



# Protecting health during COVID-19 and beyond: A global examination of paid sick leave design in 193 countries\*

Jody Heymann , Amy Raub, Willetta Waisath, Michael McCormack, Ross Weistroffer, Gonzalo Moreno, Elizabeth Wong and Alison Earle 

WORLD Policy Analysis Center, University of California, Los Angeles (UCLA), Los Angeles, CA, USA

## ABSTRACT

Well-designed paid sick leave is critical to ensure workers stay home when sick to prevent the spread of SARS-CoV-2 and other infectious pathogens, both when the economy is open and during an economic shutdown. To assess whether paid sick leave is available in countries around the world, we created and analysed a database of legislative guarantees of paid leave for personal illness in 193 UN member states. Original labour and social security legislation and global information on social security systems for each country were obtained and analysed by a multilingual research team using a common coding framework. While strong models exist across low- middle- and high-income countries, critical gaps that jeopardise health and economic security remain. 27% of countries do not guarantee paid sick leave from the first day of illness, essential to encouraging workers to stay home when they are sick and prevent spread. 58% of countries do not have explicit provisions to ensure self-employed and gig economy workers have access to paid sick leave benefits. Comprehensive paid sick leave policies that cover all workers are urgently needed if we are to reduce the spread of COVID-19, and be ready to respond to threats from new pathogens.

## ARTICLE HISTORY

Received 22 April 2020  
Accepted 29 April 2020

## KEYWORDS

COVID-19; infectious disease spread; paid sick leave; global policy analysis; workplace

## Main text Introduction

### *Paid sick leave when the economy is open*

Every major public health agency recommends staying home when sick with an infectious disease (World Health Organization, 2020; U.S. Center for Disease Control and Prevention, 2019). This remains one of the best ways to reduce spread of any respiratory infection (Barrios et al., 2012). When workers have paid sick days, they can afford to stay home as advised (Piper et al., 2017). However, when workers lack paid sick leave, they often need to make untenable choices between going to work sick and being able to afford the basic necessities for themselves and their families (Heymann, 2000; Heymann, 2006).

The data bears out the important role paid sick leave plays in reducing the likelihood of employees going to work when they're sick (DeRigne et al., 2016; Piper et al., 2017; Schneider, 2020). Studies have found that workers who lack paid sick leave are 1.5 times more likely to go to work contagious (Smith & Kim, 2010) and less likely to see a health care provider when sick (Cordoba & Aiello, 2016). Moreover, research has also borne out the effectiveness of paid sick leave in reducing community spread of respiratory illness (Kumar et al., 2012; Zhai et al., 2018) and annual influenza rates

**CONTACT** Jody Heymann  Jody.heyman@ph.ucla.edu  WORLD Policy Analysis Center, University of California, Los Angeles (UCLA), 621 Charles E Young Dr S, LSB 2218, Los Angeles, CA 90095, USA

\*All authors are affiliated with the WORLD Policy Analysis Center at the University of California, Los Angeles (UCLA).

(Kumar et al., 2013; Pichler & Ziebarth, 2017). The ability to stay home when sick reduces the spread of respiratory and other infectious illnesses to coworkers (Drago & Miller, 2010) thereby reducing productivity losses (Abay Asfaw et al., 2017), and decreasing the risk of spreading illness to customers and clients (Hsuan et al., 2017). Paid sick leave also reduces the number of children sent to childcare and school when sick, which further reduces disease spread across communities (Kamper-Jørgensen et al., 2006; Neilson & Stanfors, 2018).

### ***Sick leave during a shutdown***

The availability of paid sick leave matters not only when the economy is open but also during a shutdown. Around the world, while the nature of economic shutdowns in response to coronavirus disease 2019 (COVID-19) have varied, the vast majority of grocery stores and pharmacies have remained open, as did other essential services (Blavatnik School of Government, 2020). It is critically important that employees in each of these sectors also have paid sick leave to encourage staying home from work at the first sign of symptoms, getting tested, and self-quarantining when necessary. As essential workers come into frequent contact with the public, paid sick leave will matter both to employee health and infectious disease spread (Hsuan et al., 2017).

