CPQCC Research Update 2018

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CA Congenital Syphilis Elimination Summit 2018

Resources

https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/CongenitalSyphilis.aspx

California Department of PublicHealth

Concerning Increases in Syphilis in Women and Congenital Syphilis:

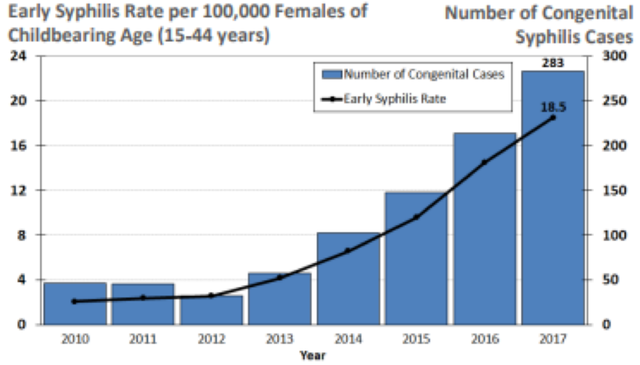
An Update for California Health Care Providers

The Problem: Increasing Congenital Syphilis in California

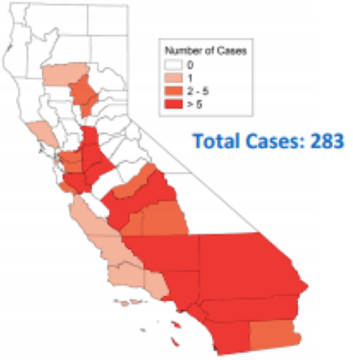
California has had a concerning increase in syphilis among women. **This has been accompanied by an over 750% increase in congenital syphilis cases from 2012 to 2017**. In 2017, most female early syphilis cases and congenital syphilis cases in California were reported from the Central Valley; however, other regions in California are increasingly affected.[1] Most women who gave birth to babies with congenital syphilis received prenatal care late in pregnancy or not at all.

This increase in numbers of congenital syphilis cases in California is an important public health problem requiring immediate attention from medical providers caring for pregnant women and women of reproductive age.

Female Syphilis Rate and Congenital Syphilis Cases, California, 2010-2017



Congenital Syphilis in Infants < 1 Year of Age, Number of Cases by County, California, 2017



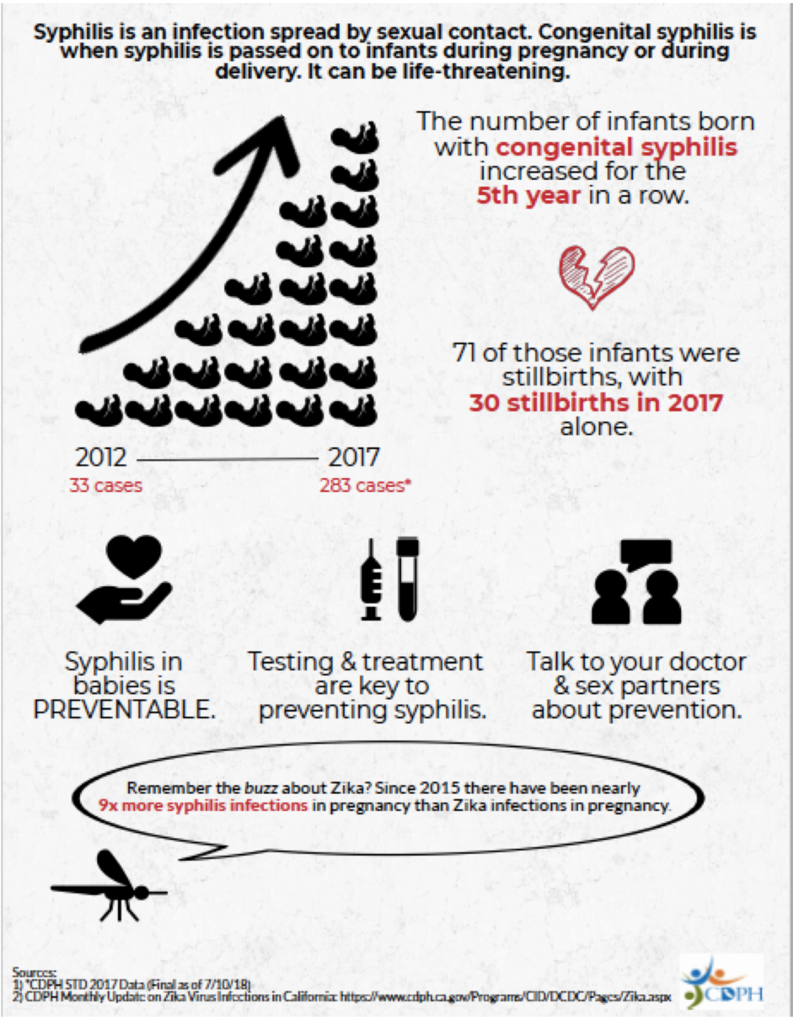
What Is Congenital Syphilis?

Congenital syphilis occurs when syphilis is transmitted from an infected mother to her fetus during pregnancy. It is a potentially devastating disease that can cause severe illness in babies including premature birth, low birth weight, birth defects, blindness and hearing loss. It can also lead to stillbirth and infant death.[2]

- In 2017, 3,342 females of childbearing age (15-44 years) were diagnosed with syphilis in CA
- Nearly half of these cases (1,462) were early syphilis, which includes the infectious primary and secondary stages as well as the early latent stage
- In 2017, early syphilis among females of childbearing age was 18.5 per 100,000, which was an increase of over 600% compared to the rate in 2012
- About 15-20% of women with syphilis were reported as pregnant

Syphilis in CA babies on the rise

- 27 of 58 counties had 1 or more congenital syphilis cases in 2017, compared with only 14 counties in 2012
- In CA, it is required by law that pregnant women get tested for syphilis at their first prenatal visit.
- Early diagnosis and prompt treatment in pregnancy prevented 70% of potential congenital syphilis cases in 2017.



Resources

https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/CongenitalSyphilis.aspx

Congenital Syphilis Can Be Prevented!

- Congenital syphilis can be prevented with early detection and timely and effective treatment of syphilis in pregnant women and women who could become pregnant.
- Preconception and interconception care should include screening for HIV and sexually transmitted diseases (STDs), including syphilis, in women at risk, in addition to access to highly effective contraception.

