Delivering the Facts

Dr. Isaac Lavie
April 17, 2025

dell children's
Health Plan

Presenter: Dr. Isaac Lavie

Education:

- M.D., Baylor College of Medicine
- B.A., Biological Basis of Behavior, University of Pennsylvania

Postdoctoral Training

- Residency, Obstetrics and Gynecology, UT Southwestern Medical School
- Internship, Obstetrics and Gynecology, UT Southwestern Medical School

Board Certification

- American Board of Obstetrics and Gynecology

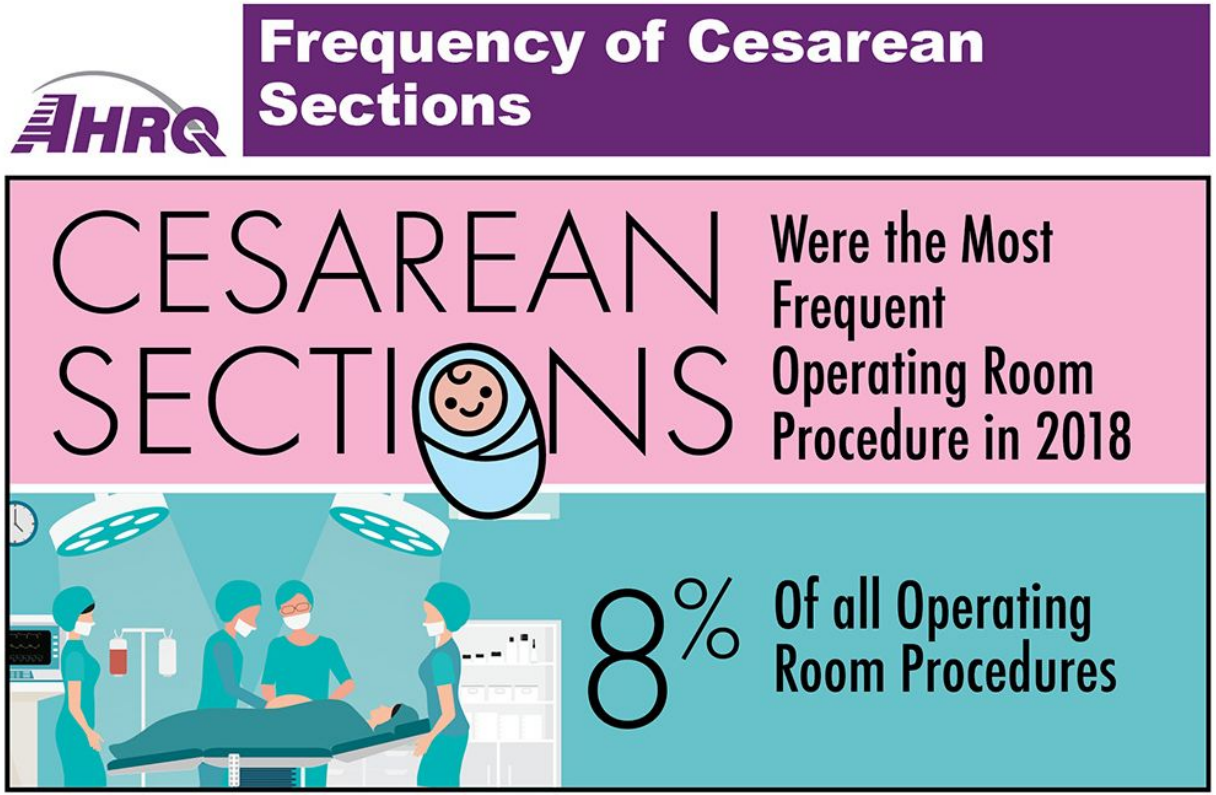
Academic and Leadership Appointments

- Maternal Medical Director
  - Specialized Delivery Unit, Dell Children's Medical Center, Austin, Texas
- Clinical Assistant Professor, Professional Track
  - Department of Women's Health at The University of Texas at Austin, Dell Medical School, Austin, Texas

Objectives

- Cesarean metrics
- Data
- Recent Study
- Patient Characteristics
- Best Practices

Delivering the Facts



Source: AHRQ, Healthcare Cost and Utilization Project Statistical brief #281: *Overview of Operating Room Procedures During Inpatient Stays in U.S. Hospitals, 2018.*

HCUP Data Partners can be found at: https://www.hcup-us.ahrq.gov/partners.jsp

https://www.ahrq.gov/data/infographics/cesarean-sections.html

dell children's Health Plan

Measures

- Nulliparous, Term, Singleton, Vertex Cesarean Birth Measure (NTSV)
- Vaginal Birth After Cesarean (VBAC)
- Risk Adjusted Cesarean Delivery (RACD)
- Cesarean Delivery Rate, Uncomplicated (AHRQ - IQI 21)*