### ***This study***

In this study, we examine the availability of paid sick leave in every country around the world. We examine key aspects that are critically important during the COVID-19 pandemic and will continue to be important in any future outbreaks. These include: Is paid sick leave available from the first day of illness? Is paid sick leave of adequate duration and wage replacement rate to cover the length of time needed for individuals to self-quarantine given the particular dynamic of COVID-19, as well as to take care of lengthy illnesses? How is paid sick leave provided? Are small businesses covered? Is paid sick leave guaranteed to the increasing share of workers engaged in non-standard employment, including self-employed and part-time workers?

## **Methods**

### ***Data sources***

To assess whether paid sick leave is available in countries around the world to respond to the COVID-19 pandemic and future outbreaks, we created and analysed a database of legislative guarantees of paid leave for personal illness in 193 UN member states. Original labour and social security legislation and global information on social security systems for each country were primarily obtained from the International Labour Organization (ILO)'s NATLEX database (International Labour Organization, 2019), supplemented with information from Social Security Programs Throughout the World (Social Security Administration, 2020), the Mutual Information System on Social Protection (MISSOC, 2020), and the Mutual Information System on Social Protection of the Council of Europe (Council of Europe, 2020).

Countries were systematically assessed by a multilingual research team using a common coding framework. To ensure coding quality and consistency, for each country, two researchers read legislation or secondary sources independently and answered questions about policy features, such as duration, wage replacement rate, and tenure requirements; the coders then reconciled any existing differences. Additional quality checks were conducted once the database was completed.

The data used in this study reflects national-level legislation on employer-provided paid sick days and social security-provided paid medical leave for the private sector. When paid sick leave policies varied subnationally, the lowest level of guaranteed paid sick leave was coded. Paid sick leave guaranteed by collective bargaining was only included when it broadly applied to the private sector. Data

reflects long-term policies in place as of March 2019 and does not reflect temporary policy changes in response to COVID-19.

## **Variables**

### ***Leave from first day of illness***

For availability of leave from first day of illness, we examined whether countries impose unpaid waiting periods before workers are able to claim paid sick leave benefits. For purposes of this variable, countries that waive waiting periods for longer illnesses were still considered to have a waiting period because workers do not necessarily know from the onset of symptoms how long they will be sick.

### ***Duration of leave available and wage replacement rates***

Length of leave was calculated based on a five-day work week unless legislation suggested a six-day work week or calendar days, and did not include extensions to leave only available in cases of hospitalisation. To assess whether workers have access to a sufficient duration of paid sick leave at an adequate wage replacement rate to respond to COVID-19, we separately calculated the length of leave available for workers at 1, 6 months, 1, and 5 years of tenure. Contribution requirements that required a minimum number of contributions while employed within a specific time period prior to being eligible for benefits were also included. If legislation did not explicitly state a tenure or contribution requirement or that workers accrue paid leave over time, we assumed general leave entitlements were available to all workers regardless of seniority. For each worker tenure listed above, we also calculated the average wage replacement rate a worker would receive during the second week of illness, taking into account any unpaid waiting period days or expiration of benefits.

### ***Employer and social security roles***

We separately captured whether leave benefits were provided by employers, social security, or a combination of both. We categorised benefits as being provided by both employers and social security if employers were required to supplement benefit levels paid by social security, employers paid for a portion of leave before benefits from social security began, or employers are required to pay benefits when workers do not meet contribution requirements to access paid leave benefits in the social security system. When sick leave was generally provided by employers, but there were government programmes in place to cover benefits for a subset of workers, such as the self-employed, we coded sick leave as being provided by employers.

### ***Coverage of small businesses, self-employed, and part-time workers***

To assess whether all workers were guaranteed access to paid leave, we examined whether coverage extended regardless of business size, self-employment status, or hours of work. To assess guarantees available to self-employed workers, we analysed whether or not social security legislation explicitly outlined coverage for self-employed workers either as part of the main social security sickness benefit or a separate programme. Both mandatory and voluntary coverage were included.