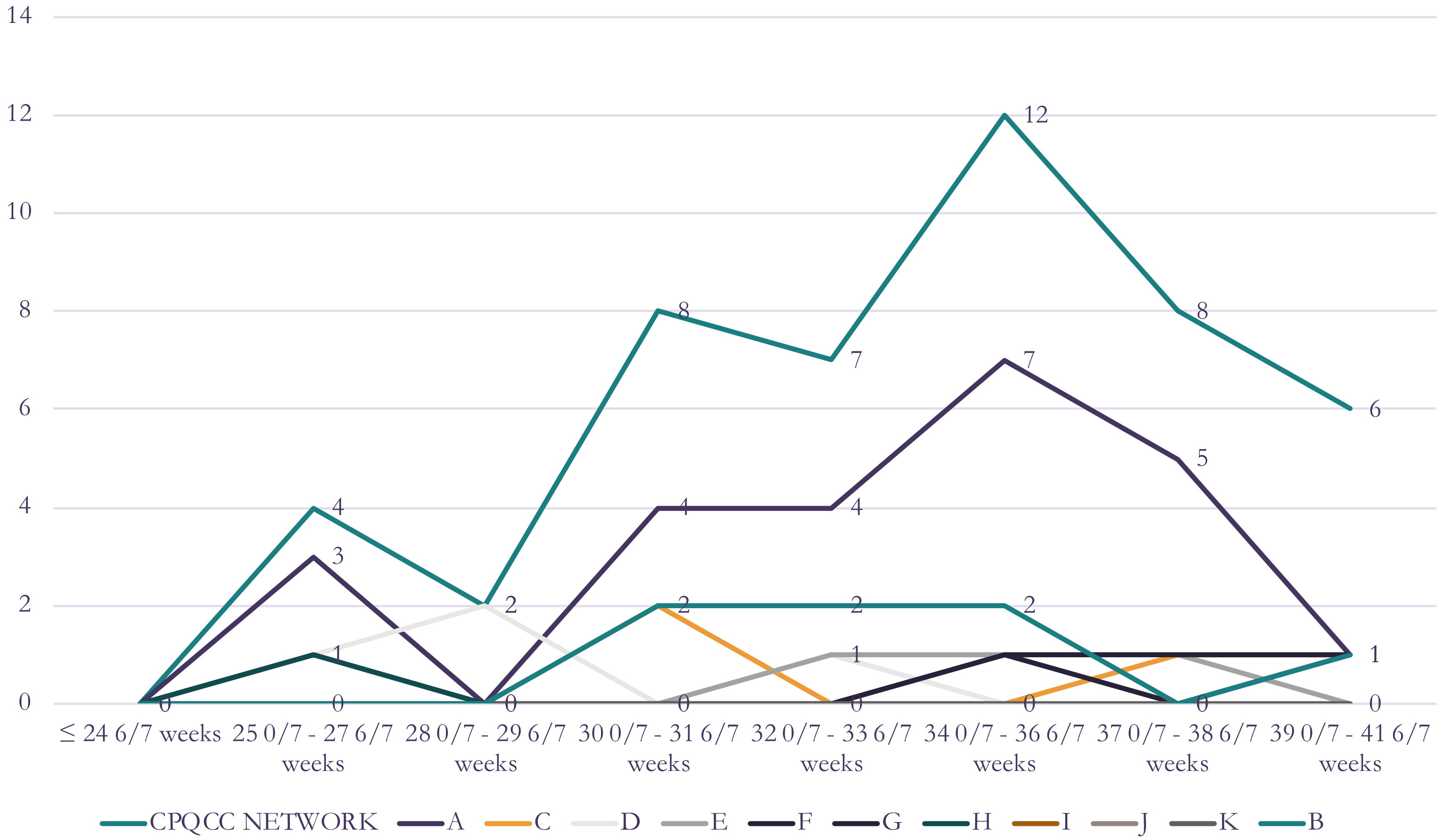
Resources For Health Care Providers Centers for Disease Control and Prevention

- 2015 STD Treatment Guidelines: Syphilis During Pregnancy (https://www.cdc.gov/std/tg2015/syphilis-pregnancy.htm) and Congenital Syphilis (https://www.cdc.gov/std/tg2015/congenital.htm)
- For clinical questions, enter your consult online at the STD Clinical Consultation Network (https://www.stdccn.org/)

Congenital Syphilis Infection

2018 (YTD)

- In 2018, 8 out of 11 RPPC have reported CS
- A total of 47 cases in CA, range 0 to 24
- There were 12 cases for infants born at 34 0/7 - 36 6/7 weeks



