NO. 161
DECEMBER 2020

ADB BRIEFS

Paid Sick Leave as a Tool for COVID-19 Control

Glenita Amoranto, Rana Hasan, Rouselle F. Lavado, and David Anthony Raitzer
Economic Research and Regional Cooperation Department, Asian Development Bank

KEY POINTS

- Paid sick leave (PSL) can help contain the spread of infectious diseases such as COVID-19, and protect workers from loss of income due to sickness.
  - Modeling finds that a PSL program in the Philippines that encourages symptomatic workers to self-isolate could reduce the overall mortality from COVID-19 by as much as 50%.
  - Econometric analysis finds that economies that provide PSL coupled with tracing further reduce the number of infections, with 10 infected individuals infecting 2 fewer other people on average.
- A new normal combining PSL with expanded contact tracing, testing, and isolation could control the COVID-19 epidemic.
- The costs—financial and administrative—of a special COVID-19-related PSL program are manageable, at a fraction of a percent of gross domestic product.

INTRODUCTION

First introduced as a key element of the social health insurance law passed in Germany in 1883, paid sick leave (PSL) is today a feature of most countries' social protection systems, albeit with varying degrees of generosity and coverage. The core function of PSL is to protect workers' incomes during an illness, preserve their employment relationship with employers, and protect their health (OECD 2020). However, PSL also has an additional function—one that is especially relevant in the context of a contagious pandemic such as the coronavirus disease (COVID-19)—as a tool for controlling the spread of infectious diseases.

The effect of PSL on the spread of infectious diseases, especially respiratory diseases such as influenza, has been well demonstrated in the scientific literature (Kim 2017). Workers without PSL are more likely to report for work when contagious (e.g., Smith and Kim 2010)—a phenomenon often referred to as contagious presenteeism—leading to a spread of disease among coworkers and others. Conversely, providing workers access to PSL has been shown to reduce the spread of contagious diseases (Pichler, Wen, and Ziebarth 2020; Pichler and Ziebarth 2017).

This brief considers the case for a special PSL program as part of measures undertaken by countries to suppress the transmission of COVID-19 under a "new normal." Unlike lockdowns that rely on measures such as workplace closures to suppress disease spread—and entail a high cost to economic activity and livelihoods—measures underlying the new normal rely on targeted incentives for behaviors that reduce disease spread. A key feature of such measures is that they do not entail significant costs to the economy.

The rest of the brief is organized as follows. It first describes some recent developments on PSL in the context of COVID-19. Subsequently, the brief turns to quantifying the benefits that a special PSL program entails in terms of controlling the spread of COVID-19.

The authors thank Liming Chen and Benedict Evangelista for their inputs; and Eduardo Banzon, Kelly Bird, Leonardo Lanzona, Michiel Van der Auwera, and Wendy Walker for the useful discussions on paid sick leave systems and their rollout.

ISBN 978-92-9262-598-6 (print)
ISBN 978-92-9262-599-3 (electronic)
ISSN 2071-7202 (print)
ISSN 2218-2675 (electronic)
Publication Stock No. BRF200394-2
DOI: http://dx.doi.org/10.22617/BRF200394-2

ADB

The brief then provides estimates of how much a PSL policy would cost in payouts to workers who need to take sick leave, using the case of the Philippines as an illustration.

PAID SICK LEAVE: STATUS AND RECENT DEVELOPMENTS

According to a global data set on PSL, 181 countries have national legislation requiring some form of PSL for workers (Heymann et al. 2020). Almost half require employers to be responsible for these benefits. For the rest, either social insurance programs (23%) or a combination of employers and social security programs (28%) are responsible. Not all workers are covered, however, in many countries. The self-employed and part-time workers are two groups often left out.