*Dell Children's Health Plan PIP

Key Birth Statistics U.S. 2022

https://www.cdc.gov/nchs/nvss/births.htm

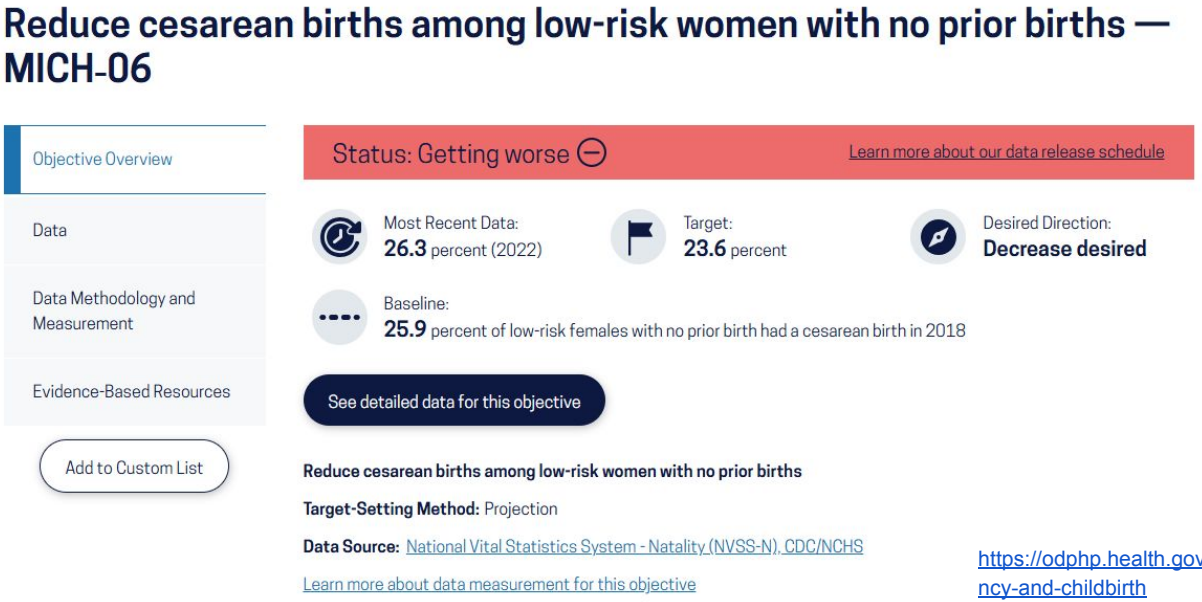
Key Birth Statistics

Data for United States in 2022

- Number of births: 3,667,758
- Birth rate: 11.0 per 1,000 population
- Fertility rate: 56.0 births per 1000 women aged 15-44 years
- Prenatal care initiated in the 1st trimester: 77.0%
- Percent born preterm (less than 37 completed weeks of gestation): 10.38%
- Percent cesarean delivery: 32.1%
- Medicaid as source of payment for the delivery: 41.3%

Source: Births: Final Data for 2022 [PDF – 1 MB]

Healthy People 2030 C-section goal



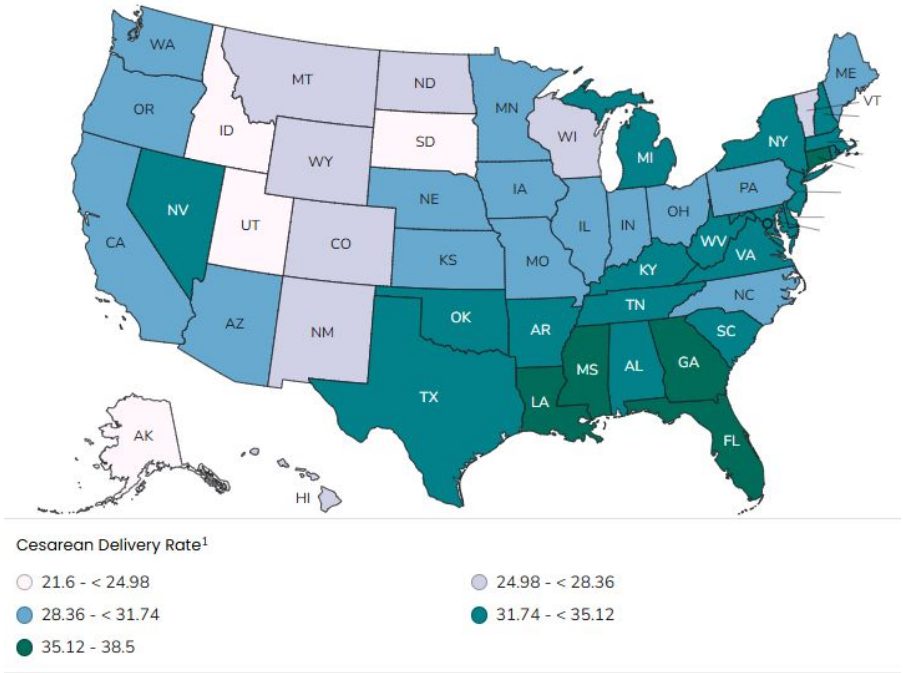
https://odphp.health.gov/healthypeople/objectives-and-data/browse-objectives/pregnancy-and-childbirth

dell children's Health Plan

Cesarean Delivery Rate by State

In 2022, Texas had one of the highest Cesarean rates in the country.

Only Louisiana, Mississippi, Florida, Georgia, Connecticut and Rhode Island had higher rates.



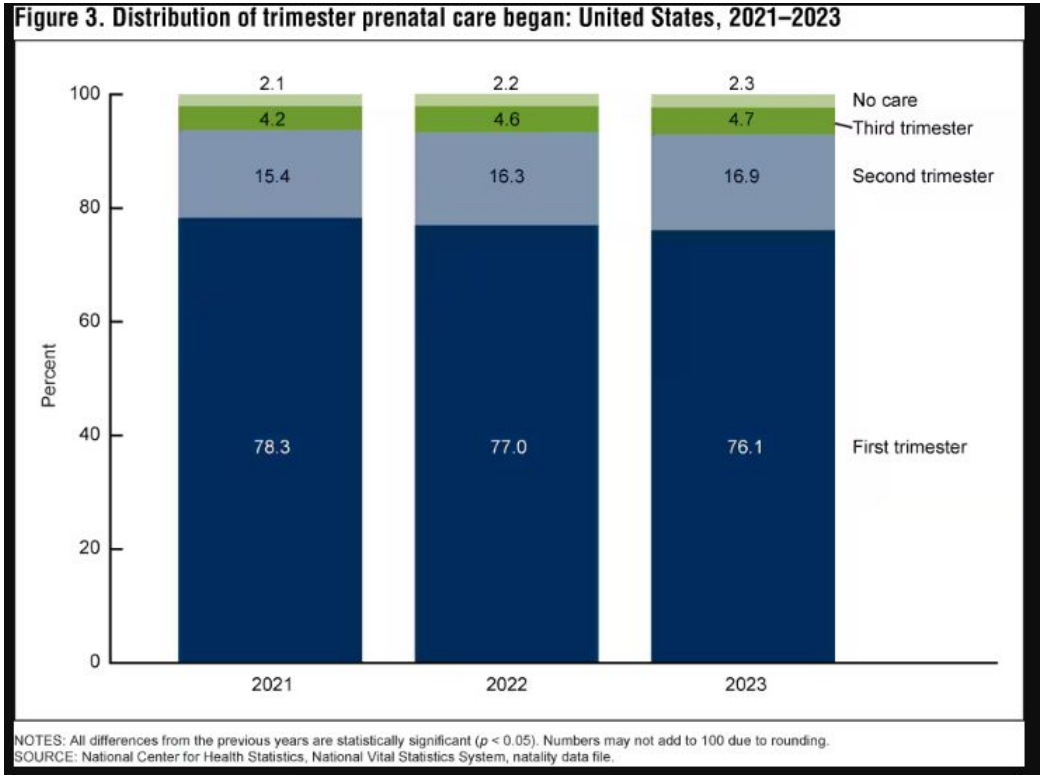
https://www.cdc.gov/nchs/pressroom/sosmap/cesarean_births/cesareans.htm