Maternal Exposures

Details

1. Participation is voluntary

2. Phase 1 of data collection will start January 2019

3. This supplemental form will be housed in the NICU Data website
   - www.cpqccdata.org

4. Please submit a Help Ticket if interested in joining the Maternal Exposures Work Group

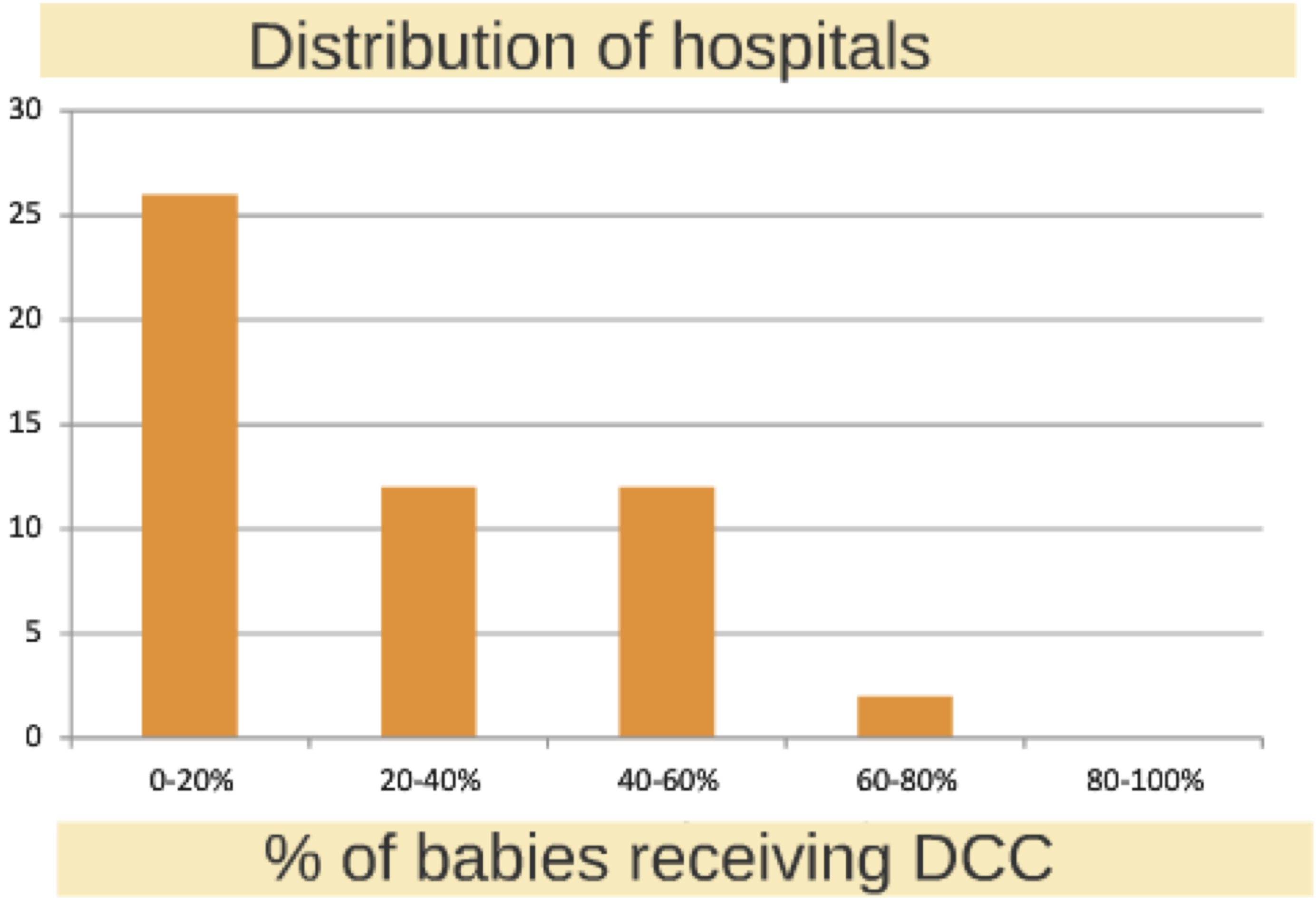
Maternal Exposures

Data collection 2019

- Can be supplement for CPQCC babies – but primarily designed for:
  - Infants in NICU not eligible for CPQCC but with maternal exposure to drugs
  - Infants in well baby nursery (i.e. not NICU)
- Designed to have minimal PHI (i.e. less maternal data other than exposures)

Delayed Cord Clamping

2016



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Delayed Cord Clamping

Recent analysis has shown that Delayed Cord Clamping (DCC) in preterm infants is associated with a reduced need for blood transfusion and a reduced risk of intraventricular hemorrhage (IVH) and necrotizing enterocolitis (NEC) in preterm infants

Randomized clinical trials have also shown other benefits of DCC including improved cardiovascular stability, cerebral oxygenation, and lower risks for both severe IVH and late-onset sepsis. Delayed Cord Clamping of up to 1 minute for preterm infants has been recommended by the WHO, NRP, and ACOG.

CPQCC has collected a variety of resources to help hospitals implement and collect data on DCC. Following a DCC data collection pilot project, CPQCC now requires members to submit data on DCC in their hospitals.

Recommended reading:

- Delayed vs early umbilical cord clamping for preterm infants: a systematic review and meta-analysis
- Effect of timing of umbilical cord clamping of term infants on maternal and neonatal outcomes.
- Delayed Umbilical Cord Clamping After Birth
- 2015 Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care of the Neonate.
- 2015 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science With Treatment Recommendations

DOWNLOAD TIP SHEET »

Author:
Henry Lee
Priya Jegatheesan

Resource Category:
Tip Sheet

Date:
September 2018

Additional PDFs:
- DCC Pilot Study Manual of Definitions
- SCVMC Delayed Cord Clamping Guidelines
- HPMC Delayed Cord Clamping Guidelines
- LAC/USC Delayed Cord Clamping Data Collection Form

Related Links:
- September 2018 Webinar Recording
- February 2018 Webinar Recording
- February 2018 Webinar Slides
- November 2017 Webinar Recording
- November 2017 Webinar Slides
- August 2017 Webinar Recording
- August 2017 Webinar Slides
- 2016-2017 Webinar Recordings
- 2016-2017 Webinar Slides
- Case Study Video

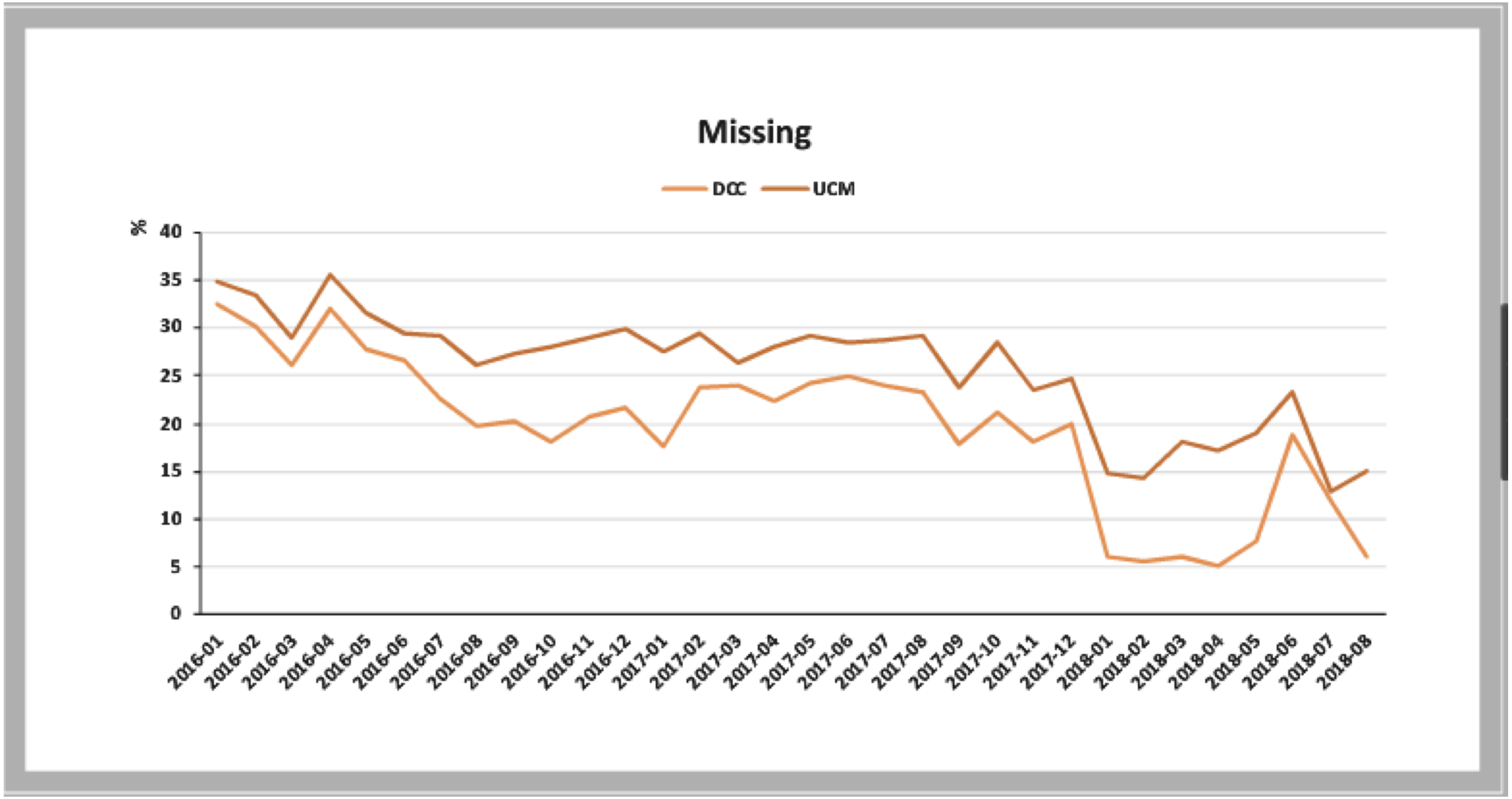
Thank you to all of the contributors to the webinars!

