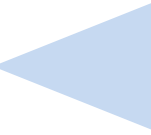




## **Report: Variation in NTSV C-section Rates Among California Hospitals**

**Prepared by PBGH to help Members leverage data for  
quality improvement**

**September 2014**



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# A. Introduction

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Despite widely documented health risks and cost increases associated with cesareans, the C-section rate in California is currently 33% - up nearly 60% from 1997. Alarming, as the C-section rate has risen, maternal and perinatal morbidity has worsened. Furthermore, the dramatic variation in C-section rates among hospitals reflects the overuse of this often avoidable and potentially harmful procedure. Narrowing variation and lowering the average C-section rate will lead to better quality care, improved health outcomes, and reduced costs.

The Pacific Business Group on Health's Call to Member Action: Transform Maternity Care through Cesarean Reductions details four distinct strategies Members can adopt to actively narrow C-section variation and decrease the average C-section rate in California. **Key among the four strategies is the use of quality data by Members to enable them to apply pressure to delivery facilities with high C-section rates, while rewarding those hospitals that meet or exceed standards.** This Report analyzes quality data<sup>1</sup>, which were publicly reported in 2012 for California's 245 delivery hospitals, and encourages Members to leverage data for quality improvement.

First on a statewide and then on a regional basis, this Report focuses on variation in the Nulliparous Term Singleton Vertex (NTSV) C-section rates among California hospitals. NTSV births are at lower risk for C-sections as compared to other deliveries because they occur among women who are first-time mothers (Nulliparous), bear a single child at full term (Term Singleton), and have babies positioned head down (Vertex).

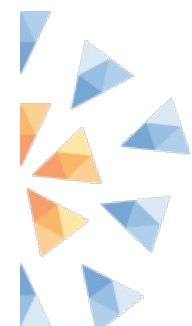
**California's NTSV C-section rate is currently 27.8%, well above the 2020 NTSV benchmark of 23.9% set forth in the Healthy People report issued by the Surgeon General.** Currently, only 37% of California hospitals meet this guideline, implying that a high volume of work lies ahead. In terms of variation, the NTSV C-section rate varies, from a low of 13% to a high of 83.3% - which suggests that a woman's chance of undergoing the procedure depends greatly on where in California she lives and in which facility she gives birth.

The high NTSV C-section rate and its extreme variation among hospitals serve as prime examples of a healthcare system plagued by inconsistent quality and the overuse of avoidable procedures. Fortunately, preliminary data from a PBGH quality improvement pilot demonstrate that a cooperative hospital can significantly reduce its NTSV C-section rate over a relatively short period. Although these findings reflect the work of a single hospital with a strong culture and willingness to address this issue, such a significant reduction in their NTSV C-section rate sends a positive signal<sup>2</sup> to the market.

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<sup>1</sup> Hospital data collected by the California Maternal Quality Care Collaborative (CMQCC) and reported to CalQualityCare.org.

<sup>2</sup> Pilots funded through the Robert Wood Johnson Foundation. Data are preliminary and based on findings over a six-month period at one Southern California hospital. PBGH partnered with the CMQCC to deliver quality improvement support.



Using the data in this Report, Members can engage in collective action to promote a high value maternity care system that moderates costs, improves birth outcomes, and, ultimately, makes mothers and families healthier.

## B. Rising C-section Rate in Context

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C-sections are clinically recommended for an estimated 15% of births, yet today about 33% of all women deliver by C-section.<sup>3</sup> Between 1997 and 2008, the national C-section rate rose from 21% to 33%, an increase of nearly 60%. This increase occurred across all demographics, ethnicities, and health profiles (such as high BMI and advanced maternal age).

**Disconcertingly, the sharpest increase in C-sections occurred among women with the lowest-risk pregnancies.**<sup>4</sup> Given the low rates of vaginal birth after a cesarean section, once a woman undergoes her first C-section, she is extremely likely to continue to have them in subsequent births<sup>5</sup> - exacerbating the problem.

*Exhibit 1: Overall US C-section Rate, National Center of Vital Statistics*

Rapidly Rising C-section Rate	
•	1965 / 4.5%
•	1980 / 16.9%
•	1997 / 21%
•	2008 / 33%
•	2014 / 33%

According to the National Partnership for Women and Families, the following factors contribute to the high C-section rate:

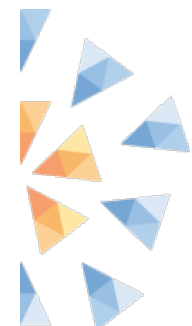
- Most hospital environments are not conducive to letting labor take its natural course
- Risks associated with common labor interventions (epidural, Pitocin) accumulate
- There are increasingly casual attitudes and limited awareness about the harms associated with this surgery
- Variation exists in physician training and practice style

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<sup>3</sup> Main, E. "Cesarean Deliveries, Outcomes, and Opportunities for Change in California: Toward a Public Agenda for Maternity Care Safety and Quality." California Maternal Quality Care Collaborative, 2011, <<https://www.cmqcc.org/resources/2079>>

<sup>4</sup> Macdorman, M.F. (2008). Cesarean Birth in the United States: Epidemiology, Trends, and Outcomes. *Clin Perinatol*, 35: 293-307.

<sup>5</sup> *Ibid.*



- Misaligned incentives benefit providers, including compensation and convenience<sup>6</sup>

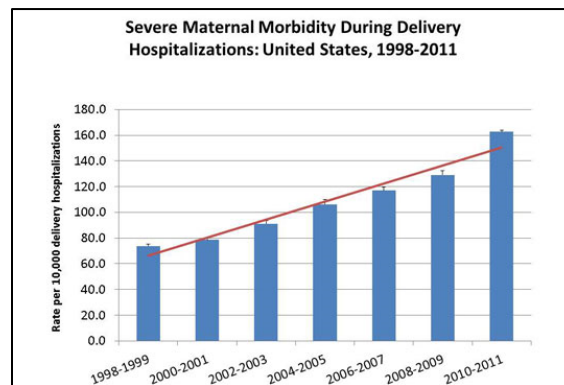
The current C-section rate reflects a hospital's labor management practices, which impact patient experience and healthcare spending. Dissecting variation in C-section rates provides a glimpse into the inconsistent quality and erratic nature of care received by laboring women.

## C. Health & Cost Impacts

**NTSV C-sections occur among the healthiest and lowest risk populations and are associated with increased morbidity.** For example, healthy, pregnant women who undergo C-sections that are not medically indicated are more likely to experience complications than those who deliver vaginally. Given the low rates of vaginal birth after a C-section, once a woman undergoes a C-section she is very likely to continue to have them in subsequent births. Additionally, women who undergo C-sections have a longer recovery time and lower satisfaction with their birth experience.<sup>7 8</sup>

**Unfortunately, the rise in C-sections has also paralleled adverse changes in maternal and perinatal health outcomes.** Research from the Center for Disease Control (CDC) suggests that mothers and babies are more likely to experience severe morbidity during birth today than they were 15 years ago, when the C-section rate was lower (Exhibit 2).

*Exhibit 2: US Increase in Severe Maternal Morbidity, 1998 – 2011, CDC*



In terms of the cost impact, the frequency of childbirth and the cost per birth explain why deliveries comprise one of the largest portions of a hospital's bill to both private insurers and Medicaid.<sup>9</sup> In California, C-sections cost on average twice as much as vaginal births, serving to further exacerbate

<sup>6</sup> For more information about the causes of the escalating C-section rate, see *Why Is the National U.S. Cesarean Section Rate So High?* Accessible at <http://www.childbirthconnection.org/article.asp?ck=10456&ClickedLink=274&area=27>.

<sup>7</sup> Kuklina, EV et al. (2009) Severe obstetric morbidity in the United States: 1998-2005. *Obstet Gynecol.* 113 (2 Part I):293-9.

<sup>8</sup> Weisman, O., et al. (2010). The experience of labor, maternal perception of the infant, and the mother's postpartum mood in a NTSV community cohort. *Arch Women's Ment Health.* (6): 505:1.

<sup>9</sup> Statistical Brief #160. Healthcare Cost and Utilization Project (HCUP). August 2013. Agency for Healthcare Research and Quality, Rockville, MD. [www.hcup-us.ahrq.gov/reports/statbriefs/sb160.jsp](http://www.hcup-us.ahrq.gov/reports/statbriefs/sb160.jsp).

costs.<sup>10</sup> **Any time a C-section can be prevented, payers save up to \$10,000.**<sup>11</sup> Even a small reduction in the number of C-sections can translate into large savings for a Member.

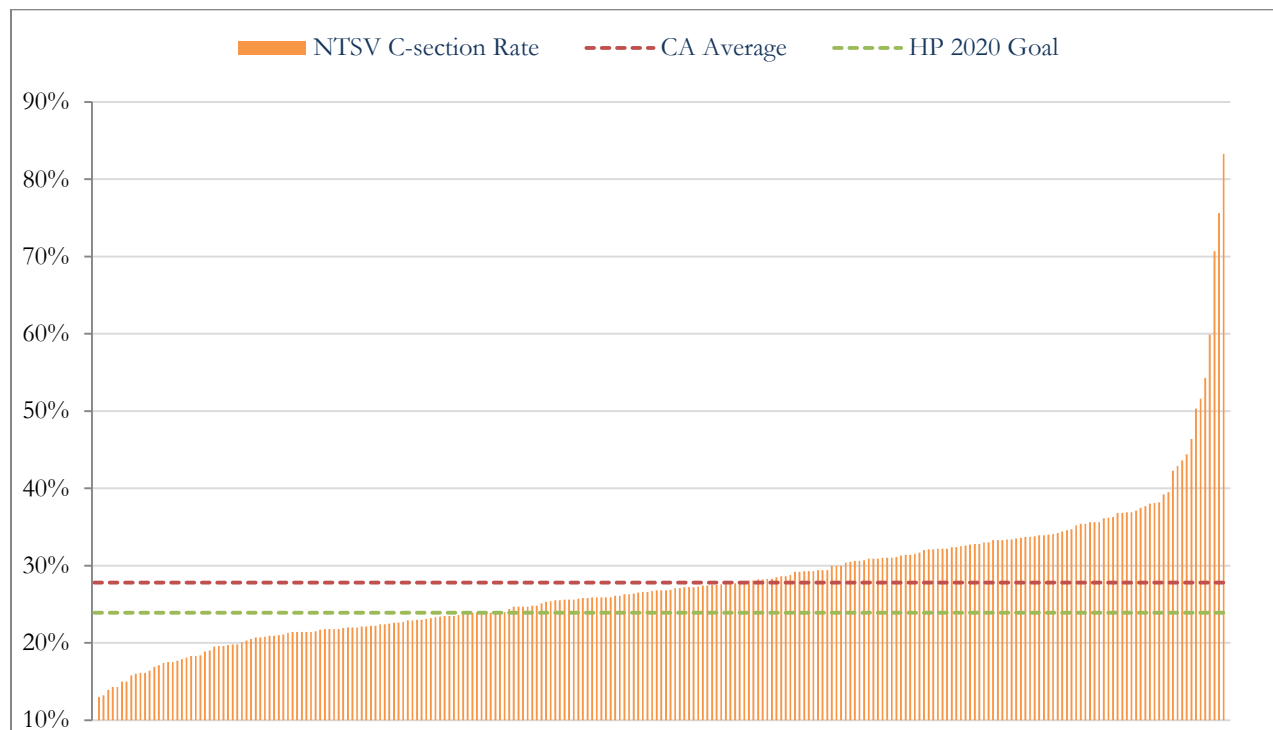
## D. California Statewide Key Findings

This section summarizes four key statewide findings. Section E provides a detailed analysis of NTSV C-section rates by California region.

