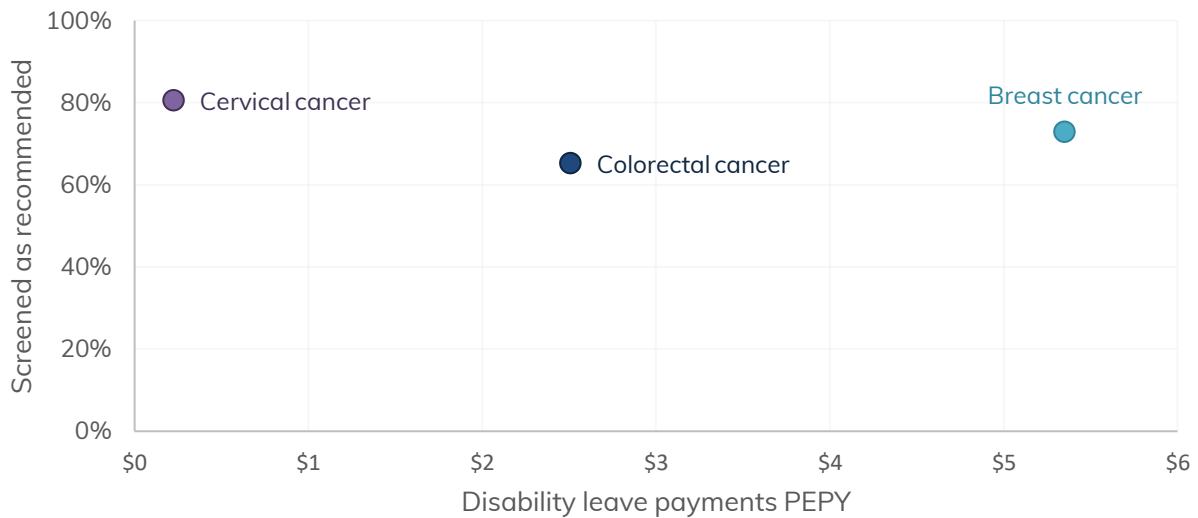
\*Shows logarithmic line of best fit for data representing each cancer type.

Source: IBI Disability and Leave Benchmarking system

### SCREENING GAPS ARE LESS DRAMATIC FOR CANCERS, BUT OPPORTUNITIES FOR IMPROVEMENT IN DISABILITY LEAVE MAY STILL BE SUBSTANTIAL

Although most individuals are screened for cancer as recommended, large screening gaps remain. Considering the observed links between age and disability outcomes, this may drive high disability leave costs. Figure 7 shows that the PEPY costs for cervical cancer and colorectal cancer are similar to PEPY costs for the chronic conditions shown in Figure 4 (excluding depression). The disability costs for breast cancer are more than double those of colorectal cancer (\$5.35 versus \$2.51 PEPY).

**Figure 7: Missed opportunities for detection and treatment in the early stages of disease progression may result in higher costs for employers**



Source: IBI Disability and Leave Benchmarking system

# DISCUSSION

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The best outcome for early screenings is to detect disease before treatment and recovery requires disability leave. Patients can experience an improvement in their quality of life, while their employers benefit from higher productivity.

The business value of closing screening gaps reflects the impact of a condition on workforce productivity and the size of the gap itself. Although depression is the least prevalent of the chronic conditions examined in this report, it is associated with the worst outcomes, in both number of claims and disability leave payments. Improved screening rates may reduce both the claims rates and the payments per incidence by reducing the severity of depression where it still occurs.

Contrasting hypertension with depression further suggests the benefit of additional screening. Hypertension may be the model in this scenario: it is screened at a 93% rate in the population, and this may be related to the low number of attributable claims relative to the population prevalence of this condition. Once individuals enter the disability system, however, incident costs for hypertension are not significantly lower than for the other conditions. This suggests that screening may result in lower claims but not necessarily a lower disability wage replacement cost when leave is required.

We might expect that obesity would be more problematic in measured outcomes: screening rates are mediocre, but the population impact (at one-third of the workforce) is high. Obesity claims rates are indeed higher than for individuals with diabetes or hypertension, but obesity claims do not constitute even one-third the claims for depression (compare 53 with 163 claims per 100,000). Additionally, obesity is only slightly more expensive than hypertension on a PEPY basis. We likely underestimate the true magnitude of disability outcomes for both obesity and hypertension, as we are restricted to those cases with a primary diagnosis of obesity and hypertension only, ignoring additional conditions that are often a result of, or present as co-morbidities with, each of those conditions.