In response to COVID-19, around 55 countries including 14 developing countries are reported to have expanded their PSL benefits (Gentilini et al. 2020). The expansion of PSL benefits has taken many different forms. For example, Uzbekistan increased the wage replacement rate for the sick from 60%–80% (depending on a worker's employment history) to 100% for all workers for the duration of the quarantine period. This includes parents with children in quarantine. In addition, when both parents are working, one is offered paid leave outside their annual PSL allocation, for the duration of school closures. Sweden now allows workers to have sickness benefits from the first day of illness rather than the second day, with the state rather than employers covering the first day of sick leave. Fiji is funding 21 days of sick leave for employees who have tested positive for COVID-19 and are earning less than $30,000 while those in the informal sector are given a lump sum of $1,000.[1] The Cook Islands started a program where registered businesses can request self-isolation support for their employees amounting to minimum wage for 35 hours per week, for a maximum of 14 days. Support is also extended to registered self-employed individuals and sole traders.[2]

The expansion of the programs has been largely financed by governments. Yet, the forms of PSL payments vary, such as being made directly to employees (for example, through state social insurance agencies as in Malaysia and Sweden), or through employers (as in New Zealand and the United States [US]).

An examination of the features of expanded PSL programs helps identify expected elements of good design, especially if the purpose is to help contain the spread of COVID-19. First, eligibility for PSL needs to cover not only confirmed or presumed cases, but also those having COVID-19-like symptoms as they are potential disease carriers. Further, workers living with ill or symptomatic household members should be covered. The special PSL program introduced in the US as part of the government's response to COVID-19, for example, allows for caregiving for COVID-19 or a "substantially similar condition." Second, the duration of the PSL needs to take into account the dynamics of the disease and provide for self-isolation of up to 14 days from the start of symptoms.[3] Third, the payout needs to be set at levels that discourage presenteeism. Internationally, wage replacement rates seem to be 60% to 100% of salary. Fourth, a special effort is needed to cover workers who may not be part of an existing PSL structure, such as the self-employed and those employed in the informal sector. In New Zealand, for example, eligibility is open to all firms, the self-employed, and contractors. Finally, it is important to maintain flexibility in the design and delivery of PSL.

COVID-19 OUTCOMES WITH PAID SICK LEAVE

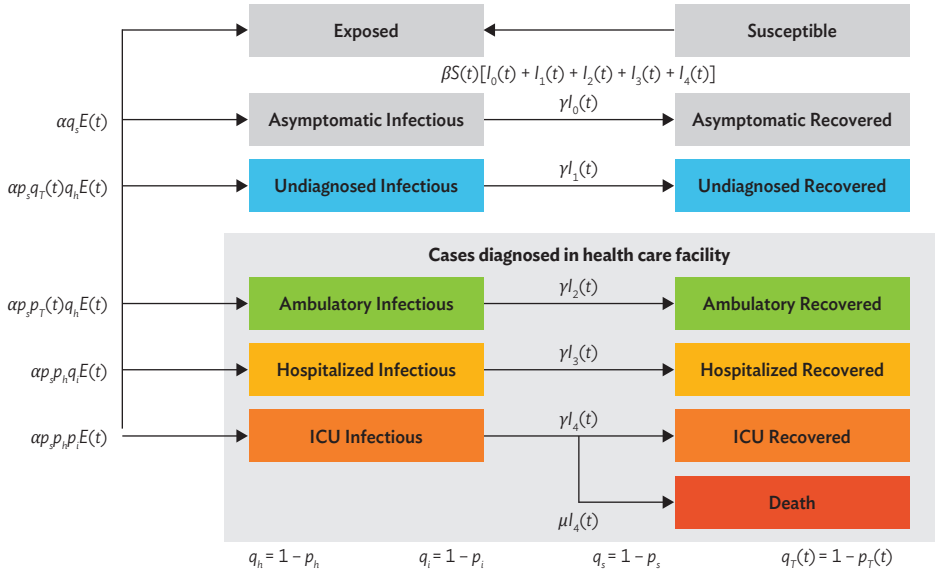
The Philippines is a relevant example when considering the role of PSL. The country has experienced the longest stringent lockdown in Asia to control COVID-19 (Hale et al. 2020), but the lockdown has slowed the outbreak, rather than achieved total suppression of spread. The country lacks widespread PSL coverage, but, like many other developing countries, has building blocks of existing programs that could be used to provide PSL more broadly.