**1. Variation among hospital NTSV C-section rates is strikingly high.** Throughout California, hospital NTSV C-section rates range dramatically from 13% to 83.3%: a 70 percentage point spread! This means that the facility in which a mother gives birth plays a significant role in influencing her chance of undergoing a C-section.

As Exhibit 3 depicts, 37% of all California hospitals do not meet the Healthy People NTSV C-section rate recommendation of 23.9%, suggesting that there is a significant opportunity to make improvements.

*Exhibit 3: NTSV C-section Rate All California Hospitals, 2012\**



*\*Each line represents one of California's 245 hospitals reporting live births.*

<sup>10</sup> Hsia, R. et al. (2014). Analysis of variation in charges and prices paid for vaginal and caesarean section births: a cross-sectional study. *BMJ Open* 4:e004017.

<sup>11</sup> Truven Health Analytics. (2013). The cost of having a baby in the United States.

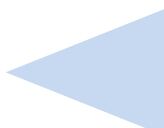
**2. Differences in the NTSV C-section rate within regions are extreme.** The most widespread case in California is in the Los Angeles region, which has the highest average NTSV C-section rate (33.6%) and the highest percentage point difference between low and high-performing hospitals (61 point difference). This means that within the Los Angeles region, mothers can have vastly different delivery experiences. In contrast, the North Bay region has the lowest NTSV C-section rate (19.6%) and the lowest percentage points spread between low and high-performing hospitals (11 point difference). These data suggest that mothers delivering in the North Bay experience more consistent care.

To provide a high-level summary of the performance and size of each region, Exhibit 4 compiles basic NTSV C-section variation data for each region.

*Exhibit 4: Comparison of C-section Performance across Regions, 2012*

Region	Total Hospitals	Average Hospital C-section Rate	Hospitals Above CA Average	Hospitals Below HP 2020	Percentage Point Difference (Range)	Total Live Births
01 Northern California	14	29.7%	6 (42.9%)	6 (42.9%)	58.5	9,153
02 Golden Empire	16	22.1%	1 (6.3%)	10 (62.5%)	18.5	31,000
03 North Bay	10	19.6%	0 (0%)	9 (90%)	11.1	10,576
04 West Bay	10	23.4%	3 (30%)	6 (60%)	15.9	19,349
05 East Bay	14	26.1%	3 (21.4%)	10 (71.4%)	19.8	26,876
06 North San Joaquin	15	29.4%	9 (60%)	3 (20%)	24.7	22,574
07 Santa Clara	11	23.8%	2 (18.2%)	6 (54.5%)	21.3	19,349
08 Mid-Coast	11	24.8%	3 (27.3%)	5 (45.5%)	21.8	12,296
09 Central	16	26.7%	7 (43.8%)	5 (31.3%)	22.9	42,100
10 Santa Barbara	9	27.8%	6 (66.7%)	3 (33.3%)	16.1	14,539
11 Los Angeles	56	33.6%	36 (64.3%)	5 (8.9%)	61.3	133,320
12 Inland Counties	27	27.4%	9 (33.3)	10 (37%)	37.9	50,906
13 Orange	17	28.3%	9 (52.9%)	5 (29.4%)	23.3	38,630
14 San Diego/Imperial	16	29.0%	10(62.5%)	1 (6.3%)	15.1	44,104





**3. The range of hospital NTSV C-section rates varies significantly from region to region.** Hospitals in Southern California regions have higher NTSV C-section rates than those in Northern California. For example, the San Francisco Bay Area (including the North Bay, West Bay, East Bay, and Santa Clara Regions) has an average NTSV C-section rate of 23.2% which is over ten percentage points lower than the Los Angeles region's average rate of 33.6%. These data suggest that, on average, women who give birth in LA hospitals are 44% more likely to have a C-section than women who deliver in the San Francisco Bay Area. These data also suggest that hospitals in certain California regions are more likely to perform unnecessary C-sections.

**4. No association exists between volume of deliveries and NTSV C-section rates.** Several exemplary hospitals maintain low NTSV C-section rates even though they have a high number of live births. These sites demonstrate that a hospital can achieve a low C-section rate irrespective of the quantity of annual births.

# E. Analysis of C-section Variation by Region

## Regional Breakdown

This section provides a detailed analysis of NTSV C-section variation for all 245 labor and delivery units in California. To facilitate reading, these hospitals have been divided into 14 California regions based on Health Service Areas used by California’s Office of Statewide Health Planning and Development: Northern California, Golden Empire, North Bay, West Bay, East Bay, North San Joaquin, Santa Clara, Mid-Coast, Central, Santa Barbara, Los Angeles, Inland Counties, Orange, San Diego/Imperial (see Exhibit 5).

*Exhibit 5: Map of California Health Service Areas*



## Data Breakdown

Each regional breakdown includes the 2012 NTSV C-section rate for each local hospital as reported by California HealthCare Foundation's CalQualityCare.org, as well as the number of live births which hospitals reported to the California Office of Statewide Health Planning and Development for the same year. **The NTSV C-section rate serves as a better quality indicator than the overall C-section rate** because it controls for some variables that contribute to higher C-section rates (such as previous C-section, breech position, and multiple births). The low-risk C-section rate is also an important quality indicator for the future, as the first birth impacts a woman's subsequent deliveries.

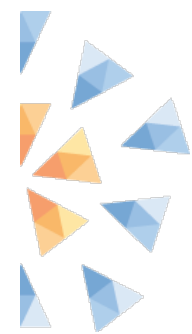
As an additional quality indicator, the analyses include the status of each hospital's participation in a maternal data registry. California is fortunate to have a state maternal data center that allows hospitals to directly and automatically report birth data for tracking. The specificity and timeliness of information collected by the California Maternal Data Center (CMDC)<sup>12</sup> promotes the transparency necessary to reduce variation in maternity care. As of October, 1 2014, 68 (28%) of the 245 California hospitals submit data to the CMDC, representing 38.5% of California's delivery volume. An additional 50 (20.4%) have taken steps to do so in the near future

Each regional analysis includes a summary of these key statistics:

- The regional average NTSV C-section rate
- Total number of hospitals
- Total live births
- Level of participation in the CMDC

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<sup>12</sup> Stanford's California Maternal Quality Care Collaborative (CMQCC) manages the California Maternal Data Center.

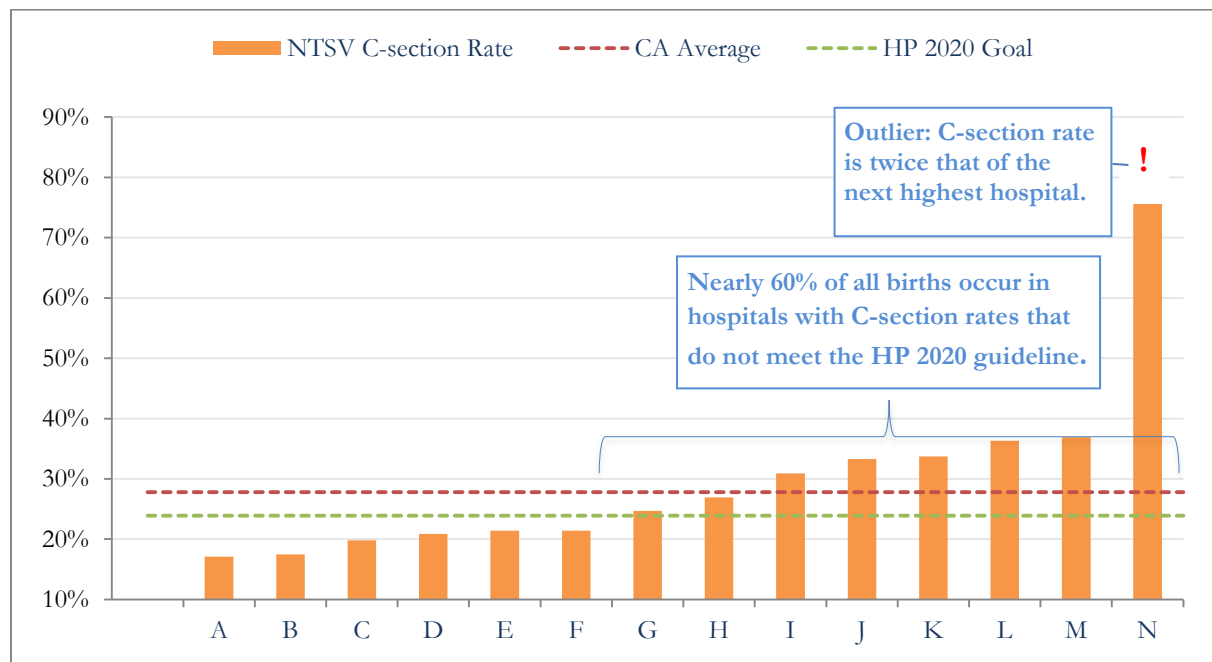


## Region 1: Northern California NTSV C-section Rates by Hospital, 2012

Regional Overview	
Mean NTSV C-section Rate	29.7%
Number of Hospitals	14
Number/Percent of Hospitals Above California NTSV Average	6/42%
Number/Percent of Hospitals Below Healthy People 2020 Guidelines	6/42%
Difference Between Lowest and Highest Performing Hospitals (Percentage Point Range)	58.6
Total Live Births	9,153

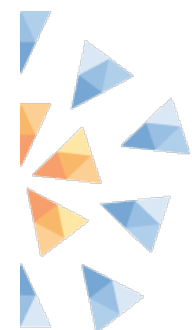
*Exhibit 1A: Graph of Northern California NTSV C-section Rates by Hospital, 2012*

To identify the specific hospitals included in the graph, refer to Exhibit 1B which lists all the hospitals in the region by ascending NTSV C-section rates. The green line represents the Healthy People 2020 benchmark for NTSV C-sections, 23.9%. The red line represents the average NTSV average C-section rate in all California hospitals, 27.8%.