Many studies have discussed the co-morbidity of depression with physical chronic conditions. In fact, not only are those with chronic conditions more likely to suffer depression but they are also more likely to miss work and suffer functional disability (Egede, 2007). Further, when depression is co-morbid with a physical ailment, an individual's total health is significantly worse than the health of those with only a physical illness (Moussavi et al., 2007). Raising awareness of depression as a potential and significant contributor to requiring leave for individuals suffering a physical illness may contribute to the recognition of the import of mental health in the workplace.

Improvement opportunities also exist for cancers, especially breast and colorectal cancer, even with relatively high rates of screening. And while gaps may be less dramatic for cancers, treatment profoundly limits the ability to work, though return to work increases over time following treatment (de Boer et al., 2008). Additional screening would also likely result in lower PEPY disability costs. A concern here is that individuals appear less likely to go into the disability system at older ages (over 60), suggesting that they might be leaving the workforce or retiring. Individuals in this age bracket also require the most time away from work when they do take leave, suggesting that cancers are more severe at older ages.

Cervical cancer is an exception. As a disease that affects women across almost the entire age spectrum, it might be expected to show a different pattern than the other cancers that are more likely to affect older

women. For example, the difference between incidence rates and claims rates at younger ages may be a factor of the type of work that individuals do at younger ages and reflect greater job insecurity, resulting in employment in jobs that do not offer disability benefits.

Considering the high burden of disease when detected—both for employers in lost work time and disability wage replacement costs and for employees in quality of life—screenings may be a way in which to manage these negative consequences in an unobtrusive, cost-effective manner.

# GUIDANCE FOR EMPLOYERS

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Closing screening gaps represents an opportunity to substantially improve workforce health and productivity. That said, IBI conducted this research using data collected before the COVID-19 pandemic. To help employers incorporate preventive screenings into their health benefits strategy and meet the challenges of ensuring access to screening during the pandemic, IBI sought input from experts at leading healthcare, employee benefits, and absence management firms. A summary of their guidance follows.

## ENGAGE WITH EMPLOYEES TO PROMOTE PREVENTIVE SCREENING

As IBI emphasized [in a previous study](#), successful health and well-being efforts engage employees by strategically leveraging health information, plan design, and communications. Employers can encourage employees to undergo routine, medically recommended screening by identifying at-risk employees, raising awareness of testing, improving access to care, and reducing barriers to testing.

### Identify high-risk employees for priority screening programs

Reviewing healthcare and disability claims periodically can provide insights into employees' health needs and help prioritize programs that would be most beneficial to specific employee populations. In addition, tracking users and nonusers of screening services can help target employee populations that might benefit the most from additional outreach.

- Directing employees to screening is only a first step. Have a plan for ensuring that employees who screen positive for a condition are provided with meaningful follow-up and opportunities to obtain and adhere to treatment. This can include working with your pharmacy benefits manager to provide low-cost medications for chronic health conditions.
- Additionally, be mindful of chronic co-morbidities. A positive screening for one condition, such as obesity, may be an opportunity to encourage screenings for related conditions such as diabetes or colorectal cancer.

## IBI THANKS THE FOLLOWING INDIVIDUALS AND FIRMS FOR PROVIDING INPUT FOR EMPLOYER GUIDANCE.

*The views expressed are those of the commentators alone. They do not necessarily reflect those of their employers and clients, nor of IBI, its members or its Board of Directors.*

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### Raise employee awareness through tailored communications

A tailored communication plan that provides screening information regularly, emphasizes available options and costs, and delivers its message with empathy for employees' concerns is essential to a successful screening effort.

Although the Patient Protection and Affordable Care Act made many preventive screenings free as part of an annual wellness exam, confusion about costs still represents one barrier to screenings. Provide employees with information about clinics that offer free screenings as part of routine employer-sponsored care. In

addition, making any out-of-pocket screening costs explicit may help employees overcome any reluctance to seek care that is driven by a fear of surprise bills. Including information about supplemental plan coverage can also help employees make informed decisions about where and when to obtain screenings.

#### NATIONAL HEALTH OBSERVANCES

January

[Cervical Health Awareness Month](#)

February

[American Heart Month](#)

March

[Colorectal Cancer Awareness Month](#)

May

[Mental Health Month](#)

October

[Breast Cancer Awareness Month](#)

October 11

[National Depression Screening Day](#)

November

[American Diabetes Month](#)

Using positive messaging rather than scare tactics can empower employees to get recommended screenings as a form of self-care. Storytelling that emphasizes the real-life benefits of preventive screenings, shared by people who resemble the company's employees, can promote greater buy-in. Including facts about disease risks and screening methods, answering frequently asked questions, and dispelling myths can further instill a sense of comfort and increase the likelihood of getting tested.