Prenatal Care

From 2021 to 2023

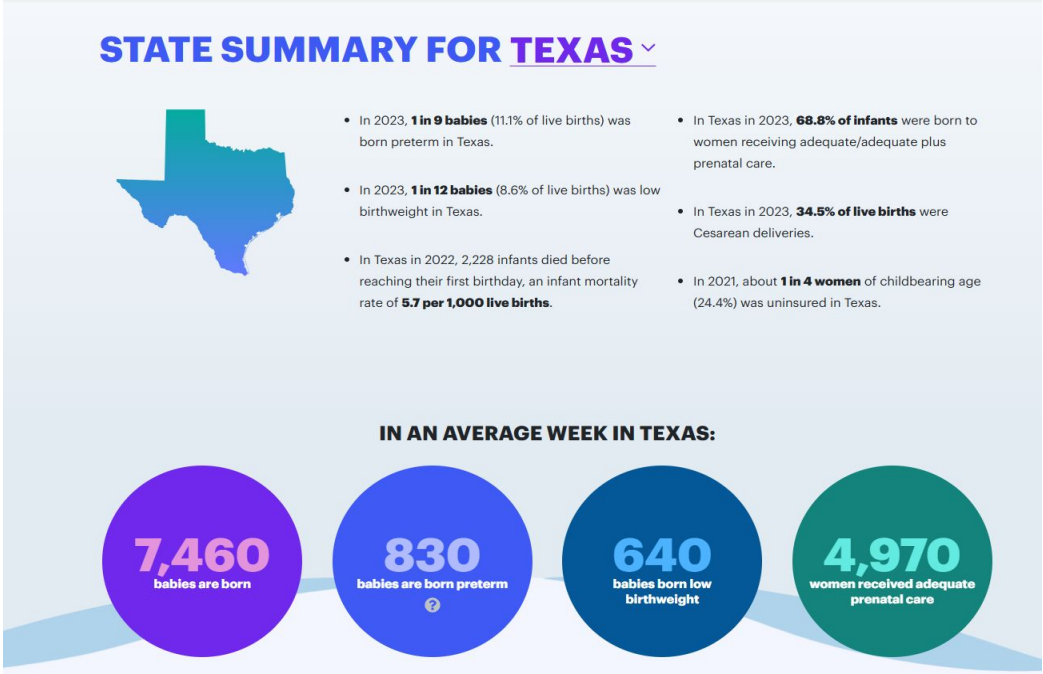
- lower rates of prenatal care beginning in the first trimester.
- higher rates of initiating prenatal care in the 2nd and 3rd trimester.

https://www.cdc.gov/nchs/products/databriefs/db507.htm



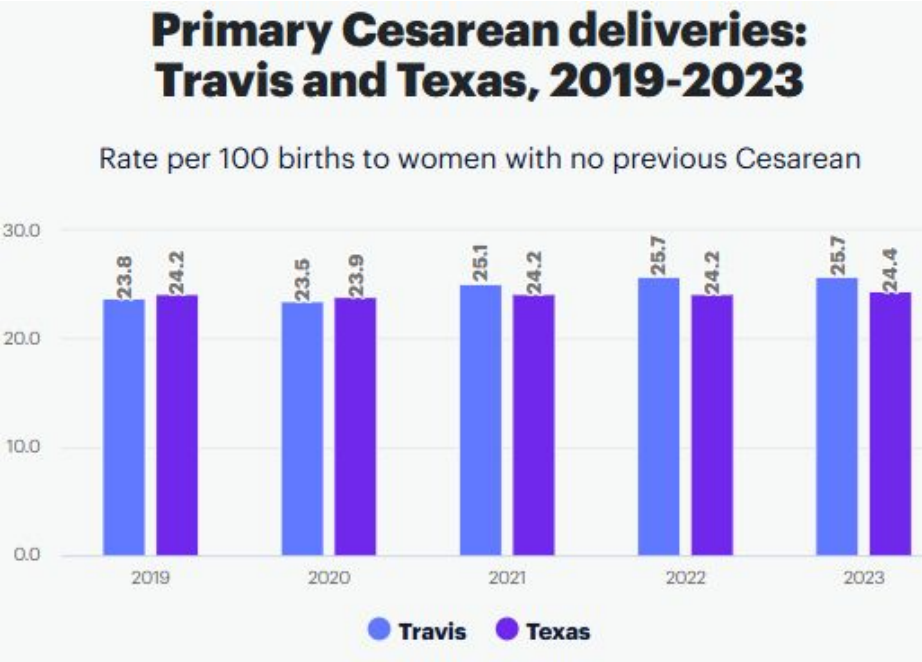
Texas Summary 2023

- 1 in 9 babies (11.1% of live births) was born preterm
- 1 in 12 babies (8.6% of live births) was low birth weight
- 2,228 infants died before their first birthday, an infant mortality rate of 5.7 per 1,000 live births
- 68.8% of infants were born to women receiving adequate/adequate plus prenatal care
- 34.8% of live births were C-section deliveries
- About 1 in 4 women of childbearing age was uninsured



https://www.marchofdimes.org/peristats/assets/s3/reports/mcd/Maternity-Care-Report-Texas.pdf

