



U.S. SHORT-TERM DISABILITY (STD) AND SICK LEAVE COST PROJECTIONS FOR CONFIRMED COVID-19 CASES

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Executive Summary

To provide insights into the financial burden of COVID-19 associated with lost work time costs, IBI reviewed employment, wage and leave benefit data from the U.S. Bureau of Labor Statistics (BLS) and lost workday experiences contained in IBI's dataset of employer-sponsored short-term disability (STD) claims to estimate the incidence and absence compensation for employees who take extended sick days or STD leaves for a coronavirus diagnosis. To help support the public policy discussion on strategies to respond to the pandemic, the analysis offers insights into low-, mid- and high-range scenarios depending on the total COVID-19 cases across the country.

	Low-range (4M US cases)	Mid-range (8M US cases)	High-range (15M US cases)
Employee cases	1.5M	3M	5.6M
Small firms (<500)	789K	1.6M	3M
Large firms	716K	1.4M	2.7M
STD claims	648K	1.3M	2.4M
STD wage replacements	\$1.2B	\$2.4B	\$4.5B
Total costs	\$6.1B	\$12.7B	\$23.3B

Under a low-range scenario of 4 million U.S. coronavirus cases:

- Employed patients will make up 1.5 million of the cases. Almost 800,000 of those cases will be from employees of small firms (<500 employees) who are now entitled to paid sick days under the Families First Coronavirus Response Act (FFCRA) that went into effect April 1, 2020.
- Nearly 650,000 coronavirus STD claims will increase the average annual STD claims volume from 2011-2018 (3.1 million) by 21%.

- STD wage replacement payments for eligible employee coronavirus cases will total \$1.2 billion. This is the equivalent of 20% of the in-force premiums collected by insurance carriers in 2018 (\$6.1 billion).
- Based on an average absence duration of 20 lost workdays per case (the weighted average duration of STD claims for influenza, pneumonia and respiratory failure), lost work time cost for employee coronavirus cases is projected to total \$6.1 billion. This amount equates to a 6.4% increase in sick day and STD payments from 2018 (\$97 billion).

Under a mid-range scenario of 8 million U.S. coronavirus cases:

- Employed patients will make up 3.0 million cases. 1.6 million cases will be from employees of small firms.
- 1.3 million coronavirus STD claims will increase the average annual STD claims volume by 42%.
- STD wage replacement payments for eligible employee coronavirus cases will total \$2.4 billion, the equivalent of 40% of 2018 in-force premiums.
- Lost work time cost for employee coronavirus cases is projected to total \$12.7 billion, the equivalent of a 13% increase in 2018 sick day and STD payments.

Under a high-range scenario of 15 million U.S. coronavirus cases:

- Employed patients will make up 5.6 million cases. Almost 3 million cases will be from employees of small firms.
- 2.4 million coronavirus STD cases will increase the average annual STD claims volume by 79%.
- STD wage replacement payments for eligible employee coronavirus cases will total \$4.5 billion, the equivalent of 75% of 2018 in-force premiums.
- Lost work time cost for employee coronavirus cases is projected to total \$23.3 billion, the equivalent of a 24% increase in 2018 sick day and STD payments.

The full lost work time impact of employees directly impacted by the pandemic—which would include expanded family medical leave to care for out-of-school children and sick leave due to quarantines, isolation orders and undiagnosed conditions with coronavirus symptoms—is beyond the scope of this analysis.

Background

The coronavirus (COVID-19) pandemic crisis has disrupted a large part of the U.S. economy. Tens of thousands of school closures have halted educational activities and required many parents to take leaves of absence from work. Shelter-in-place orders have closed many businesses deemed “nonessential,” resulting in decreased consumer demand, widespread layoffs and large financial losses across all industries.

Estimates of the pandemic’s impact on health care spendingⁱ have excluded the costs of lost wages and lost output for employed coronavirus patients. Similarly, macroeconomic estimates of the impact on consumer spending and economic outputⁱⁱ tend to take a societal perspective that overlooks the microeconomic financial burden on stakeholders such as employers that pay sick day wages and insurance carriers (including self-insured employers) who underwrite short-term disability (STD) leaves for coronavirus cases.