For part-time workers, legislation was reviewed for explicit inclusion of part-time workers in paid leave benefits provided by employers and/or social security. Eligibility was assessed using the definition of part-time work in relation to full-time work as defined in national labour legislation (e.g. 50% of full time). Countries were categorised as guaranteeing benefits to part-time workers working less than 25% of full time if they explicitly included workers working less than 25% or if they (1) did not define a minimum threshold for part-time work, (2) defined part-time work in terms of a maximum number of hours, or (3) defined part-time work as ‘less than full-time’ (Table 1).

**Table 1.** Description of variables in paper.

Variable	Description	Example coding (Cabo Verde)
Leave from first day of illness	Whether there is an unpaid waiting period to receive benefits	Yes – paid from first day (No waiting period mentioned)
Duration of leave	Duration of paid sick leave by worker tenure	6 weeks or more (90 days of paid sick leave for workers with less than 4 months of social security contributions. Up to 3 years of paid sick leave through social security once contribution requirements met.)
Wage replacement rate	Payment level of paid sick leave as a percentage of wages in week two	80–100% of wages (Fully paid in week two. For workers with at least four months of social security contributions, social security pays 70% and employer pays 30%. Otherwise, employer pays full benefits.)
Provision of paid sick leave	During the first six weeks of paid leave, responsibility for provision	Employer and social security (Employers pay for first three days of leave in full. Then employers and social security share responsibility for providing paid leave.)
Self-employed workers access	Whether or not labour and/or social security law explicitly guarantee (or deny) access to paid sick leave to self-employed workers	Self-employed workers guaranteed national paid sick leave (Self-employed workers are included in social security through a specific law and are required to contribute.)
Part-time workers access	Whether or not labour and/or social security law explicitly guarantee (or deny) access to paid sick leave to part-time workers employed at various proportions of full-time work	Guaranteed to part-time workers working less than 25% of full time (Part-time workers are defined as those working less than full time and are guaranteed all rights in the labour code that are extended to full-time workers.)

## Analysis

Differences were assessed by country income group using Pearson's chi-square statistics to address questions of feasibility of guaranteeing workers access to paid sick leave in different settings. Country income level was categorised according to the World Bank's country and lending groups as of 2019. McNemar's chi-square test was used to assess differences in the duration and payment level of paid sick leave across worker tenure to address whether workers who had recently changed jobs were equally well covered as workers with longer tenures. In most countries, whether leave was available from the first day of illness and who provides leave did not vary by worker tenure. All analyses were conducted in Stata 14.

## Results

### *Paid leave from first day of illness*

Nearly three quarters of countries (73%) globally made paid sick leave available for those in the formal economy from the first day of illness, supporting workers' ability to stay home at the first sign of illness. Nearly all (93%) low-income countries guaranteed paid leave from the first day compared to 78% of middle-income countries ( $p < 0.1$ ) and 55% of high-income countries ( $p < 0.001$ ) (Table 2).

**Table 2.** Are workers entitled to paid sick leave from the first day of illness?

	Low-income countries (N = 29)	Middle-income countries (N = 101)	High-income countries (N = 58)	Total (N = 188)
No, none	1 (3%)	7 (7%)	3 (5%)	11 (6%)
No – paid leave, but not from first day	1 (3%)	15 (15%)	23 (40%)	39 (21%)
Yes, paid from first day	27 (93%)	79 (78%)	32 (55%)	138 (73%)

Note: Mozambique makes paid leave available from the first day in the case of 'contagious disease.'

**Table 3.** Duration of paid leave workers have access to by how long they have worked for their employer and country income level.