Coordinate educational materials and activities to coincide with national disease awareness months.

Using existing communication vehicles may be just as effective as creating new messaging efforts. On-site benefits fairs, wellness events, and posters can reach employees at work. Social media, newsletters, and materials sent to the home can include information targeted to spouses and dependents.

### Support screening access through policies and resources

A well-communicated strategic screening plan and high levels of buy-in will nonetheless fail if employees cannot overcome logistical barriers to care.

Create workplace policies that specifically allow employees to take time off for preventive care. Allowing for shift coverage and sick leave for routine preventive health appointments can provide time during the workday needed to seek care. Ensuring that supervisors are aware of these policies can encourage employees to coordinate time off in ways that do not unnecessarily disrupt operations.

Leveraging relationships with on-site or nearby clinics to provide routine screening for employees can help ensure convenient, high-quality testing without necessitating extensive time off.

### Remove barriers that prevent employees from seeking screenings

Work with your health benefits provider to reduce financial barriers to screenings when possible. In addition to coverage under employer-sponsored health plans, supplemental health plans may offer an annual dollar benefit per covered person per year with proof of a wellness screening. It is also worth noting that financial incentives to obtain screenings may not be effective in every work environment. It is often more effective for employers to absorb some extra expense to increase access than to focus on extrinsic incentives.



## EMPHASIZE TO LEADERSHIP THE VALUE OF SCREENING PROGRAMS

Getting senior leaders' buy-in can help ensure durable support for screening programs. An effective business case for screenings uses a company's own data to emphasize the opportunity costs of absence for preventable conditions as well as the financial burdens of avoidable medical, sick-day, and disability costs.

## USE RESOURCES TO ENSURE THAT SCREENINGS REMAIN ON TRACK DURING PANDEMIC OR EMERGENCY SITUATIONS

As the persistent COVID-19 pandemic reminds us daily, health needs do not disappear even when traditional modes of care are not possible. Evidence is mounting that social distancing measures, fears of infection, and the curtailment of all but the most essential healthcare services have created barriers to routine and preventive care.

In a survey conducted by the U.S. Census Bureau<sup>2</sup> between June 25 and June 30, 2020, 42% of US adults reported that they had delayed getting medical care in the previous four weeks because of the COVID-19 pandemic. The Kaiser Family Foundation<sup>3</sup> reports that compared with early January 2020, screenings for breast and cervical cancers fell by 94%; screenings for colorectal cancers fell by 86%.

Providing options for employees to maintain routine preventive screening and care when emergency situations occur can keep employees performing at their best. Options for continuity of care should be part of [every company's pandemic plan](#) and include some in-home alternatives to clinic-based testing, telehealth services for chronic conditions, and in-home wellness kits.

## ADDITIONAL WORKPLACE STRATEGIES ARE AVAILABLE

- The American Cancer Society's [programs, communications tools, and information](#)
- The CDC's [Workplace Health Strategies](#)

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<sup>2</sup> US Census Bureau, Household Pulse Survey, Measuring Household Experiences during the Coronavirus (COVID-19) Pandemic, June 9, 2020, <https://www.census.gov/householdpulsedata>, accessed August 14, 2020.

<sup>3</sup> Kaiser Family Foundation, Peterson-KFF Health Tracker, How have healthcare utilization and spending changed so far during the coronavirus pandemic? August 6, 2020, [https://www.healthsystemtracker.org/chart-collection/how-have-healthcare-utilization-and-spending-changed-so-far-during-the-coronavirus-pandemic/#item-costs-use-covid\\_change-in-average-weekly-cancer-screening-volume-jan-1-2017-jan-19-2020-vs-jan-20-apr-21-2020-by-type-of-screening](https://www.healthsystemtracker.org/chart-collection/how-have-healthcare-utilization-and-spending-changed-so-far-during-the-coronavirus-pandemic/#item-costs-use-covid_change-in-average-weekly-cancer-screening-volume-jan-1-2017-jan-19-2020-vs-jan-20-apr-21-2020-by-type-of-screening), accessed August 14, 2020.

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# APPENDIX

## BREAST CANCER

*USPSTF Recommendations (Grade B).* The USPSTF recommends screening mammography for women, with or without a clinical breast examination, every one to two years for women age 40 years and older.

*Meeting Guidelines data.* Acquired from Healthy People 2020, which uses responses from the National Health Interview Survey (NHIS) from 2018. More information [here](#).