The benefits of a special PSL program can be demonstrated using an age-structured susceptible, exposed, infected, and recovered (SEIR) model developed for the analysis of COVID-19 control policies for the Philippines (Figure 1).[4] This model explicitly reflects contacts between people in different age groups at home, in schools, in workplaces, and in other locations, and it draws upon many national data sets, including extensive occupational microdata, to project these patterns. It uses age patterns in modeled infection to consider varied severity of illness and treatment needed based on age. The model has been parameterized to replicate historical characteristics of COVID-19 hospitalizations and mortality by age during a reference period for which detailed data are available.

Within the model, there are several "compartments" of infected people—the subclinical/asymptomatic, the symptomatic/clinical but undiagnosed, the diagnosed/ambulatory, the hospitalized, and those needing intensive care unit (ICU) treatment. PSL is considered in the model as a modifier to the contact rates of workers who have symptoms but do not need hospitalization, with the largest reductions (50%) placed on work contacts and smaller reductions (25%) put on school and other contacts. This reflects that PSL will reduce disease transmission by symptomatic cases after the onset of symptoms and will avert some presymptomatic transmission because the policy would

1 KPMG. 2020. Fiji Government and Institution Measures in Response to COVID-19.
2 Government of the Cook Islands. Self Isolation Support.
3 While the onset and duration of viral shedding and the period of infectiousness for COVID-19 are not yet known, current literature indicates that the incubation period ranges from 2 days to 14 days (Centers for Disease Control and Prevention. Coronavirus Disease 2019 [COVID-19]), and COVID-19-infected individuals are contagious for up to 14 days.
4 This section draws on Raitzer et al. (2020).

Figure 1: Epidemiological Model Structure



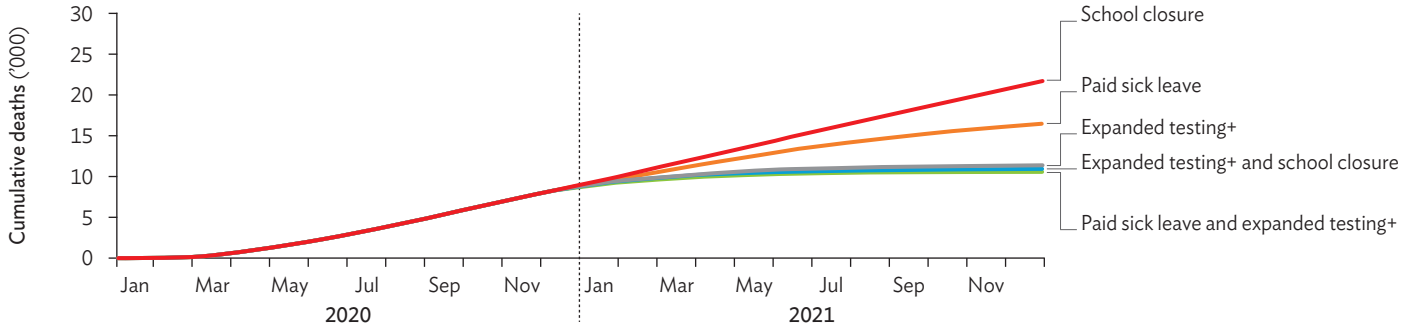
ICU = intensive care unit.
Source: Otamaru et al. (2020).

cover workers staying home to care for infected household members, so that contacts are also reduced during the incubation stage after intrahousehold infection. The PSL policy is modeled as covering 50% of the workforce.

Results indicate that overall mortality from COVID-19 can be potentially cut in half by the introduction of PSL alone, if PSL is the only measure maintained after current lockdowns expire.