A financial model for STD leaves and sick day lost work time

To provide a more complete—but far from comprehensive—view of the financial burden of coronavirus cases, this analysis creates a model of the wages, benefits, and wage replacements paid to employees who cannot work because they contract coronavirus. The steps to this model are as follows:

1. Following an approach used by Covered California to estimate coronavirus healthcare costs,ⁱⁱⁱ we start with baseline of diagnosed coronavirus cases at a low-range (assuming interventions such as social distancing and shelter-in-place orders are effective), a mid-range, and a high-range based on higher than expected positive testing results.
2. We then assume that the employed share of diagnosed coronavirus cases will represent employees’ share of the U.S. population.^{iv} We further differentiate employees by their eligibility for STD benefits and their employment at large (500+ employees) or small (< 500 employees) firms—which indicates eligibility for paid sick days under Families First Coronavirus Response Act (FFCRA)^v beginning April 1, 2020.
3. We estimate the lost worktime duration of coronavirus case based on the influenza, pneumonia, and respiratory failure experiences contained in a large dataset of employer sponsored STD claims.^{vi}
4. Finally, we apply common features of STD and paid sick leave policies reported by the U.S. Bureau of Labor Statistics (BLS) to the lost workdays for employed coronavirus cases eligible for different benefits before and after extended FFCRA sick leave policies taking effect April 1, 2020.

The data sources and key assumptions for this model are described in the Appendix. We make several simplifying assumptions in this analysis and use best-available data for our model. That said, there is substantial uncertainty with regards to projected caseloads, the relative risks of coronavirus to employees, and the applicability of wage data before the pandemic occurred. All findings should be considered approximate and contingent.