	By worker tenure				By country income level for workers with 1 year tenure		
	1 month tenure (N = 185)	6 months tenure (N = 185)	1 year tenure (N = 185)	5 years tenure (N = 185)	Low-income (N = 28)	Middle-income (N = 99)	High-income (N = 58)
No paid sick leave	67 (36%)	18 (10%)	12 (6%)	11 (6%)	1 (4%)	7 (7%)	4 (7%)
Less than 2 weeks	7 (4%)	5 (3%)	2 (1%)	1 (1%)	0 (0%)	2 (2%)	0 (0%)
2–5.9 weeks	18 (10%)	30 (16%)	27 (15%)	21 (11%)	6 (21%)	16 (16%)	5 (9%)
6 weeks or more	87 (47%)	127 (69%)	140 (76%)	148 (80%)	19 (68%)	72 (73%)	49 (84%)
Varies by worker type	6 (3%)	5 (3%)	4 (2%)	4 (2%)	2 (7%)	2 (2%)	0 (0%)

### Duration of paid sick leave available

Nearly all countries guaranteed workers who have worked a year or longer at least two weeks of paid sick leave (91% for workers with one or five years of tenure), compared to only 57% of countries when individuals have worked only one month for an employer ( $p < 0.001$ ). A small minority of countries (2–3% depending on tenure) made the duration of benefits dependent on type of worker, such as whether a worker is a supervisor or hourly employee. Access to at least six weeks of paid leave also differed greatly for workers with only one month of tenure (47%) compared to those with lengthier (76% of those with one year of tenure, 80% of those with five or more years,  $p < 0.001$ ).

Fewer low-income countries guaranteed at least six weeks leave (68%) compared to high-income (84%,  $p < 0.1$ ) countries (Table 3).

### Adequate wage replacement rate

Only 51% of countries guaranteed workers with six months tenure at least 80% wage replacement rates with slightly more guaranteeing them to workers with at least one year of tenure. Low wage replacement rates may create barriers to taking leave for low-income workers. Even fewer (35%,  $p < 0.001$ ) guaranteed at least 80% of wages to workers with only a month of tenure (Table 4).

**Table 4.** Wage replacement rate during week 2 of paid sick leave by worker tenure and country income level.

	By worker tenure				By country income level for workers with 1 year tenure		
	1 month tenure (N = 185)	6 months tenure (N = 184)	1 year tenure (N = 184)	5 years tenure (N = 184)	Low-income (N = 29)	Middle-income (N = 97)	High-income (N = 58)
No paid sick leave	75 (41%)	22 (12%)	14 (8%)	12 (7%)	1 (3%)	9 (9%)	4 (7%)
Flat rate benefit	2 (1%)	2 (1%)	2 (1%)	3 (2%)	0 (0%)	0 (0%)	2 (3%)
Less than 60% of wages	13 (7%)	21 (11%)	18 (10%)	16 (9%)	2 (7%)	9 (9%)	7 (12%)
60–79% of wages	25 (14%)	43 (23%)	45 (24%)	44 (24%)	5 (17%)	26 (27%)	14 (24%)
80–100% of wages	65 (35%)	93 (51%)	102 (55%)	106 (58%)	18 (62%)	53 (55%)	31 (53%)
Varies by worker type	5 (3%)	3 (2%)	3 (2%)	3 (2%)	3 (10%)	0 (0%)	0 (0%)

**Table 5.** Who provides paid sick leave during the first six weeks of illness?

	Low-income countries (N=29)	Middle-income countries (N=99)	High-income countries (N=58)	Total (N=186)
No paid sick leave	1 (3%)	7 (7%)	3 (5%)	11 (6%)
Employer only	25 (86%)	43 (43%)	18 (31%)	86 (46%)
Social security only	3 (10%)	21 (21%)	16 (28%)	40 (22%)
Employer and social security	0 (0%)	28 (28%)	21 (36%)	49 (26%)

Differences in pay and reimbursement varied slightly, but were not statistically significant, across income levels, with 62% of low-income countries, 55% of middle-income countries, and 52% of high-income countries guaranteeing at least 80% of wages.