In the presence of a "new normal" of minimum health standards, PSL can reduce mortality more than school closure, without sacrificing the future of tens of millions of children, with total modeled deaths through 2021 falling from 26,000 to 16,000. Combining PSL with expanded contact tracing, testing, and isolation, as well as the new normal could allow the COVID-19 epidemic to be kept under control, even as businesses and schools are allowed to open, with additional mortality beyond deaths to date kept limited (Figure 2).

Figure 2: Cumulative Mortality from COVID-19 Under Different Mitigation Scenarios Involving Minimum Health Standards with Paid Sick Leave, Expanded Testing, Tracing and Isolation, and School Closure in the Philippines



Notes: All scenarios were premised on "new normal" of minimum health standards post-community quarantine. School closure versus opening refers to 15 November 2020 through 30 April 2021. Expanded testing+ refers to contact tracing, testing, and isolation, leading 50% of cases to reduce transmission after diagnosis.
Source: ADB estimates as of early October 2020.

Paid Sick Leave and COVID-19 Spread: Cross-Country Regression Analysis[a]

The role of paid sick leave (PSL) in controlling the spread of COVID-19 is also examined using data from 75 economies and analyzing these using a cross-country regression framework. To measure COVID-19 spread, country-specific reproductive numbers, often referred to as R_t, reported by Abbott et al. (2020), are used. R_t describes the average number of individuals infected by an infectious person. Using R_t has several advantages when measuring the spread of COVID-19. Compared with other COVID-19 outcomes, such as daily or total cases or deaths, R_t is more comparable across economies since it accounts for population size and for various delays in reporting.

To capture whether a country provides PSL, information from the World Policy Analysis Center is used.[b] This data set contains information on PSL coverage, such as coverage by employment type and duration of leave allowed. If a country offers PSL (of any duration) and covers at least some self-employed and part-time workers, it is considered to offer PSL in the empirical model. Another specification with a stricter definition of PSL is also tested.

A number of other variables are also included in the analysis. These variables capture, among others, the nature of lockdowns (for example, workplace closures, bans on public gathering, etc.), the extent of contact tracing and mass testing, and the degree of physical mobility. Country fixed effects are employed to capture all time-invariant features of countries while a linear time trend is used to capture unobserved temporal features of COVID-19, and day of the week dummies capture effects of reporting variations over weekdays. In effect, the regression model employs a difference-in-differences approach, in which estimates are causal provided that the "parallel trends" assumption holds (i.e., that trends in R_t would be similar over time absent the evaluated measures). Only countries with more than 30 observations between January 2020 and June 2020 are included.

While the inclusion of country fixed effects means that the analysis cannot assess the independent effect of PSL on COVID-19 spread, effects are evaluated indirectly through interaction terms with time-variant variables. An important channel through which PSL is expected to influence COVID-19 is through the system of contact tracing, whereby people who have come in recent contact with a COVID-19 positive person are identified and requested to isolate. As a large share of COVID-19 cases involve mild symptoms (or even no symptoms, but are still infectious), a call for isolation is unlikely to be followed if doing so leads to a loss of income. Providing PSL can reduce such behavior and the negative externality associated with it by making contact tracing more effective.

The table below shows that contact tracing leads to 0.16 units of reduction in R_t. However, once this is interacted with the presence of PSL, the coefficient on tracing is no longer significant and its magnitude much smaller. On the other hand, the coefficient on the interaction term between tracing and PSL is negative and statistically significant at the 1% level (column 2). This suggests that it is the combination of PSL and tracing that drives reductions in R_t. On average, economies that provide PSL in addition to tracing experience a 0.21 unit of reduction in R_t compared with economies that only undertake tracing. In other words, an individual infected with COVID-19 on average infects 0.21 fewer other people.

The effect of the tracing–PSL combination is larger in the 41 developing economies in the sample, in which the labor force is less well insulated from income loss (columns 3 and 4). In column 5, a much stricter set of criteria is used to define PSL, and the results are found to be robust.

[a] This draws upon Chen et al. (2020).
[b] World Policy Analysis Center. Short-Term Paid Sick Leave Data.
Source: Chen et al. (2020).