*Exhibit 1B: Northern California NTSV C-section Rates and Total Live Births by Hospital, 2012*

<b>Label</b>	<b>Hospital</b>	<b>NTSV C-section Rate</b>	<b>Total Live Births</b>	<b>CMDC Submitter?</b>
A	Mad River Community Hospital	17.1%	541	No
B	Redwood Memorial Hospital	17.5%	369	In process
C	St. Joseph Hospital - Eureka	19.8%	594	In process
D	Sutter Coast Hospital	20.9%	331	No
E	Feather River Hospital	21.4%	972	No
F	Ukiah Valley Medical Center/Hospital Drive	21.4%	909	No
G	Enloe Medical Center- Esplanade Campus	24.7%	1,396	Yes
H	St. Elizabeth Community Hospital	26.9%	719	In Process
I	Mercy Medical Center - Redding	30.9%	1,950	In Process
J	Colusa Regional Medical Center	33.3%	158	No
K	Banner Lassen Medical Center	33.7%	247	No
L	Oroville Hospital	36.3%	414	No
M	Sutter Lakeside Hospital	36.9%	337	No
N	Fairchild Medical Center	75.6%	216	No

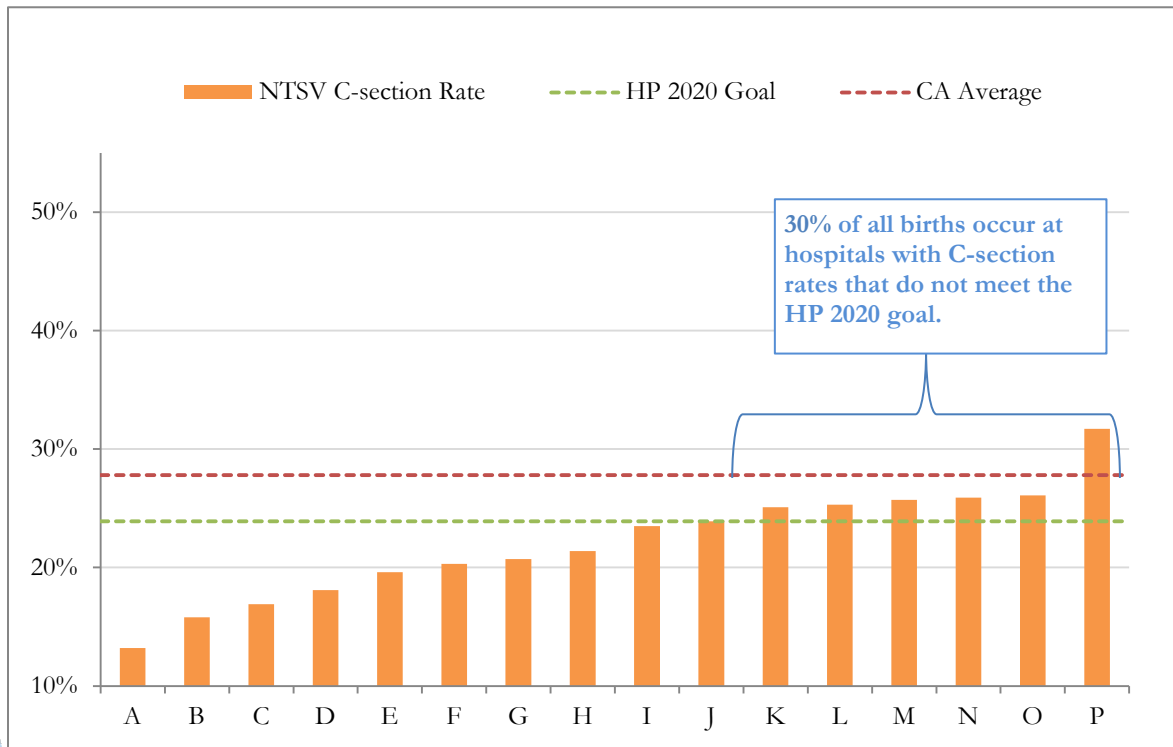


## Region 2: Golden Empire NTSV C-section Rates by Hospital, 2012

Regional Overview	
Mean NTSV C-section Rate	22.1%
Number of Hospitals	16
Number/Percent of Hospitals Above California NTSV Average	1/6%
Number/Percent of Hospitals Below Healthy People 2020 Guidelines	10/63%
Difference Between Lowest and Highest Performing Hospitals (Percentage Point Range)	18.5
Total Live Births	31,000

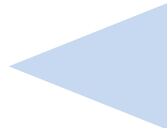
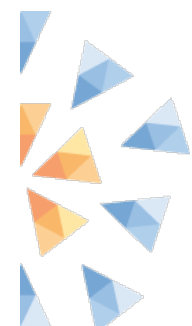
*Exhibit 2A: Graph of Golden Empire NTSV C-section Rates by Hospital, 2012*

To identify the specific hospitals included in the graph, refer to Exhibit 2B which lists all the hospitals in the region by ascending C-section rates. The green line represents the Healthy People 2020 benchmark for NTSV C-sections, 23.9%. The red line represents the average NTSV average C-section rate in all California hospitals, 27.8%.



*Exhibit 2B: Golden Empire NTSV C-section Rates and Total Live Births by Hospital, 2012*

<b>Label</b>	<b>Hospital</b>	<b>NTSV C-section Rate</b>	<b>Total Live Births</b>	<b>CMDC Submitter?</b>
A	Sutter Davis Hospital	13.2%	1,350	In process
B	Tahoe Forest Hospital	15.8%	362	No
C	Kaiser Permanente - South Sacramento	16.9%	2,362	In process
D	Barton Memorial Hospital	18.1%	385	In process
E	Kaiser Permanente - Roseville	19.6%	5,088	Yes
F	University Of California Davis Medical Center	20.3%	1,816	No
G	Sierra Nevada Memorial Hospital	20.7%	494	In Process
H	Woodland Memorial Hospital	21.4%	704	In Process
I	Sutter Memorial Hospital- Sacramento	23.5%	5,699	Yes
J	Methodist Hospital Of Sacramento	23.9%	1,704	In Process
K	Mercy Hospital - Folsom	25.1%	895	In Process
L	Sutter Roseville Medical Center	25.3%	2,965	Yes
M	Fremont Medical Center	25.7%	2,061	No
N	Mercy General Hospital	25.9%	2,344	In Process
O	Mercy San Juan Hospital	26.1%	2,312	In Process
P	Marshall Medical Center (1-Rh)	31.7%	459	No



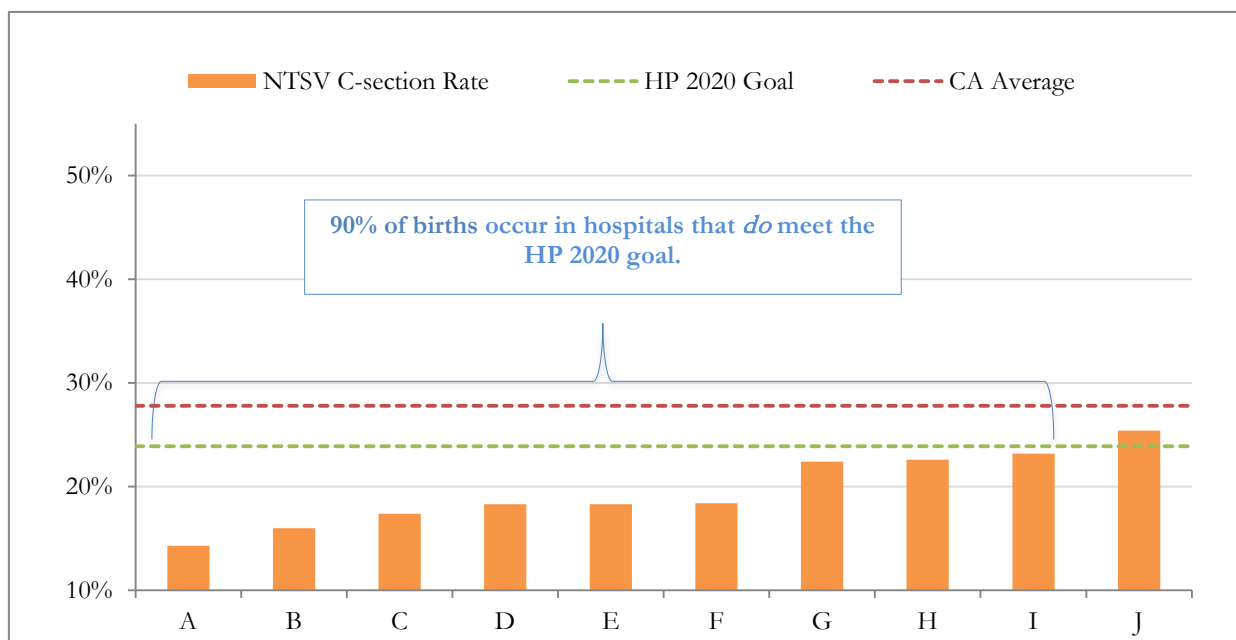
### Region 3: North Bay NTSV C-section Rates by Hospital, 2012

Regional Overview	
Mean C-section NTSV Rate	19.6%
Number of Hospitals	10
Number/Percent of Hospitals Above California NTSV Average	0/0%
Number/Percent of Hospitals Below Healthy People 2020 Guidelines	9/90%
Difference Between Lowest and Highest Performing Hospitals (Percentage Point Range)	11.1
Total Live Births	10,576

- The North Bay region has the lowest C-section rate in the state with an average rate of 19.6%. The North Bay also reports the fewest number of total live births of all the regions.

*Exhibit 3A: Graph of North Bay C-section Rates by Hospital, 2012*

To identify the specific hospitals included in the graph, refer Exhibit 3B which lists all the hospitals in the region by ascending C-section rates. The green line represents the Healthy People 2020 benchmark for NTSV C-sections, 23.9%. The red line represents the average NTSV average C-section rate in all California hospitals, 27.8%.





*Exhibit 3B: North Bay C-section Rates and Total Live Births by Hospital, 2012*

<b>Label</b>	<b>Hospital</b>	<b>NTSV C-section Rate</b>	<b>Total Live Births</b>	<b>CMDC Submitter?</b>
A	Sonoma Valley Hospital	14.3%	147	No
B	St. Helena Hospital & Clearlake	16.0%	426	No
C	Sutter Solano Medical Center	17.4%	666	No
D	Kaiser Permanente - Vallejo	18.3%	2,258	In process
E	Petaluma Valley Hospital	18.3%	444	In process
F	Sutter Medical Center Of Santa Rosa	18.4%	1,636	No
G	North Bay Medical Center	22.4%	1,323	Yes
H	Queen Of The Valley Hospital - Napa	22.6%	847	In process
I	Kaiser Permanente - Santa Rosa	23.2%	1,891	In process
J	Santa Rosa Memorial Hospital-Montgomery	25.4%	938	In process