### Provision of paid sick leave

More than a quarter of countries (26%) provided paid leave benefits during the first six weeks of illness solely through social security and an additional 22% shared the responsibility between employers and government. However, in nearly half of countries (46%), paid sick leave was provided solely by employers, placing the burden of providing income support solely on employers. Low-income countries were more likely than middle-income or high-income countries to rely solely on employers for paid leave benefits (86% compared to 43%,  $p < 0.001$  and 31%,  $p < 0.001$  respectively) (Table 5).

### Coverage of small businesses and self-employed workers

No country excluded workers from paid sick leave benefits based solely on size of enterprise. Nearly half of countries (42%) included explicit provisions to provide paid sick leave benefits to self-employed workers. High-income countries were more likely to guarantee paid sick leave to self-employed workers than low- or middle-income countries (67% compared to 7%,  $p < 0.001$  and 38%,  $p < 0.01$  respectively) (Table 6).

### Coverage of part-time workers

Only a third of countries globally explicitly included part-time workers in access to paid sick leave. High-income countries were more likely to guarantee paid sick leave to part-time workers. Overall, 46% of high-income countries guaranteed paid sick leave to part-time workers. In the majority of cases, that included those working less than 25% of full time. In comparison, 31% of middle-income countries ( $p < 0.1$ ) and 23% of low-income countries ( $p < 0.1$ ) explicitly guaranteed paid sick leave to part-time workers (Table 7).

**Table 6.** Do countries guarantee self-employed workers access to paid sick leave?

	Low-income countries (N = 28)	Middle-income countries (N = 102)	High-income countries (N = 57)	Total (N = 187)
No national paid sick leave guaranteed for any workers	1 (4%)	7 (7%)	3 (5%)	11 (6%)
National sick leave, but not for self-employed workers	25 (89%)	41 (40%)	12 (21%)	78 (42%)
Self-employed workers guaranteed national paid sick leave	2 (7%)	39 (38%)	38 (67%)	79 (42%)
Not specified in law	0 (0%)	15 (15%)	4 (7%)	19 (10%)

**Table 7.** Do countries guarantee part-time workers access to paid sick leave?

	Low-income countries (N = 29)	Middle-income countries (N = 102)	High-income countries (N = 55)	Total (N = 186)
No national paid sick leave guaranteed for part-time workers	1 (3%)	7 (7%)	4 (7%)	12 (6%)
Guaranteed to part-time workers working at least 50% of full time	1 (3%)	1 (1%)	1 (2%)	3 (2%)
Guaranteed to part-time workers working 25-49% of full time	3 (10%)	4 (4%)	1 (2%)	8 (4%)
Guaranteed to part-time workers working less than 25% of full time	3 (10%)	27 (26%)	23 (42%)	53 (28%)
<i>Not specified in law**</i>	21 (73%)	63 (62%)	26 (47%)	110 (59%)

## Discussion

More than a quarter of the world's countries do not offer paid sick leave from the first day of illness. This includes some of the countries which were hardest hit early in the global pandemic and have faced overwhelmed health care systems and large loss of life, including Italy, Iran, and the United States (Devex, 2020; World Health Organization, 2020). There are also substantial gaps in coverage for workers who have recently started a new job (36% of countries), self-employed workers (58%), and part-time workers (65%). Lack of coverage for these workers may be especially critical for reducing spread as workforces shift to meet increasing demands on grocery stores and delivery services. While the absence of adequate sick leave is only one factor affecting spread, it is an important one which can be readily addressed in a way that also reduces the economic impacts of the pandemic by limiting productivity losses, turnover, presenteeism, and overall absenteeism (Lindemann & Britton, 2015; Hill, 2013; Baughman et al., 2003; Stearns & White, 2018).