Paid Sick Leave, Tracing, and R_t

	Full Sample	Full Sample	Developed	Developing	Strict PSL Definition
Variables	(1) R_t	(2) R_t	(3) R_t	(4) R_t	(5) R_t
Tracing	−.156*** (.0562)	−.0472 (.0636)	−.0782 (.0669)	−.0634 (.0731)	−.0813 (.0551)
Tracing x PSL		−.207*** (.0697)	−.150* (.0764)	−.258** (.104)	−.220*** (.0729)
Observations	6,639	6,639	3,157	3,482	6,639
Number of countries	75	75	34	41	75
R-squared	0.566	0.572	0.680	0.507	0.572
F statistic	33.242	34.866	107.936	57.032	33.615

PSL = paid sick leave.
Notes: Other variables in all regressions include stay-at-home mobility; interaction of mobility and household size; small and large gathering bans; school, workplace, and public transport closure; mask use; mass testing; maximum temperature; country dummies; day of week dummies; and time trend. In columns 1–4, PSL = 1 if the program offers some duration with positive replacement ratio and covers some part-time and self-employed workers. In column 5, PSL = 1 if the program offers at least 2 weeks of well-paid sick leave from the first day and guarantees coverage for part-time and self-employed workers. Robust standard errors clustered by country in parentheses. * = p<0.1, ** = p<0.05, *** = p<0.01.

COSTS OF A SPECIAL PAID SICK LEAVE POLICY FOR CONTROLLING COVID-19

Clearly, PSL incentivizes behaviors that can slow the COVID-19 epidemic. It is thus useful to consider the costs required to realize this effect. Continuing with the case of the Philippines, the total payout to workers who develop COVID-19 or similar symptoms is estimated using various data sources;[5] information on the expected incidence of COVID-19 and diseases that present similar symptoms (such as respiratory infections and influenza); and broad contours of the current PSL system in the Philippines.[6]

Specifically, the following steps are taken. First, as there are no available estimates of how many workers in the Philippines are covered by PSL (and its terms), information from the 2018 labor force survey on the employment characteristics of sample workers (such as type of employment and employer, type of contract, and mode of payment), is combined with information on membership in the Social Security System (SSS) and the Government Service Insurance System (GSIS)[7] to estimate the likely number of workers with access to employer-provided 15-day PSL with full pay (i.e., government employees and a small subset of private sector employees); workers with SSS membership entitling them to sickness benefits; and the remaining set of workers.[8]

Second, the number of workers who would likely avail of the special PSL benefit needs to be estimated. It includes not only workers who develop COVID-19, but also other diseases with similar symptoms. The results of the SEIR model discussed earlier are used to generate estimates of the number of workers likely to develop COVID-19.[9]

Regarding the incidence of diseases with COVID-19-like symptoms, data on incidence of acute respiratory infection and common colds, cough, and flu are derived from the Demographic and Health Survey (DHS) 2017.[10] Since workers would also need to take PSL when their family members develop COVID-19 or other diseases with similar symptoms, dependents are included in the estimate, with adjustments made to the incidence rates for the likelihood that household members fall sick on contiguous dates.

Third, the duration of PSL availed is assumed to be 15 days for those with COVID-19 infection and 9 days for those who have symptoms of other diseases. For the latter, 9 days of paid leave are considered sufficient for recovery and diagnosis to be made after the onset of symptoms. In this way, the PSL program is capped at 15 days per year. However, in the case of a serious confirmed COVID infection, the benefit could continue until recovery. The cap is useful for alleviating possible misuse and limiting potential outlays, while allowing enough flexibility to cover most cases.

Finally, the amount paid when on sick leave, also known as the wage replacement rate, needs to be calculated. Ideally, the pay received by those availing of PSL would be equivalent to their regular wage rate. However, this can pose problems such as encouraging moral hazard, i.e., encouraging workers to ignore prudent behavior on health matters and raising the probability of contracting a contagious disease; or even pure work shirking, i.e., claiming to be sick when well (and known as "absenteeism" in the literature). There is also the issue of keeping the fiscal costs of a special PSL policy manageable.