Travis County vs Texas

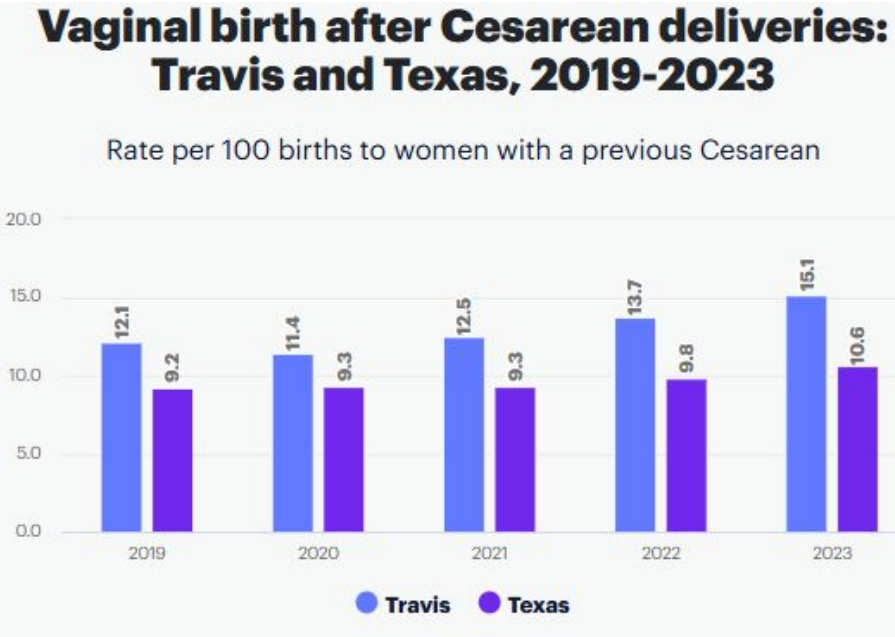


In Texas in 2023:

- 34.5% of live births were C-sections
- 24.4% primary C-section deliveries
- 10.6% VBAC

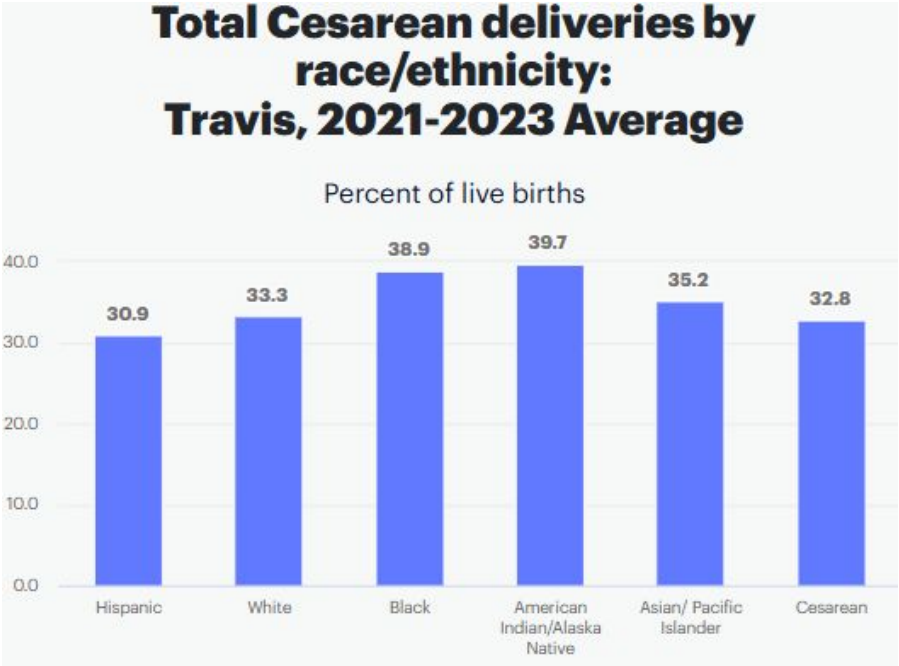
In 2023, Travis county had a 5% higher rate of primary C-section deliveries than the state average.

Travis County vs Texas



In 2023,Travis county had almost 30% more VBACs than the state average.

Race/Ethnic Disparities



https://www.marchofdimes.org/peristats/data?top=8&lev=1&stop=86&ftop=356&reg=48&sreg=48&creg=48453&obj=1&slev=6

dell children's Health Plan

Local Hospitals 2016-2019

HOSPITAL	CESAREAN RATE	EPISIOTOMY RATE
Ascension Seton Hays	7.7	2.8
Ascension Seton Medical Center	15.8	2.2
Ascension Seton Northwest	16.6	10.7
Ascension Seton Williamson	18.9	2.4

HOSPITAL	CESAREAN RATE	EPISIOTOMY RATE
St Davids Georgetown Hospital	14.4	0.5
St Davids Hospital	16.2	1.4
St Davids South Austin Hospital	18.6	4.3
North Austin Medical Center	20.8	2.3

HOSPITAL	CESAREAN RATE	EPISIOTOMY RATE
Baylor Scott & White Medical Center Lake Pointe	18.3	8.8
Baylor Scott & White Medical Center Lakeway	18.8	2.5
Baylor Scott & White Medical Center Marble Falls	15.8	6.1

*primary Cesarean rate

https://www.marchofdimes.org/peristats/state-summaries/texas?lev=1&obj=3&reg=99&slev=4&sreg=48&stop=55&top=3

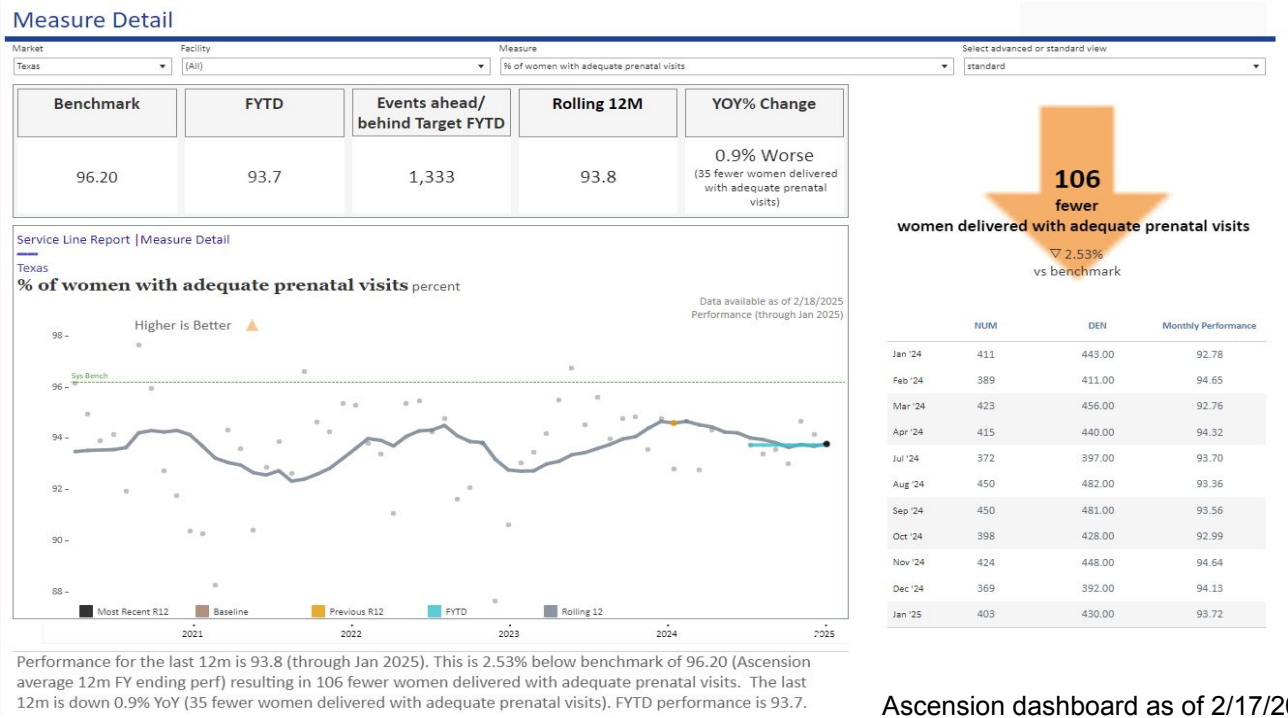
dell children's Health Plan

Texas Ascension C-section Trends (NTSV)

Ascension dashboard as of 2/17/2025

dell children's Health Plan

Texas Ascension Prenatal Visit Trends



Performance for the last 12m is 93.8 (through Jan 2025). This is 2.53% below benchmark of 96.20 (Ascension average 12m FY ending perf) resulting in 106 fewer women delivered with adequate prenatal visits. The last 12m is down 0.9% YoY (35 fewer women delivered with adequate prenatal visits). FYTD performance is 93.7.

Ascension dashboard as of 2/17/2025

dell children's Health Plan

Recent Study - Value Based Care in Obstetrics: Comparison between Vaginal Birth and Cesarean Section.

Background

Healthcare costs have substantially increased in recent years, threatening the population health. Obstetric care is a significant contributor to this scenario since it represents 20% of healthcare. The rate of cesarean sections (C-sections) has escalated worldwide. Evidence shows that cesarean delivery is not only more expensive, but it is also linked to poorer maternal and neonatal outcomes. This study assesses which type of delivery is associated with a higher healthcare value in low-risk pregnancies.

Results

A total of 9345 deliveries were analyzed. The C-section group had significantly worse rates of breastfeeding in the first hour after delivery , a higher rate of intensive unit care (ICU) admission both for the mother and the newborn , and a higher average cost of hospitalization

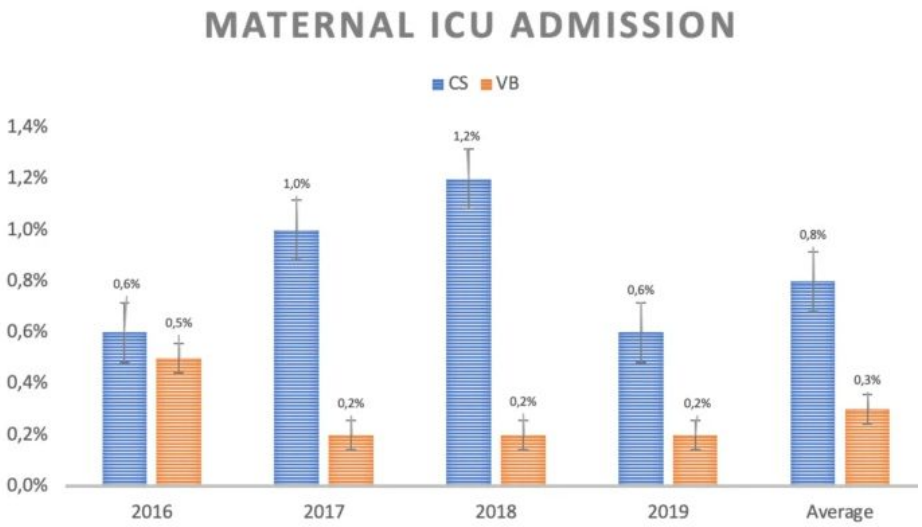
Conclusion

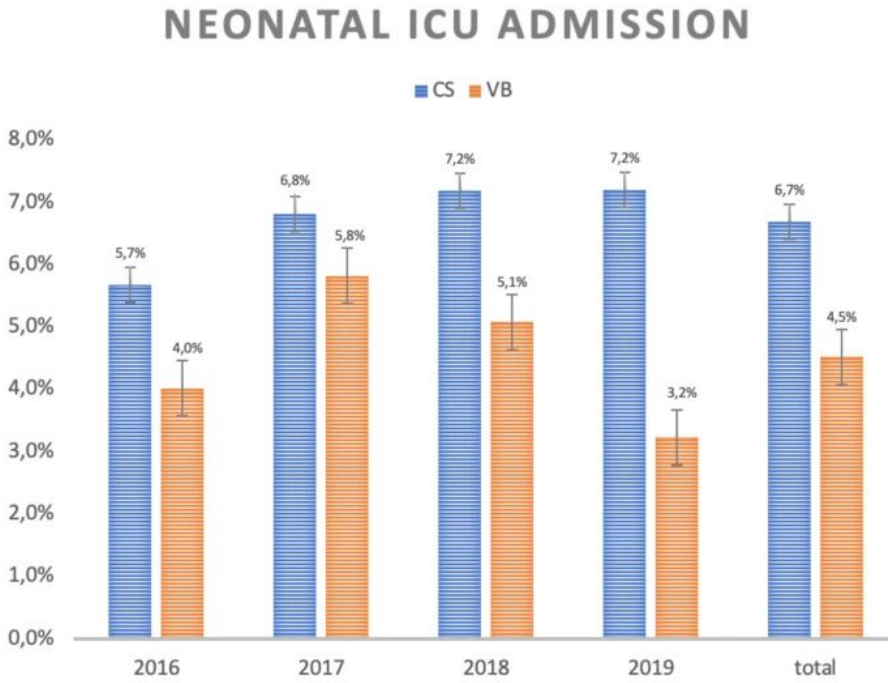
Cesarean deliveries in low-risk pregnancies were associated with a lower value delivery because in addition to being more expensive, they had worse perinatal outcomes.