The COVID-19 pandemic is likely to be with us across countries for 12–24 months and a range of countries have temporarily strengthened paid sick leave policies to respond to the threat. For example, the government in El Salvador has provided 30 days of paid sick leave for workers at higher risk of infection who are required to quarantine themselves. Chile recently extended paid leave for all workers who due to the COVID-19 crisis must remain at home and are not able to work remotely. Saudi Arabia instituted special paid sick leave for quarantined workers that entered the country from abroad. Trinidad and Tobago recently introduced a pandemic leave that is available to government workers that are ineligible for sick leave including fixed-term contract employees, short term contract employees, and workers in on-the-job training. Still others have increased benefit levels. For example, Uzbekistan increased the wage replacement rate for paid sick leave from 60-80% to 100% for the full duration of the quarantine while Russia increased the minimum benefit level for sick leave pay to the national minimum wage until the end of 2020. Other responses include waiving waiting periods (e.g. Canada, Finland, and Portugal) (Gentilini, 2020).

However, temporary changes to paid sick leave are not enough to ensure countries are prepared for the next pandemic. There have been five serious threats in less than 20 years, including SARS emerging in 2002, H1N1 in 2009, MERS in 2012, Ebola in 2013, and now COVID-19. There are likely to be new emerging respiratory and other infectious diseases in the coming years (Carroll et al., 2018). Slowing the spread of all future infectious diseases gives our society more time to effectively respond to these unknown threats.

The economic cost of providing paid sick leave are modest compared to the economic costs of a pandemic, particularly once the more rapid spread of disease caused by workers going to work sick is factored in. For example, a study from South Korea estimated that H1N1 cost the country US\$1.58 billion (Suh et al., 2013) and in Chile, the H1N1 outbreak resulted in 117,600 lost work days in just two months of 2009 (Duarte et al., 2017). Ebola reduced combined GDP in Sierra Leone, Guinea, and Liberia by 5 percent in 2014 (Thomas et al., 2015). Paid sick leave also creates economic benefits in

years without emerging infections. It is estimated that having a national paid sick leave policy would have saved the US economy up to \$2 billion from 2007 to 2014 (Abay Asfaw et al., 2017).

Moreover, at every country income level, models exist for providing paid sick leave for the majority of working adults beginning at the first day of illness and lasting the two weeks needed for self-quarantine, as well as the longer term needed to care for severe COVID-19 illness. These include approaches to extending coverage to workers who have recently started a new job, workers in small businesses, and those who are self-employed or working part-time. In many countries, leave is made more economically feasible when it is provided in full or in part by social security, spreading the financial contributions across employers, employees, and/or government.

## Conclusion

While there is no single solution which would eliminate the tension between the need to reduce the spread of infectious diseases and the need for human contact, both for essential services and for much of the economy to function, there are key policies which can benefit both. Well-designed paid sick leave is a central one.

There is an urgent need to pass comprehensive paid sick leave policies to cover all workers if we are to reduce the spread of COVID-19 during the current economic shutdowns and continue to reduce the spread when the economy reopens. The health and economic benefits of these policies would be felt not only during the current outbreak, but for years to come as new infections emerge and old infections return.

## Acknowledgements

Jody Heymann designed the study and analyses, oversaw data collection and analyses, interpreted the findings, and drafted the manuscript. Amy Raub co-designed the study and analyses, led the data collection and analysis, and co-drafted the manuscript. Willetta Waisath co-led the data collection and analysis. Alison Earle led and oversaw the literature review conducted with Michael McCormack and Elizabeth Wong. Michael McCormack, Gonzalo Moreno, and Ross Weistroffer collected the data. All authors reviewed the provided edits to the final manuscript.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

## Funding

We are grateful to the William and Flora Hewlett Foundation for supporting this work.

## ORCID

Jody Heymann  <http://orcid.org/0000-0003-0008-4198>

Alison Earle  <http://orcid.org/0000-0001-9177-8122>

## Data availability

The data will be made publicly available at <https://www.worldpolicycenter.org/maps-data/data-download>.

