

# Clinical and Economic Impact Assessment of Hormonal IUD Use in Reducing Unplanned Pregnancies in Brazil: Real-World Analysis from a Brazilian Health Insurance Company

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## INTRODUCTION

Unplanned pregnancies (UP) are associated with adverse maternal and infant outcomes, including delayed prenatal care, preterm birth, abortion, lower breastfeeding rates, and poorer physical and mental health, as well as reduced preparedness for pregnancy and adoption of healthy behaviors [1]. In São Paulo, Brazil, the prevalence of UP reached 65.7% in 2025, which is high compared with the estimated global prevalence of 40%–50% [2,3]. In this context, long-acting reversible contraceptive (LARC) methods, such as intrauterine devices (IUDs) and the etonogestrel implant, are among the most effective strategies for pregnancy prevention. In 2014, Unimed Campinas, a private health insurance provider in São Paulo, began offering the 52 mg levonorgestrel IUD, expanding coverage in 2020 with the 19.5 mg levonorgestrel IUD.

## OBJECTIVE

To quantify trends in the utilization of levonorgestrel-releasing intrauterine devices (L-IUD) and estimate the costs potentially avoided through the reduction of unplanned pregnancies (UP) in an insured population.

## METHODS

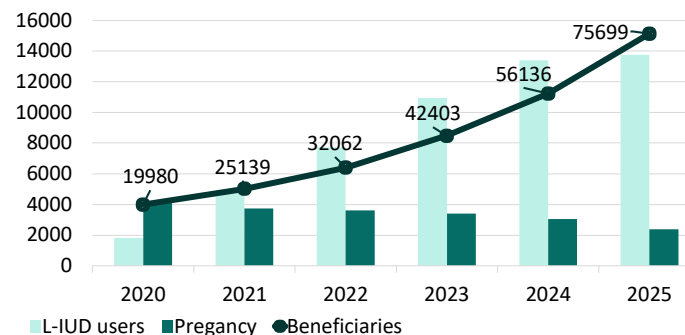
Retrospective cohort study including beneficiaries aged 18–34 years, followed between 2020 and October 2025. The cohort included prior users and new insertions of 52 mg and 19.5 mg L-IUDs. Low-risk pregnancies composed the second cohort for cost analysis. All data were obtained from administrative records of a large Brazilian Health Insurance Company (Unimed Campinas). Prenatal and delivery costs were calculated using reimbursed amounts, and savings scenarios were modeled based on UP rates reported in the literature (32.8%–65.7%).

## RESULTS

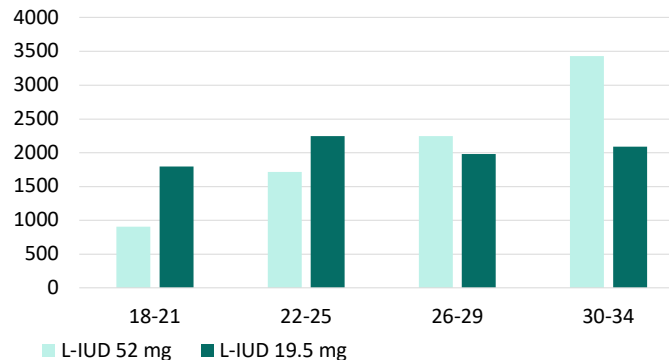
Among 251,419 beneficiaries, 20,377 pregnancies occurred (8.1%). A total of 52,376 L-IUD users were identified, including 16,398 new insertions (50.5% L-IUD 52 mg; 49.5% L-IUD 19.5 mg).

Insertions increased by 80% through 2023, followed by a decline in 2024–2025. The annual pregnancy incidence showed a progressive decrease (3.5%–22%), amounting to a cumulative reduction of 41.8%. The mean cost of prenatal care and delivery was US\$ 1,961.34, resulting in total spending of US\$ 39.9 million during the period. Considering a UP rate of 65.7%, the associated financial impact was US\$ 26.2 million. In prevention scenarios attributing 32.8% or 65.7% reduction in UP to L-IUD use, estimated savings were US\$ 7.4 million and US\$ 14.8 million, respectively.

**FIGURE 1. GROWTH IN BENEFICIARIES (18–34) ALONGSIDE LNG-IUD UPTAKE AND FEWER PREGNANCIES**



**FIGURE 2. DISTRIBUTION OF L-IUD USERS BY AGE GROUP, IN 5 YEARS (2020–2025)**



**TABLE 1. ESTIMATED UNPLANNED PREGNANCIES AND ASSOCIATED COSTS OVER FIVE YEARS IN A BRAZILIAN HEALTH INSURANCE POPULATION**

INDICATOR	2020–2025
TOTAL OF PREGNANCIES	20,377
TOTAL COST	USD 39,966,225
ESTIMATED UPS (65.7%) <sup>2</sup>	13,388
TOTAL COST OF UPS	USD 26,258,419

Note: Costs were originally calculated in Brazilian reais (BRL) and converted to U.S. dollars (USD) using an exchange rate of USD 1 = BRL 5.42 (December 12, 2025)

**TABLE 2. FIVE-YEAR BUDGET IMPACT ANALYSIS OF COSTS ASSOCIATED WITH IUD MIGRATION**

SCENARIO	TOTAL UP COST (USD)	SAVINGS VS CURRENT (USD)
CURRENT SCENARIO	USD 26,258,419	—
MIGRATION SCENARIO (32.85%)	USD 17,632,446	USD 7,410,289
MIGRATION SCENARIO (65.7%)	USD 9,006,473	USD 14,820,579

## CONCLUSION

Hormonal IUD use demonstrated a strong association with reduced pregnancy rates and substantial potential for cost savings for the Brazilian Health Insurance Company. Wider adoption of long-acting contraceptive methods represents a cost-effective, high-impact strategy to mitigate UP and their associated financial consequences.

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