CHD who become pregnant face a specialized set of challenges and an increased risk of adverse outcome. Risk factors associated with adverse obstetrical and neonatal outcomes are incompletely understood. The primary aim of this study was to determine what cardiac risk factors are associated with preterm birth (PTB) and low birth weight (LBW).

STUDY DESIGN: A retrospective cohort study examined outcomes in women with CHD who delivered between1998-2010. We collected maternal cardiac, obstetrical, neonatal and echocardiographic data for analysis. The rates of adverse obstetrical and neonatal outcomes were determined and baseline cardiac characteristics were examined using Fishers exact test to assess the strength of association with adverse outcomes.

RESULTS: The study included 64 women with CHD (1 mild, 45 moderate, 22 complex heart defects) who had a total of 68 pregnancies. Only 29 women had preconception cardiac evaluation at an adult congenital heart disease center. An adverse obstetrical or neonatal outcome occurred in 41.1% (n=28) of pregnancies and included any of the following: PTB, LBW, pre-eclampsia, preterm rupture of membranes, or hemorrhage. The rate of PTB was 36.7% (n=25) and LBW was 27.9% (n=19). Factors associated with sustaining a PTB or LBW included the need for cardiac medications prior to pregnancy, moderate/severe tricuspid valve regurgitation, and moderate to severe right ventricular dysfunction ($p \leq 0.05$). The rate of cesarean delivery was 50.7%.

CONCLUSION: A significant number of women with CHD undergoing pregnancy will experience an adverse obstetrical or neonatal outcome. Right heart failure, as evidenced by moderate to severe RV dysfunction and/or moderate to severe tricuspid valve regurgitation is associated with an increased risk of PTB and LBW. A larger cohort is needed to confirm these findings. Given the high rate of adverse outcomes, women with CHD should be cautioned about fetal as well as maternal cardiac risks associated with pregnancy.

326 Mode of delivery after previous cesarean section in the Netherlands

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OBJECTIVE: The SIMPLE study (Cesarean Section IMPLEmentation), studies the implementation of current guidelines for cesarean section (CS) in the Netherlands: both current care and facilitators and barriers for optimal care. An important group with increasing CS rates is pregnant women with a previous CS. We evaluated the current patterns in choices of mode of delivery in women who were eligible for a trial of labor (TOL) in the Netherlands.

STUDY DESIGN: We performed a secondary analysis on a Dutch retrospective cohort. This cohort included women who were eligible for a TOL and gave birth in 2010. Data were collected in 17 hospitals, with a good representation of all Dutch regions and hospital types. In the participating hospitals, 30 cases of TOL and all repeat CSs in the same time-interval were included. We recorded data which was considered relevant for the chance on a vaginal birth after previous cesarean (VBAC). Primary outcome measures were: current percentage TOL and VBAC per hospital, and the differences between women opting for TOL or repeat CS.

RESULTS: Medical records of 9,833 patients were reviewed, 1,068 patients had a history of CS (10.9%) of whom 757 (70.9%) were eligible for TOL. The TOL rate ranged from 44% to 93% (68.9% 12.1%), the VBAC rate ranged from 50% to 90% (72.4% 10.9%). Women who chose for a TOL over a repeat CS had in general a more favorable prognostic profile for achieving VBAC. However, a trend was observed that hospitals with a higher TOL rate had a higher VBAC rate, indicating that the chance of successful VBAC is currently not adequately estimated, but that local obstetric policy plays a more important role.

CONCLUSION: In 2010, in the Netherlands, the majority of women opted for a TOL after previous CS. National data on uterine rupture shows an annual incidence of about 30 cases in 175.000 deliveries [1]. In the group of women with a TOL, this is 0.3% The benefits of VBAC outweigh these small numbers of serious morbidity, but identification of women who have a very low chance of success is needed. Reference [1] PRN: "Perinatal Care in the Netherlands 2005" Utrecht 2008.

327 Higher rates of secondary caesarean sections and assisted vaginal deliveries per hospital do not improve perinatal outcome

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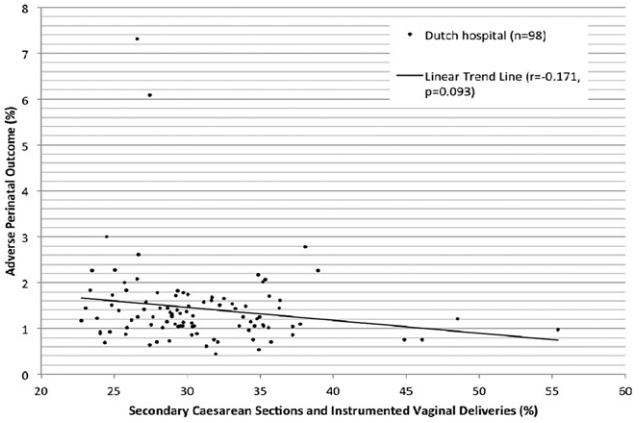
OBJECTIVE: Secondary Caesarean sections and instrumental deliveries are performed for failure of progress of labour or for suspected fetal distress. One would hypothesize that a high intervention rate during labour would result in optimal fetal outcome. In this study, we assessed whether higher rates of secondary caesarean sections and assisted vaginal deliveries per hospital are related to an improved perinatal outcome.