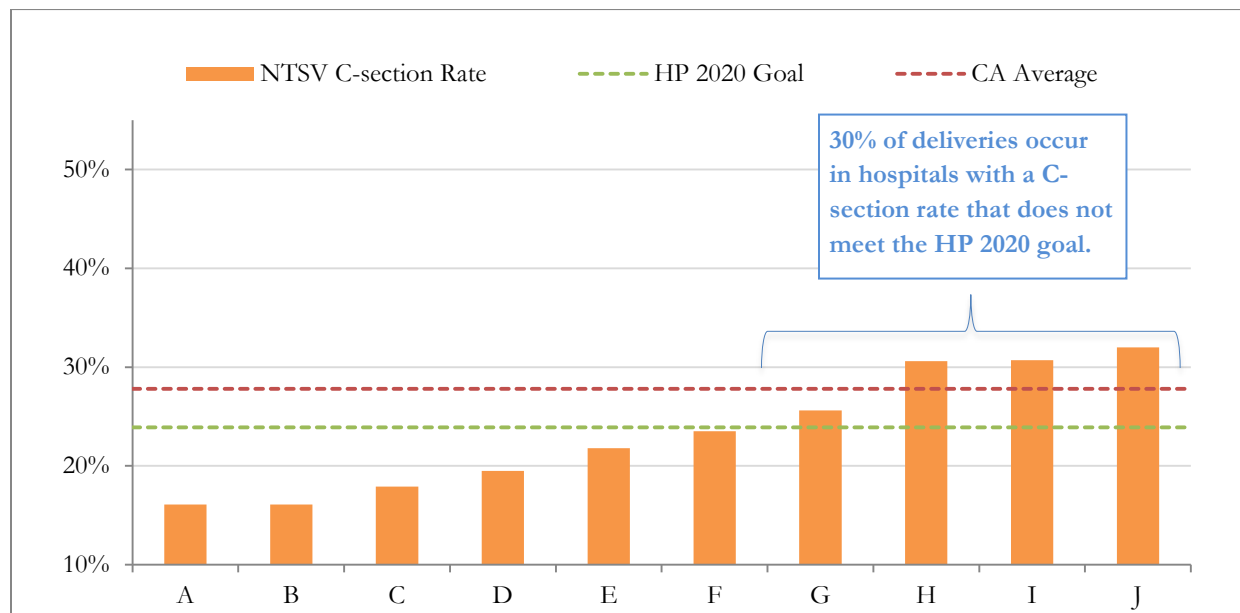
## Region 4: West Bay NTSV C-section Rates by Hospital, 2012

Regional Overview	
Mean NTSV C-section Rate	23.4%
Number of Hospitals	10
Number/Percent of Hospitals Above California NTSV Average	3/30%
Number/Percent of Hospitals Below Healthy People 2020 Guidelines	6/60%
Difference Between Lowest and Highest Performing Hospitals (Percentage Point Range)	15.9
Total Live Births	19,349

➤ One of every five births in the West Bay occurs in three hospitals with C-section rates over 30%.

*Exhibit 4A: Graph of West Bay NTSV C-section Rates by Hospital, 2012*

To identify the specific hospitals included in the graph, refer to Exhibit 4B which lists all the hospitals in the region by ascending C-section rates. The green line represents the Healthy People 2020 benchmark for NTSV C-sections, 23.9%. The red line represents the average NTSV average C-section rate in all California hospitals, 27.8%.



*Exhibit 4B: West Bay C-section Rates and Total Live Births by Hospital, 2012*

<b>Label</b>	<b>Hospital</b>	<b>NTSV C-section Rate</b>	<b>Total Live Births</b>	<b>CMDC Submitter?</b>
A	Kaiser Permanente - Redwood City	16.1%	1,447	In process
B	San Francisco General Hospital	16.1%	1,156	No
C	California Pacific Medical Center - St. Luke's Campus	17.9%	933	Yes
D	UCSF Medical Center	19.5%	1,885	No
E	California Pacific Medical Center-California	21.8%	5,513	Yes
F	Marin General Hospital	23.5%	1,400	No
G	Kaiser Permanente - San Francisco	25.6%	2,914	In process
H	Mills-Peninsula Medical Center	30.6%	1,864	Yes
I	Sequoia Hospital	30.7%	1,632	In Process
J	Seton Medical Center	32.0%	605	No

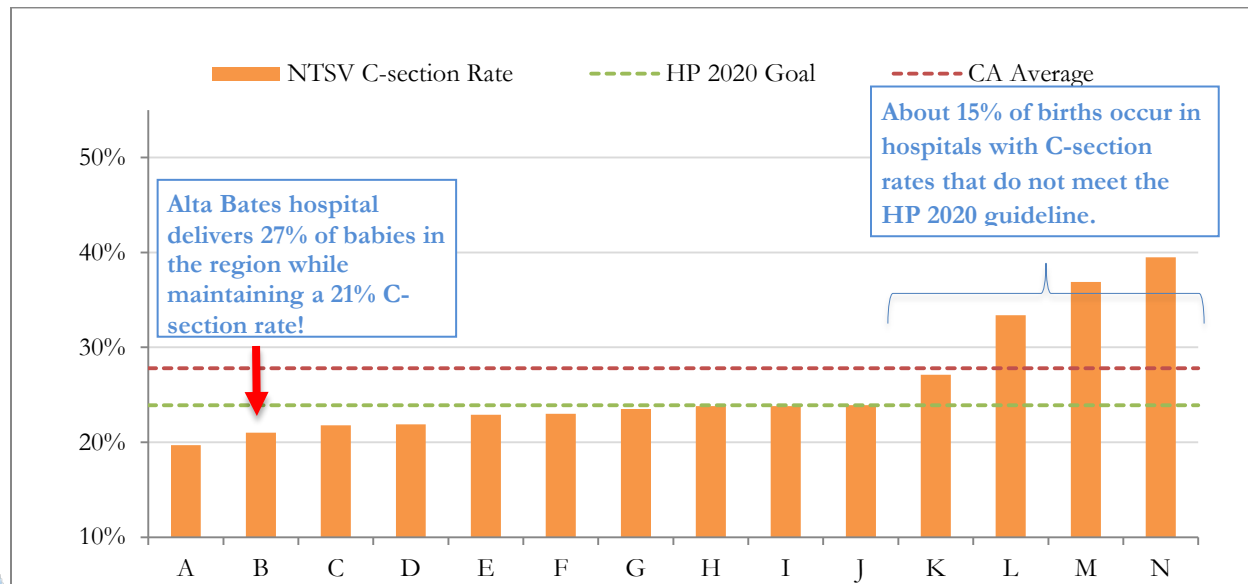
## Region 5: East Bay NTSV C-section Rates by Hospital, 2012

Regional Overview	
Mean NTSV C-section Rate	26.1%
Number of Hospitals	14
Number/Percent of Hospitals Above California NTSV Average	3/21%
Number/Percent of Hospitals Below Healthy People 2020 Guidelines	10/71%
Difference Between Lowest and Highest Performing Hospitals (Percentage Point Range )	19.8
Total Live Births	26,876

- *Alta Bates Hospital (B) reports the second lowest C-section rate (21.0%) and also the region's highest total annual live births (7,236). This suggests that it is possible to maintain low C-section rates and have a high volume of live births.*

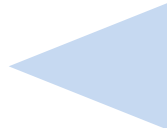
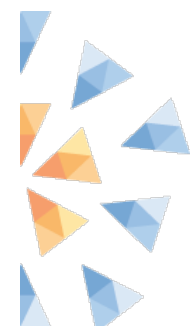
### Exhibit 5A: Graph of East Bay C-section Rates by Hospital, 2012

To identify the specific hospitals included in the graph, refer to Exhibit 5B which lists all the hospitals in the region by ascending C-section rates. The green line represents the Healthy People 2020 benchmark for NTSV C-sections, 23.9%. The red line represents the average NTSV average C-section rate in all California hospitals, 27.8%.



*Exhibit 5B: East Bay NTSV C-section Rates and Total Live Births by Hospital, 2012*

<b>Label</b>	<b>Hospital</b>	<b>NTSV C-section Rate</b>	<b>Total Live Births</b>	<b>CMDC Submitter?</b>
A	Contra Costa Regional Medical Center	19.7%	1,910	No
B	Alta Bates Summit Med Center-Alta Bates	21.0%	7,236	Yes
C	Kaiser Permanente - Hayward	21.8%	2,690	Yes
D	John Muir Medical Center-Walnut Creek	21.9%	2,630	No
E	St. Rose Hospital	22.9%	981	No
F	Sutter Delta Medical Center	23.0%	988	No
G	Alameda County Medical Center	23.5%	1,097	No
H	Kaiser Permanente - Antioch	23.8%	1,457	In process
I	Kaiser Permanente - Walnut Creek	23.8%	3,633	In process
J	Washington Hospital - Fremont	23.9%	1,970	No
K	Kaiser Permanente - Oakland	27.1%	2,284	Yes
L	Eden Medical Center	33.4%	94	No
M	Valley Care Medical Center	36.9%	1,138	Yes
N	San Ramon Regional Medical Center	39.5%	723	Yes



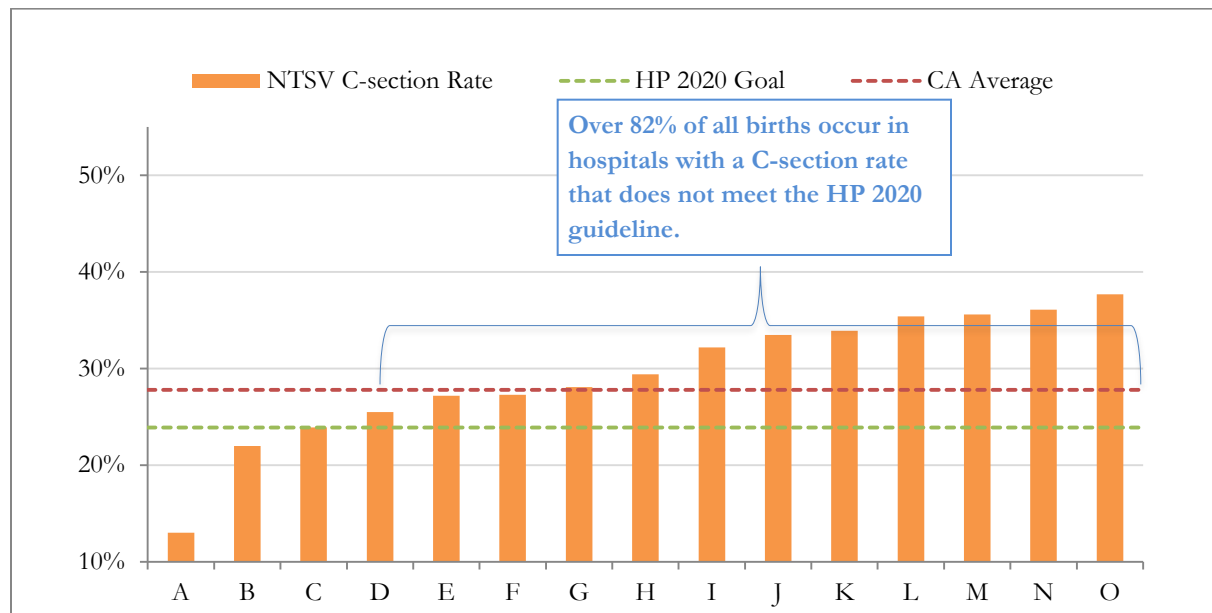
## Region 6: North San Joaquin NTSV C-section Rates by Hospital, 2012

Regional Overview	
Mean NTSV C-section Rate	29.4%
Number of Hospitals	15
Number/Percent of Hospitals Above California NTSV Average	9/60%
Number/Percent of Hospitals Below Healthy People 2020 Guidelines	3/20%
Difference Between Lowest and Highest Performing Hospitals (Percentage Point Range)	24.7
Total Live Births	22,574

- Over 22% of all births occur in the hospitals with the two highest C-section rates (8-10 points over the state average).

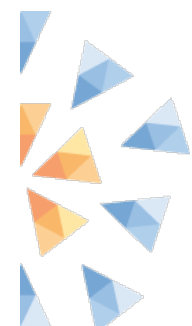
*Exhibit 6A: Graph of North San Joaquin NTSV C-section Rates by Hospital, 2012*

To identify the specific hospitals included in the graph, refer to Exhibit 6B which lists all the hospitals in the region by ascending C-section rates. The green line represents the Healthy People 2020 benchmark for NTSV C-sections, 23.9%. The red line represents the average NTSV average C-section rate in all California hospitals, 27.8%.