Negrini R, da Silva Ferreira RD, Guimarães DZ. Value-based care in obstetrics: comparison between vaginal birth and caesarean section.*BMC Pregnancy Childbirth*. 2021;21(1):333. Published 2021 Apr 26. doi:10.1186/s12884-021-03798-2

Study Results - ICU Admits

As with their babies, low-risk parturient who underwent C-sections had higher admission rates to the ICU than those who underwent vaginal delivery (0,8% vs 0,3%, $p = 0.001$)



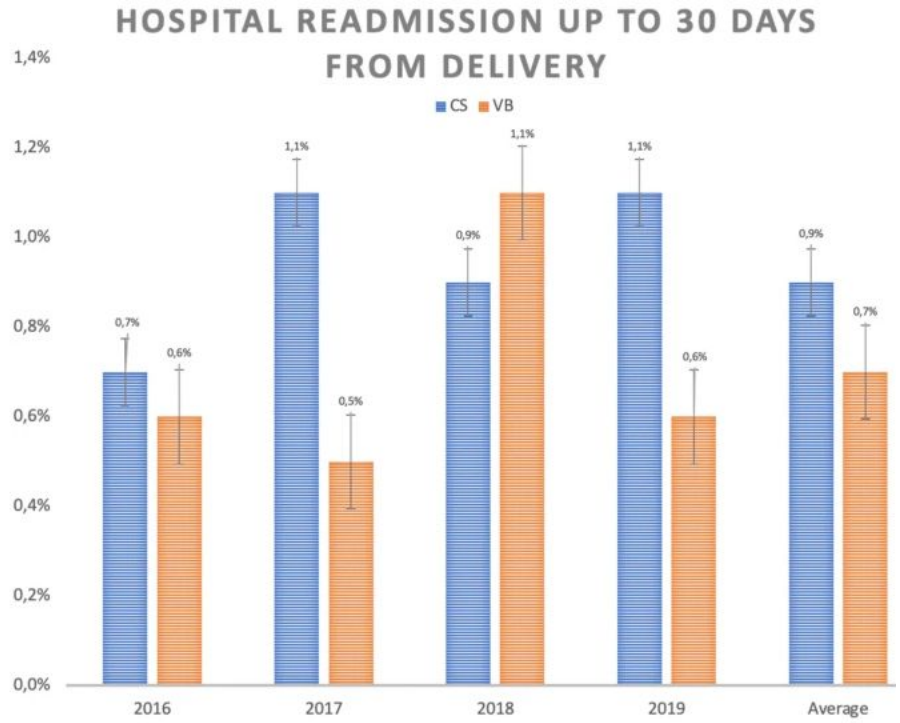


Neonates born by C-section are more likely to need this type of support than those born by vaginal delivery (6.7% vs 4.5%, $p = 0.0078$. The quantitative analysis of NICU admissions in C-sections also reveals that in less than 5% of cases the cesarean was due to an emergency related to intrapartum fetal distress, so this condition seems not to contribute to the final result.

Negrini R, da Silva Ferreira RD, Guimarães DZ. Value-based care in obstetrics: comparison between vaginal birth and caesarean section. *BMC Pregnancy Childbirth*. 2021;21(1):333. Published 2021 Apr 26. doi:10.1186/s12884-021-03798-2

Study Results - Readmissions

The rates of hospital readmission within 30 days from delivery are also higher in those patients submitted to C-sections than to vaginal delivery, although without statistical significance



Negrini R, da Silva Ferreira RD, Guimarães DZ. Value-based care in obstetrics: comparison between vaginal birth and caesarean section.*BMC Pregnancy Childbirth*. 2021;21(1):333. Published 2021 Apr 26. doi:10.1186/s12884-021-03798-2

Study Results: Costs

- Considering the overall hospital costs per patient (mother-baby binomial), cesarean deliveries are almost 15% more expensive than vaginal deliveries in low-risk pregnancies

- The total cost of hospitalization for cesarean delivery is more expensive due to higher maternal and neonatal costs.
  - There is a difference of almost 30% between hospital costs related to newborns undergoing cesarean delivery and those of vaginal delivery
  - Higher costs due to higher ICU admissions
  - Higher costs related to readmissions

Negrini R, da Silva Ferreira RD, Guimarães DZ. Value-based care in obstetrics: comparison between vaginal birth and caesarean section.*BMC Pregnancy Childbirth*. 2021;21(1):333. Published 2021 Apr 26. doi:10.1186/s12884-021-03798-2