## References

Abay Asfaw, D., Rosa, R., & Pana-Cryan, R. (2017). Potential economic benefits of paid sick leave in reducing absenteeism related to the spread of influenza-like illness. *Journal of Occupational and Environmental Medicine*, 59(9), 822–829. <https://doi.org/10.1097/JOM.0000000000001076>

- Barrios, L. C., Koonin, L. M., Kohl, K. S., & Cetron, M. (2012). Selecting nonpharmaceutical strategies to minimize influenza spread: The 2009 influenza A (H1N1) pandemic and beyond. *Public Health Reports*, 127(6), 565–571. <https://doi.org/10.1177/003335491212700606>
- Baughman, R., DiNardi, D., & Holtz-Eakin, D. (2003). Productivity and wage effects of “family-friendly” fringe benefits. *International Journal of Manpower*, 24(3), 247–259.
- Carroll, D., Daszak, P., Wolfe, N. D., Gao, G. F., Morel, C. M., Morzaria, S., Pablos-Méndez, A., Tomori, O., & Mazet, J. A. (2018). The global virome project. *Science*, 359(6378), 872–874. <https://doi.org/10.1126/science.aap7463>
- Cordoba, E., & Aiello, A. E. (2016). Social determinants of influenza illness and outbreaks in the United States. *North Carolina Medical Journal*, 77(5), 341–345. <https://doi.org/10.18043/ncm.77.5.341>
- Coronavirus Disease (COVID-19) Advice for the Public. (2019). World Health Organization. Retrieved April 2, 2020 from, <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public>. Published 2020.
- COVID-19 — a timeline of the coronavirus outbreak. (2020). Devex. Retrieved April 8, 2020, from <https://www.devex.com/news/covid-19-a-timeline-of-the-coronavirus-outbreak-96396>
- DeRigne, L., Stoddard-Dare, P., & Quinn, L. (2016). Workers without paid sick leave less likely to take time off for illness or injury compared to those with paid sick leave. *Health Affairs*, 35(3), 520–527. <https://doi.org/10.1377/hlthaff.2015.0965>
- Drago, R., & Miller, K. (2010). *Sick at work: Infected employees in the workplace during the H1N1 pandemic*. Institute for Women’s Policy Research (B264).
- Duarte, F., Kadiyala, S., Masters, S. H., & Powell, D. (2017). The effect of the 2009 influenza pandemic on absence from work. *Health Economics*, 26(12), 1682–1695. <https://doi.org/10.1002/hec.3485>
- Gentilini, U. *Weekly social protection links – A newsletter on the latest research and practice from the world of social protection*. Retrieved April 2, 2020, from <http://www.ugogentilini.net/>
- Heymann, S. J. (2000). *The widening gap: Why America’s working families are in jeopardy and what can be done about it*. Basic Books.
- Heymann, S. J. (2006). *Forgotten families: Ending the growing crisis confronting children and working parents in the global economy*. Oxford University Press.
- Hill, H. D. (2013). Paid sick leave and job stability. *Work and Occupations*, 40(2), 143–173. <https://doi.org/10.1177/0730888413480893>
- Hsuan, C., Ryan-Ibarra, S., DeBurgh, K., & Jacobson, D. M. (2017). Association of paid sick leave laws with foodborne illness rates. *American Journal of Preventive Medicine*, 53(5), 609–615. <https://doi.org/10.1016/j.amepre.2017.06.029>
- Kamper-Jørgensen, M., Wohlfahrt, J., Simonsen, J., Grønbaek, M., & Benn, C. S. (2006). Population-based study of the impact of childcare attendance on hospitalizations for acute respiratory infections. *Pediatrics*, 118(4), 1439–1446. <https://doi.org/10.1542/peds.2006-0373>
- Kumar, S., Grefenstette, J. J., Galloway, D., Albert, S. M., & Burke, D. S. (2013). Policies to reduce influenza in the workplace: Impact assessments using an agent-based model. *American Journal of Public Health*, 103(8), 1406–1411. <https://doi.org/10.2105/AJPH.2013.301269>
- Kumar, S., Quinn, S. C., Kim, K. H., Daniel, L. H., & Freimuth, V. S. (2012). The impact of workplace policies and other social factors on self-reported influenza-like illness incidence during the 2009 H1N1 pandemic. *American Journal of Public Health*, 102(1), 134–140. <https://doi.org/10.2105/AJPH.2011.300307>
- Lindemann, D., & Britton, D. (2015). *Earned sick days in Jersey City: A study of employers and employees at year one*. Center for Women and Work Report.
- Missceo database. (2020). The Mutual Information System on Social Protection of the Council of Europe (MISSCEO). Retrieved March 2019, from <https://www.coe.int/en/web/european-social-charter/missceo-comparative-tables>
- Missoc database. (2020). Mutual Information System on Social Protection (MISSOC). Retrieved March 2019, from <https://www.missoc.org/missoc-database/>
- NATLEX: Database of national labour, social security and related human rights legislation. (2020). International Labour Organization. Retrieved March 2019, from <https://www.ilo.org/dyn/natlex/natlex4.home>
- Neilson, J., & Stanfors, M. (2018). Time alone or together? Trends and trade-offs among dual-earner couples, Sweden 1990–2010. *Journal of Marriage and Family*, 80(1), 80–98. <https://doi.org/10.1111/jomf.12414>
- Oxford COVID-19 government response tracker. (2020). Blavatnik School of Government. Retrieved April 7, 2020, from <https://www.bsg.ox.ac.uk/research/research-projects/oxford-covid-19-government-response-tracker>
- Pichler, S., & Ziebarth, N. R. (2017). The pros and cons of sick pay schemes: Testing for contagious presenteeism and noncontagious absenteeism behavior. *Journal of Public Economics*, 156, 14–33. <https://doi.org/10.1016/j.jpubeco.2017.07.003>
- Piper, K., Youk, A., James IIIA, E., & Kumar, S. (2017). Paid sick days and stay-at-home behavior for influenza. *PLoS One*, 12(2). <https://doi.org/10.1371/journal.pone.0170698>
- Schneider, D. (2020). Paid sick leave in Washington state: Evidence on employee outcomes, 2016–2018. *American Journal of Public Health*, 110(4), 499–504. <https://doi.org/10.2105/AJPH.2019.305481>
- Smith, T. W., & Kim, J. (2010). *Paid sick days: Attitudes and experiences*. NORC/University of Chicago.

- Social security programs throughout the world. (2020). Social Security Administration. Retrieved March 2019, from <https://www.ssa.gov/policy/docs/progdesc/ssptw/>
- Stay home when you are sick. (2019). U.S. Centers for Disease Control and Prevention. Retrieved April 14, 2020, from <https://www.cdc.gov/flu/business/stay-home-when-sick.htm>
- Stearns, J., & White, C. (2018). Can paid sick leave mandates reduce leave-taking? *Labour Economics*, 51, 227–246. <https://doi.org/10.1016/j.labeco.2018.01.002>
- Suh, M., Kang, D. R., Lee, D. H., Choi, Y. J., Tchoe, B., Nam, C. M., Kim, H. J., Lee, J. K., Jun, B. Y., Youm, Y., & Bae, G. N. (2013). Socioeconomic burden of influenza in the Republic of Korea, 2007–2010. *PLoS One*, 8(12), e84121. <https://doi.org/10.1371/journal.pone.0084121>
- Thomas, M. R., Smith, G., Ferreira, F. H., Evans, D., Maliszewska, M., Cruz, M., Himelein, K., & Over, M. (2015). The economic impact of Ebola on sub-Saharan Africa: updated estimates for 2015. Retrieved April 14, 2020, from <http://documents.worldbank.org/curated/en/541991468001792719/pdf/937210REVISIED000Jan02002015000FINAL.pdf>
- Zhai, Y., Santibanez, T. A., Kahn, K. E., Black, C. L., & de Perio, M. A. (2018). Paid sick leave benefits, influenza vaccination, and taking sick days due to influenza-like illness among U.S. Workers. *Vaccine*, 36(48), 7316–7323. <https://doi.org/10.1016/j.vaccine.2018.10.039>