Numerator: Number of women aged 50 to 74 years with a mammogram in the past two years  
Denominator: Number of women aged 50 to 74 years

**Table 1: Prevalence and meeting screening guidelines for breast cancer by demographic factors among those eligible for screening, NHIS 2018**

	Prevalence in workforce		Meeting screening guidelines	
	%	SE	%	SE
Overall	4.68	0.44	72.80	0.77
Age				
55-65 years	5.03	0.61	72.90	1.10
Race/ethnicity				
NH White	5.27	0.56	73.10	0.84
NH Black	3.01	1.10	74.00	2.27
Hispanic	2.42	1.00	71.50	2.35
Education				
<High school	3.83	1.69	63.40	2.53
High school	3.88	0.93	69.20	1.48
Some college	6.07	1.20	71.20	1.71
Associate's degree	3.82	0.99	72.80	2.02
Four-year college	4.54	0.80	79.70	1.51
Advanced degree	4.70	0.44	82.20	1.68
% Poverty threshold				
<100	4.61	1.93	57.80	2.42
100-199	3.44	1.08	63.40	1.99
200-399	4.47	0.79	71.30	1.43
400-599	3.80	0.86	75.20	1.63
600+	4.68	0.44	83.00	1.28

	Prevalence in workforce		Meeting screening guidelines	
	%	SE	%	SE
Health insurance status				
Insured	4.37	0.49	74.90	0.97
Private	4.74	0.53	76.80	1.02
Public	0.68	1.19	67.20	2.27
Uninsured	2.50	1.34	39.20	3.39

ICD-10 Codes for breast cancer claims. Prefixed by C50.

**Table 2: Disability claims data for those taking extended leave for breast cancer**

	Claims n	Cost per claim		Median	Days per claim	
		Mean	SD		Mean	SD
Overall	138,659	6526.00	10509.69	60	84.6	68.8
Age						
20-24	205	2226.71	3172.00	41	61.6	55.7
25-29	1,418	4689.75	6729.68	55	82.0	66.1
30-34	4,232	5920.22	8569.46	59	86.1	68.5
35-39	8,944	7386.54	16637.88	60	85.4	69.1
40-44	16,856	7199.12	11692.82	59	84.6	68.9
45-49	24,504	6725.95	10778.79	57	83.2	68.4
50-54	28,406	6635.22	9964.70	58	83.5	68.5
55-59	26,063	6397.96	9456.32	60	85.1	69.2
60-64	18,015	6226.11	8980.91	62	86.1	70.3
65-69	6,127	5624.80	9096.76	63	85.1	66.9

## CERVICAL CANCER

**USPSTF Recommendations (Grade A).** The USPSTF recommends screening for cervical cancer every three years with cervical cytology alone in women aged 21 to 29 years. For women aged 30 to 65 years, the USPSTF recommends screening every three years with cervical cytology alone, every five years with high-risk human papillomavirus (hrHPV) testing alone, or every five years with hrHPV testing in combination with cytology (cotesting).

**Meeting Guidelines data.** Acquired from Healthy People 2020, which uses responses from the National Health Interview Survey from 2018. More information [here](#).

Numerator: Number of women aged 21 to 65 years who have not had a hysterectomy and have had a Pap test in the past three years

Denominator: Number of women aged 21 to 65 years who have not had a hysterectomy

**Table 3: Prevalence and meeting screening guidelines for cervical cancer by demographic factors among those eligible for screening, NHIS 2018**

	Prevalence in workforce		Meeting screening guidelines	
	%	SE	%	SE
Overall	0.62	0.25	80.50	1.20
Age				
21-34 years	0.30	0.34	79.10	2.20
35-44 years	1.06	0.75	86.30	1.70
45-54 years	0.71	0.86	81.20	2.30
55-65 years	0.62	0.71	74.10	2.40
Race/ethnicity				
NH White	0.85	0.38	81.30	1.30
NH Black	0.12	0.70	85.50	2.70
Hispanic	0.46	0.77	79.30	3.00
Education				
<High school	0.75	1.58	71.30	4.30
High school	1.12	0.96	77.00	2.80
Some college	1.16	0.87	80.70	2.70
Associate's degree	0.67	1.18	84.80	2.50
Four-year college	0.21	0.46	85.30	1.90
Advanced degree	0.18	0.56	90.30	1.80
% Poverty threshold				
<100	0.49	1.68	69.80	3.70
100-199	1.48	1.05	74.30	3.10
200-399	0.53	0.48	79.70	2.10
400-599	0.60	0.72	83.40	2.30
600+	0.25	0.58	87.60	2.10

	Prevalence in workforce		Meeting screening guidelines	
	%	SE	%	SE
Health insurance status				
Insured	0.59	0.26	83.30	1.00
Private	0.45	0.26	84.20	1.20
Public	1.27	1.42	79.00	2.70
Uninsured	0.66	1.54	61.30	4.00

ICD-10 Codes for cervical cancer claims. Prefixed by C53.