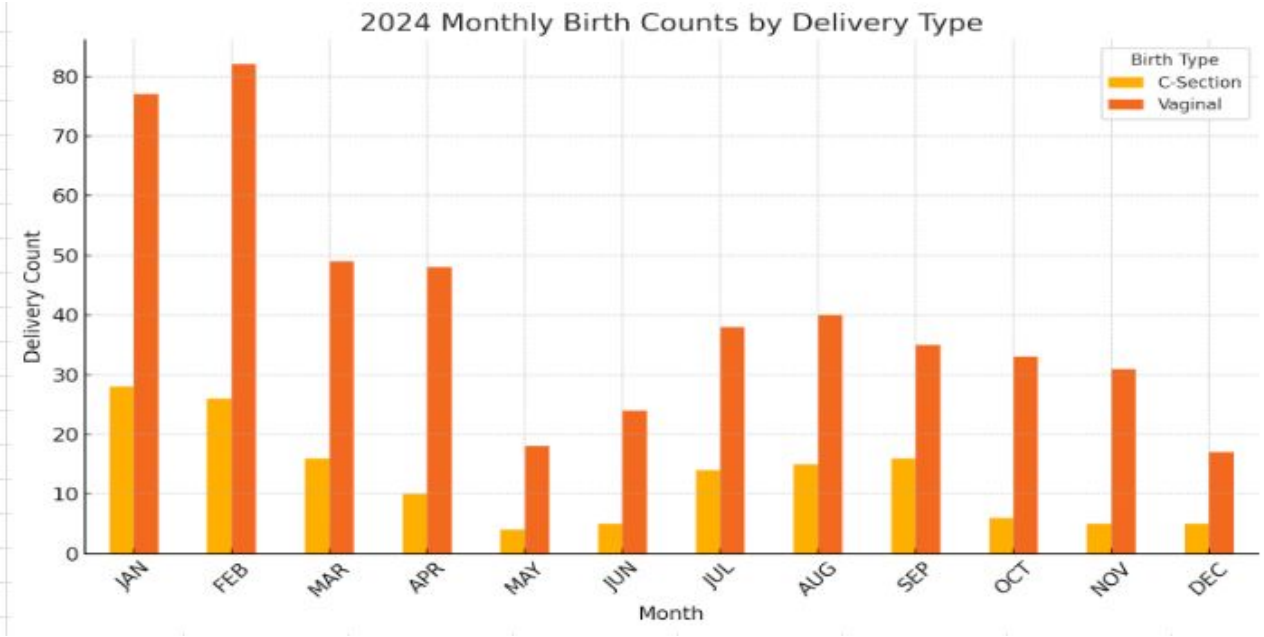
Texas Costs (2020):

TEXAS 2020	C-section	Vaginal Birth	Percent Difference
Employee Sponsored Insurance	$15,851.74	$11,278.33	29%
FFS Medicaid	$4,233.48	$2,776.59	34%

- Most of Texas Medicaid members are in an MCO so figures may be slightly skewed.

https://healthcostinstitute.org/hcci-originals-dropdown/all-hcci-reports/average-payments-for-childbirth-among-the-commercially-insured-and-fee-for-service-medicaid

Closer to Home: Dell Children's Health Plan (Medicaid)



C-sections

JAN	26.67%
FEB	24.07%
MAR	24.62%
APR	17.24%
MAY	18.18%
JUN	17.24%
JUL	26.92%
AUG	27.27%
SEP	31.37%
OCT	15.38%
NOV	13.89%
DEC	22.73%

dell children's Health Plan

Length of Stay Vaginal vs. C-section

facility /IP claims
DOS 2022-2025
PAID CLAIMS

Table1

# year	birth_type	avg_length_of_stay_days	birth type	avg_length_of_stay_days
2022	C-Section	4.3	Vaginal	2.1
2023	C-Section	3.2	Vaginal	2
2024	C-Section	3.4	Vaginal	2.2
2025	C-Section	3	Vaginal	2

30 Day Readmission Rates & Causes

year	birth_type	delivery_count	readmission_count	readmission_rate
2022	C-Section	324	23	7%
2022	Vaginal	906	27	3%
2023	C-Section	306	21	7%
2023	Vaginal	643	19	3%
2024	C-Section	147	10	7%
2024	Vaginal	469	14	3%
2025	C-Section	3	0	0%
2025	Vaginal	23	1	4%

Facility/IP claims

IP Readmission within 30 days

30 Day Readmission Causes

Birth Type	Rank	Description	ICD-10 Codes	Estimated Average Cost (Facility/IP)	Notes
C-Section	1	Surgical site infection (SSI) / wound complications	T81.4XXA	$3,000 – $5,000	Includes wound dehiscence or abscess, often requiring antibiotics/surgery
	2	Endometritis / Uterine infection	O85	$3,500 – $6,000	Common infection post-C-section, may require IV antibiotics & admission
	3	Hemorrhage or postpartum anemia	O72.1, D62	$3,000 – $5,800	Includes transfusions, extended hospital stay
Vaginal	1	Hemorrhage / Retained placenta complications	O72.0, O73.0	$3,500 – $6,500	May involve surgical procedures and blood transfusions
	2	Infection (UTI, endometritis)	O86.0, N39.0	$2,500 – $4,500	Varies based on infection severity and treatment setting
	3	Mental health conditions (e.g., postpartum depression)	F53.0, F32.9	$2,000 – $8,000	Cost depends on outpatient therapy, inpatient psych care, or meds

Patient Characteristics

Demographics

- Age
- Race/Ethnicity

Physical health

- Obesity
- Smoking
- Hypertension
- Previous or existing complications (placenta previa, pre-eclampsia)

Mental health

- Alcohol & drug use
- Perinatal mood and anxiety disorders

dell children's Health Plan https://pmc.ncbi.nlm.nih.gov/articles/PMC9014312/

Studies & Strategies to Decrease C-sections

Midwives (McLean, et al., 2023)

Nurse staffing (Lyndon, et al., 2025)

Provider birth attitudes (White VanGompel, et al., 2018)

Quality Improvement collaborative (Rosenstein, et al., 2021)

CMQCC

California Maternal Quality Care Collaborative

Produced a toolkit in 2016 to support vaginal birth and reduce primary cesareans

Collaborative effort of over 50 experts, including obstetricians, anesthesiologists, midwives, labor nurses, doulas, patient advocates, childbirth education professionals, public health professionals, policymakers, and healthcare purchasers

The adoption of toolkit strategies decreased NTSV cesarean rates by more than 3%, without any changes in safety metrics

Strategies for Improving the Culture of Care, Awareness, and Education for Cesarean Reduction

