



# Geographical and socioeconomic disparities in the use of percutaneous coronary intervention in the Philippines

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Shoji and colleagues showed regional variations in the distribution of percutaneous coronary interventions (PCI) centers in Japan. Moreover, there were also disparities in the number of scintigraphy and computed tomography scanners across Japan. Lower availability of scintigraphy scanners was associated with lower preprocedural noninvasive stress testing rates.<sup>1</sup> The Philippines, a lower-middle-income archipelagic country in Southeast Asia, also faces the same problem of geographical disparities in the availability of PCI-capable hospitals.

Coronary artery disease is the leading cause of death in the Philippines and having access to PCI—geographically or financially—may mean life and death to patients with acute coronary syndrome (ACS). The Philippine Heart Association (PHA) also recommends PCI to improve outcomes among patients diagnosed with ACS. Patients who received PCI had lower in-hospital mortality (5.6%) than those who only received medical management (9.3%). However, a study in 2017 showed a low revascularization rate on index admission.<sup>2</sup> Access to hospitals with catheterization laboratories is limited in the Philippines. As of 2019, Philippine Heart Association recorded only 49 PCI centers in the Philippines—24 in the National Capital Region, and others distributed in major and highly urbanized cities—13 in Luzon, seven in the Visayas, and five in Mindanao (Figure 1). Outside these cities, there are no PCI centers.

Another primary reason for the delay in treatment is financial constraints.<sup>3</sup> The current cost of PCI in the

Philippines ranges from PhP152,000 to PhP387,500 (US\$3040 to US\$7750), inclusive of admission medication, professional fees, and hospital and operating room use. PhilHealth, the country's national health insurance, offers financial assistance to patients undergoing PCI; however, the cost of the procedure is much higher than the coverage. Based on the 2019 procedure case rate, percutaneous coronary angioplasty is subsidized for PhP30,300 (US\$ 606), which includes both the hospital admission and professional fee.<sup>4</sup> The patient shoulders any excess through their private insurance or as an out-of-pocket (OOP) payment. OOP payment increased by 150% from 2002 to 2012, accounting for 74% of the total household health spending in the country.<sup>5</sup> The gap between the cost of PCI and financial assistance provided by the national insurance contributes to the high-risk population's reluctance to seek health services.

To address these challenges and burdens, we call on the government to make PCI more accessible and affordable for Filipinos. We highlight the need for capacity building of hospitals in the provinces and far-flung areas of the country in providing this service to improve the care of patients with coronary artery disease. The government should also continue expanding health insurance coverage for PCI.

## Declaration of interests

We declare no competing interests.

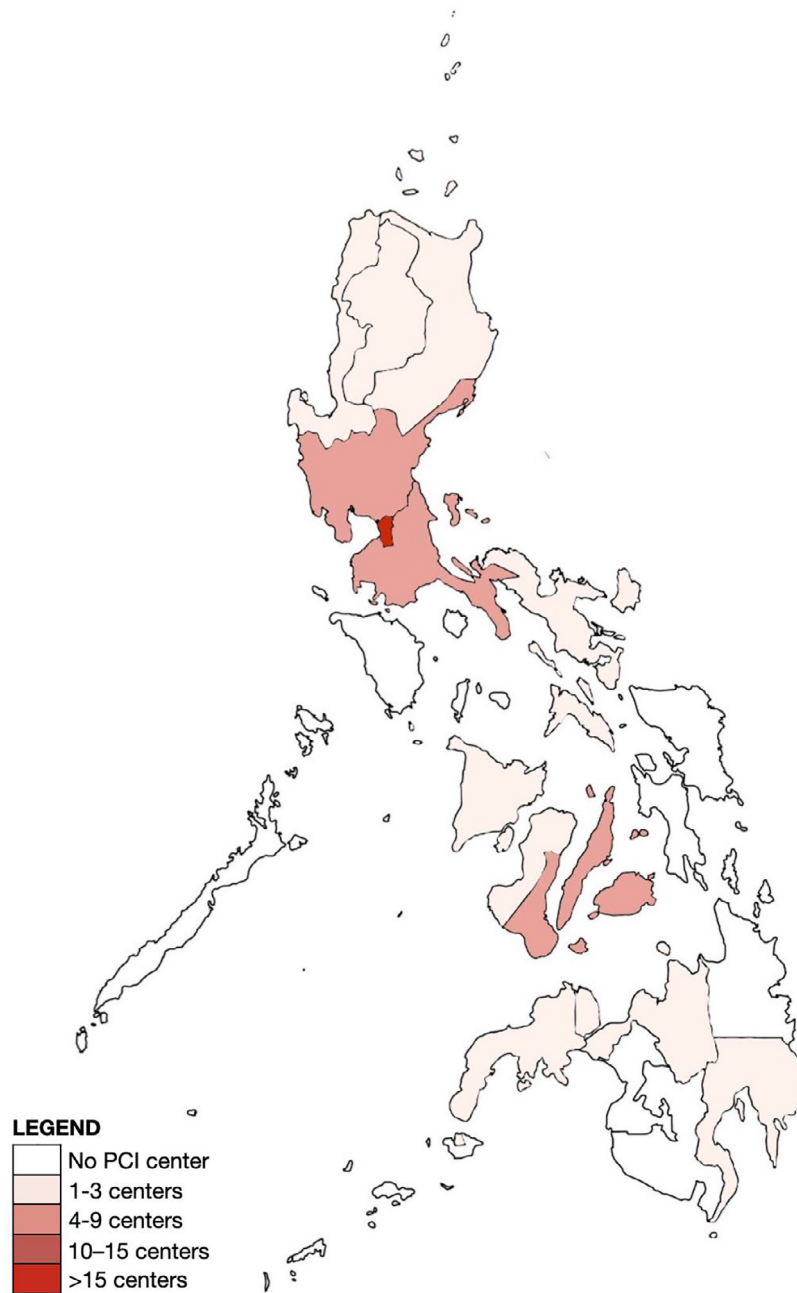
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**Figure 1.** Geographical distribution of catheterization laboratories in the Philippines as of 2019.

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### References

- Shoji S, Yamaji K, Sandhu AT, et al. Regional variations in the process of care for patients undergoing percutaneous coronary intervention in Japan. *Lancet Reg Heal – West Pacific*. 2022;22. <https://doi.org/10.1016/j.lanwpc.2022.100425>.
- Bermudez-delos Santos AAA, Tumanan-Mendoza BA, Mendoza VL, et al. The Epidemiologic Burden of Hospitalization for Coronary Artery Disease Among Adults Aged 19 years and above in the Philippines. *Philipp J Cardiol*. 2020;8–19.
- Lazaro VL. 2014 PHA Clinical Practice Guidelines for the Diagnosis and Management of Patients with Coronary Heart Disease. *ASEAN Hear J Off J ASEAN Fed Cardiol*. 2016;24:3.
- PhilHealth. List of Procedure Case Rates. 2019. <https://www.foi.gov.ph/requests/aglfmVmbzktcGhyHAsSB0NvbnRlbnQiD1BILTYoNDcyMDAyMDQ2Ngw>. Accessed 9 April 2022.
- Bredenkamp C, Buisman LR. Financial protection from health spending in the Philippines: policies and progress. *Health Policy Plan*. 2016;31:919–927.