**Table 4: Disability claims data for those taking extended leave for cervical cancer**

	Claims n	Cost per claim		Median	Days per claim	
		Mean	SE		Mean	SD
Overall	7,992	5194.96	7410.17	61	81.2	57.6
Age						
20-24	55	1732.64	2452.65	28.5	46.4	45.8
25-29	332	3380.06	3645.44	46	65.8	52.4
30-34	805	3888.51	5274.81	47	68.5	53.7
35-39	1,129	5035.19	10048.55	49	69.1	51.6
40-44	1,206	4968.08	5910.24	59	77.2	52.4
45-49	1,160	5638.09	6963.07	63	83.3	58.2
50-54	1,075	5949.54	7606.14	80	92.8	62.8
55-59	1,060	6116.89	9221.00	76	91.2	61.1
60-64	754	5446.35	6053.20	80	90.5	56.5
65-69	223	5172.60	6421.10	78	92.1	58.8

## COLORECTAL CANCER

*USPSTF Recommendations (Grade A).* The USPSTF recommends screening for colorectal cancer starting at age 50 years and continuing until age 75 years.

*Meeting Guidelines data.* Acquired from Healthy People 2020, which uses responses from the National Health Interview Survey from 2018. More information [here](#).

Numerator: Number of persons aged 50 to 75 years who have had a blood stool test in the past year, a sigmoidoscopy in the past five years and a blood stool test in the past three years, or a colonoscopy in the past 10 years

Denominator: Number of persons aged 50 to 75 years

**Table 5: Prevalence and meeting screening guidelines for colorectal cancer by demographic factors among those eligible for screening, NHIS 2018**

	Prevalence in workforce		Meeting screening guidelines	
	Mean	SE	%	SE
Overall	0.57	0.31	65.20	1.20
Sex				
Male	0.49	0.48	65.70	1.60
Female	0.64	0.47	64.80	1.50
Age				
55-65 years	0.60	0.49	67.40	1.80
Race/ethnicity				
NH White	0.57	0.37	67.60	1.30
NH Black	0.61	2.57	63.90	3.20
Hispanic	0.76	1.30	57.70	3.70
Education				
<High school	0.55	1.74	51.30	3.70
High school	0.65	1.01	61.60	2.30
Some college	0.25	0.77	67.50	2.40
Associate's degree	1.07	1.37	64.60	3.00
Four-year college	0.16	0.48	70.30	2.40
Advanced degree	0.63	0.83	74.80	2.80
% Poverty threshold				
<100			53.20	3.60
100-199	1.22	2.22	55.40	3.20
200-399	0.71	0.82	61.80	2.20
400-599	0.38	0.56	68.70	2.60
600+	0.47	0.53	74.30	2.00
Health insurance status				

	Prevalence in workforce		Meeting screening guidelines	
	Mean	SE	%	SE
Insured	0.38	0.31	63.70	1.60
Private	0.31	0.33	64.30	1.70
Public	1.15	2.47	61.60	3.20
Uninsured	0.78	4.51	29.70	4.80

ICD-10 Codes for colorectal cancer claims. Prefixed by C18-20, C26, and C26.0.

**Table 6: Disability claims data for those taking extended leave for colorectal cancer**

	Claims n	Cost per claim		Median	Days per claim	
		Mean	SE		Mean	SD
Overall	49,738	8183.32	11018.42	84	100	49.7
Sex						
Male	28,457	8740.56	11330.01	83	102.9	76.9
Female	21,228	7437.59	10540.80	88	104.2	74.0
Age						
20-24	82	4391.90	4367.89	68	90.2	68.0
25-29	372	5245.72	6282.14	77	100.4	81.4
30-34	1,063	7321.96	10715.93	84	103.0	79.0
35-39	1,958	8207.66	12394.60	83	102.9	76.7
40-44	3,860	9436.85	12804.29	85	103.8	73.7
45-49	7,058	8562.82	10997.04	84	103.1	77.1
50-54	11,250	8643.93	12160.60	77	100.5	76.5
55-59	10,843	8096.62	10046.82	85	104.5	76.1
60-64	8,197	7979.12	10492.02	89.3	106.5	75.7
65-69	3,115	7247.59	10331.70	88	103.1	71.8



## HYPERTENSION (HIGH BLOOD PRESSURE)

*USPSTF Recommendations (Grade A).* The USPSTF recommends screening for high blood pressure in adults aged 18 years and older. The USPSTF recommends obtaining measurements outside of the clinical setting for diagnostic confirmation before starting treatment.