Results

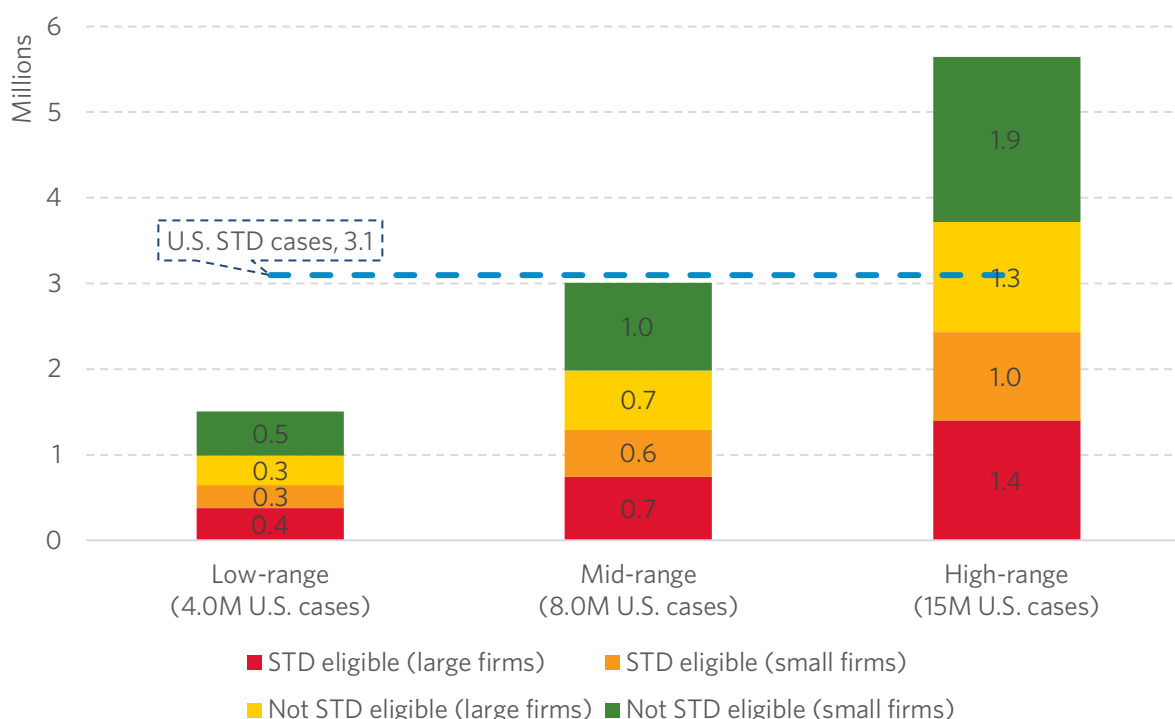
CORONAVIRUS CASES AMONG EMPLOYEES

Figure 1 shows the estimated employee coronavirus cases by eligibility for STD and by firm size. We present the caseloads for three coronavirus scenarios used by Covered California to model costs for a population of commercially insured healthcare beneficiaries. This includes a “low-range” of 4 million U.S. cases, and “mid-range” of 8 million cases, and a “high-range” of 15 million cases. For context, the annual estimated claims for employer-sponsored STD policies (3.1 million) is also reported.

Based on employee's share of the U.S. population and assuming that employees are at no greater risk of contracting coronavirus than non-employees, under the low-range scenario, 1.5 million coronavirus cases will be employees at large or small firms. Estimates for the mid- and high-range scenarios are 3 million and 5.6 million employee cases respectively. These estimates consider the 188,000 diagnosed cases that occurred before emergency paid sick leave enacted by the FFCRA took effect on April 1, 2020.

In all scenarios, cases among STD-eligible employees represent about 43% of employee coronavirus cases (reflecting the overall STD participation rates in the civilian labor force). The low-range scenario would increase the annual STD claims volume by about 21%, and the mid- and high-range scenarios would increase claims by about 42% and 79%, respectively).

Figure 1: Estimated coronavirus claims for STD-eligible and ineligible employees



Note on Figure 1: Case counts represent the share of employees among all U.S. coronavirus cases, as reflected by the share of persons employed by large and small firms in the U.S. population. Due to rounding, data presented throughout this report may not match up precisely to the numbers indicated in the graphs.

STD AND SICK DAY PAYMENTS FOR CORONAVIRUS CASES

Figure 2 shows payments for employee coronavirus cases under the low-, mid- and high- range scenarios. Payments are based on an average of 20 lost workdays per case (based on the weighted experience of STD claims for influenza, pneumonia and respiratory failure^{vii}).

Wage replacements paid by STD insurance represent payments to STD-eligible employees. Wages paid by employers include sick day wages for employees not eligible for STD, for the elimination period (EP) of STD claims, and for the difference between STD wage replacements as well as emergency sick leave wages enacted by FFCRA for employees at small firms who were diagnosed with coronavirus on or after April 1, 2020. Employee benefits such as insurance, retirement, and mandatory contributions are assumed to continue for the duration of a case, even if paid sick days are not available (in the case of STD-ineligible employees at large firms).