5 These include the Labor Force Survey 2018, annual reports from the SSS and GSIS, and the Demographic and Health Survey (DHS) 2017.

6 Key features of the current system of PSL in the Philippines are as follows. First, the government provides to its employees (including contractual workers) 15 days of PSL with full pay (Civil Service Commission 1998). The private corporate sector tends to follow similar sick leave policies. Second, there is a statutory annual "incentive leave" of 5 days for employees who have worked for 12 months; however, this is insufficient as a COVID-19 control tool. Third, SSS provides a daily sickness allowance benefit in addition to retirement, unemployment, and disability benefits. It covers a large set of workers (including the self-employed) and would need to play a critical role in providing expanded PSL benefits. In fact, it is the conduit for the wage subsidy provided under the Small Business Wage Subsidy program.

7 SSS. Facts and Figures as of September 2019; GSIS. Integrated Corporate Reporting System.

8 These steps yield estimates at the national level. To compute the numbers for more disaggregated geographic units (for example, urban areas and areas with varying levels of risk of contracting COVID-19) an extra step is required since only SSS and GSIS reports at the national level are accessible to us. Specifically, we use the DHS 2017 which uses SSS and GSIS membership for each working member of sample households to estimate the share of total members accounted by the geographic units of interest. Further, worker type can be approximated by the PhilHealth membership classification reported in the DHS.

9 The scenario used to calculate payout assumes that sustainable social distancing/minimum health standard is adhered to and 50% of workers and family members who exhibit COVID-19 and COVID-like symptoms are immediately isolated.

10 One difficulty with the data is that fever and cough are lumped together with common colds, which may be occurring frequently given that the DHS 2017 was conducted from August to October, considered to be flu season in the Philippines. We adjusted for possible overestimation of COVID-like cases by (i) assuming that the reporting period covers a quarter rather than 30 days, and (ii) allowing households to fall sick on contiguous dates. This adjusted incidence rate was used to estimate the number of workers and dependents who would develop COVID-like symptoms.

Two ways of computing payouts are considered. The first assumes a flat rate of ₱480 per day. ₱480 is close to the 65th percentile of the national wage rate and within the range used in PSL programs in other countries. This is also the highest payout rate from SSS sickness benefit.[11] The second assumes a scaled payout, which ranges from a floor that is equivalent to the minimum wage to a ceiling of ₱480 per day.[12] The second approach avoids a situation in which a worker who earns less than the flat rate of ₱480 would be incentivized to call in sick when healthy. Admittedly, a maximum pay of ₱480 may be insufficient for many workers to stay at home in response to symptoms. But such workers are likely to include those associated with employers that provide generous PSL.

The table below provides the financial costs of a special PSL for COVID-19 in two panels. The upper panel uses the flat rate of ₱480 per day for the payout when workers avail of PSL. The lower panel uses the differentiated payout ranging from the regional minimum wage to ₱480 per day.

Focusing on the upper panel, the estimated payout nationally is almost ₱110 billion (or 0.56% of 2019 gross domestic product [GDP]). Given that government employees and a subset of private establishment employees already have sufficiently generous sick leave benefits, it is estimated that around ₱22 billion will be shouldered by their employers. The remaining ₱87 billion would have to be subsidized by the government in the form of top-ups to SSS and as full subsidy for those not covered by SSS or GSIS. Turning to the lower panel of the table on page 6, the estimated payout nationally is ₱46 billion (or 0.24% of 2019 GDP). If the PSL program is further applied only to areas with higher risks of COVID-19, the totals for the differentiated payout rates range from ₱10 billion for high-risk urban areas (0.05% of 2019 GDP) to ₱34 billion for high- and moderate-risk areas nationally (or 0.18% of GDP).[13]

The costs of administering the program are additional to the amounts that would be transferred to beneficiaries. Taking as a guide the Pantawid Pamilyang Pilipino Conditional Cash Transfer Program, which has 8% administrative costs, the administrative costs of the

Estimated Sick Leave Payout by Geographic Areas (₱ million and share of 2019 GDP)

	Most Likely Covered by Employer	Most Likely to be Subsidized by the Government	Total Payout	Share of 2019 GDP, %
A. Flat Payout Rate				
National	22,186	87,318	109,505	0.56
Urban	10,031	39,484	49,515	0.25
High risk (all)	3,588	14,122	17,710	0.09
High risk (urban)	3,425	13,477	16,902	0.09
High and moderate risk (all)	15,182	59,778	74,960	0.38
High and moderate risk (urban)	8,171	32,167	40,338	0.21
B. Differentiated Payout Rate				
National	11,821	34,261	46,082	0.24
Urban	5,672	18,472	24,144	0.12
High risk (all)	2,198	7,883	10,081	0.05
High risk (urban)	2,101	7,641	9,742	0.05
High and moderate risk (all)	8,173	26,144	34,317	0.18
High and moderate risk (urban)	4,683	15,763	20,446	0.10

GDP = gross domestic product.
Note: Estimates cover paid sick leave from 15 October 2020 to 31 December 2021. Shares were computed based on the 2019 GDP estimate of ₱19,516,418 current prices.
Source: ADB estimates.

[11] Social Security System (SSS). 2020. *Sickness Benefit*.
[12] The scale was created to mimic the SSS daily sick allowance benefits, using the SSS monthly salary. The payout, using the SSS benefit schedule, ranges from ₱30 to ₱480. Adjustments are needed for the lower end of the scale to make it a livable wage. We, therefore, adjusted the floor to the minimum wage per region and set the ceiling at ₱480 per day. In Region 1, for example, the floor is set at ₱282 and the ceiling is ₱480. Scaling follows the monthly salary credit calculation from SSS. Since minimum wage varies per region, the scale on each range of SSS monthly income varies per region as well.
[13] The riskiness of geographic areas is determined on the basis of moderate- and high-risk areas based on the number of COVID-19 cases and hospital capacity utilization rate. High risk (all) refers to areas that are listed as high risk, and those in high risk (urban) include areas that are classified as urban and high risk. High and moderate risk (all) include all areas listed as high and moderate risk, and those at high and moderate risk (urban) are only limited to urban areas.

most generous PSL program work out to around ₱9 billion (or 0.05% of 2019 GDP). Actual costs could be even less as the conditional cash transfer program involves instructional sessions with parents and verification of compliance with a range of educational and health conditionalities. It should be noted that, from an economic perspective, these administration costs are the only true costs, as the rest of the payments are transfers. Moreover, as the transfers will be oriented toward lower-income beneficiaries who have a higher marginal utility of consumption than the overall population, the transfer effect will likely be welfare-increasing.

CONCLUDING REMARKS

This brief has argued that a special PSL program for COVID-19 has an important role in controlling the spread of the disease. Using the case of the Philippines, it has shown that the costs of a comprehensive program that covers all types of workers, including the self-employed as well as those employed under informal arrangements, are not prohibitive, especially when targeted geographically to locations where the risk of major COVID-19 incidence is high (e.g., dense urban locations). Moreover, when considered relative to other COVID-19 control measures, PSL can be quite cost-effective.

Implementing a PSL program can be challenging, especially when considering the extension of benefits to workers who are not engaged in formal wage employment. However, these challenges will vary from country to country. In the case of the Philippines, for example, where the SSS provides sickness benefits and covers both self-employed and informal workers (though not fully), implementation will be easier than in countries without this system.

It should also be noted that PSL programs provide benefits beyond direct reduction of COVID-19 transmission. As noted in the introduction of this paper, PSL has been found to reduce transmission of many other infectious diseases and the disease burden associated with them. In addition, the reduction of transmission of other COVID-19-like illness will reduce the pressure on testing, tracing, and isolation systems to discern which illnesses are actually COVID-19 and on the medical system to treat COVID-19 cases. By helping to smooth consumption shocks for those infected, PSL has an important social protection function. Given the low economic costs and multiple benefits of PSL, it should be considered a priority "no-regret" option to help keep the pandemic contained.