*Meeting Guidelines data.* Acquired from Healthy People 2020, which uses responses from the National Health Interview Survey from 2017. More information [here](#).

Numerator: Number of persons aged 18 years and over who had their blood pressure measured within the preceding two years and can state level

Denominator: Number of persons aged 18 years and over

**Table 7: Prevalence and meeting screening guidelines for hypertension by demographic factors among those eligible for screening, NHIS 2018**

	Prevalence in workforce		Meeting screening guidelines	
	%	SE	%	SE
Overall	19.49	0.76	92.80	0.50
Sex				
Male	20.67	1.05	90.90	0.70
Female	18.25	1.07	94.70	0.50
Age				
21-34 years	5.51	0.80		
35-44 years	13.55	1.45		
45-54 years	24.80	1.79	94.00	0.90
55-65 years	36.19	2.03	95.70	0.80
Race/ethnicity				
NH White	20.35	0.88	93.90	0.50
NH Black	25.01	2.51	93.70	1.10
Hispanic	13.38	1.72	89.00	1.30
Education				
<High school	20.15	3.00	86.70	2.00
High school	23.10	1.76	91.90	1.10
Some college	19.80	1.74	92.80	1.20
Associate's degree	21.92	2.21	94.50	1.00
Four-year college	16.57	1.41	94.60	0.90
Advanced degree	16.84	1.80	96.00	0.80
% Poverty threshold				
<100	14.82	2.22	89.70	1.50
100-199	18.19	1.87	90.30	1.40
200-399	20.57	1.41	92.20	0.80

	Prevalence in workforce		Meeting screening guidelines	
	%	SE	%	SE
400-599	20.49	1.61	94.50	1.10
600+	19.71	1.48	95.40	0.90
Health insurance status				
Insured	18.02	0.81	94.30	0.50
Private	17.94	0.86	94.30	0.60
Public	16.56	2.75	94.20	1.00
Uninsured	12.71	1.97	78.40	2.20

ICD-10 Codes for hypertension claims. Prefixed by I10-13 and I15.  
 More severe (with congestive heart failure): I11.0, I13.0, and I13.2.

**Table 8: Disability claims data for those taking extended leave for hypertension**

	Claims n	Cost per claim		Median	Days per claim	
		Mean	SD		Mean	SD
Overall	53,860	3626.21	7493.97	34	55.7	61.2
Sex						
Male	26,729	3879.17	7358.08	33	55.9	63.5
Female	27,058	3375.79	7618.06	35	55	58.8
Age						
20-24	365	2154.40	2599.40	36.5	54.1	56.0
25-29	1,571	3016.05	6607.87	36	53.9	55.8
30-34	3,326	3904.40	10954.39	39	56.4	58.0
35-39	5,503	3508.82	7510.12	35	54.1	59.6
40-44	7,252	3490.10	7733.51	32	53.2	60.4
45-49	8,921	3488.44	7178.94	33	52.4	57.7
50-54	9,180	3449.77	6538.82	32	53.3	61.3
55-59	8,305	3885.18	6787.30	35	58.0	64.6
60-64	5,629	4163.50	8554.57	38.5	61.5	65.5
65-69	1,731	3834.47	6665.21	39	61.6	65.4
Severity						
Less	53,083	3590.0	7448.4	34	55.3	60.8
More	777	5816	9561.9	53.0	82.7	83.6

## DEPRESSION

**USPSTF Recommendations (Grade B).** The USPSTF recommends screening for depression in the general adult population, including pregnant and postpartum women. Screening should be implemented with adequate systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up.

**Meeting Guidelines data.** Acquired from Healthy People 2020, which uses responses from the National Ambulatory Medical Care Survey from 2016. More information [here](#).