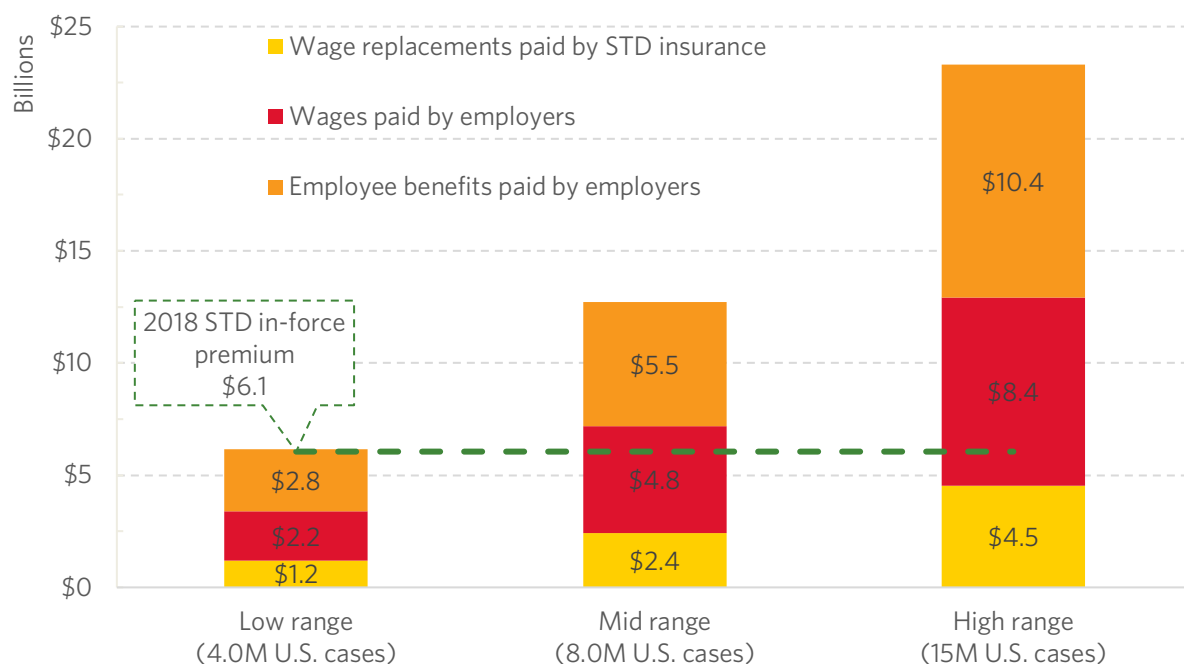
For context, the 2018 STD in-force premiums collected by disability insurance carriers (\$6.1 billion) are also reported.^{viii}

Lost work time payments for employee coronavirus cases are \$6.1 billion in the low-range scenario, \$12.7 billion in the mid-range scenario, and \$23.3 billion in the high-range scenario.

STD wage replacements in the low-, mid- and high-range scenarios represent 20%, 40%, and 75% of 2018 in-force premiums, respectively.

While not shown in Figure 2, IBI's Full Cost Estimator (FCE) model^{ix} estimates about \$97 billion in payments for sick days and STD claims among U.S. employees in 2018. This suggests that payments for coronavirus cases represent an increase between 6% to 24% of the "pre-pandemic" lost work time experience.

Figure 2: Estimated payments for employee coronavirus cases (billions)



Note on Figure 2: Wages paid by employers include paid sick days, the elimination period of STD claims, and emergency sick leave enacted by the FFCRA.

Discussion

As of March 31, 2020, there were more than 188,000 diagnosed coronavirus cases^x in the U.S., with confirmed cases increasing by an average of 30% per day since the steepest uptick began on March 17, 2020. At that rate, without significant successful efforts to slow or stop the rate of transmission,^{xi} the U.S. would diagnose its 4 millionth coronavirus case around mid-April 2020.

This analysis suggests that employers and disability insurance carriers will bear substantial lost work time costs due to diagnosed coronavirus cases among U.S. employees. The estimates represent between 10% to 20% of the coronavirus testing and treatment costs reported by Covered California under similar scenarios. It bears noting that the full lost work time costs associated with the response to coronavirus—including paid family leave for parents of children whose schools are closed, absences due to quarantines, isolation orders and undiagnosed

conditions with coronavirus symptoms—are beyond the scope of this analysis. Thus, the findings represent a very conservative estimate of coronavirus-related lost work time costs.

EMPLOYER GUIDANCE

Public health agencies such as the Centers for Disease Control and Prevention ([CDC](#))^{xii} and the World Health Organization ([WHO](#))^{xiii} have issued guidance for employers to help curb the transmission of COVID-19. IBI has also organized [guidance from healthcare and absence management professionals](#) on how employers can best manage the day-to-day practicalities of business continuity while simultaneously processing sick day, leave and time off requests under unprecedented circumstances.^{xiv} Guidance areas include:

- Managing different types of leaves during times of uncertainty
- Care resources for employees with chronic illnesses
- Coping with Mental health issues/stress
- Readiness to resume business operations

Employers have also used the [IBIBridge online networking platform](#) to connect with each other and exchange information about their companies' COVID-19 experiences, strategies, and questions.^{xv}

ⁱ Covered California, The Potential National Health Cost Impacts to Consumers, Employers and Insurers Due to the Coronavirus (COVID-19), March 22, 2020. <https://www.coveredca.com/newsroom/news-releases/2020/03/24/covered-california-releases-the-first-national-projection-of-the-coronavirus-covid-19-pandemics-cost/>

ⁱⁱ <https://www.nber.org/papers/w26882>; <https://www.nber.org/papers/w26866>

ⁱⁱⁱ Covered California, op. cit. i.