*Exhibit 6B: North San Joaquin NTSV C-section Rates and Total Live Births by Hospital, 2012*

<b>Label</b>	<b>Hospital</b>	<b>NTSV C-section Rate</b>	<b>Total Live Births</b>	<b>CMDC Submitter?</b>
A	Emanuel Medical Center, Inc.	13.0%	1,322	No
B	Sutter Amador Hospital	22.0%	354	No
C	Kaiser Permanente - Modesto	23.9%	2,340	In process
D	St. Joseph's Medical Center Of Stockton	25.5%	2,528	In process
E	Dameron Hospital	27.2%	1,364	Yes
F	Doctors Medical Center	27.3%	3,739	Yes
G	Lodi Memorial Hospital	28.1%	964	No
H	San Joaquin General Hospital	29.4%	2,141	No
I	Oak Valley District Hospital (2-Rh)	32.2%	279	No
J	Doctors Hospital Of Manteca	33.5%	716	Yes
K	Sutter Tracy Community Hospital	33.9%	640	No
L	Sonora Regional Medical Center - Greenley	35.4%	528	Yes
M	Memorial Hospital Los Banos	35.6%	734	No
N	Memorial Hospital Medical Center - Modesto	36.1%	2,045	No
O	Mercy Medical Center - Merced	37.7%	2,880	In Process



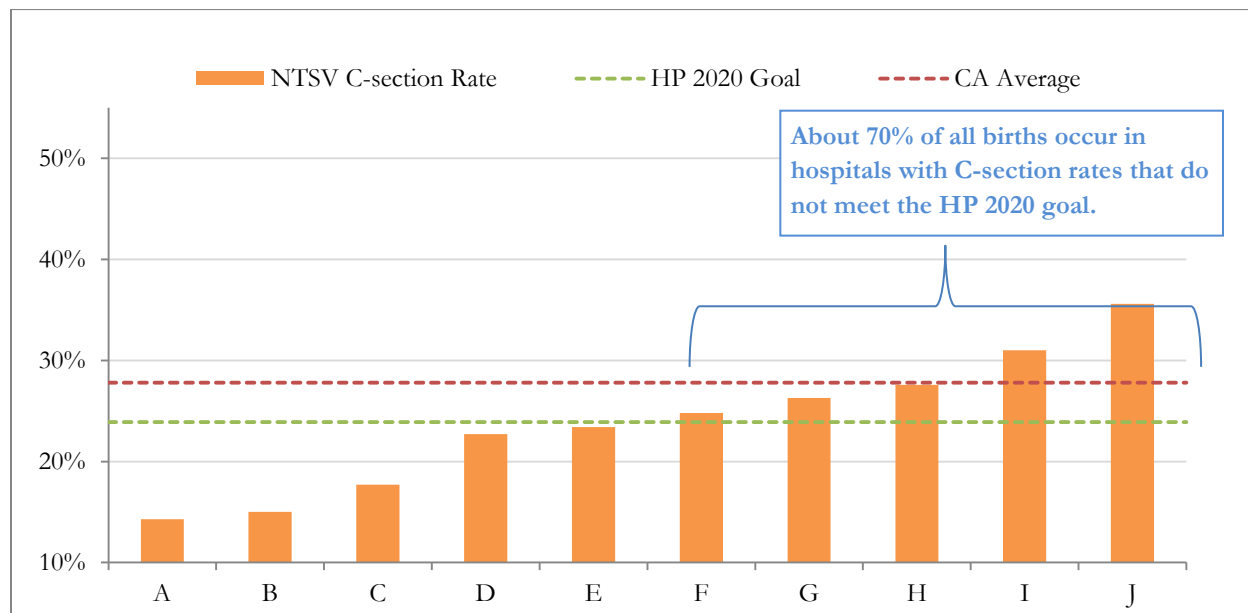
## Region 7: Santa Clara NTSV C-section Rates by Hospital, 2012

Regional Overview	
Mean NTSV C-section Rate	23.8%
Number of Hospitals	11
Number/Percent of Hospitals Above California NTSV Average	2/18%
Number/Percent of Hospitals Below Healthy People 2020 Guidelines	6/55%
Difference Between Lowest and Highest Performing Hospitals (Percentage Point Range)	21.3
Total Live Births	27,672

➤ The three hospitals with the highest C-section rates account for 42% of all births in the region.

*Exhibit 7A: Graph of Santa Clara NTSV C-section Rates by Hospital, 2012*

To identify the specific hospitals included in the graph, refer to Exhibit 7B which lists all the hospitals in the region by ascending C-section rates. The green line represents the Healthy People 2020 benchmark for NTSV C-sections, 23.9%. The red line represents the average NTSV average C-section rate in all California hospitals, 27.8%.





*Exhibit 7B: Santa Clara NTSV C-section Rates and Total Live Births by Hospital, 2012*

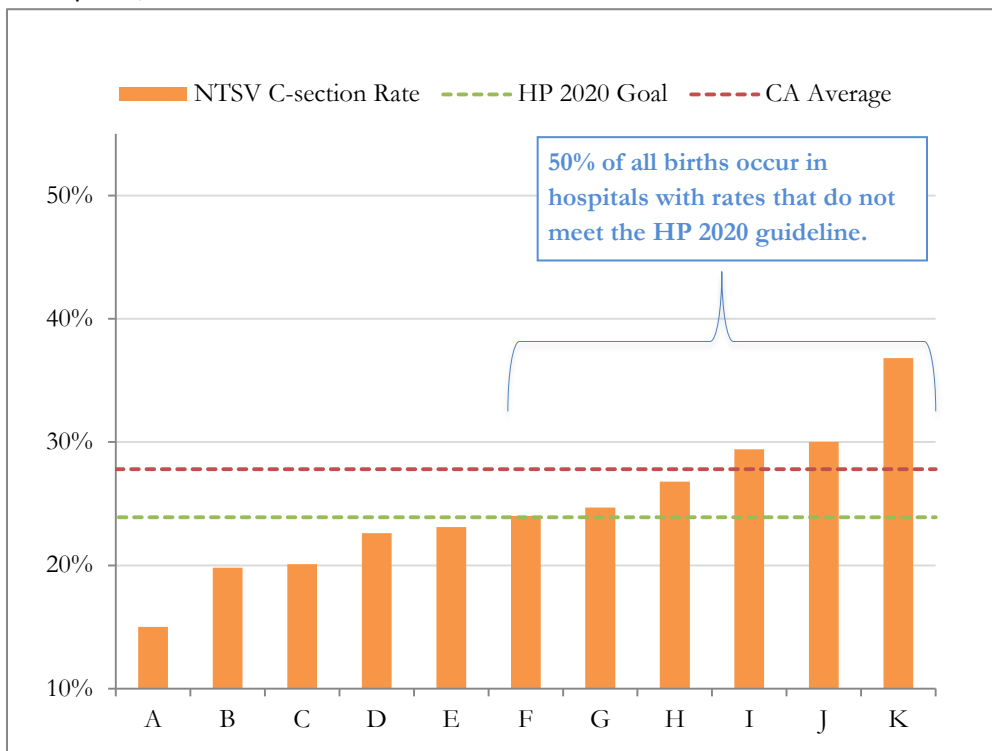
<b>Label</b>	<b>Hospital</b>	<b>NTSV C-section Rate</b>	<b>Total Live Births</b>	<b>CMDC Submitter?</b>
A	El Camino Hospital Los Gatos	14.3%	723	Yes
B	Kaiser Permanente - San Jose	15.0%	2,074	In process
C	St. Louise Regional Hospital	17.7%	634	No
D	Regional Medical Center Of San Jose	22.7%	435	No
E	Lucile Salter Packard Children's Hospital at Stanford	23.4%	4,344	No
F	Kaiser Permanente - Santa Clara	24.8%	4,511	Yes
G	O'Connor Hospital - San Jose	26.3%	3,298	No
H	El Camino Hospital	27.6%	4,387	Yes
I	Santa Clara Valley Medical Center	31.0%	3,985	Yes
J	Good Samaritan Hospital-San Jose	35.6%	3,281	No

## Region 8: Mid-Coast NTSV C-section Rates by Hospital, 2012

Regional Overview	
Mean NTSV C-section Rate	24.8%
Number of Hospitals	11
Number/Percent of Hospitals Above California NTSV Average	3/27%
Number/Percent of Hospitals Below Healthy People 2020 Guidelines	5/46%
Difference Between Lowest and Highest Performing Hospitals (Percentage Point Range)	21.8
Total Live Births	12,296

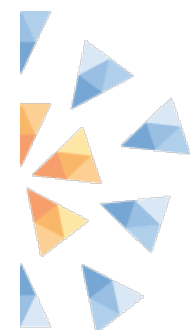
*Exhibit 8A: Graph of NTSV Mid-Coast C-section Rates by Hospital, 2012*

To identify the specific hospitals included in the graph, refer to Exhibit 8B which lists all the hospitals in the region by ascending C-section rates. The green line represents the Healthy People 2020 benchmark for NTSV C-sections, 23.9%. The red line represents the average NTSV average C-section rate in all California hospitals, 27.8%.



*Exhibit 8B: Mid-Coast NTSV C-section Rates and Total Live Births by Hospital, 2012*

<b>Label</b>	<b>Hospital</b>	<b>NTSV C-section Rate</b>	<b>Total Live Births</b>	<b>CMDC Submitter?</b>
A	Twin Cities Community Hospital	15.0%	734	Yes
B	French Hospital Medical Center	19.8%	584	In Process
C	Sutter Maternity & Surgery Center Of Santa Cruz	20.1%	978	No
D	Natividad Medical Center	22.6%	2,748	Yes
E	Community Hospital Monterey Peninsula	23.1%	1,045	No
F	Sierra Vista Regional Medical Center	24.0%	1,265	Yes
G	Dominican Hospital-Santa Cruz/Soquel	24.7%	926	In Process
H	Salinas Valley Memorial Hospital	26.8%	1,686	No
I	George L. Mee Memorial Hospital	29.4%	544	In process
J	Watsonville Community Hospital	30.0%	1,368	No
K	Hazel Hawkins Memorial Hospital	36.8%	418	No