STUDY DESIGN: We studied the deliveries of all nulliparous women with term, singleton, cephalic pregnancies, carrying a living fetus without congenital abnormalities at the start of delivery in all 98 Dutch hospitals from January 2005 to December 2007. Data were obtained from the Dutch Perinatal Registry. This registry contains the linked and validated data of the national obstetric database for gynaecologists and the national neonatal/paediatric database. For each hospital, total intervention rates (which included secondary caesarean sections and assisted vaginal deliveries) for the indications suspected fetal distress or dystocia, were correlated to adverse perinatal outcome rates, defined as intrapartum mortality, apgar score <7 and/or NICU admission) using the Pearsons correlation coefficient.

RESULTS: We studied 258.676 deliveries. The total intervention rates per hospital ranged from 23% to 55%. No significant correlation was found between total intervention rates and adverse perinatal outcome per hospital (Fig.1, $r=-0.171$, $p=0.093$). Also the rates of interventions made solely for the indication fetal distress were not significantly correlated to adverse perinatal outcome ($r=+0.174$, $p=0.086$). Interestingly, higher intervention rates for the indication dystocia per hospital were significantly related to lower perinatal adverse outcome rates ($r=-0.236$, $p=0.019$).

CONCLUSION: There appears to be a wide variety in rates of secondary caesarean sections and assisted vaginal deliveries between hospitals in the Netherlands. Overall, higher intervention rates do not significantly improve perinatal outcome.



328 Changes in care associated with introduction of a post-partum hemorrhage patient safety program

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OBJECTIVE: To determine whether the introduction of a multi-pronged patient safety program regarding the management of post-partum hemorrhage (PPH) was associated with changes in patient care or outcomes.

STUDY DESIGN: In August 2008, a patient safety program designed to assist with the management of PPH was instituted at a tertiary care urban maternity hospital. This program was composed of three principle components: (1) an educational initiative designed to improve the accuracy of blood loss estimation; (2) the training regarding and institution of a protocol for the management of post-partum hemorrhage; and (3) the institution of the active management of the third stage of labor. Patient care processes and outcomes were assessed for the six months prior to (period A) and six months after (period B) the institution of this program.

RESULTS: There were 278 and 341 women diagnosed with PPH during periods A and B respectively. The women with PPH in both time periods were of similar age, height, weight, parity and gestational age. They also had similar frequencies of multiple gestations, placenta previas, preeclampsia, and operative deliveries. Conversely, several aspects of care were significantly different during the two time periods. Women who had a PPH after the program was instituted had significantly shorter third stages ($P = .03$); were significantly more likely to receive more than one type of uteronic (46% vs, 60%, $P < .01$) or a B-lynch suture (4.7% vs, 9.4%, $P = .03$); and were significantly less likely to undergo a manual extraction of their placenta (18 vs. 12%, $P = .049$). Patient outcomes, including the frequency of blood transfusion, hysterectomy, and ICU admission were similar between the two time periods.

CONCLUSION: Introduction of a program aimed at optimizing management of postpartum hemorrhage resulted in several indications of a more quickly escalated response to postpartum hemorrhage. Further study will be required to determine whether this more rapid escalation translates into improved health outcomes.

329 Postpartum sexual functioning and mode of delivery in a diverse population of women

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OBJECTIVE: Sexual functioning and satisfaction are hypothesized to be adversely affected by vaginal delivery, yet this has not been well studied. We sought to explore this relationship using the Sexual Health Outcomes in Women Questionnaire (SHOW-Q), which assesses female sexual functioning including same-sex and unpartnered activity.

STUDY DESIGN: Prospective observational study of 160 pregnant women. Baseline questionnaire included sociodemographic characteristics, reproductive history and sexual activity. Postpartum questionnaire (6-8 months) included the SHOW-Q, an open-ended question on factors interfering with sexual activity and items on delivery mode, depression and breastfeeding. Primary outcomes were overall SHOW-Q score among those who had resumed sexual activity and the sexual satisfaction subscale among all women.

RESULTS: 71.3% of participants delivered vaginally. At follow up, 23.2% had depression, 43% were exclusively breastfeeding, and 79.8% had resumed sexual activity. Mean SHOW-Q satisfaction subscale score was 67.8 (SD 27.8); mean overall SHOW-Q score was 72.8 (SD 19.6). Depression ($p=0.01$) and exclusive breastfeeding ($p=0.01$) were associated with poorer sexual satisfaction in multivariate analysis, while Asians showed a trend toward better scores ($p=0.07$). Bivariate analyses of the sexually active sample yielded African American or Latina ethnicity and having less than a college education as significant positive correlates of overall SHOW-Q score, and age and breastfeeding as negative correlates. The age and education trends persisted in multivariable analysis. Factors identified as interfering with sexual activity included being tired (21.9%) and presence of children at home (35.9%). