CMQCC
CALIFORNIA MATERNAL QUALITY CARE COLLABORATIVE

Using California Maternity Data to Drive Quality Improvement

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CPQCC and CMQCC

Mission: Improving care for moms and newborns

California Perinatal Quality Care Collaborative (CPQCC)

- Expertise in data capture from hospitals
- Established Neonatal Database in 1996
- Data use agreements in place with 130 hospitals with NICUs
- Model of working with state agencies to provide data of value

California Maternal Quality Care Collaborative (CMQCC)

- Expertise in maternal data analysis
- Developer of maternal QI toolkits
- Host of collaborative learning communities
- Established Maternal Data Center in 2011

CMQCC Key Partner/Stakeholders

State Agencies:

- MCAH, Dept Public Health
- OSHPD Healthcare Information Division
- Office of Vital Records (OVR)
- Regional Perinatal Programs of California (RPPC)
- DHCS, Medi-Cal

Public and Consumer Groups

- California Hospital Accountability and Reporting Taskforce (CHART)
- California HealthCare Foundation
- Kaiser Family Foundation
- March of Dimes (MOD)

Professional groups

- American College of Obstetrics and Gynecology (ACOG)
- Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN)
- American College of Nurse Midwives (ACNM),
- American Academy of Family Physicians (AAFP)

Key Medical and Nursing Leaders

- Universities and Hospital Systems
- Kaisers, Sutter, Sharp, Dignity, Scripps, Providence, Public hospitals,

CMQCC Key Partner/Stakeholders (con't)

Hospital Associations:

- California Hospital Association / HQI
- Regional Hospital Associations

Payers

- Aetna
- Anthem Blue Cross
- Blue Shield
- Cigna
- Health Net

Purchasers

- CALPERS (State and local government employees and retirees)
- Medi-Cal (for managed care plans)
- Pacific Business Group on Health/ Silicon Valley Employers Forum
- Cover California (ACA entity)

Data ←→ Action

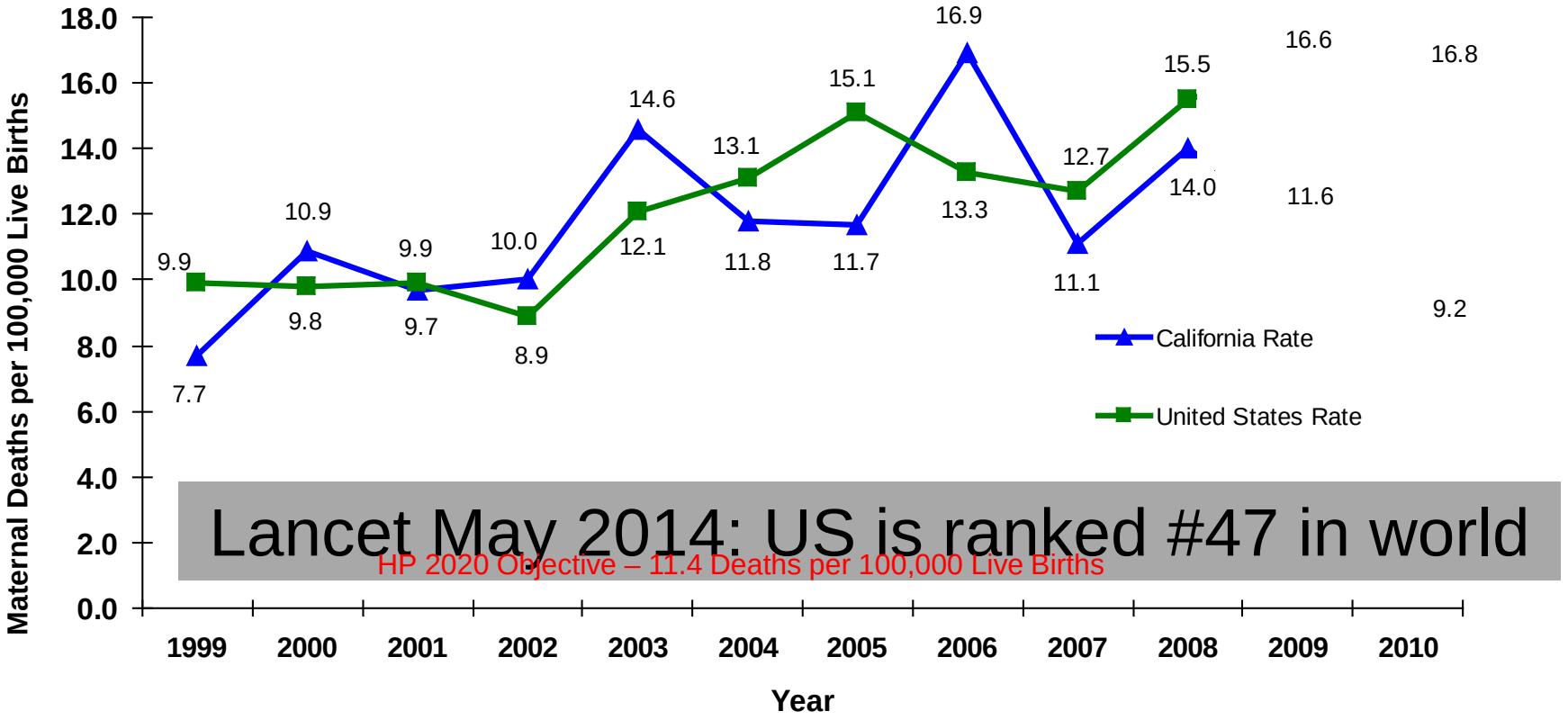
- Data-Driven Quality Improvement
- BOTH performance and safety projects
- Data Sources:
  - Maternal Mortality Case reviews
  - Linked: Vital Records / Hospital Discharge Diagnosis Data (CMQCC Maternal Data Center)

CMQCC Toolkits and Collaboratives

- Maternal Mortality and Morbidity
  - Hemorrhage
  - Preeclampsia
  - CV Disease*
  - DVT Prevention*
- National Quality Measures
  - Preventing Early Elective Delivery (MOD National)
  - Antenatal Steroids
  - First Birth Cesarean Delivery*

*Currently under development

Maternal Mortality Rate, California and United States; 1999-2008



SOURCE: State of California, Department of Public Health, California Birth and Death Statistical Master Files, 1999-2010. Maternal mortality for California (deaths ≤ 42 days postpartum) was calculated using ICD-10 cause of death classification (codes A34, O00-O95,O98-O99) for 1999-2010. United States data and HP2020 Objective were calculated using the same methods. U.S. maternal mortality rates are published by the National Center for Health Statistics (NCHS) through 2007 only. Rates for 2008-2010 were calculated using NCHS Final Birth Data (denominator) and CDC Wonder Online Database for maternal deaths (numerator). Accessed at http://wonder.cdc.gov/ucd-icd10.html on Apr 17, 2013 8:00:39 PM. Produced by California Department of Public Health, Center for Family Health, Maternal, Child and Adolescent Health Division, April, 2013.

THE CALIFORNIA PREGNANCY-ASSOCIATED MORTALITY REVIEW (CA-PAMR)

Report from 2001-2003
Maternal Death Reviews

This project was supported by the federal Title V MCH block grant from the California Department of Public Health; Center for Family Health; Maternal, Child and Adolescent Health Division

CA-PAMR Pregnancy-Related Deaths (2002-2004) Chance to Alter Outcome by Cause of Death

Clinical Cause of Death	Chance to Alter Outcome			
	Strong/ Good (%)	Some (%)	None (%)	Total N (%)
Obstetric hemorrhage	69	25	6	16 (11)
Deep vein thrombosis/ pulmonary embolism	53	40	7	15 (10)
Sepsis/infection	50	40	10	10 (7)
Preeclampsia/eclampsia	50	50	0	24* (17)
Cardiomyopathy and other cardiovascular causes	25	61	14	28* (19)
Cerebral vascular accident	22	0	78	9 (6)
Amniotic Fluid Embolism	0	87	13	15 (10)
All other causes of death	46	46	8	26 (18)
Total (%)	**40**	**48**	**13**	**143***

"CMQCC Technical Report on CA-PAMR Findings 2002-2004; submitted to CA MCAH, August 2011" *2 Cases had insufficient data to determine chance to alter outcome.

Maternal Mortality and Severe Morbidity

Approximate distributions, compiled from multiple studies

Cause	Mortality (1-2 per 10,000)	ICU Admit (1-2 per 1,000)	Severe Morbid (1-2 per 100)
VTE and AFE	15%	5%	2%
Infection	10%	5%	5%
Hemorrhage	15%	30%	45%
Preeclampsia	15%	30%	30%
Cardiac Disease	25%	20%	10%

Reduce Maternal Mortality and SMM (CA-PAMR)

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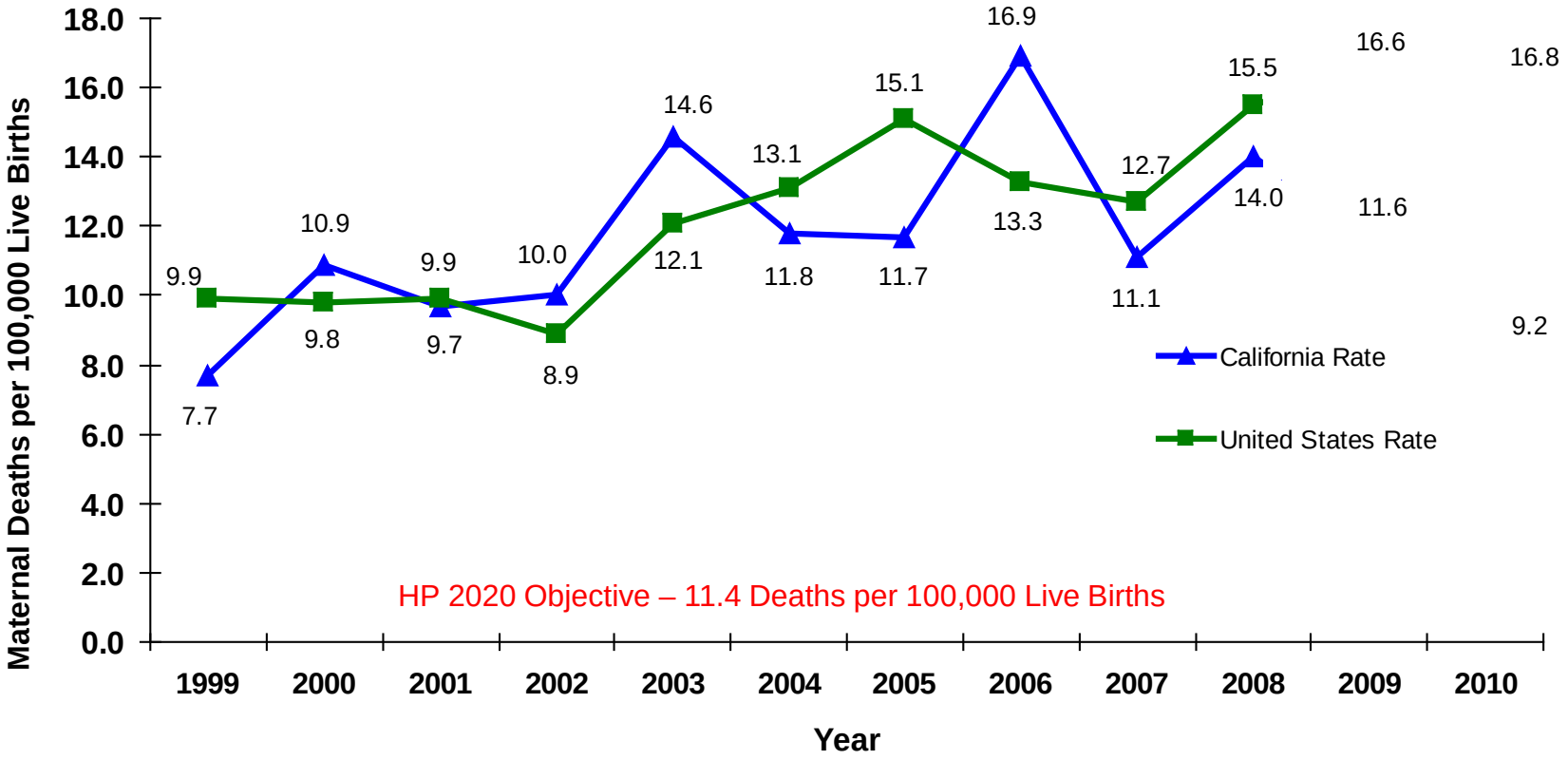
- Hemorrhage Taskforce (2009)
- Hemorrhage QI Toolkit (2010)
- Multi-hospital QI Collaborative(s) (2010-11)
  - Test the "tools" and implementation strategies
- State-wide Implementation (2013-2014)
- Preeclampsia Taskforce (2012)
- Preeclampsia QI Toolkit (2013)
- Multi-hospital QI Collaborative (2013)
- Cardiovascular Detailed Case Analysis (2013)
- Cardiovascular QI Toolkit (2014)

Connect the Dots!

Maternal Mortality Rate, California and United States; 1999-2010



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Severe Maternal Morbidity (SMM)

- Mortality is difficult to measure and uncommon (<1/10,000)
- Working with HRSA MCH-B and CDC to test ways to define and measure SMM
- SMM Collabortive to examine the CDC metric using ICD9 codes, and others using blood bank data, ICU admission, LOS
- The Maternal Data Center is at the center

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The CMQCC Maternal Data Center (CMDC)

Data ⬅➔ Action

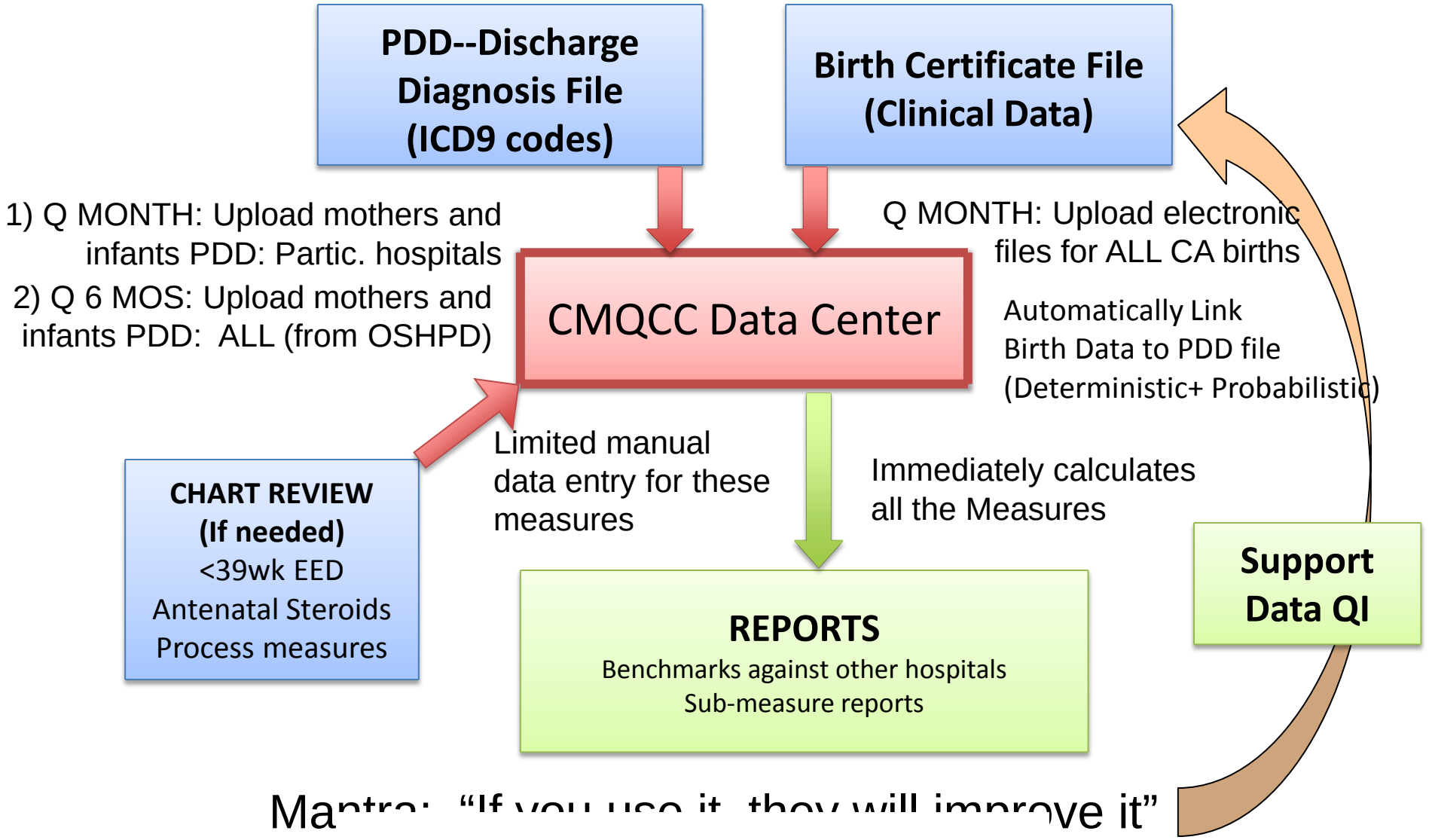
What is the CMDC?

Low-burden/High-value

A **Rapid-Cycle** one-stop shop to support hospitals' obstetric quality improvement initiatives and service line management

- Overall hospital obstetric performance measures (>40)
- Benchmarking statistics--to compare your hospital to regional, state, and like-hospital peers
- Facilitating reporting to Leapfrog, HEN, and CMS IQR
- Provider-level statistics—to assess variation within a hospital

CMQCC Maternal Data Center



Mantra: "If you use it, they will improve it"

Sample Hospital

Measures

Period: Q1 2014

Hospital Clinical Performance Measures

Elective Delivery <39 Weeks (PC-01)	3.3%
Cesarean Section Rate-Nullip, Term, Singleton, Vertex (PC-02)	25.7%
Vaginal Birth After Cesarean (VBAC) Rate, Uncomplicated (AHRQ IQI 22)	16.2%
Total Cesarean Section Rate	29.2%
Primary Cesarean Section	20.8%
Failed Induction	24.5%

View all 31 Hospital Clinical Performance Measures

Provider Performance Measures

Cesarean Births	
Elective Deliveries	
Vaginal Births	

Hospital Data Quality Measures

Missing / Inconsistent Delivery Method	2.7%
Missing / Inconsistent V27 (Outcome of Delivery)	0.2%
Data Submission Trends	

View all 12 Hospital Data Quality Measures

Sample Hospital

Measures

Hospital Clinical Performa

Electiv

Cesarean Section Rate-Nulli

Vaginal Birth After Cesare

View all 3

Provider Performance Mea

Hospital Data Quality Mea

Missing /

Missing / Inconsist

Vi

Data Entry Status

To submit data files or identify cases requiring chart review, click "Data Entry Status" button above.

Hospital Statistics

- Demographic Statistics
- Delivery Statistics
- Maternal Comorbidity Statistics
- Baby/Prematurity Statistics
- Utilization Statistics
- CCS Report

View Delivery Logbook

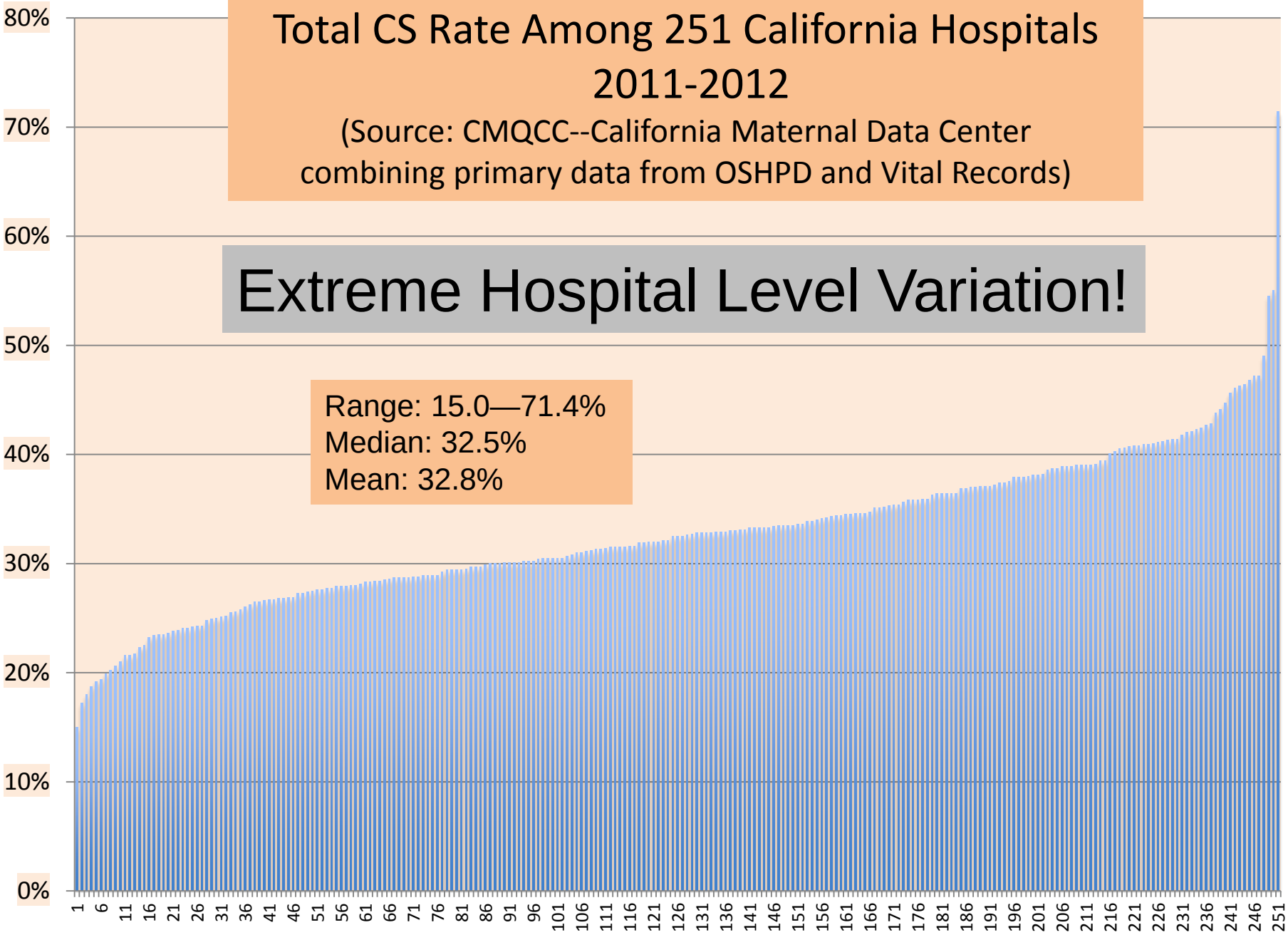
First you must authenticate using 2-factor authentication

Data ←→ Action

- Reducing Early Elective Delivery
- Reducing Primary CS—First birth, Low Risk or NTSV CS
- Taskforce➔Toolkit➔Collabortive
- The Data Center is designed to report measures by region, payer, purchaser, hospital, medical group and provider

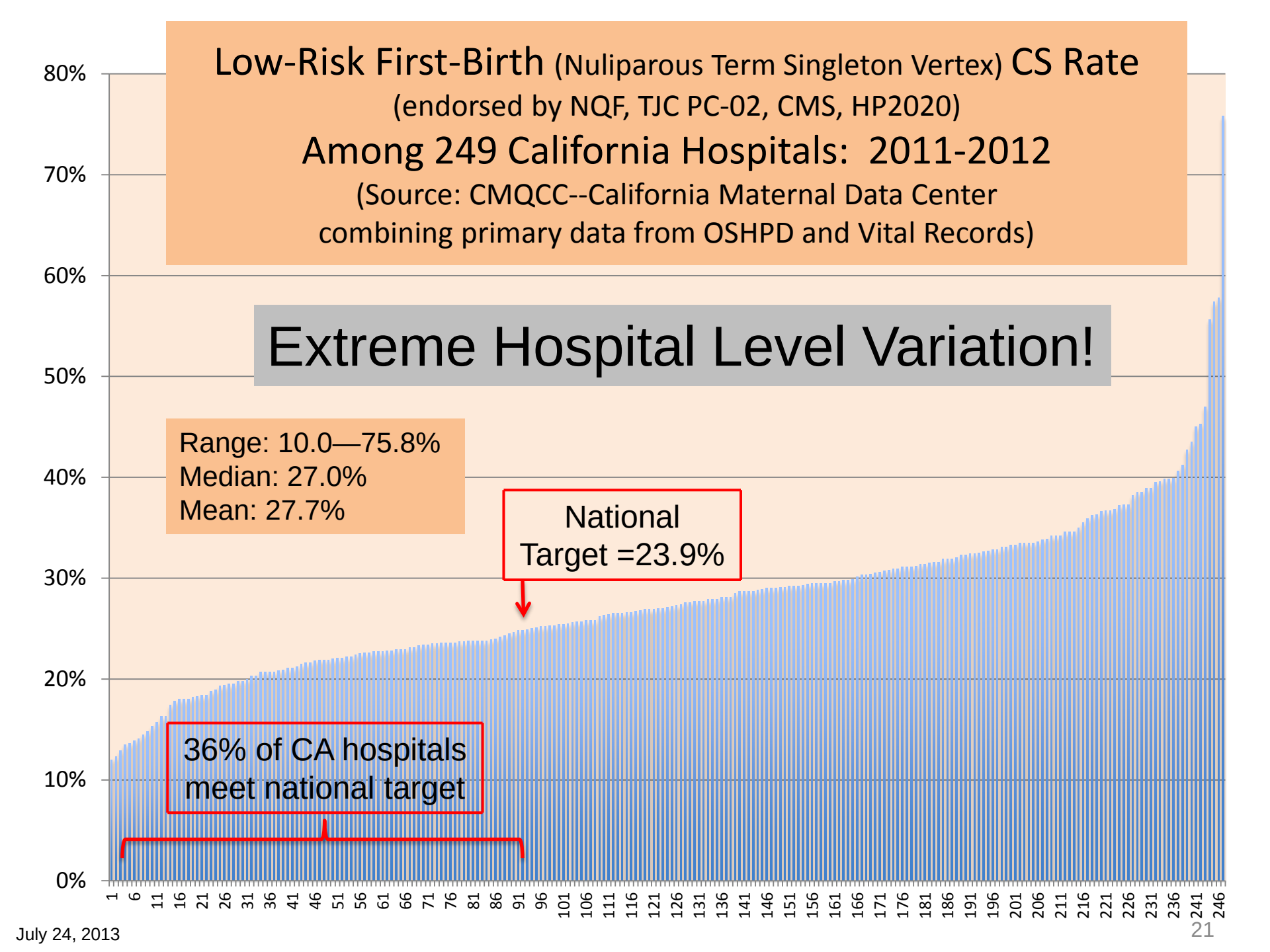
Total CS Rate Among 251 California Hospitals 2011-2012

(Source: CMQCC--California Maternal Data Center combining primary data from OSHPD and Vital Records)



Extreme Hospital Level Variation!

Range: 15.0—71.4%
Median: 32.5%
Mean: 32.8%


Low-Risk First-Birth (Nuliparous Term Singleton Vertex) CS Rate
(endorsed by NQF, TJC PC-02, CMS, HP2020)
Among 249 California Hospitals: 2011-2012
(Source: CMQCC--California Maternal Data Center
combining primary data from OSHPD and Vital Records)
Extreme Hospital Level Variation!
Range: 10.0—75.8%
Median: 27.0%
Mean: 27.7%
National
Target =23.9%
36% of CA hospitals
meet national target
80%
70%
60%
50%
40%
30%
20%
10%
0%
1 6 11 16 21 26 31 36 41 46 51 56 61 66 71 76 81 86 91 96 101 106 111 116 121 126 131 136 141 146 151 156 161 166 171 176 181 186 191 196 201 206 211 216 221 226 231 236 241 246

Beyond Reporting Rates
(Numerator/Denominator)

- Automated Measure analysis using nested sub-measures to guide and focus your QI journey
- Drill-down to the patient level with Case Review Worksheets to understand quality improvement opportunities—for both clinical quality and data quality
- Trend analyses of both measures and sub-measures

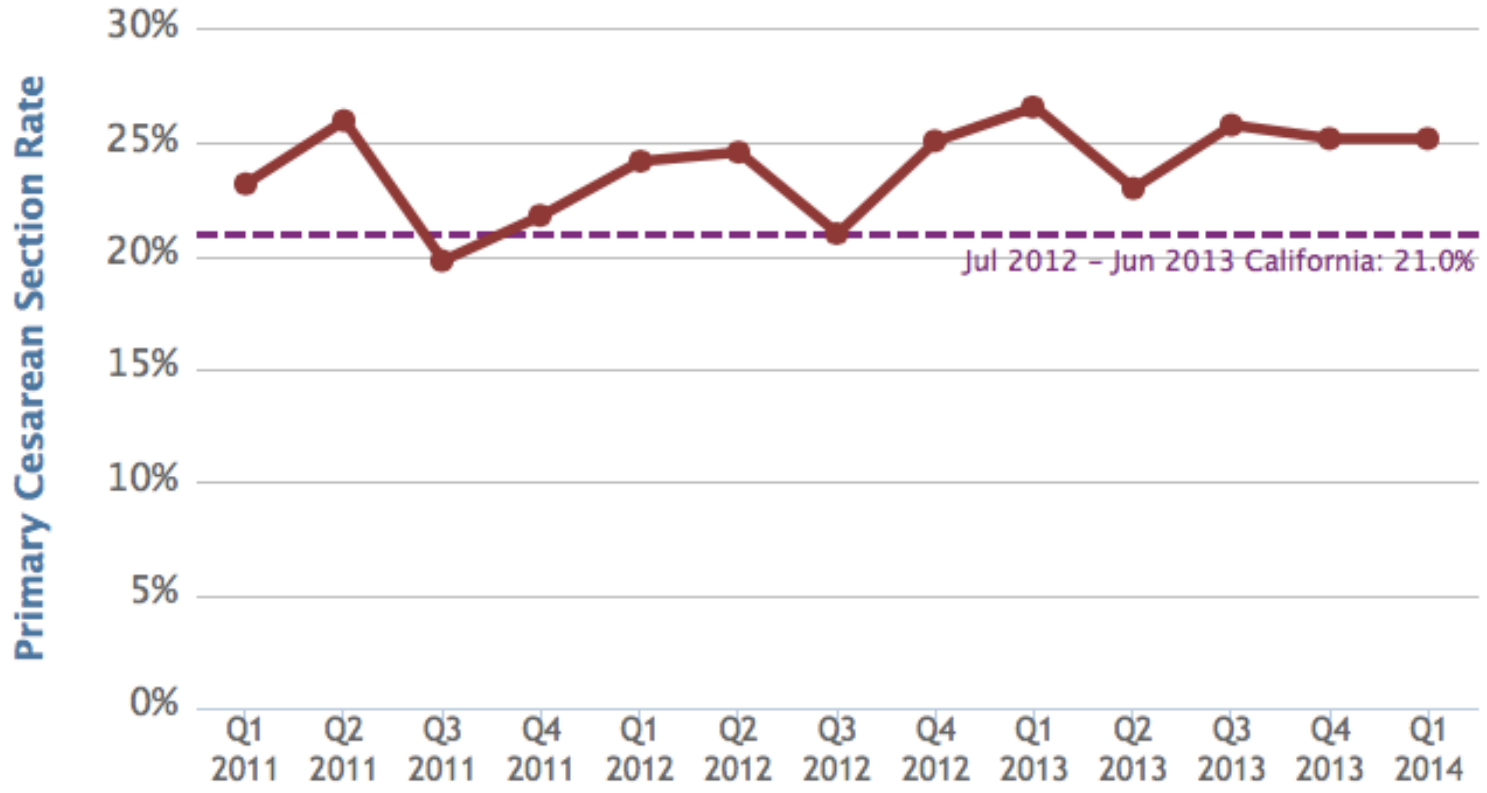
Sample Hospital

Hospital Trend | Benchmark Comparisons | System Comparisons | Payer Comparisons | Provider Comp

CMDC receives birth certificate data approximately 45 days after the end of each month. This means the data for April 2014 available around June 15th 2014.

Rate of Cesarean Section among women with no prior Cesarean.

See full definition.



Measure Analysis

Frequency

Monthly

Quarterly

Annually

Corrected

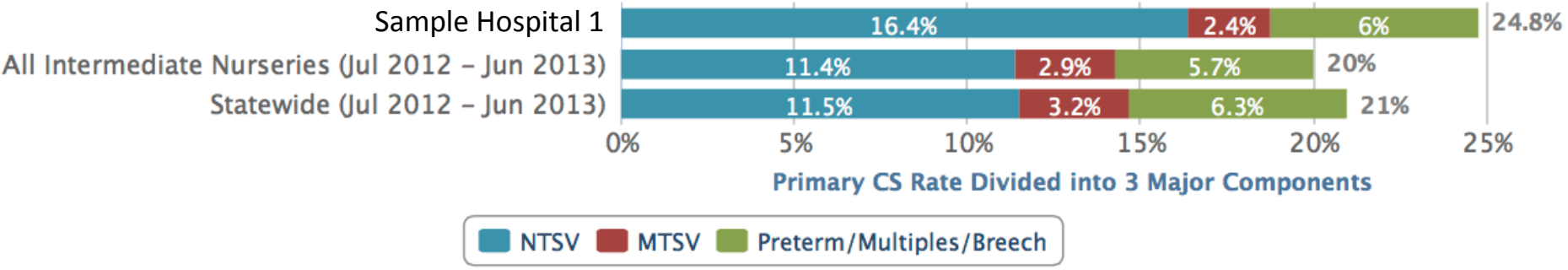
Also Display

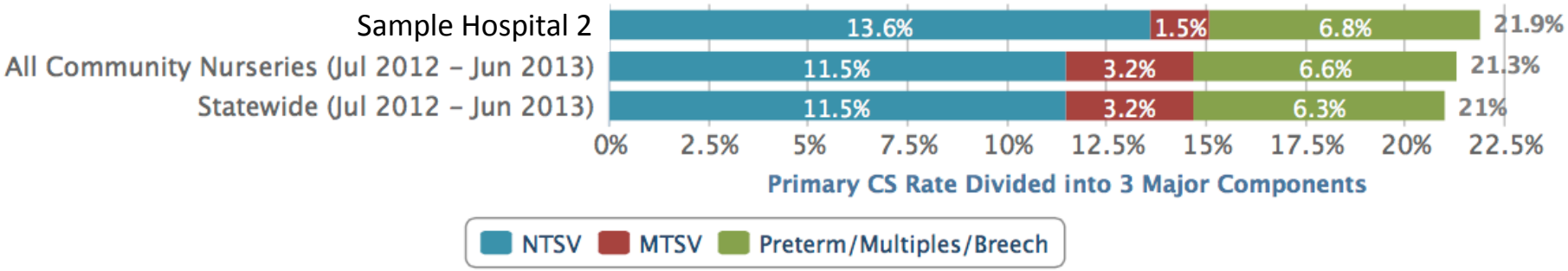
Download As

PNG (image)

CSV (Excel)

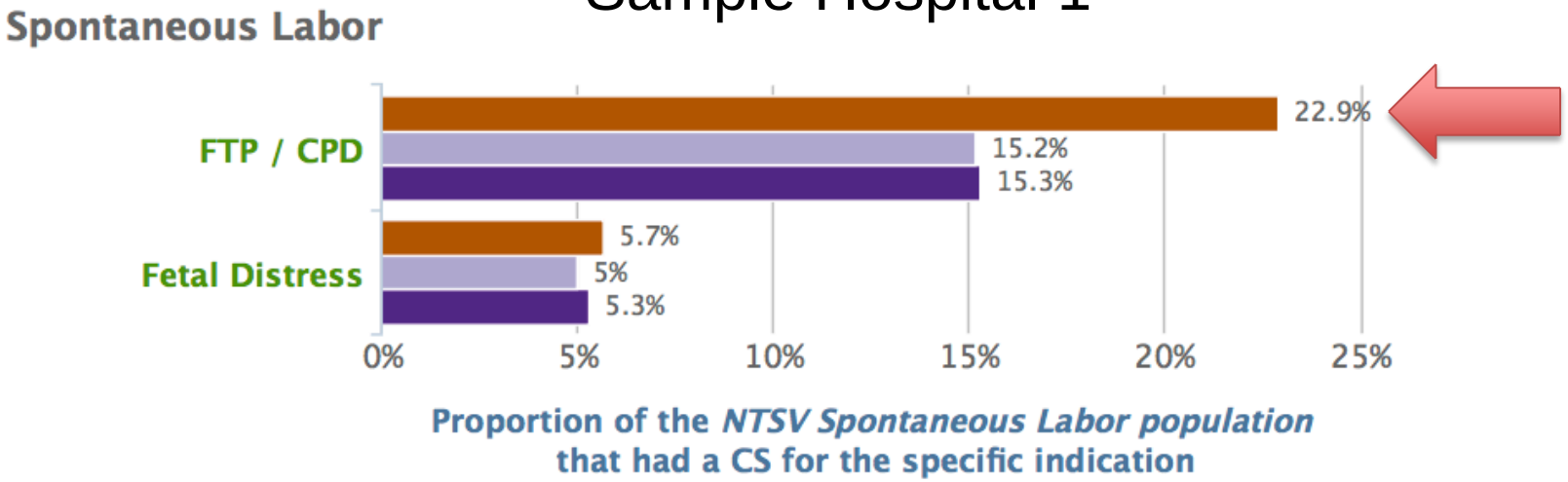
3 Major Drivers of the Primary CS Rate

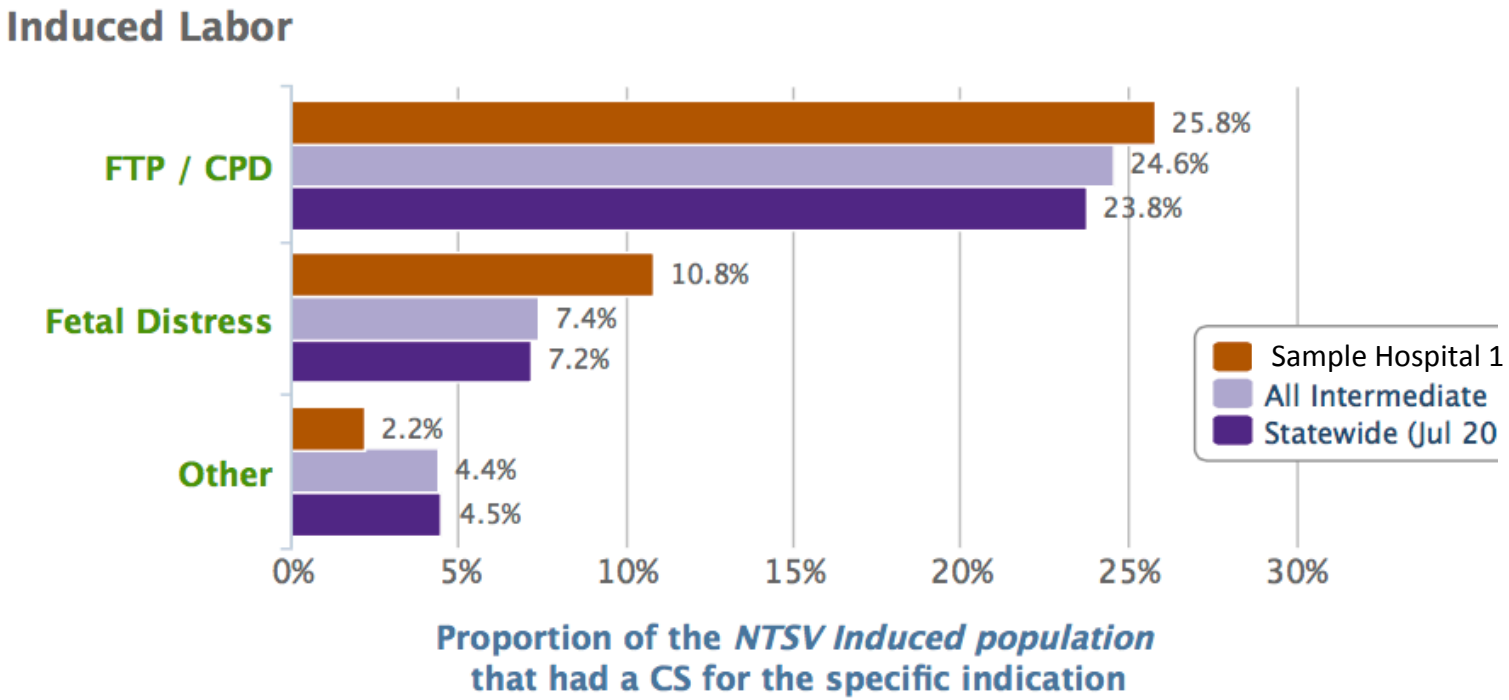




Comparison Rates for the 3 Major NTSV Drivers

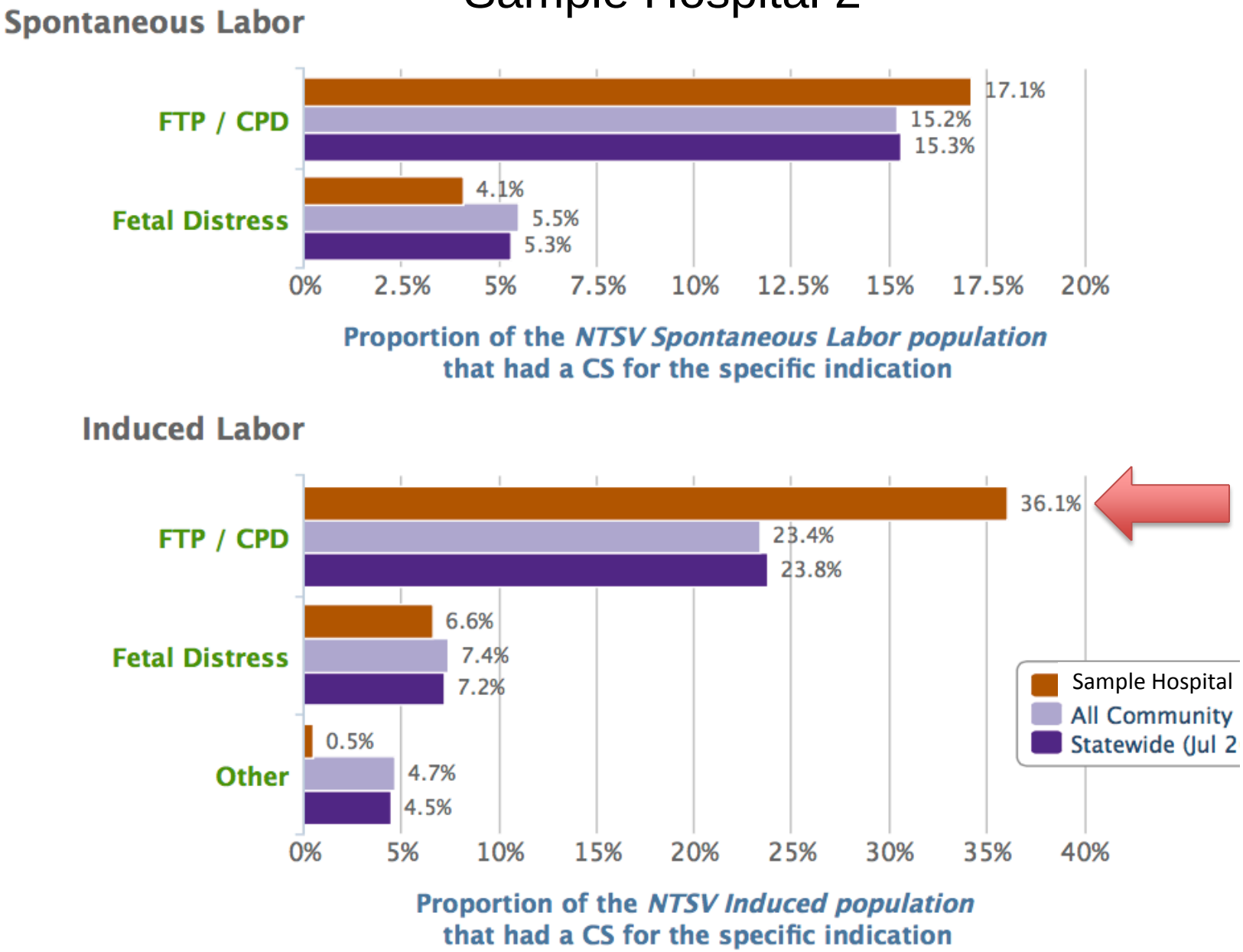
Sample Hospital 1





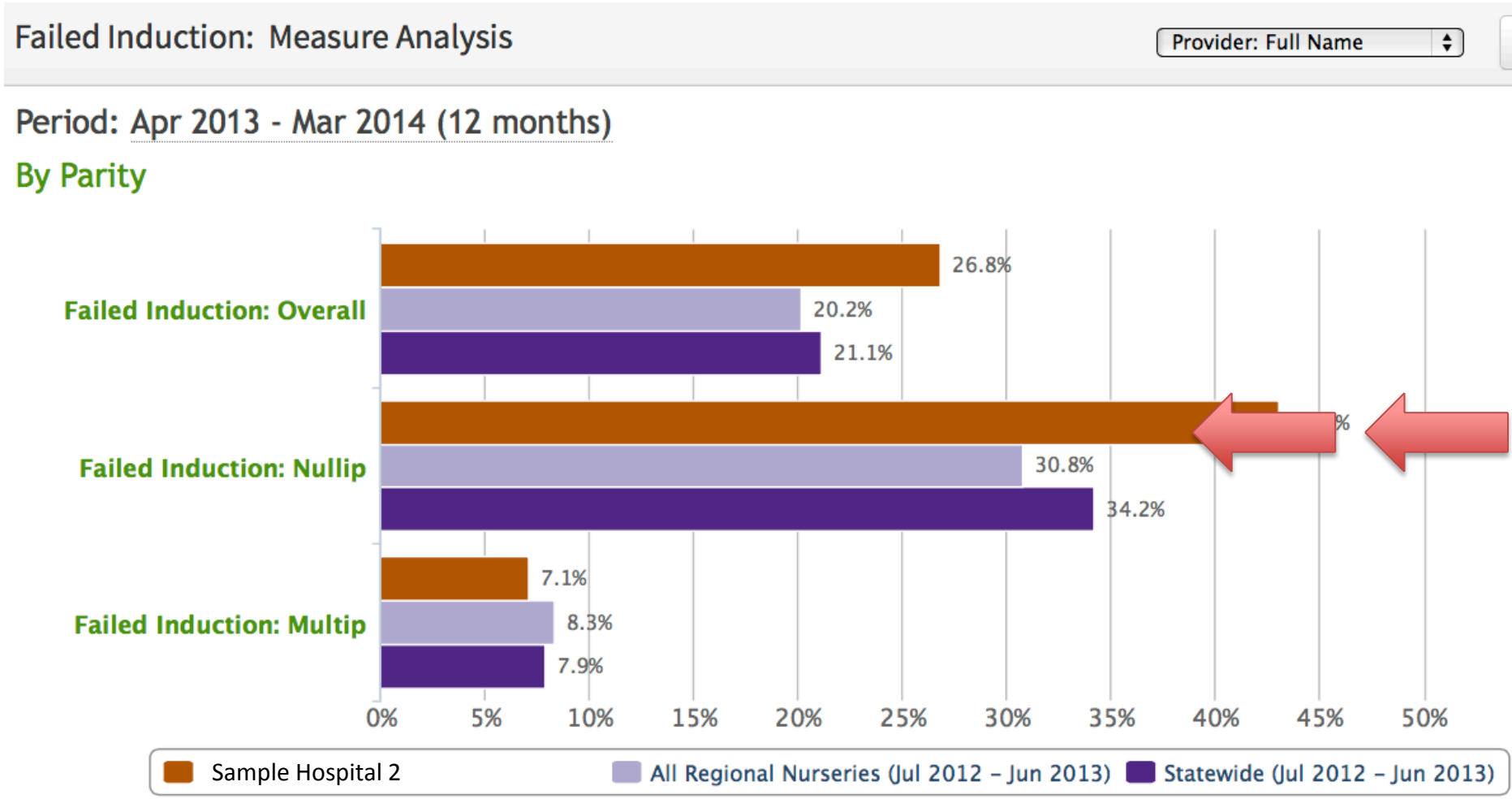
Comparison Rates for the 3 Major NTSV Drivers

Sample Hospital 2



Comparison Rates for the 3 Major NTSV Drivers

Sample Hospital 2



Provider-Level Cesarean Rates

Period: Apr 2013 – Mar 2014 (12 months)

Provider	Total Deliveries	Total CS Rate	Primary Cesarean Section Rate	NTSV Cesarean Section Rate
Sample Hospital 2	5804	36.0% (2090/5804)	23.7% (1110/4687)	31.9% (662/2074)
A101	90	36.7% (33/90)	30.7% (23/75)	31.3% (10/32)
20A7	88	27.3% (24/88)	20.0% (16/80)	26.8% (11/41)
A477	87	40.2% (35/87)	27.9% (19/68)	46.4% (13/28)
A413	85	38.8% (33/85)	19.7% (12/61)	24.0% (6/25)
A350	84	44.0% (37/84)	34.8% (24/69)	47.4% (18/38)
A368	84	41.7% (35/84)	30.0% (21/70)	37.5% (15/40)
A119	80	40.0% (32/80)	32.9% (23/70)	43.2% (19/44)
A343	76	53.9% (41/76)	42.4% (25/59)	65.5% (19/29)

CMQCC Data-Driven QI: NTSV CS

- Preliminary Data

Data Quality Measures

Show: ☐ Last 12 Month

Sample Hospital 3

Measure	Nov 2013 – Jan 2014 Rate
Missing / Inconsistent Delivery Method	0.3%
Missing / Inconsistent V27 (Outcome of Delivery)	0.1%
Missing / Inconsistent Fetal Presentation	2.7%
Inconsistent Mother's Date of Birth	0.5%
Inconsistent Parity	0.1%
Inconsistent Induction	11.9%
Missing Maternal Diabetes ICD9 Code	26.7%
Missing Maternal Hypertension ICD9 Code	36.4%
Unlinked Mothers	0.1%

CMQCC Data Driven Projects

- Maternal Mortality and Morbidity
  - Implementation of safety bundles for Hemorrhage and Preeclampsia
  - Validating measures of Severe Maternal Morbidity
  - Maternal CV Disease
- National Quality Measures
  - Preventing Early Elective Delivery
  - Antenatal Steroids
  - First Birth Cesarean Delivery

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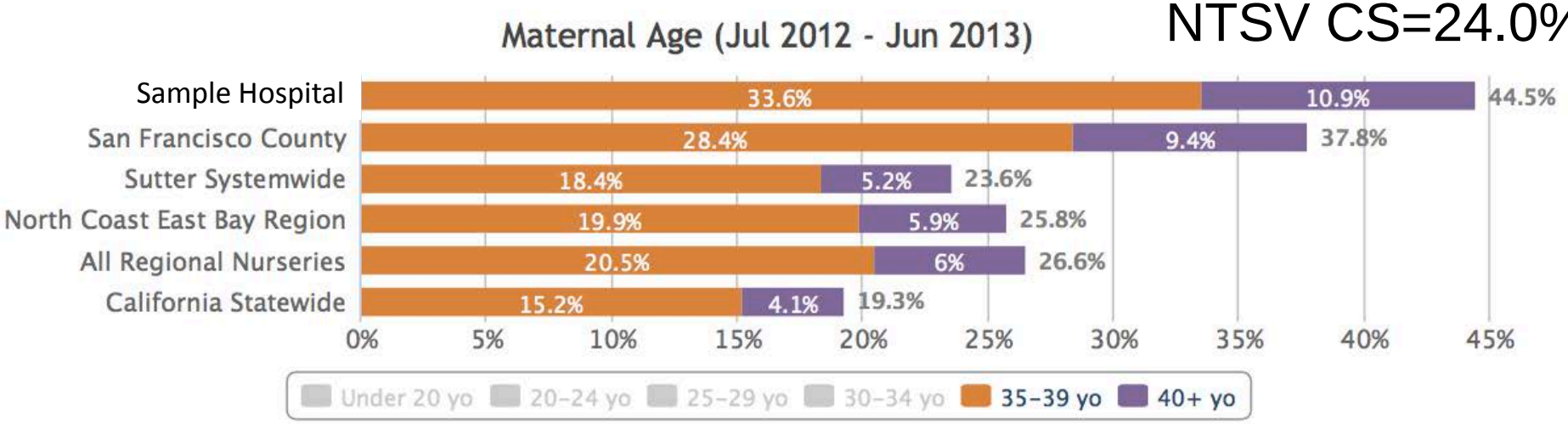
Thank You!

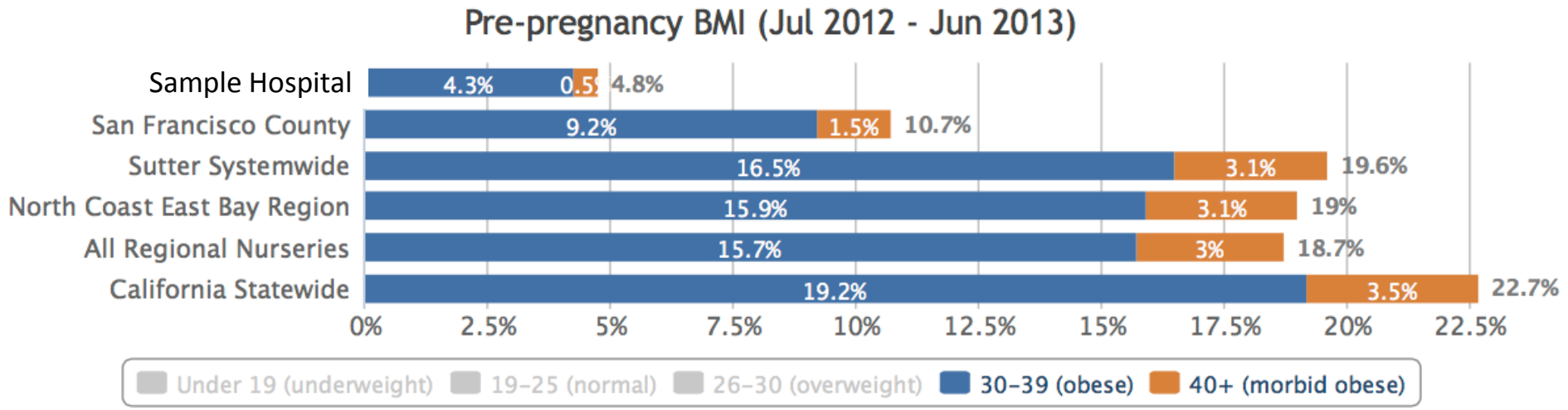
Main@CMQCC.org

CMQCC: **Transforming Maternity Care**

Are there confounding factors needing risk adjustment? A Bay Area Story

NTSV CS=24.0%





Hospitals with higher rates of older moms also have lower rates of obese moms