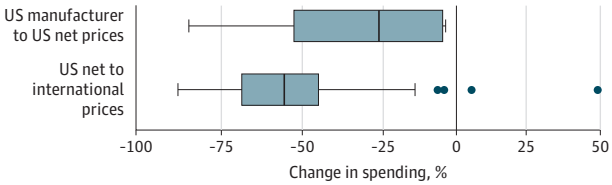
Figure 2. Product-Level Percent Changes in Spending at 2020 US Volume and Different Prices



The analysis was limited to 10 insulin products and 50 other select single-source, brand-name drugs. Vertical lines through the solid boxes represent medians, the widths of the solid boxes mark the IQR, the whiskers represent adjacent values, which are defined as the largest and smallest data points within 1.5 times the IQR, and dots indicate points that fall beyond the whiskers.

reflect several components of HR 3, including price negotiation, and Medicare vs national net prices may differ. The 52% discount is likely conservative due to data limitations, including use of net prices to manufacturers rather than to payers (including supply chain markups) and the absence of net price data for HR 3 countries. Furthermore, actual spending under HR 3 may be lower if Medicaid and other payers already face subinternational prices for some drugs. Although international reference pricing would yield considerable savings, other important considerations around the design and implementation of drug price regulation include incentives for research and development, industry launch and pricing strategies, and increasing utilization in response to lower prices.

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Rates of Prenatal Cannabis Use Among Pregnant Women Before and During the COVID-19 Pandemic

Cannabis use among pregnant women is common and has increased in recent years in the US, from an estimated 3.4% in 2002 to 7.0% in 2017.[1] Pregnant women report using cannabis to relieve stress and anxiety,[2] and prenatal cannabis use may have risen during the COVID-19 pandemic as pregnant women faced general and pregnancy-specific COVID-related stressors (eg, social isolation, financial and psychosocial distress, increased burden of childcare, changes in prenatal care, and concerns about heightened risks of COVID-19).[3,4]

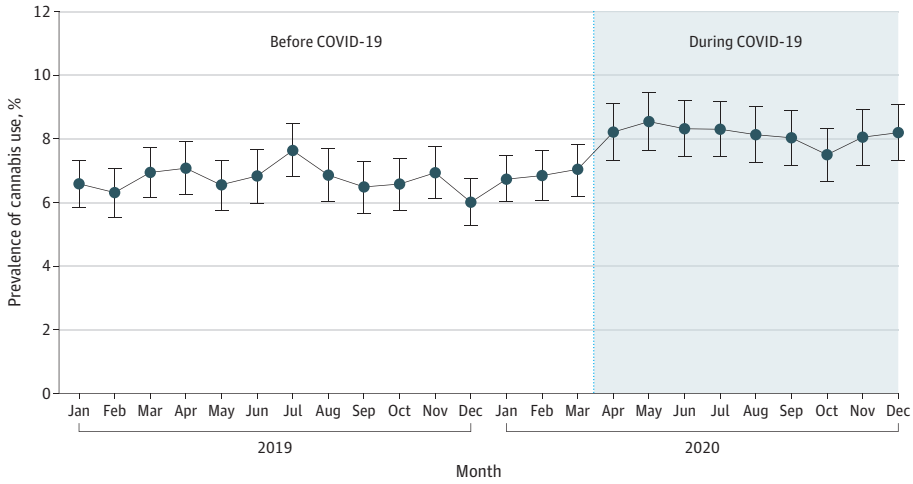
Supplemental content

Considered an essential business in California, cannabis retailers remained open during the pandemic with record sales in 2020.[5] We used data from Kaiser Permanente Northern California (KPNC), a large integrated health care delivery system with universal screening for prenatal cannabis use to test the hypothesis that rates of prenatal cannabis use increased during the COVID-19 pandemic.

Methods | The sample comprised all KPNC pregnant women screened for prenatal cannabis use via a universal urine toxicology test from January 1, 2019, through December 31, 2020, during standard prenatal care (at ≈8 weeks' gestation). The institutional review board of KPNC approved this study and waived the need for informed consent.

We computed monthly rates of prenatal cannabis use standardized to the year 2020 age and race and ethnicity distribution. We fit interrupted time-series (ITS) models to monthly rate data using negative binomial regression, adjusted for age (<25, 25 to <35, ≥35 years) and self-reported race and ethnicity (Asian/Pacific Islander, Black, Hispanic, non-Hispanic White, or other or unknown), which were included because of the known age and race and ethnicity differences in the prevalence of prenatal cannabis use. The prepandemic period was defined as urine toxicology tests conducted from January 2019 to March 2020 and the

Figure. Monthly Trends in Cannabis Use During Pregnancy Before and During the COVID-19 Pandemic (N = 100 005)



Prenatal cannabis use was based on a positive toxicology screening result conducted as part of standard prenatal care (≈8 weeks' gestation) and includes 1 screening per pregnancy. All positive toxicology test results were confirmed by a laboratory test (see Laboratory Methods in the Supplement). The median monthly sample size in the months before COVID-19 was 4085 (range, 3655-5040), with a mean of 4189. The median monthly sample size in the months during COVID-19 was 4124 (range, 3932-4356), with a mean of 4130. Error bars indicate 95% CIs of the standardized rates.