Also to Janella and Priya Jegatheesan from SCVMC

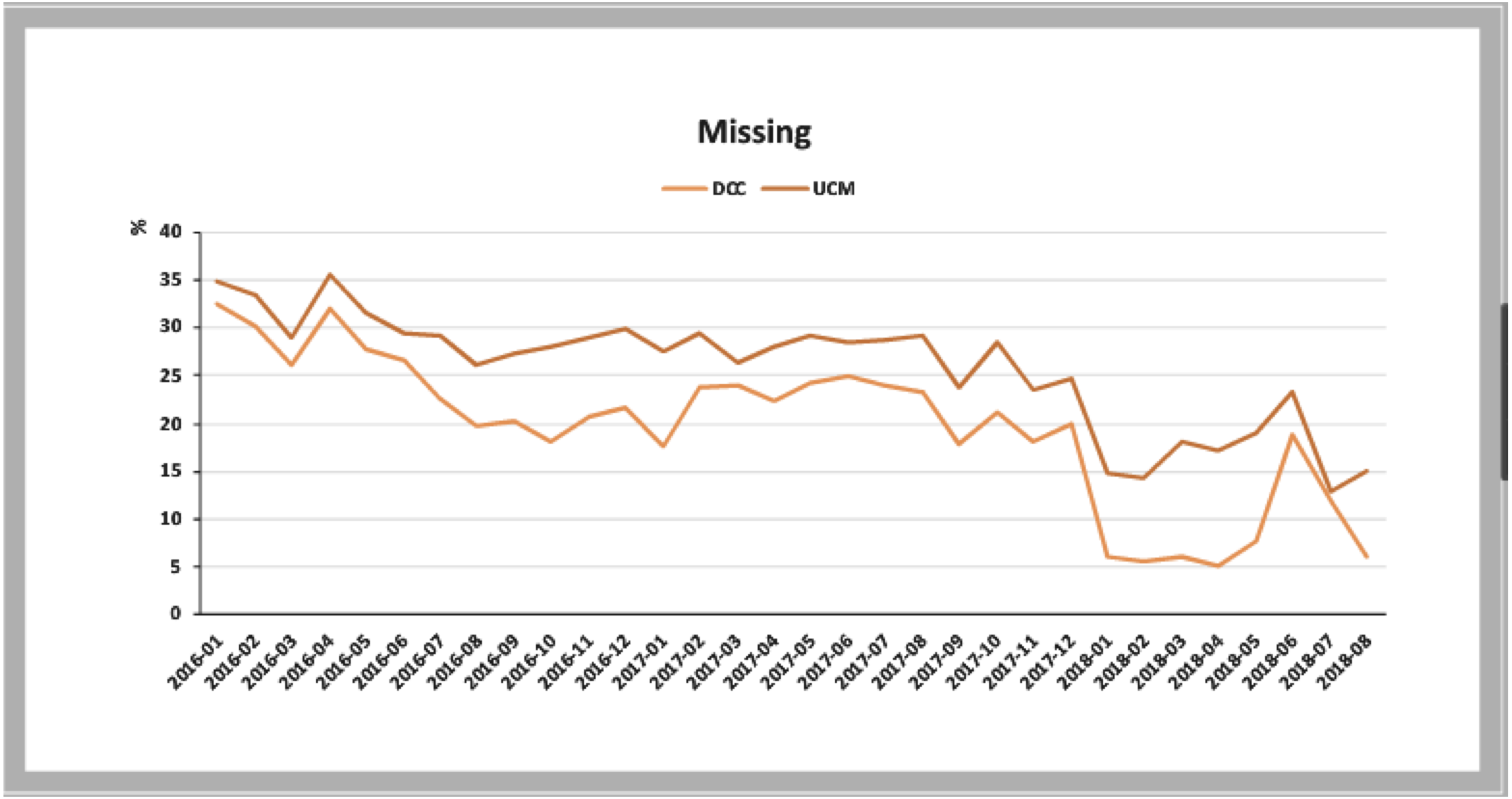
Resources for data collection and for implementation available at:
https://www.cpqcc.org/resources/delayed-cord-clamping

Decrease in missing data over time

2016 → 2018



Decrease in missing data over time 2016→2018



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ORIGINAL ARTICLES

The Effect of Level of Care on Gastroschisis Outcomes

Jordan C. Apfeld, MD[1], Zachary J. Kastenberg, MD[1,2], Karl G. Sylvester, MD[1,2,3,4], and Henry C. Lee, MD[4,5]

Objective To examine the relationship between level of care in neonatal intensive care units (NICUs) and outcomes for newborns with gastroschisis.

Study design A retrospective cohort study was conducted at 130 California Perinatal Quality Care Collaborative NICUs from 2008 to 2014. All gastroschisis births were examined according to American Academy of Pediatrics NICU level of care at the birth hospital. Multivariate analyses examined odds of mortality, duration of mechanical ventilation, and duration of stay.

Results For 1588 newborns with gastroschisis, the adjusted odds of death were higher for those born into a center with a level IIA/B NICU (OR, 6.66; $P = .004$), a level IIIA NICU (OR, 5.95; $P = .008$), or a level IIIB NICU (OR, 5.85; $P = .002$), when compared with level IIIC centers. The odds of having more days on ventilation were significantly higher for births at IIA/B and IIIB centers (OR, 2.05 [$P < .001$] and OR, 1.91 [$P < .001$], respectively). The odds of having longer duration of stay were significantly higher at IIA/B and IIIB centers (OR, 1.71 [$P < .004$]; OR, 1.77 [$P < .001$]).