REFERENCES

Abbott, S. et al. 2020. Estimating the Time-Varying Reproduction Number of SARS-CoV-2 Using National and Subnational Case Counts. *Wellcome Open Res 2020*. 5. p. 112.

Chen, L., D. Raitzer, R. Hasan, R. Lavado, and O. Velarde. 2020. What Works to Control COVID-19? Econometric Analysis of a Cross-Country Panel. *ADB Economics Working Paper* No. 625. Manila: ADB.

Civil Service Commission. 1998. Memorandum Circular on Omnibus Rules on Leaves.

Gentilini, U., M. Almenfi, P. Dale, A. V. Lopez, and U. Zafar. 2020. *Social Protection and Jobs Responses to COVID-19: A Real-Time Review of Country Measures.* 12 June. COVID-19 Living Paper. Washington, DC: World Bank Group.

Hale, T., S. Webster, A. Petherick, T. Phillips, and B. Kira. 2020. Oxford COVID-19 Government Response Tracker. Blavatnik School of Government.

Heymann, J., A. Raub, W. Waisath, M. McCormack, R. Weistroffer, G. Moreno, E. Wong, and A. Earle. 2020. Protecting Health during COVID-19 and Beyond: A Global Examination of Paid Sick Leave Design in 193 Countries. *Global Public Health*. 15(7), pp. 925–934.

Kim, D. 2017. Paid Sick Leave and Risks of All-Cause and Cause-Specific Mortality among Adult Workers in the USA. *International Journal of Environmental Research and Public Health.* 14(10). p. 1247.

Organisation for Economic Co-operation and Development (OECD). 2020. Paid Sick Leave to Protect Income, Health and Jobs through the COVID-19 Crisis.

Otamaru, H., Y. Sun, J. T. Lim, and A. Cook. 2020. Policy Options for After the Enhanced Community Quarantine Period in the Philippines Ends: A Modelling Study. Draft mimeo.

Philippine Statistics Authority (PSA) and ICF. 2018. *Philippines National Demographic and Health Survey 2017*. Quezon City, Philippines and Rockville, Maryland, US: PSA and ICF.

Pichler, S., K. Wen, and N. R. Ziebarth. 2020. Positive Health Externalities of Mandating Paid Sick Leave. *IZA Discussion Papers*. 13530. Institute of Labor Economics.

Pichler, S. and N. R. Ziebarth. 2017. The Pros and Cons of Sick Pay Schemes: Testing for Contagious Presenteeism and Noncontagious Absenteeism Behavior. *Journal of Public Economics*. 171 (March 2019). pp. 86–104.

Raitzer, D., R. Lavado, J. Rabajante, A. Cook, G. Amoranto, E. Banzon, L. Chen, E. Go, X. Javier, H. Otamaru, Y. Sun, and J. T. Lim. 2020. Letting Loose without Letting Up: Costs and Benefits of COVID-19 Control Options. Draft mimeo.

Smith, T. W. and J. Kim. 2010. Paid Sick Days: Attitudes and Experiences. National Opinion Research Center at the University of Chicago for the Public Welfare Foundation Publication.

About the Asian Development Bank
ADB is committed to achieving a prosperous, inclusive, resilient, and sustainable Asia and the Pacific, while sustaining its efforts to eradicate extreme poverty. Established in 1966, it is owned by 68 members—49 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.

ADB Briefs are based on papers or notes prepared by ADB staff and their resource persons. The series is designed to provide concise, nontechnical accounts of policy issues of topical interest, with a view to facilitating informed debate. The Department of Communications administers the series.

In this publication, "$" refers to United States dollars.

Asian Development Bank
6 ADB Avenue, Mandaluyong City
1550 Metro Manila, Philippines
Tel +63 2 8632 4444
Fax +63 2 8636 2444

www.adb.org/publications/series/adb-briefs