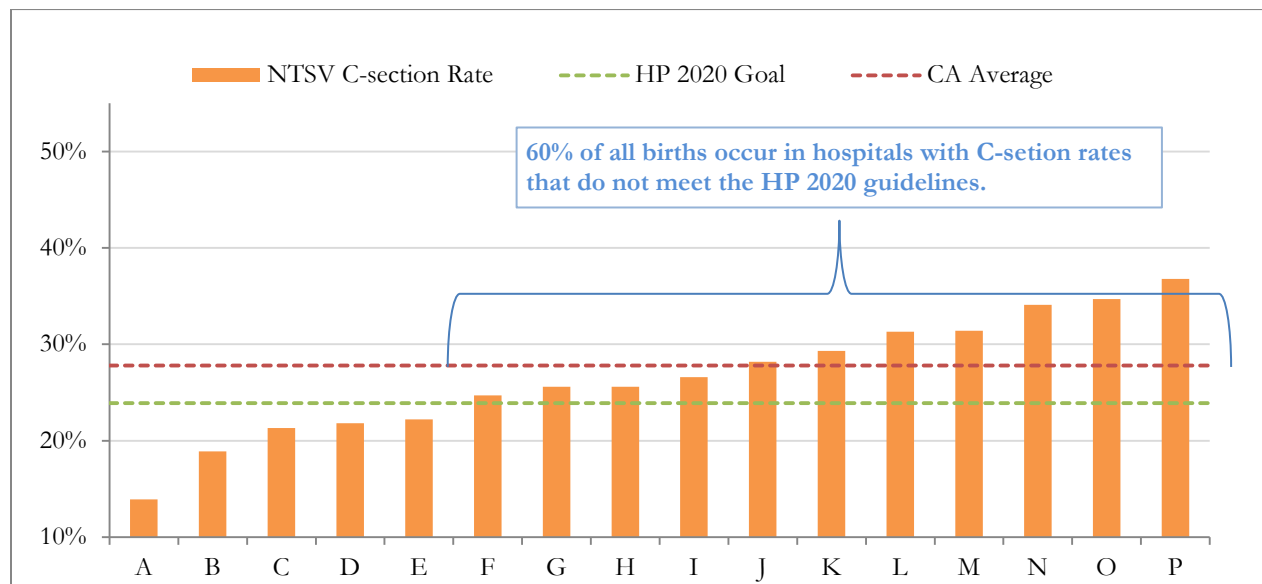
## Region 9: Central C-section NTSV Rates by Hospital, 2012

Regional Overview	
Mean NTSV C-section Rate	26.7%
Number of Hospitals	16
Number/Percent of Hospitals Above California NTSV Average	7/44%
Number/Percent of Hospitals Below Healthy People 2020 Guidelines	5/31%
Difference Between Lowest and Highest Performing Hospitals (Percentage Point Range)	22.9
Total Live Births	42,100

➤ This region has particularly high annual birth volumes, averaging 2,631 births per hospital.

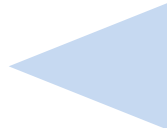
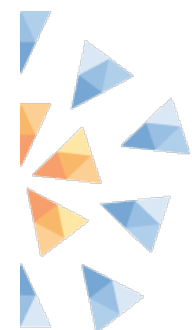
### Exhibit 9A: Graph of Central NTSV C-section Rates by Hospital, 2012

To identify the specific hospitals included in the graph, refer to Exhibit 9B which lists all the hospitals in the region by ascending C-section rates. The green line represents the Healthy People 2020 benchmark for NTSV C-sections, 23.9%. The red line represents the average NTSV average C-section rate in all California hospitals, 27.8%.



*Exhibit 9B: Central C-section NTSV Rates and Total Live Births by Hospital, 2012*

<b>Label</b>	<b>Hospital</b>	<b>NTSV C-section Rate</b>	<b>Total Live Births</b>	<b>CMDC Submitter?</b>
A	Bakersfield Memorial Hospital- 34th Street	13.9%	3,684	In Process
B	San Joaquin Community Hospital	18.9%	2,922	No
C	Kern Medical Center	21.3%	4,567	No
D	Tulare Regional Medical Center	21.8%	1,253	No
E	Adventist Medical Center - Reedley	22.2%	1,260	No
F	Kaiser Permanente - Fresno Medical Center	24.7%	1,124	In process
G	Community Regional Medical Center-Fresno	25.6%	6,663	Yes
H	Sierra View District Hospital	25.6%	1,780	Yes
I	Mercy Southwest Hospital	26.6%	2,428	In Process
J	Kaweah Delta Medical Center	28.2%	3,996	Yes
K	Madera Community Hospital	29.3%	1,597	Yes
L	St. Agnes Medical Center	31.3%	4,046	No
M	Ridgecrest Regional Hospital	31.4%	485	No
N	Clovis Community Medical Center	34.1%	3,430	Yes
O	Central Valley General Hospital	34.7%	1,993	No
P	Delano Regional Medical Center	36.8%	872	No

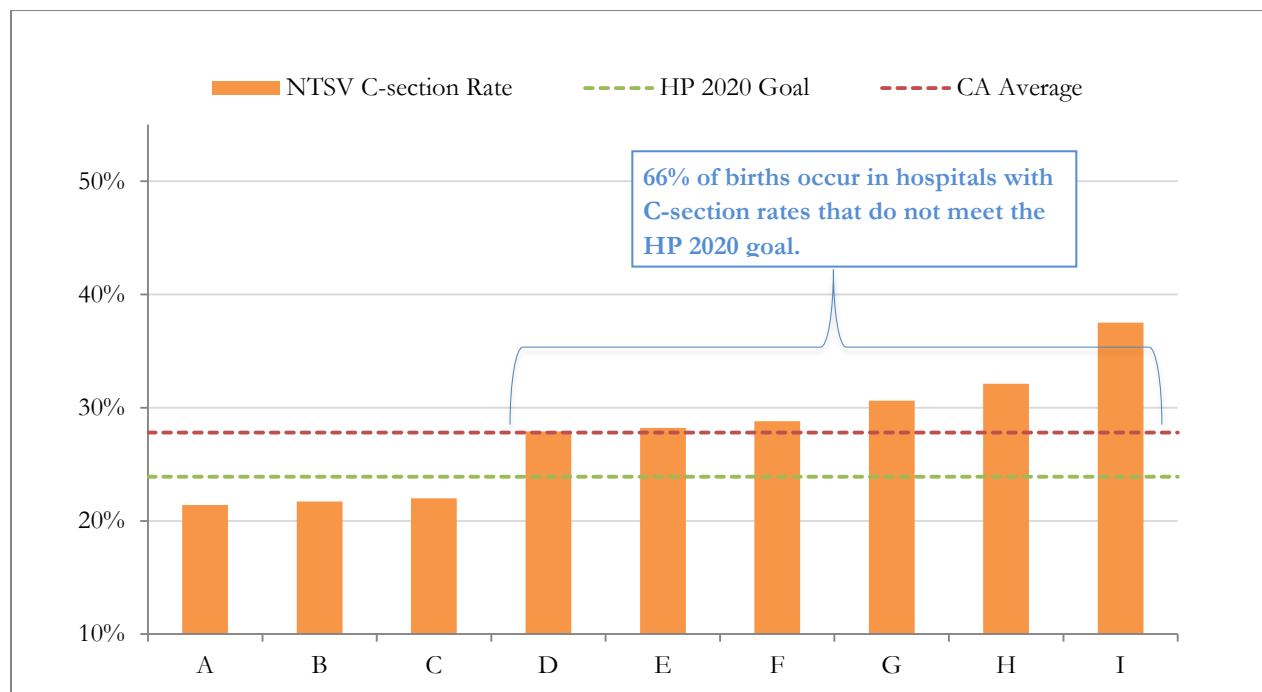


## Region 10: Santa Barbara NTSV C-section Rates by Hospital

Regional Overview	
Mean NTSV C-section Rate	27.8%
Number of Hospitals	9
Number/Percent of Hospitals Above California NTSV Average	6/67%
Number/Percent of Hospitals Below Healthy People 2020 Guidelines	3/33%
Difference Between Lowest and Highest Performing Hospitals (Percentage Point Range)	16.1
Total Live Births	14,539

*Exhibit 10A: Graph of Santa Barbara NTSV C-section Rates by Hospital, 2012*

To identify the specific hospitals included in the graph, refer to Exhibit 10B which lists all the hospitals in the region by ascending C-section rates. The green line represents the Healthy People 2020 benchmark for NTSV C-sections, 23.9%. The red line represents the average NTSV average C-section rate in all California hospitals, 27.8%.



*Exhibit 10B: Santa Barbara NTSV C-section Rates and Total Live Births by Hospital, 2012*

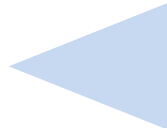
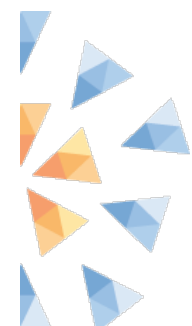
<b>Label</b>	<b>Hospital</b>	<b>NTSV C-section Rate</b>	<b>Total Live Births</b>	<b>CMDC Submitter?</b>
A	Lompoc Valley Medical Center	21.4%	440	No
B	Community Memorial Hospital-San Buenaventura	21.7%	2,481	Yes
C	Ventura County Medical Center & Santa Paula Hospital	22.0%	1,734	No
D	Los Robles Hospital And Medical Center	27.9%	1,760	No
E	Santa Barbara Cottage Hospital	28.2%	2,287	No
F	Marian Regional Medical Center	28.8%	2,456	In Process
G	Simi Valley Hospital	30.6%	685	No
H	St. John's Regional Medical Center	32.1%	2,548	In Process
I	St. John's Pleasant Valley Hospital	37.5%	148	In Process



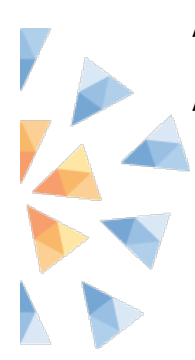


*Exhibit 11B: Los Angeles NTSV C-section Rates and Total Live Births by Hospital, 2012*

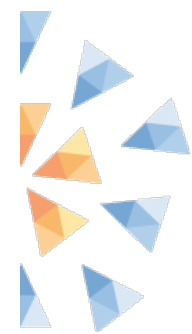
<b>Label</b>	<b>Hospital</b>	<b>NTSV C-section Rate</b>	<b>Total Live Births</b>	<b>CMDC Submitter?</b>
A	Kaiser Permanente - Woodland Hills	22.0%	1,580	No
B	Kaiser Permanente - Panorama City	22.1%	2,160	No
C	California Hospital Medical Center - Los Angeles	22.2%	4,933	In Process
D	Kaiser Permanente - Downey	22.9%	3,672	No
E	Kaiser Permanente - South Bay	23.3%	2,163	No
F	Methodist Hospital Of Southern California	23.9%	1,812	No
G	Pacific Hospital Of Long Beach	24.7%	734	No
H	Downey Regional Medical Center	24.8%	1,323	No
I	Presbyterian Intercommunity Hospital	25.5%	3,472	No
J	San Dimas Community Hospital	25.9%	436	No
K	Henry Mayo Newhall Memorial Hospital	25.9%	1,173	Yes
L	St. Mary Medical Center	26.3%	2,678	In process
M	Los Angeles County And USC Medical Center	26.5%	982	No
N	Kaiser Permanente - Los Angeles	26.7%	2,526	No
O	Kaiser Permanente - Baldwin Park	26.8%	2,833	No
P	Pomona Valley Hospital Medical Center	27.2%	6,842	In process
Q	Kaiser Permanente - West LA	27.4%	1,679	In process
R	Foothill Presbyterian Hospital-Johnston Memorial	27.5%	909	No
S	Ronald Reagan UCLA Medical Center	27.6%	2,083	In process