Improve Quality and Access to Childbirth Education

Improve Communication through Shared Decision Making at Critical Points in Care

Bridge the Provider Knowledge and Skills Gap

Improve Support from Senior Hospital Leadership and Harness the Power of Clinical Champions

Transition from Paying for Volume to Paying for Value

Key Strategies for Supporting Intended Vaginal Birth

Implement Institutional Policies that Uphold Best Practices

Implement Early Labor Supportive Care Policies and Establish Criteria for Active Labor Admission

Improve Supportive Care During Labor

Encourage Partnership with Doulas

Utilize Regional Anesthesia

Consider Intermittent Monitoring for Low Risk People

Implement Guidelines for Potentially Modifiable Conditions (ie, ECV, HSV prophylaxis)

Key Strategies to Monitor Labor Abnormalities

Create Highly Reliable Teams and Improve Interprofessional Communication

Implement Standard Diagnostic Criteria and Standard Responses to Labor Challenges and Fetal Heart Rate Abnormalities

Utilize Operative Vaginal Delivery when Appropriate

Identify Malposition and Implement Appropriate Interventions

Consider Alternative Coverage Programs

Develop Systems to Facilitate Safe Transfer of Care

Reduce Liability Driven Decision Making by Focusing on Quality and Safety

Using Data to Drive Reductions in Cesareans

Make Data Compelling to Providers

Assist Organizations to Understand the Data and Identify Steps to Improve Care

Assist Providers to Understands their Cesarean Rates and Be Comfortable with the Quality of the Data

Engage Patients, Employers, and the General Public

Midwifery Integration

Administrative Strategies - Use a team based model, Encourage quality improvement efforts, Analyze quality metrics for all provider types

Clinical Strategies - Cultivate a culture that values reduced intervention through the standardization of clinical practices, Ensure midwives are allowed to practice at their highest level while removing requirements that diminish autonomy

Educational Strategies - Encourage team-based care, Allow for shadowing opportunities, Interprofessional education, Debrief the normal

Improved Safety Across Birth Settings

Standardized system of consultation

Promote timely and efficient transfer by allowing direct admits rather than through the ED

Respect patient autonomy when it comes to birth setting

Remember that transferring to a hospital can be traumatic

Keep the patient and newborn together whenever possible

Establish a case review process

Coordinate postpartum care with transferring provider

Key Strategies for Integrating Doulas Into the Birth Care Team

Administrative Strategies - Foster a culture that values physiologic birth, Connect with community-based doula programs, Consider a hospital-based doula program, Don’t consider doulas as “visitors”

Clinical Strategies - Value the doula’s extensive knowledge of labor support techniques as a complement to medical skill sets, Establish expectations, Foster a culture of shared decision making, Engage in mutual learning

Educational Strategies - Educational opportunities that incorporate doulas as part of the team, Debrief births where doula care was, or could have been pivotal

Best Practices

Cervical dilation of 6 cm be considered start of active labor (moderate quality evidence).

Active phase arrest of labor should be defined as no progression in dilation in patients who are at least 6 cm dilated with rupture of membranes despite 4 hours of adequate uterine activity or 6 hours with inadequate uterine activity with pitocin (low quality evidence).

Prolonged second stage of labor should be defined as 3 hours of pushing in nulliparous patients, and 2 hours in multiparous patients. An individualized approach should be used to define second stage arrest (high quality evidence).

Second stage arrest can be identified earlier if there is lack of fetal rotation or descent despite adequate pushing effort (good practice point).

Neuraxial anesthesia can be offered during any stage of labor (moderate quality evidence).

Amniotomy is recommended to reduce the duration of labor (high quality evidence).

Either low-dose or high-dose Pitocin strategies are reasonable approaches to reduce operative deliveries (high quality evidence).

Intrauterine pressure catheters are recommended to determine adequacy of uterine contractions in those with protracted active labor or when contractions can not be accurately assessed externally (low quality evidence).

Pushing should commence when complete cervical dilation is achieved (high quality evidence).

Cesarean delivery should be performed once active phase arrest of labor is achieved (low quality evidence).

Those with second stage arrest disorders should be assessed for operative vaginal delivery before performing cesarean delivery (low quality evidence)

Resources

Lyndon,A, Simpson, KR, Landstrom, GL, et al. Relationship between nurse staffing during labor and cesarean birth rates in U.S. hospitals. *Nursing Outlook*. 2025;73(2):DOI: 10.1016/j.outlook.2024.102346

McLean KA, Souter VL, Nethery E. Expanding midwifery care in the United States: Implications for clinical outcomes and cost. Birth. 2023;50(4):935-945. doi:10.1111/birt.12748

Nedberg IH, Lazzerini M, Mariani I, et al. Changes in maternal risk factors and their association with changes in cesarean sections in Norway between 1999 and 2016: A descriptive population-based registry study. *PLoS Med*. 2021;18(9):e1003764. Published 2021 Sep 3. doi:10.1371/journal.pmed.1003764

Negrini R, da Silva Ferreira RD, Guimarães DZ. Value-based care in obstetrics: comparison between vaginal birth and caesarean section. *BMC Pregnancy Childbirth*. 2021;21(1):333. Published 2021 Apr 26. doi:10.1186/s12884-021-03798-2

Rosenstein MG, Chang SC, Sakowski C, et al. Hospital Quality Improvement Interventions, Statewide Policy Initiatives, and Rates of Cesarean Delivery for Nulliparous, Term, Singleton, Vertex Births in California. *JAMA*. 2021;325(16):1631-1639. doi:10.1001/jama.2021.3816

White VanGompel E, Main EK, Tancredi D, Melnikow J. Do provider birth attitudes influence cesarean delivery rate: a cross-sectional study. BMC Pregnancy Childbirth. 2018;18(1):184. Published 2018 May 29. doi:10.1186/s12884-018-1756-7

Zochowski MK, Kolenic GE, Zivin K, et al. Trends In Primary Cesarean Section Rates Among Women With And Without Perinatal Mood And Anxiety Disorders. *Health Aff (Millwood)*. 2021;40(10):1585-1591. doi:10.1377/hlthaff.2021.00780

First and Second Stage Labor Management (ACOG Clinical Practice Guideline #8, January 2024)

Thank you for attending