^{iv} Integrated Benefits Institute (IBI), Disability and Leave Benchmarking database, Accessed March 26, 2020. <https://www.ibiweb.org/benchmarking/>

^v Public Law No: 116-127 (03/18/2020), Families First Coronavirus Response Act, <https://www.congress.gov/bill/116th-congress/house-bill/6201>

^{vi} IBI, op. cit. iv.

^{vii} IBI, op. cit. iv.

^{viii} Milliman, June 2019, Summary of key results from 2018 U.S. Group Disability Market Survey, <https://www.milliman.com/insight/summary-of-key-results-from-2018-us-group-disability-market-survey>

^{ix} Integrated Benefits Institute (IBI), Full Cost Estimator (IBI), accessed March 26, 2020. Integrated Benefits Institute (IBI). <https://www.ibiweb.org/full-cost-estimator/>

^x Johns Hopkins University Center for Systems Science and Engineering (CSSE), Accessed March 26, 2020. <https://www.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>

^{xi} Pei, S. and J. Shaman. [Initial Simulation of SARS-CoV2 Spread and Intervention Effects in the Continental US](#). medRxiv, 40303, doi:10.1101/2020.03.21.20040303.

^{xii} U.S. Centers for Diseases Control and Prevention (CDC), Interim Guidance for Businesses and Employers to Plan and Respond to Coronavirus Disease 2019 (COVID-19), March 22, 2020, accessed April 3, 2020. <https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-business-response.html>

^{xiii} World Health Organization (WHO), Getting your workplace ready for COVID-19, March 3, 2020, accessed April 3, 2020. <https://www.who.int/docs/default-source/coronaviruse/getting-workplace-ready-for-covid-19.pdf>

^{xiv} Integrated Benefits Institute, Managing Health and Productivity in the Age of Coronavirus: The Professional Healthcare, Wellbeing and Absence Management View, accessed April 3, 2020. <https://www.ibiweb.org/managing-health-and-productivity-in-the-age-of-coronavirus-the-professional-healthcare-wellbeing-and-absence-management-view/>

^{xv} Integrated Benefits Institute, IBIBridge, accessed April 3, 2020. <https://www.ibiweb.org/ibibridge/>

Appendix: Key model assumptions

POPULATION ASSUMPTIONS

- Case estimates reflect figures used by the Covered California analysis of healthcare costs.^{xvi}
- The likelihood of contracting COVID-19 is the same regardless of employment status—that is, coronavirus cases among employed persons will reflect the distribution of employees in small firms^{xvii} (<500 employees) and large firms (500+ employees).
- All coronavirus cases will require lost workdays equal to the weighted average disability STD durations for influenza (21.1 days), pneumonia (30.7 days) and acute and chronic respiratory failure (75.4) diagnoses ($\times \frac{5}{7}$ to reflect a 5-day work week).^{xviii} Based on the distribution of coronavirus cases by severity^{xix}, we assume that cases requiring a stay in an intensive care unit will account for about 8% of all coronavirus cases, and have lost work time similar to respiratory failure STD claims. Hospitalization cases (26% of the all cases) will have lost work time similar to pneumonia claims, and all other cases will have lost work time similar to influenza claims.

PAID SICK DAYS ASSUMPTIONS

- Company paid sick days are the weighted average of sick days among employees with and without coverage.^{xx} In 2019, 76% of the civilian labor force had access to paid sick days, for an average of 8 days. The weighted total is 6.1 days.
- Sick days authorized by the FFCRA for employees at small firms are the difference between 10 authorized days and company paid sick days.^{xxi}

STD ASSUMPTIONS

- Coverage for STD benefits among coronavirus cases will reflect participation in benefits among employees in small and large firms.^{xxii}
- Elimination period (EP) for STD claims is 5 paid lost workdays (i.e., 1 week $\times \frac{5}{7}$ to reflect a 5-day work week)
- STD policies will incur an average of 17 paid lost workdays after the EP, based on average disability calendar durations for influenza and pneumonia diagnoses.^{xxiii} Paid lost workdays are the difference between the total calendar duration $\times \frac{5}{7}$ (to reflect a 5-day work week) and the 5 day elimination period.