Numerator: Number of primary care physician office visits by patients aged 19 years and over that included depression screening

Denominator: Number of primary care physician office visits by patients aged 19 years and over

**Table 9: Prevalence and meeting screening guidelines for depression by demographic factors among those eligible for screening, NHIS 2018**

	Prevalence in workforce		Meeting screening guidelines	
	%	SE	%	SE
Overall	12.87	0.99	9.00	3.80
Sex				
Male	12.67	1.52	10.20	4.30
Female	13.03	1.29	8.40	3.90
Age				
21-34 years	15.61	1.88	DSU	
35-44 years	13.59	2.48	DSU	
45-54 years	11.07	2.20	8.50	4.00
55-65 years	10.55	2.00	8.90	5.10
Race/ethnicity				
NH White	13.49	1.21	9.40	3.80
NH Black	11.64	4.09	DSU	
Hispanic	12.74	3.12	9.20	3.60
Health insurance status				
Insured				
Private	12.59	1.10	8.10	3.20
Public	11.51	1.09	7.90	3.40
Uninsured	20.18	4.90	8.60	4.30
	18.12	3.37	DSU	

DSU (Data Statistically Unreliable): Data do not meet the criteria for statistical reliability, data quality, or confidentiality.

**ICD-10 Codes for depression claims.** Prefixed by F32-33.

More severe: F32.2, F32.3, F33.2, and F33.3.

**Table 10: Disability claims data for those taking extended leave for depression**

	Claims n	Cost per claim		Days per claim		
		Mean	SD	Median	Mean	SD
Overall	409,875	7072.42	15968.99	60.0	78.7	65.4
Sex						
Male	125,434	7671.65	20348.98	58	78.4	68.6
Female	284,117	6807.74	13583.80	61	78.9	64.0
Age						
20-24	14,093	3268.59	7927.14	46	61.5	51.8
25-29	43,399	5437.42	13843.01	53	68.6	56.4
30-34	57,069	6659.24	15135.90	58	74.6	60.2
35-39	59,673	7290.17	14487.05	60	77.7	63.6
40-44	58,977	7530.82	13651.51	61	79.2	65.8
45-49	54,968	7904.38	26641.50	62	81.7	69.3
50-54	51,126	7754.97	12503.18	64	83.8	69.6
55-59	38,538	7632.22	12731.58	65	85.7	70.4
60-64	19,010	7865.57	12094.46	69	89.5	72.6
65-69	3,620	7370.09	11534.51	68	87.4	67.1
Severity						
Less	330,518	6478.6	15181.7	58	76.1	64.4
More	79,357	9574	18716.5	72.0	89.8	68.7

## DIABETES

**USPSTF Recommendations (Grade B).** The USPSTF recommends screening for abnormal blood glucose as part of cardiovascular risk assessment in adults aged 40 to 70 years who are overweight or obese. Clinicians should offer or refer patients with abnormal blood glucose to intensive behavioral counseling interventions to promote a healthful diet and physical activity.

**Meeting Guidelines data.** Acquired from the National Center for Health Statistics; responses were analyzed from the National Health Interview Survey from 2018.

Numerator: Number of persons aged 40 to 70 who are overweight or obese and who have had a test for fasting blood sugar in the past 12 months

Denominator: Adults aged 40 to 70 who are overweight or obese

**Table 11: Prevalence and meeting screening guidelines for diabetes by demographic factors among those eligible for screening, NHIS 2018**

	Prevalence in workforce		Meeting screening guidelines	
	%	SE	%	SE
Overall	15.64	1.64	63.03	1.54
Sex				
Male	15.81	2.32	62.32	2.16
Female	15.48	2.26	63.61	1.97
Age				
21-34 years				
35-44 years				
45-54 years	13.43	2.59	59.57	2.71
55-65 years	20.62	2.98	67.01	2.23
Race/ethnicity				
NH White	14.77	1.87	63.45	1.83
NH Black	17.27	5.40	60.80	4.02
Hispanic	18.31	4.91	62.46	4.04
Education				
<High school	19.69	6.84	59.04	4.25
High school	14.98	3.38	61.24	3.04
Some college	17.17	4.19	63.18	3.50
Associate's degree	16.16	4.30	63.25	3.66
Four-year college	13.93	3.43	66.46	3.45
Advanced degree	14.16	4.35	66.92	4.22
% Poverty threshold				
<100	21.09	8.39	60.75	3.97
100-199	20.97	5.16	61.42	3.64
200-399	16.31	2.90	63.75	2.75

	Prevalence in workforce		Meeting screening guidelines	
	%	SE	%	SE
400-599	14.61	3.13	64.58	3.13
600+	12.24	2.76	63.53	3.18
Health insurance status				
Insured	15.27	1.84	64.54	1.75
Private	14.71	1.91	63.55	2.05
Public	21.21	8.10	65.80	4.41
Uninsured	13.18	5.30	34.22	5.42

ICD-10 Codes for diabetes claims. Prefixed by E11.  
 More severe (with complications): E11.0-7.