Conclusions NICU level of care was associated with significant disparities in odds of mortality for newborns with gastroschisis. *(J Pediatr 2017;190:79-84).*

Table III. Mortality, longer ventilation time, and longer total duration of stay for infants with gastroschisis in California, 2008-2014

Outcome variables, by level of care	No, n (%)	Yes, n (%)	Unadjusted OR (95% CI)	*P* value	aOR (95% CI)*	*P* value
Died (mortality)						
Level IIA/B	199 (13.6)	7 (18.4)	3.65 (1.15-11.6)	.03	6.66 (1.81-24.5)	.004
Level IIIA	156 (10.7)	6 (15.8)	3.99 (1.20-13.3)	.02	5.95 (1.58-22.3)	.008
Level IIIB	588 (40.2)	20 (52.6)	3.53 (1.32-9.47)	.01	5.85 (1.95-17.6)	.002
Level IIIC	519 (35.5)	5 (13.2)	1 [Reference]		1 [Reference]	
>5 Days on ventilator						
Level IIA/B	86 (11.6)	105 (16.3)	1.94 (1.38-2.71)	<.001	2.05 (1.41-2.98)	<.001
Level IIIA	98 (13.2)	49 (7.6)	0.79 (0.54-1.17)	.24	0.76 (0.48-1.19)	.23
Level IIIB	259 (35.0)	303 (47.0)	1.85 (1.45-2.37)	<.001	1.91 (1.47-2.48)	<.001
Level IIIC	298 (40.2)	188 (29.1)	1 [Reference]		1 [Reference]	
Duration of stay >36 days						
Level IIA/B	93 (12.6)	106 (14.7)	1.50 (1.08-2.08)	.02	1.71 (1.18-2.47)	.004
Level IIIA	92 (12.5)	64 (8.9)	0.92 (0.64-1.32)	.64	1.04 (0.67-1.61)	.85
Level IIIB	258 (35.0)	329 (45.5)	1.68 (1.32-2.13)	<.001	1.77 (1.37-2.28)	<.001
Level IIIC	295 (40.0)	224 (31.0)	1 [Reference]		1 [Reference]	

*Model included year of birth, sex, black race, gestational age, Apgar scores at 1 and 5 minutes, severity-weighted congenital malformation score, respiratory distress syndrome, and presence of maternal complications or obstetric complications; model for days on ventilator and duration of stay included a categorical variable for transfer <48 hours.

Comparison of Collaborative Versus Single-Site Quality Improvement to Reduce NICU Length of Stay

PEDIATRICS Volume 142, number 1, July 2018:e20171395

RESULTS: From 2013 to 2015, 8917 infants were cared for in 20 collaborative NICUs, 19 individual project NICUs, and 71 nonparticipants. In the collaborative group, the PMA at discharge decreased from 37.8 to 37.5 weeks ($P = .02$), and early discharge increased from 31.6% to 41.9% ($P = .006$). The individual project group had no significant change. Nonparticipants had a decrease in PMA from 37.5 to 37.3 weeks ($P = .01$) but no significant change in early discharge (39.8% to 43.6%; $P = .24$). There was no significant change in readmissions over time in the collaborative group.

If average daily cost is $3000, could translate to $58.5 million for California annually.

Programmatic and Administrative Barriers to High-Risk Infant Follow-Up Care

Brian G. Tang, MD[1,2] Henry C. Lee, MD, MS[2,3] Erika E. Gray, BA[2,3] Jeffrey B. Gould, MD, MPH[2,3] Susan R. Hintz, MD, MS[2,3]

Am J Perinatol 2018;35:940–945.

50 Program Coordinators (90%)

3 Medical Directors (5%)

3 Providers (5%)

Table 1 Difficulties and barriers encountered in the HRIF referral process

Most frequent difficulties in the NICU to HRIF referral process	***N*** **(%)**
Missing data on referral forms	13 (25)
Inconsistent referrals (i.e., Referral not made even if child is eligible)	12 (23)
Most common barriers to HRIF referral	***N*** **(%)**
Limited resources and personnel for NICU/HRIF interface	27 (51)
Parent/family education about the importance of HRIF	20 (38)

Strategies to improve no-show rates at HRIF

Strategies used to follow up with families after missed HRIF visit	*N* (%)
Multiple calls until personal response and reschedule	43 (77)
Postcard or letter by mail	41 (73)
Call to pediatrician	21 (38)
One call only—leave message if no answer	10 (18)
Email	5 (9)
Robo-call	0
Strategies used to remind families of upcoming HRIF visits	
Personal call	52 (93)
Postcard or letter by mail	40 (71)
"Robo-call"	16 (29)
Email	10 (18)
Other	7 (13)
Strategies HRIF program uses for successful follow up with patients who live at a distance	
None	30 (54)
Transportation vouchers	11 (20)
Outreach clinics	10 (18)
Gas card	5 (9)
Home visits	2 (4)
Financial gift/incentive	1 (2)
Weekend visits	0

Resources needs and barriers in HRIF

Table 4 Resource needs and barriers in HRIF

Areas of significant resource needs for HRIF	*N*	(%)
Additional funding	30	(54)
More space in clinic facilities and/or expanded number of half-day clinics	28	(50)
Additional personnel for scheduling/follow-up calls	26	(46)
Better access to subspecialists for referrals	19	(34)
Additional personnel for coordination of services	18	(32)
Expansion to additional outreach locations	16	(29)
Other	14	(25)
More medical and NP providers	13	(23)
More psychologists and/or other staff qualified to conduct developmental and behavioral testing	8	(14)
Areas considered significant barriers and challenges to successful follow-up	***N***	**(%)**
Parent/family work schedule	39	(70)
Parent/family perception that the child is doing well and no need for HRIF	38	(68)
Transportation issues	37	(66)
Patient/family distance from clinic	30	(54)
Insurance	30	(54)
Limited availability for HRIF clinic times	26	(46)
Limited personnel for tracking/follow-up calls in HRIF program	23	(41)
Parent/family refusal for other reasons	18	(32)
Other	10	(18)

Journal of Perinatology
https://doi.org/10.1038/s41372-018-0057-3

QUALITY IMPROVEMENT ARTICLE

Disparities in NICU quality of care: a qualitative study of family and clinician accounts

Krista Sigurdson[1,2,3] · Christine Morton[4] · Briana Mitchell[1,2] · Jochen Profit[1,2]

Received: 18 July 2017 / Revised: 29 December 2017 / Accepted: 3 January 2018

Abstract

Objective To identify how family advocates and clinicians describe disparities in NICU quality of care in narrative accounts.

Study design Qualitative analysis of a survey requesting disparity stories at the 2016 VON Quality Congress. Accounts (324) were from a sample of RNs ($n = 114$, 35%), MDs ($n = 109$, 34%), NNPs ($n = 55$, 17%), RN other ($n = 4$, 1%), clinical other ($n = 25$, 7%), family advocates ($n = 16$, 5%), and unspecified ($n = 1$, <1%).

Results Accounts (324) addressed non-exclusive disparities: 151 (47%) language; 97 (30%) culture or ethnicity; 72 (22%) race; 41 (13%) SES; 28 (8%) drug use; 18 (5%) immigration status or nationality; 16 (4%) sexual orientation or family status; 14 (4%) gender; 10 (3%) disability. We identified three types of disparate care: neglectful care 85 (26%), judgmental care 85 (26%), or systemic barriers to care 139 (44%).

Conclusions Nearly all accounts described differential care toward *families*, suggesting the lack of equitable family-centered care.

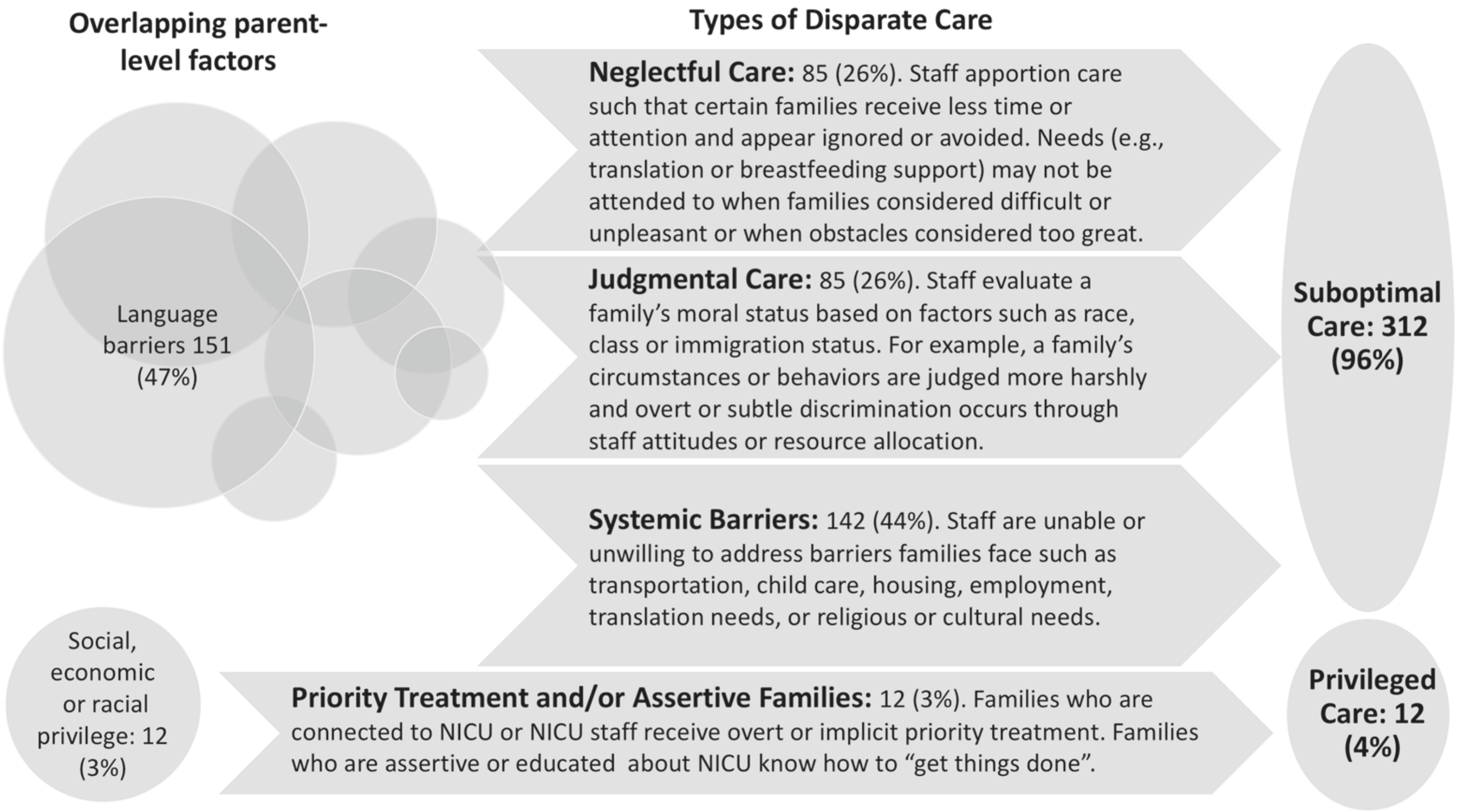

Fig. 1 Types of disparities in care. Accounts described neglectful care, judgmental care, and systemic barriers to care leading to suboptimal care or priority treatment or assertive families leading to better care Overlapping family-level factors led to suboptimal care, whereas social, economic, or racial privilege let to better care.

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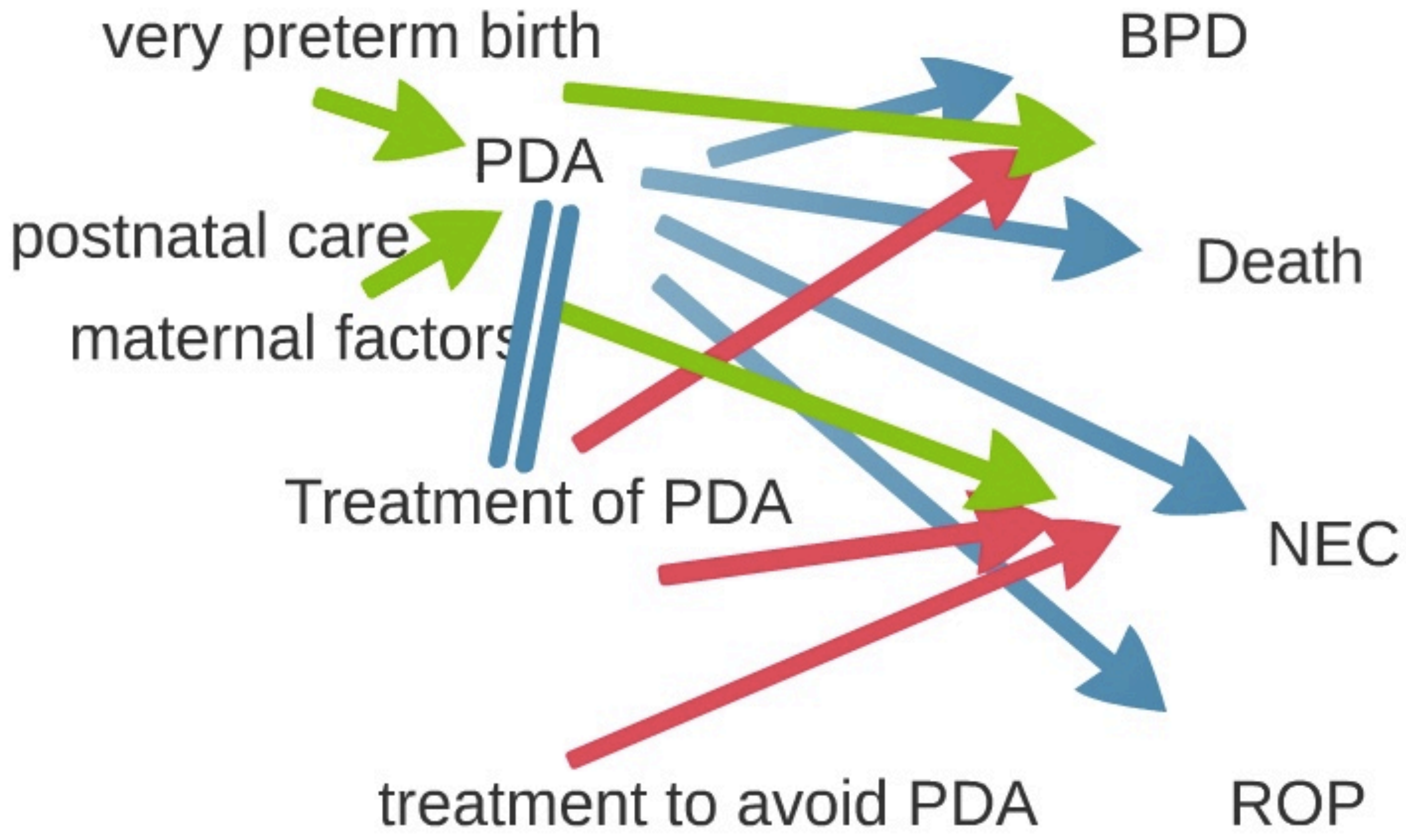
ORIGINAL ARTICLES

Covariation of Neonatal Intensive Care Unit-Level Patent Ductus Arteriosus Management and In-Neonatal Intensive Care Unit Outcomes Following Preterm Birth

James I. Hagadorn, MD, MSc[1,2], Mihoko V. Bennett, PhD[3,4], Elizabeth A. Brownell, PhD[1,2], Kurlen S. E. Payton, MD[5], William E. Benitz, MD[3], and Henry C. Lee, MD, MS[3,4]

Objective To test the hypothesis that neonatal intensive care unit (NICU)-specific changes in patent ductus arteriosus (PDA) management are associated with changes in local outcomes in preterm infants.

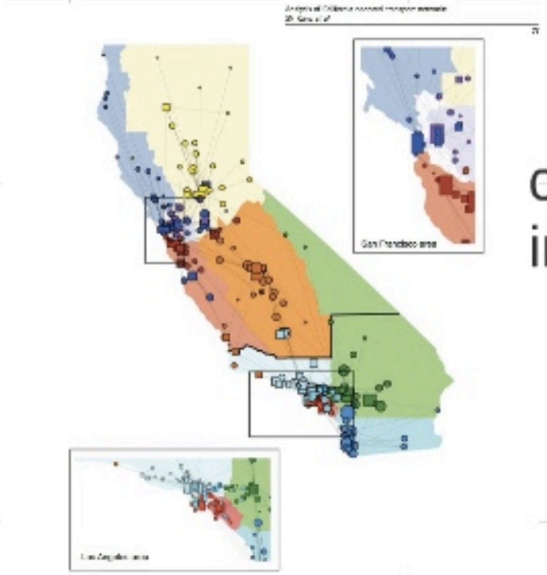
Study design This retrospective repeated-measures study of aggregated data included infants born 400-1499 g admitted within 2 days of delivery to NICUs participating in the California Perinatal Quality Care Collaborative. The period 2008-2015 was divided into four 2-year epochs. For each epoch and NICU, we calculated proportions of infants receiving cyclooxygenase inhibitor (COXI) or PDA ligation and determined NICU-specific changes in these therapies between consecutive epochs. Generalized estimating equations were used to examine adjusted relationships between NICU-specific changes in PDA management and contemporaneous changes in local outcomes.



Patient without PDA

less intervention for PDA

change in rates of:
BPD
NEC
mortality
...



change in rate of PDA intervention

change in rate of outcomes

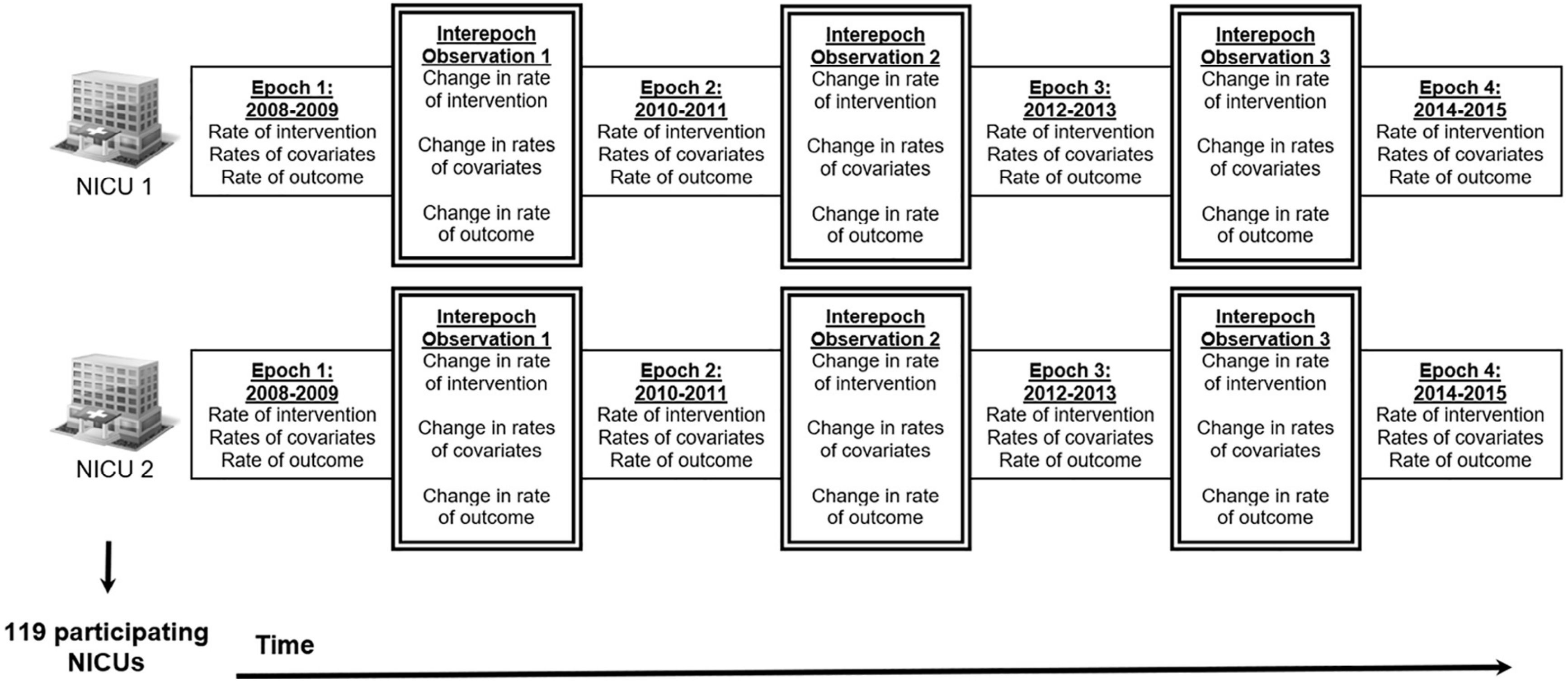
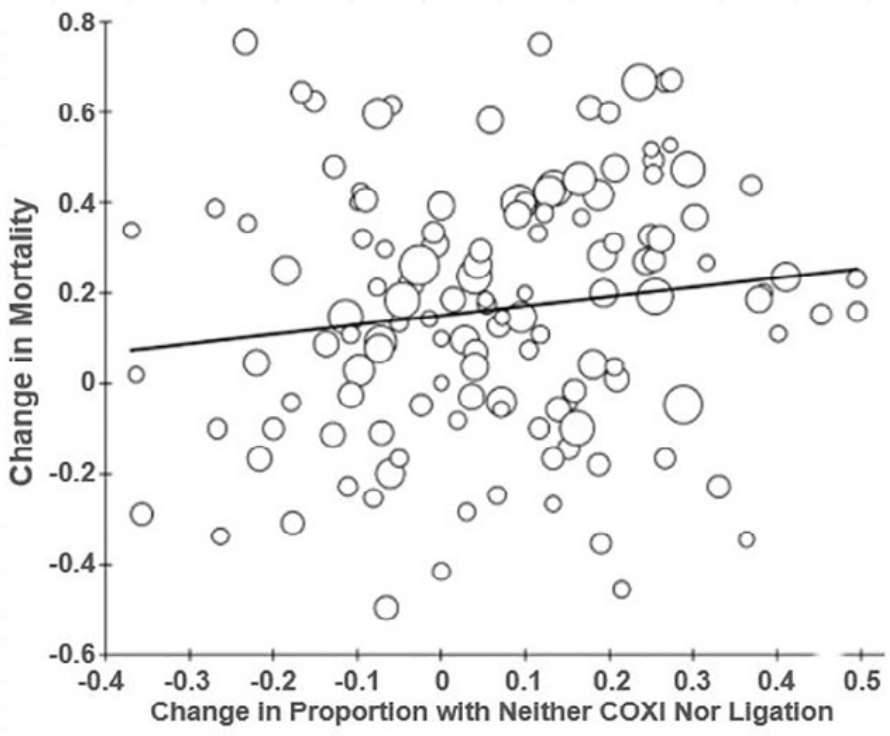