<b>Label</b>	<b>Hospital</b>	<b>NTSV C-section Rate</b>	<b>Total Live Births</b>	<b>CMDC Submitter?</b>
T	Los Angeles County Olive View-UCLA Medical Center	27.6%	607	No
U	Providence Holy Cross Medical Center	28.1%	3,010	Yes
V	Lac/Harbor-UCLA Medical Center	28.3%	820	No
W	Centinela Hospital Medical Center	29.2%	1,027	No
X	Antelope Valley Hospital	29.3%	5,537	Yes
Y	Hollywood Presbyterian Medical Center	30.0%	4,141	No
Z	Garfield Medical Center	30.0%	4,447	Yes
AA	Good Samaritan Hospital-Los Angeles	30.4%	4,130	In Process
AB	Valley Presbyterian Hospital	30.9%	4,312	Yes
AC	Long Beach Memorial Medical Center	31.0%	5,514	Yes
AD	Whittier Hospital Medical Center	31.5%	1,398	Yes
AE	Pacific Alliance Medical Center, Inc.	32.4%	2,171	No
AF	San Gabriel Valley Medical Center	32.5%	2,702	Yes
AG	Cedars Sinai Medical Center	32.6%	6,779	Yes
AH	Providence Saint Joseph Medical Center	32.7%	2,449	Yes
AI	Verdugo Hills Hospital	32.8%	643	No
AJ	White Memorial Medical Center	32.8%	3,885	No
AK	Huntington Memorial Hospital	33.0%	3,451	No
AL	St. Johns Health Center	33.0%	1,692	No
AM	St. Francis Medical Center	33.9%	5,095	In Process
AN	Northridge Hospital Medical Center	34.2%	1,659	No



<b>Label</b>	<b>Hospital</b>	<b>NTSV C- section Rate</b>	<b>Total Live Births</b>	<b>CMDC Submitter?</b>
AO	West Hills Hospital Medical Center	34.6%	797	No
AP	Providence Little Company Of Mary Mc - Torrance & San Pedro	35.2%	3,439	Yes
AQ	Providence Tarzana Medical Center	36.2%	2,341	Yes
AR	Citrus Valley Medical Center - Qv Campus	37.1%	4,256	Yes
AS	Santa Monica - UCLA Medical Center And Orthopedic Hospital	38.0%	1,349	No
AT	Torrance Memorial Medical Center	38.1%	3,120	In process
AU	Glendale Adventist Medical Center - Wilson Terrace	38.2%	2,522	No
AV	Glendale Memorial Hospital And Health Center	39.2%	287	In Process
AW	Greater El Monte Community Hospital	43.6%	484	Yes
AX	Beverly Hospital	44.4%	770	No
AY	Memorial Hospital Of Gardena	46.4%	1,272	No
AZ	Monterey Park Hospital	50.3%	1,559	Yes
BA	East Valley Hospital Medical Center	51.6%	161	No
BB	East Los Angeles Doctors Hospital	59.9%	809	No
BC	Pacifica Hospital Of The Valley	70.7%	543	No
BD	Los Angeles Community Hospital	83.3%	152	No



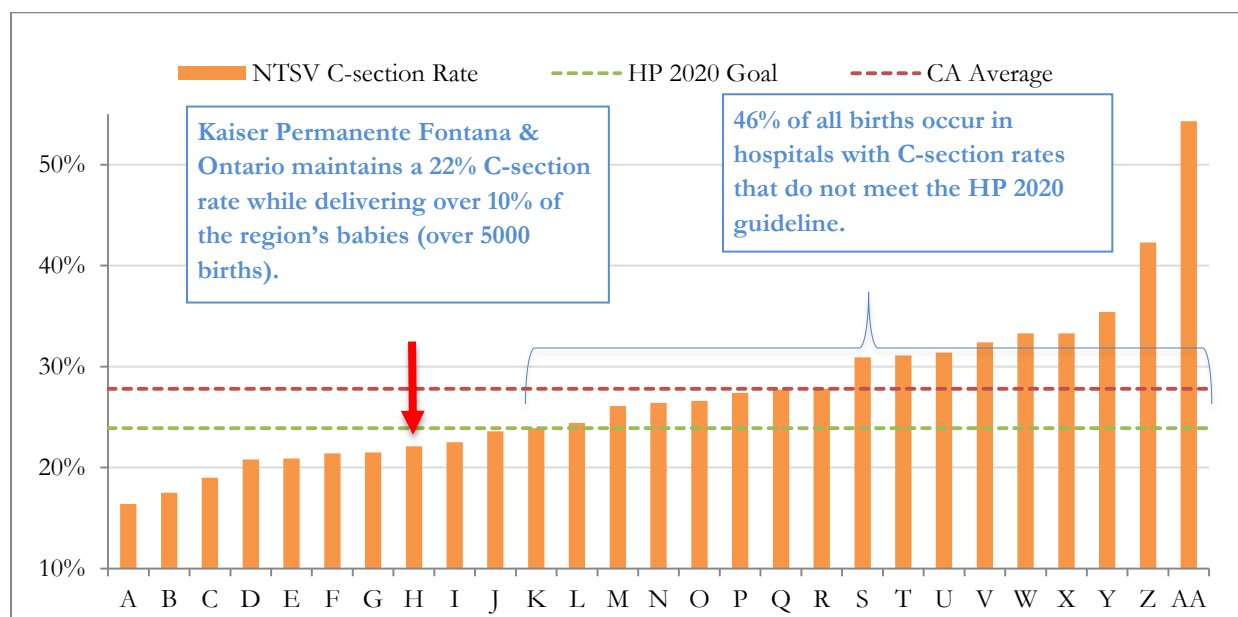
## Region 12: Inland Counties NTSV C-section Rates by Hospital, 2012

Regional Overview	
Mean NTSV C-section Rate	27.4%
Number of Hospitals	27
Number/Percent of Hospitals Above California NTSV Average	9/33%
Number/Percent of Hospitals Below Healthy People 2020 Guidelines	10/37%
Difference Between Lowest and Highest Performing Hospitals (Percentage Point Range)	37.9
Total Live Births	50,906

- *Of note: Inland Counties has seven high volume hospitals (delivering 2,500 babies or more) with C-section rates performing better than the Healthy People 2020 guidelines.*

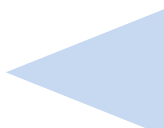
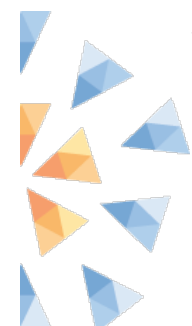
### Exhibit 12A: Graph of Inland Counties NTSV C-section Rates by Hospital, 2012

To identify the specific hospitals included in the graph, refer to Exhibit 12B which lists all the hospitals in the region by ascending C-section rates. The green line represents the Healthy People 2020 benchmark for NTSV C-sections, 23.9%. The red line represents the average NTSV average C-section rate in all California hospitals, 27.8%.

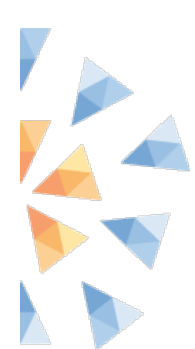


*Exhibit 12B: Inland Counties C-section NTSV Rates and Total Live Births by Hospital, 2012*

<b>Label</b>	<b>Hospital</b>	<b>NTSV C-section Rate</b>	<b>Total Live Births</b>	<b>CMDC Submitter?</b>
A	Northern Inyo Hospital	16.4%	215	In process
B	Desert Valley Hospital	17.5%	635	No
C	St. Mary Regional Medical Center	19.0%	2,526	No
D	Arrowhead Regional Medical Center	20.8%	2,719	No
E	Redlands Community Hospital	20.9%	2,569	No
F	Southwest Healthcare System-Murrieta	21.4%	3,410	No
G	Loma Linda University Medical Center	21.5%	2,837	In process
H	Kaiser Permanente - Fontana & Ontario	22.1%	5,214	No
I	Desert Regional Medical Center	22.5%	3,422	No
J	Riverside County Regional Medical Center	23.6%	2,422	Yes
K	Corona Regional Medical Center-Main	23.9%	1,381	No
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L	St. Bernardine Medical Center	24.4%	1,979	No
M	Parkview Community Hospital	26.1%	2,244	No
N	Kaiser Permanente - Moreno Valley	26.4%	964	No
O	Kaiser Permanente - Riverside	26.6%	3,027	No
P	John F Kennedy Memorial Hospital	27.4%	2,351	No
Q	Loma Linda University Medical Center-Murrieta	27.7%	970	In Process
R	Riverside Community Hospital	27.8%	3,598	No
<hr/>				
S	San Geronio Memorial Hospital	30.9%	477	Yes
T	Montclair Hospital Medical Center	31.1%	791	No



<b>Label</b>	<b>Hospital</b>	<b>NTSV C- section Rate</b>	<b>Total Live Births</b>	<b>CMDC Submitter?</b>
U	San Antonio Community Hospital	31.4%	2,155	No
V	Barstow Community Hospital	32.4%	69	No
W	Mammoth Hospital	33.3%	109	No
X	Victor Valley Community Hospital	33.3%	1,295	No
Y	Hemet Valley Medical Center	35.4%	865	Yes
Z	Community Hospital Of San Bernardino	42.3%	2,236	In Process
AA	Hi-Desert Medical Center	54.3%	426	Yes

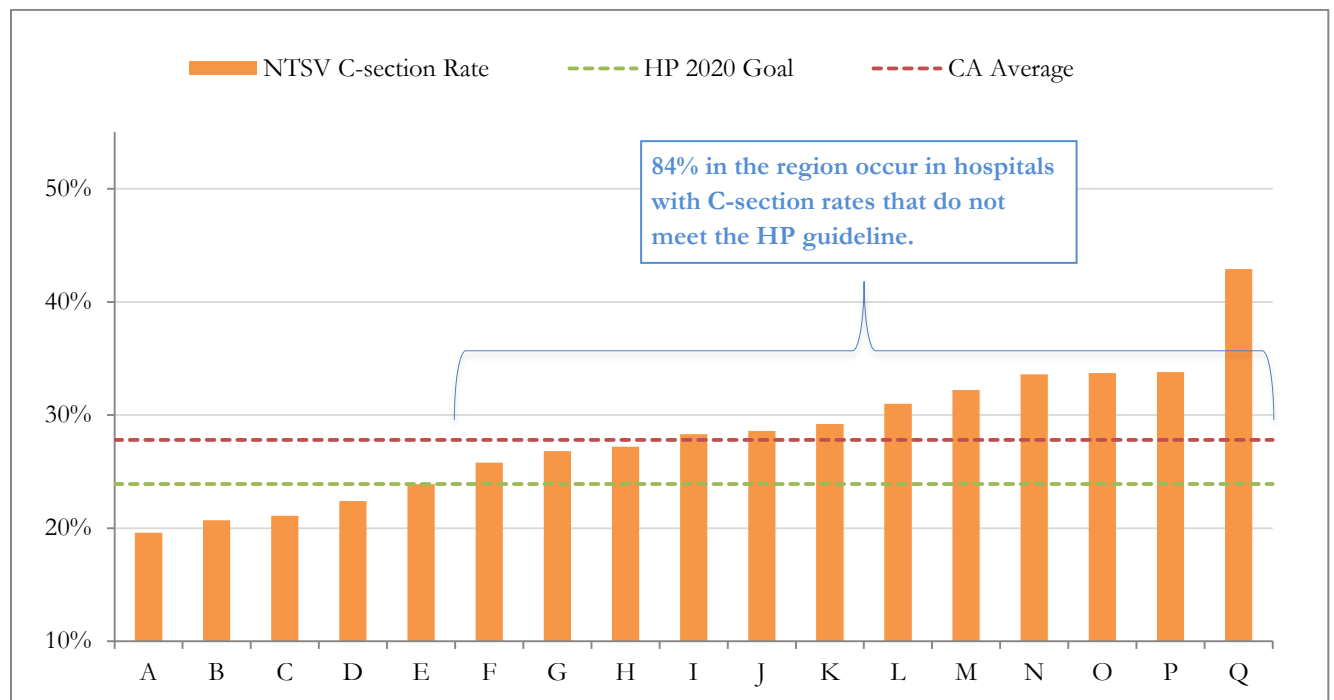


## Region 13: Orange C-section NTSV Rates by Hospital, 2012

Regional Overview	
Mean NTSV C-section Rate	28.3%
Number of Hospitals	17
Number/Percent of Hospitals Above California NTSV Average	9/53%
Number/Percent of Hospitals Below Healthy People 2020 Guidelines	5/29%
Difference Between Lowest and Highest Performing Hospitals (Percentage Point Range)	23.3
Total Live Births	38,630