Table. Change in Percentage of Cannabis Use During Pregnancy After the Start of the Pandemic[a]

	Rate ratio (95% CI)	
Interrupted time-series model variables	Unadjusted	Adjusted[b]
Pre-COVID-19 expected trend[c]	1.001 (0.994-1.008)	1.001 (0.993-1.008)
COVID-19 shift	1.268 (1.145-1.405)[d]	1.251 (1.120-1.397)[d]
COVID-19 change in trend	0.989 (0.973-1.006)	0.992 (0.975-1.010)

[a] See the Methods section for the prepandemic period definition.

[b] Adjusted for age (<25, 25 to <35, and ≥35 years) and self-reported race and ethnicity from the electronic health record (see the Methods section definition for race and ethnicity).

[c] See Laboratory Methods in the Supplement for determination of prenatal cannabis use.

[d] Significant at $P < .05$.

pandemic period from April through December 2020 (see Laboratory Methods in the Supplement).

The rate ratio and corresponding 95% CIs are reported herein. We conducted the analyses using SAS version 9.4 (SAS Institute Inc). A 2-sided $P < .05$ was considered statistically significant.

Results | Of 100 005 pregnancies (95 412 women), 26% were Asian or Pacific Islander; 7%, Black; 28%, Hispanic; 34%, non-Hispanic White; and 5%, other, unknown, or multiracial. The patients were a mean age of 31 years (median, 31 years). There were negligible differences in age or race and ethnicity in the 2 periods. During the pandemic, patients completed toxicology testing slightly earlier in their pregnancies (before pandemic mean, 8.51 weeks' gestation; during pandemic mean, 8.04 weeks' gestation).

Before the pandemic, the standardized rate of prenatal cannabis use was 6.75% of pregnancies (95% CI, 6.55%-6.95%); that rate increased to 8.14% of pregnancies (95% CI, 7.85%-8.43%) during the pandemic (**Figure**). In the ITS analysis, we found that prenatal cannabis use increased by 25% (95% CI, 12%-40%; **Table**) during the pandemic over prenatal cannabis use during the 15 months before the pandemic. The ITS analysis confirmed that these rates before and during the pandemic were stable, with no statistically significant month-to-month trends (Table).

Discussion | Rates of biochemically verified prenatal cannabis use increased significantly during the COVID-19 pandemic among pregnant women in Northern California. Results are consistent with the rise in cannabis sales seen in California during the same period.[5] When the toll of the COVID-19 pandemic begins to fade and restrictions are lifted, it is unknown whether pandemic-related increases in rates of cannabis use during pregnancy will reverse or remain elevated. Continued monitoring of trends is critical as the pandemic continues to evolve.

This study is limited to pregnant women universally screened in the KPNC system for prenatal cannabis use via urine toxicology testing early in pregnancy (≈8 weeks' gestation) as part of standard prenatal care, and data do not reflect continued use throughout pregnancy. In some cases, positive toxicology test results may detect prenatal cannabis use that occurred prior to pregnancy recognition. Additional studies that capture pandemic-related changes in frequency of and reasons for cannabis use during pregnancy and among nonpregnant women are also needed.

Prenatal cannabis use is associated with health risks, including low infant birth weight and potential effects on offspring neurodevelopment.[6] Clinicians should educate pregnant women about the harms of prenatal cannabis use, support women to quit, and provide resources for stress reduction.

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Drafting of the manuscript: Young-Wolff, Ray.
Critical revision of the manuscript for important intellectual content: All authors.
Statistical analysis: Ray, Alexeeff, Avalos.
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COMMENT & RESPONSE

A Review of Transcatheter Treatment of Valvular Heart Disease

To the Editor We believe the recent Review[1] about transcatheter treatment of valvular heart disease has 1 important omission. The description of the "heart team" failed to include an anesthesiologist.

In addition to playing an important role in the medical evaluation and selection of patients who undergo this procedure, anesthesiologists administer sedation, general anesthesia, or both; administer as many as 10 additional potent nonanesthetic medications during the procedure; provide echocardiographic assessment and monitoring; work to maintain hemodynamic stability; provide resuscitation, if needed; and oversee recovery after the procedure.

All these duties are critical for a successful outcome in patients undergoing transcatheter treatment of valvular heart disease. In fact, the entire procedure would not be possible without the many services provided by the anesthesiologist.

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1. Davidson LJ, Davidson CJ. Transcatheter treatment of valvular heart disease: a review. *JAMA*. 2021;325(24):2480-2494. doi:10.1001/jama.2021.2133

In Reply We agree with Drs Katz and Suriani that anesthesiologists are integral and highly valuable members of the heart team. Their crucial contributions are one of the primary drivers for the excellent outcomes of transcatheter procedures. Our discussion[1] regarding the heart team was intended to highlight the shared decision-making choices among transcatheter, surgical, and medical therapy options for patients with valvular heart disease.

Anesthesiologists provide conscious sedation in more than 60% of patients undergoing transcatheter aortic valve implantation, which has led to shorter hospital lengths of stay, decreased in-hospital and 30-day mortality, and more frequent discharge of patients to home.[2] Intraprocedural echocardiographic guidance for mitral and tricuspid interventions are supported by cardiologists or anesthesiologists based on center practices.

The success and delivery of high-quality care requires coordinated collaboration and communication from the heart team that extends to many others including, but not limited to, nursing, certified registered nurse anesthetists, technicians, sonographers, advance practice clinicians, and administrators.

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