Figure 1. Division of 2008-2015 study period into four 2-year epochs. Each participating NICU had four NICU-specific epochs (*single-line boxes*) considered for inclusion in unadjusted trend analyses, and 3 observations of interepoch change (*double-line boxes*) considered for inclusion in multivariable analyses of associations between change in PDA management and change in outcome rates.

a) No COXI or Ligation versus Mortality



b) No COXI or Ligation versus BPD

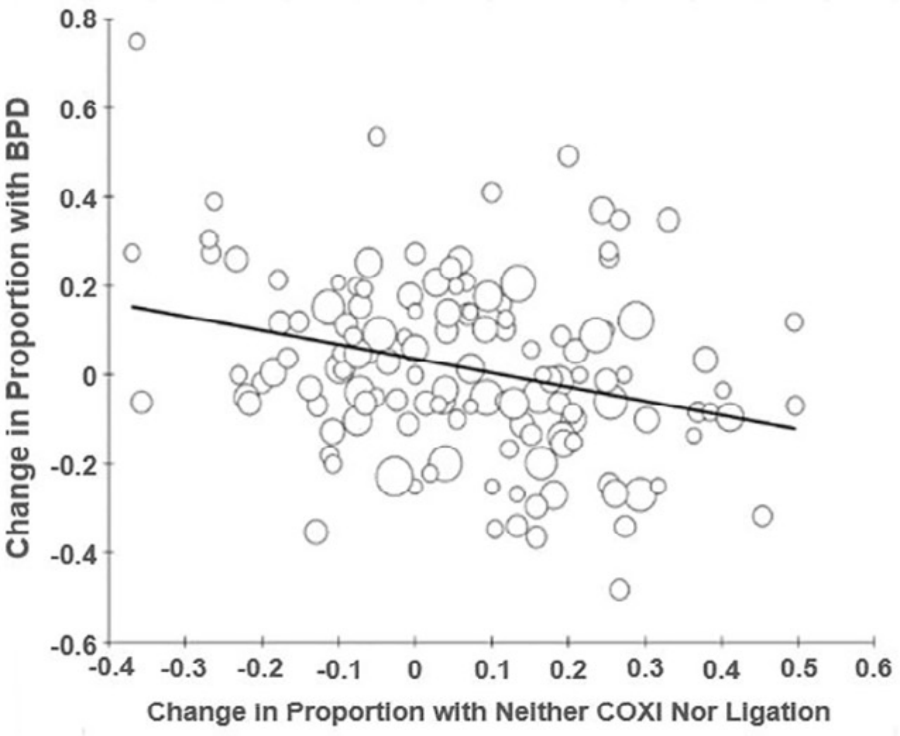


Table 2: Summary of Table 1.

Change between epochs in NICU-specific, birth weight-specific rate of:	Adjusted incremental change (percentage points) between epochs in NICU-specific rate of: Died[a]	Died or BPD[a]	Severe IVH[a]	BPD[b]	PVL[b]	NEC[b]	Severe ROP
Stratum 1 - Birth weight 400-749 grams: 133 Observations of change between consecutive epochs, 55 NICUs							
↑ No COXI or ligation	↑↑↑†	-	-	↓↓↓*	-	-	-
↓ COXI without ligation	-	-	-	-	-	-	-
↓ COXI and ligation	↑↑↑*	-	-	-	-	-	-
↓ Ligation without COXI	-	-	-	-	-	-	-
↓ Any COXI	↑↑*	-	-	↓↓*	-	-	-
↓ Any ligation	↑↑*	-	-	-	-	-	-
Stratum 2 - Birth weight 750-999 grams: 178 Observations of change between consecutive epochs, 73 NICUs							
↑ No COXI or ligation	-	-	-	-	-	↓*	-
↓ COXI without ligation	↓†	-	-	-	-	-	-
↓ COXI and ligation	-	-	-	-	-	-	-
↓ Ligation without COXI	-	-	-	-	-	-	-
↓ Any COXI	-	-	-	-	-	-	-
↓ Any ligation	-	-	-	-	-	-	-
Stratum 3 - Birth weight 1000-1499 grams: 331 Observations of change between consecutive epochs, 119 NICUs							
↑ No COXI or ligation	-	-	-	-	-	-	-
↓ COXI without ligation	-	-	-	-	-	-	-
↓ COXI and ligation	-	↓↓↓↓*	-	↓↓↓↓*	-	-	-
↓ Ligation without COXI	-	-	-	-	-	-	↓*
↓ Any COXI	-	-	-	-	-	-	-
↓ Any ligation	-	↓↓↓↓*	-	↓↓↓↓†	-	↓*	-

P value: *<0.05 †<0.01 ‡<0.001

Percentage point increase, per percentage point change in independent variable: ↑ 0 – <0.1; ↑↑ 0.1 – <0.2; ↑↑↑ 0.2 – <0.3

Percentage point decrease, per percentage point change in independent variable: ↓ >-0.1 – 0; ↓↓ >-0.2 – -0.1; ↓↓↓ >-0.3 – -0.2; ↓↓↓↓ >-0.4 – -0.3;

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