COMPENSATION ASSUMPTIONS

- Average daily wages are \$200.^{xxiv}
- Average daily benefits are \$92.^{xxv}
- Employees receive full wages and benefits for each company paid sick day, and each day of an STD EP.
- Employees eligible for paid sick days under FFCRA are paid full wages and benefits for the difference between 10 days and company paid sick days.
- Employees with STD coverage are paid wages at the average replacement rate of 62%, plus benefits.^{xxvi} Employees eligible for both STD and FFCRA are paid the difference between normal pay and the wage replacement rate (i.e., 38%) for the difference between 10 days and the elimination period.

- Benefits are paid for each day of absence even if wages or wage replacements are not.

PAYMENTS PER CASE

Table 1 shows the distribution of days and payments for each coronavirus case

Table 1: Lost workdays and payments per employee coronavirus case

	Lost workdays			Payments				Total per case
	Paid sick	STD /FFCRA	Unpaid	Sick days	STD wages	FFCRA wages	Benefits	
At large firms								
With STD coverage	5.0	15.0	0.0	\$1,000	\$1,860	\$0	\$1,840	\$4,700
Without STD coverage	6.1	0.0	13.9	\$1,216	\$0	\$0	\$1,840	\$3,056
At small firms - Post 3/31/2020								
With STD coverage	5.0	15.0	0.0	\$1,000	\$1,860	\$380	\$1,840	\$5,080
Without STD coverage	6.1	3.9	10.0	\$1,216	\$0	\$784	\$1,840	\$3,840
At small firms - Pre 4/1/2020								
With STD coverage	5.0	15.0	0.0	\$1,000	\$1,860	\$0	\$1,840	\$4,700
Without STD coverage	6.1	0.0	13.9	\$1,216	\$0	\$0	\$1,840	\$3,056

^{xvi} Covered California, op. cit. i.

^{xvii} U.S. Bureau of Labor Statistics (BLS), Business Employment Dynamics, <https://www.bls.gov/bdm/bdmfirmsize.htm#SIZE1>, accessed March 27, 2020.

^{xviii} IBI, op. cit. iv.

^{xix} Severe Outcomes Among Patients with Coronavirus Disease 2019 (COVID-19) — United States, February 12–March 16, 2020. MMWR Morb Mortal Wkly Rep 2020;69:343-346. DOI: <http://dx.doi.org/10.15585/mmwr.mm6912e2>

^{xx} BLS, Employee Benefits Survey (EBS) 2019, https://www.bls.gov/ncs/ebs/benefits/2019/benefits_leave.htm, accessed March 27, 2020.

^{xxi} U.S. Department of Labor, Wage and Hour Division, <https://www.dol.gov/agencies/whd/pandemic/ffcra-questions>, Accessed March 31, 2020.

^{xxii} BLS, National Compensation Survey, https://www.bls.gov/ncs/ebs/benefits/2019/benefits_tab.htm#tabs-3, accessed March 27, 2020

^{xxiii} IBI, op. cit. iv.

^{xxiv} BLS, Occupation and Employment Statistics, <https://www.bls.gov/oes/>, accessed March 27, 2020.

^{xxv} BLS, EBS 2019, https://www.bls.gov/ncs/ebs/benefits/2019/benefits_life.htm, accessed March 27, 2020.

^{xxvi} BLS op. cit., xviii.



About IBI

Founded in 1995, the Integrated Benefits Institute (IBI) is a national, nonprofit research and educational organization focused on workforce health and productivity. IBI provides data, research, tools and engagement opportunities to help business leaders make sound investments in their employees' health. IBI is supported by more than 1,200 member companies representing over 20 million workers.

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