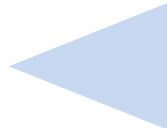
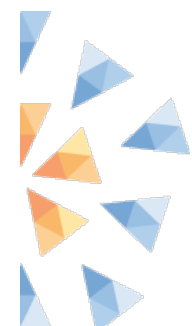
*Exhibit 13A: Graph of Orange C-section Rates by Hospital, 2012*

To identify the specific hospitals included in the graph, refer to Exhibit 13B which lists all the hospitals in the region by ascending C-section rates. The green line represents the Healthy People 2020 benchmark for NTSV C-sections, 23.9%. The red line represents the average NTSV average C-section rate in all California hospitals, 27.8%.



*Exhibit 13B: Orange NTSV C-section Rates and Total Live Births by Hospital, 2012*

<b>Label</b>	<b>Hospital</b>	<b>NTSV C-section Rate</b>	<b>Total Live Births</b>	<b>CMDC Submitter?</b>
A	Western Medical Center Hospital - Anaheim	19.6%	1,423	No
B	Los Alamitos Medical Center	20.7%	1,400	No
C	University Of California Irvine Medical Center	21.1%	1,467	Yes
D	La Palma Intercommunity Hospital	22.4%	228	No
E	Anaheim Regional Medical Center	23.9%	1,614	Yes
F	Kaiser Permanente- Orange County Anaheim	25.8%	998	No
G	Saddleback Memorial Medical Center	26.8%	2,686	Yes
H	Western Medical Center - Santa Ana	27.2%	2,199	No
I	Fountain Valley Regional Hospital And Medical Center - Euclid	28.3%	3,121	No
J	St. Jude Medical Center	28.6%	2,118	Yes
K	Kaiser Permanente - Orange County Irvine	29.2%	2,776	No
L	Mission Hospital Regional Medical Center	31.0%	2,974	In process
M	Orange Coast Memorial Medical Center	32.2%	1,722	Yes
N	Hoag Memorial Hospital Presbyterian	33.6%	6,030	Yes
O	St. Joseph Hospital - Orange	33.7%	4,795	In process
P	Garden Grove Hospital And Medical Center	33.8%	1,852	No
Q	Coastal Communities Hospital	42.9%	1,227	No





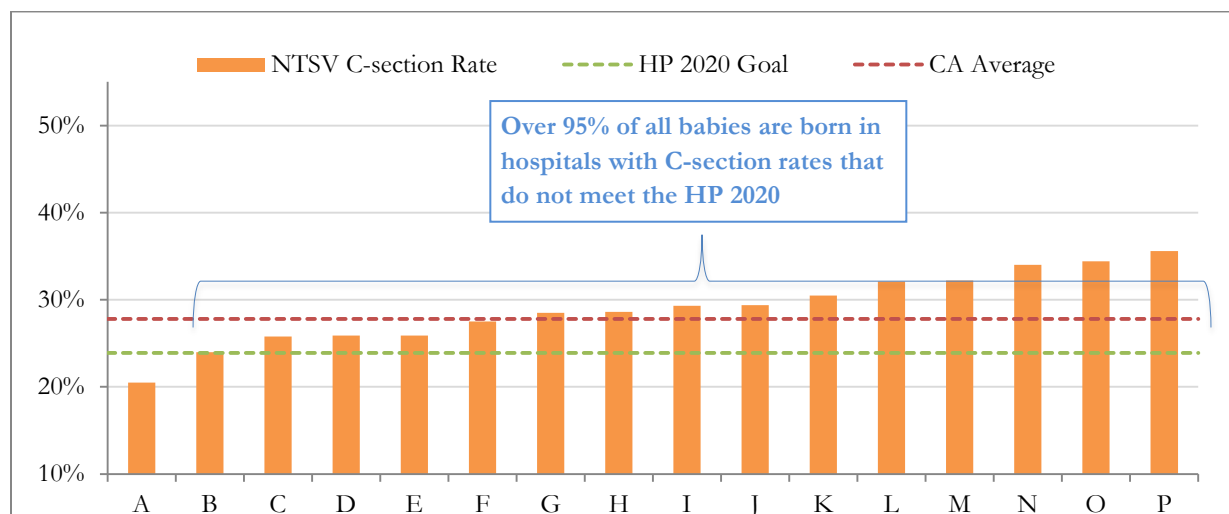
## Region 14: San Diego/Imperial NTSV C-section Rates by Hospital, 2012

Regional Overview	
Mean NTSV C-section Rate	29%
Number of Hospitals	16
Number/Percent of Hospitals Above California NTSV Average	10/63%
Number/Percent of Hospitals Below Healthy People 2020 Guidelines	1/6%
Difference Between Lowest and Highest Performing Hospitals (Percentage Point Range)	15.1
Total Live Births	44,104

- One of every five birth occurs at Sharp Mary Birch Hospital for Women and Newborns which also reports the highest number of annual live births in the state (8,833 births). Unfortunately, the hospital also reports a C-section rate of 34.4%.

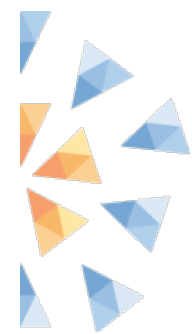
*Exhibit 14A: Graph of San Diego/Imperial NTSV C-section Rates by Hospital, 2012*

To identify the specific hospitals included in the graph, refer to Exhibit 14B which lists all the hospitals in the region by ascending C-section rates. The green line represents the Healthy People 2020 benchmark for NTSV C-sections, 23.9%. The red line represents the average NTSV average C-section rate in all California hospitals, 27.8%.



*Exhibit 14B: San Diego/Imperial NTSV C-section Rates and Total Live Births by Hospital, 2012*

<b>Label</b>	<b>Hospital</b>	<b>NTSV C-section Rate</b>	<b>Total Live Births</b>	<b>CMDC Submitter?</b>
A	Scripps Mercy Hospital	20.5%	2,026	Yes
B	Pioneers Memorial Healthcare District	24.0%	1,767	Yes
C	Fallbrook Hospital District	25.8%	402	No
D	Sharp Grossmont Hospital	25.9%	3,559	Yes
E	Tri-City Medical Center	25.9%	2,769	Yes
F	Paradise Valley Hospital	27.5%	1,142	Yes
G	Scripps Memorial Hospital - Encinitas	28.5%	1,546	Yes
H	UCSD Medical Center	28.6%	2,525	In process
I	Pomerado Hospital	29.3%	1,166	Yes
J	Kaiser Permanente - San Diego	29.4%	4,685	In process
K	Scripps Mercy Hospital - Chula Vista	30.5%	2,157	Yes
L	Sharp Chula Vista Medical Center	32.1%	2,839	Yes
M	Palomar Health Downtown Campus	32.2%	3,552	Yes
N	El Centro Regional Medical Center	34.0%	1,144	No
O	Sharp Mary Birch Hospital for Women and Newborns	34.4%	8,833	Yes
P	Scripps Memorial Hospital - La Jolla	35.6%	3,992	Yes



# F. Appendix A: How to Read and Interpret Data

The guide below helps Members drill down into the hospital data provided in Section E.

## Regional Overview

The box at the top of each region’s page highlights relevant data including:

- **Number/percentage of hospitals with C-section rates higher than the California average:** Identifies the number of lower performing hospitals with NTSV C-section rates higher than the California average.
- **Number/percent of hospitals with NTSV C-section rates better than Healthy People 2020 Guideline:** Identifies the number of high performing hospitals with NTSV C-section rates in the lowest third of all hospitals.
- **Percentage Point Range:** Specifies the number of percentage points between the hospitals with the highest and lowest C-section rates to reveal how much difference exists between hospitals. The greater the range, generally, the higher the average C-section rate for the region.

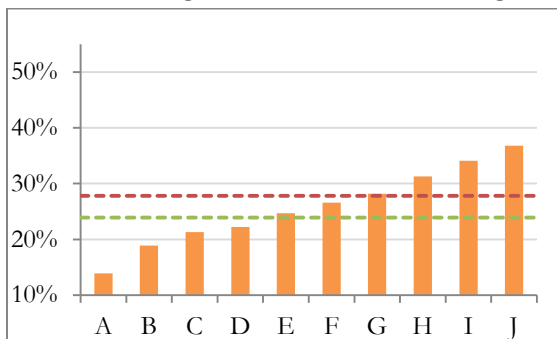
## Graphs of C-section Rates by Hospital

These charts provide a visual display of key information, including:

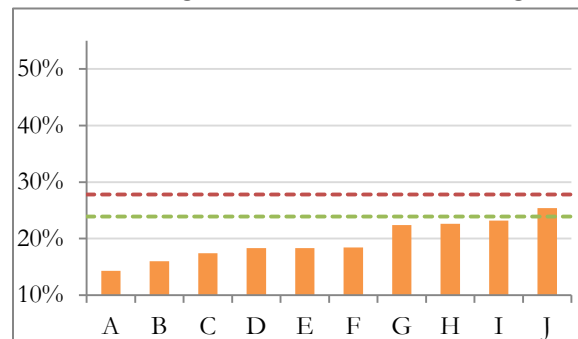
- Each orange bar represents a C-section rate for a particular hospital in a region.
- Those bars below the green line represent hospitals performing at or better than the Healthy People 2020 NTSV C-section guidelines and are already meeting best practices.
- The bars above the red line represent hospitals with C-section rates higher than the California average and are lower performing hospitals.

**Is there variation?** Variation reveals unwarranted differences in care quality which can lead to discrepancies in how much each hospital spends per birth and inconsistent hospital experiences for patients.

What does a region with **high variation** look like? The orange bars are less similar heights.



What does a region with **low variation** look like? The orange bars are more similar heights.



## Table of C-section Rates and Total Live Births by Hospital

This table identifies the specific hospital in each graph and provides corresponding data. What should a Member pay attention to?

- **Total Live Births:** Indicates the number of live births delivered at each facility.

