Monitoring surgical care indicators in a public health network in a Peruvian region: a pilot study

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To the Editor,

It has been well-recognized that there is a need to collect and analyze information regarding indicators to monitor the universal access of the population to safe, affordable, and timely healthcare, both surgical and anesthetic at different levels (global, national and sub-regional).^{1,2} Similarly, it has also been reported that the limited attention given to the cost derived from surgical pathologies and the absence of information on standardized measures of surgical care have contributed to the indifference of anesthetic and surgical care within global health during the past two decades.²

Despite Peru being a country of upper-middle income,³ it requires more research regarding these indicators.⁴ For this reason, after the approval of our Institutional Ethics Committee, we carried out this pilot study with the objective of measuring standardized surgical care indicators during 2016 in a public health network (Piura Health Care Network of Social Health Insurance-EsSALUD Peru system) that consisted of six hospitals (a reference hospital, four local hospitals, and a specialized

institute) in the Piura region. The Piura region is the second most populated region of Peru with 1,856,809 inhabitants according to the 2017 census.⁵

According to computerized records, 14,462 surgeries (major and minor) were performed during 2016. Information on sex, age, and the type of anesthesia was obtained from 10,629 (73.5%) of these patients (Table). Of the operated patients, 38.2% (4,061) were female and 61.8% (6,568) were male. Some patients received more than a single type of anesthesia: 5,263 (49.4%) subarachnoid blocks, 2,557 (24%) general anesthesia, 2,452 (23%) local anesthesia, 326 (3.1%) combined sedation with local anesthesia, 34 (0.3%) sedation, 21 (0.2%) epidural blocks, and three (0.03%) plexus blocks. Of all the surgeries, 13,664 (94.5%) were performed in patients assigned to the health network. Since the number of patients insured in the network during 2016 was 606,900 inhabitants,^A a rate of 2,251 surgeries per 100,000 population was obtained. The exposed rate was lower than the national rate of the institution, which reached 3,297 surgeries per 100,000 inhabitants in 2016 (with 360,561 surgeries performed in 10,937,079 insured patients).^B

In 2016, the number of anesthesiologists, surgeons (general and specialists), and gynecologists was 29, 97, and 39 respectively. This resulted in a specialist surgical workforce density of 27 per 100,000 inhabitants. Similarly, the number of operating rooms in the same period was 16. In 2017 (data were unavailable for 2016), two rural provinces of the region had no fully-equipped surgical facilities; thus, the estimated coverage of access to timely essential surgery was 98.2%.^{A,C}

According to the paper records of the postoperative recovery and intermediate/intensive care units, 55 (0.38%) patients died in 2016 during the postoperative period.

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Table Age distribution of the surgical patients in the Piura Health Care Network of Social Health Insurance-EsSALUD Peru in 2016

Age group (yr)	Frequency (%)
< 1	103 (0.97)
1–5	276 (2.6)
6–10	309 (2.91)
11–14	244 (2.30)
15–24	970 (9.13)
25–39	2,867 (26.97)
40–49	1,210 (11.38)
50–60	1,258 (11.84)
≥ 61	3,392 (31.91)
Total	10,629 (100)

Source: Social Health Insurance-EsSALUD computer system.

Nevertheless, more than 30% of these medical paper records were lost because the archive flooded, which is why we decided not to analyze postoperative mortality cases.

Concerning protection against impoverishing and catastrophic expenditure, 100% of insured people in the network had protection against direct payments for surgical and anesthesia care in 2016.

This pilot study showed that, as the volume of surgical procedures was < 5,000 procedures per 100,000 population, this Peruvian health network met five targets of the Lancet Commission on Global Surgery.⁵ Moreover, we identified certain problems such as the fact that part of the medical records were still printed (i.e., only part of the information was computerized). Finally, it revealed the dynamics of regional surgical care (e.g., the hospitals with most cases of perioperative mortality and the timely period for tracking these cases) needed to carry out a future investigation into integral measurement of the indicators (including an analysis of postoperative mortality) in all health institutions (public and private segments) from the Piura region.

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Footnotes A. *Instituto Nacional de Estadística e Informática (INEI)*. Lima: Oficina Técnica de Informática; 1997. Perú Compendio Estadístico 2018 Salud. Available from URL: https://www.inei.gob.pe/media/MenuRecursivo/publicaciones_digitales/Est/Lib1635/cap06/ind06.htm (accessed January 2020).

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