**Table 12: Disability claims data for those taking extended leave for diabetes**

	Claims n	Cost per claim		Median	Days per claim	
		Mean	SD		Mean	SD
Overall	52,257	4644.60	8587.57	48.0	73.4	74.8
Sex						
Male	32,300	5136.35	8877.02	52.0	77.1	79.1
Female	19,894	3835.78	8024.05	44	67.5	66.9
Age						
20-24	443	1485.09	1739.07	29	44.9	58.9
25-29	1,404	2597.07	10059.17	31	51.1	60.7
30-34	2,624	3270.03	8060.32	39	57.0	57.9
35-39	4,164	3628.92	8124.10	39	60.5	64.9
40-44	6,187	4196.83	9041.37	42	65.4	66.4
45-49	8,172	4483.88	7473.47	46	71.3	75.3
50-54	9,887	4917.71	8903.28	52	76.7	84.6
55-59	9,534	5215.50	8517.85	56	81.2	76.5
60-64	6,392	5854.10	9841.37	62	86.9	78.6
65-69	1,753	5169.71	6933.84	65	84.4	66.7
Severity						
Less	40,108	4398	8488.2	45.0	70.3	75.5
More	12,149	5461	8853.3	63.0	85.0	71.3

## OBESITY

**USPSTF Recommendations (Grade B).** The USPSTF recommends that clinicians offer or refer adults with a body mass index of 30 or higher (calculated as weight in kilograms divided by height in meters squared) to intensive, multicomponent behavioral interventions.

**Meeting Guidelines data.** Acquired from Healthy People 2020, which uses responses from the National Survey of Energy Balance-Related Care among Primary Care Physicians from 2018. More information [here](#).

Numerator: Number of primary care physicians who measure their adult patients' body mass index at every well-patient visit, every visit, or annually

Denominator: Number of primary care physicians who treat patients aged 18 and over

**Table 13: Prevalence and meeting screening guidelines for obesity by demographic factors among those eligible for screening, NHIS 2018**

	Prevalence in workforce		Meeting screening guidelines	
	%	SE	%	SE
Overall	32.33	0.94	48.70	3.40
Sex				
Male	30.84	1.24		
Female	33.89	1.37		
Age				
21-34 years	28.35	1.61		
35-44 years	35.04	2.00		
45-54 years	36.71	2.11		
55-65 years	34.15	1.88		
Race/ethnicity				
NH White	31.31	1.06		
NH Black	40.80	2.76		
Hispanic	35.62	2.39		
Education				
<High school	35.17	3.30		
High school	36.78	2.05		
Some college	36.32	2.14		
Associate's degree	37.21	2.51		
Four-year college	27.17	1.68		
Advanced degree	24.24	2.07		
% Poverty threshold				
<100	33.66	3.24		
100-199	35.25	2.61		
200-399	35.80	1.65		

	Prevalence in workforce		Meeting screening guidelines	
	%	SE	%	SE
400-599	32.30	1.88		
600+	26.62	1.54		
Health insurance status				
Insured	32.83	2.65		
Private	32.18	1.09		
Public	37.60	3.22		
Uninsured	32.63	1.03		

Note: No information available for demographics of those meeting screening guidelines.

ICD-10 Codes for obesity claims. Prefixed by E66.  
More severe (morbid): E66.9.

**Table 14: Disability claims data for those taking extended leave for obesity**

	Claims n	Cost per claim		Median	Days per claim	
		Mean	SD		Mean	SD
Overall	121,249	2596.74	5207.16	31	36.7	28.5
Sex						
Male	23,522	3180.30	5253.73	32	38.6	31.9
Female	97,623	2456.66	5186.20	31	36	27.6
Age						
20-24	2,024	1357.65	3171.86	29	34.2	23.1
25-29	9,267	2151.61	5865.50	30	35.4	25.3
30-34	16,275	2380.89	6226.54	30	35.7	27.8
35-39	20,309	2554.42	5452.19	31	36.6	28.9
40-44	21,240	2692.51	5415.79	31	37.0	27.9
45-49	18,973	2714.43	4620.47	31	36.5	28.2
50-54	15,321	2842.46	4905.66	31	37.1	28.8
55-59	10,494	2747.88	3520.78	31	37.6	30.1
60-64	4,593	3103.51	5286.07	32	39.6	34.4
65-69	927	2877.61	4837.64	31	39.3	31.8
Severity						
Less	78,029	2259	3255.5	31	36.4	29.0
More	43,220	3172.4	7399.6	31	37.3	27.5





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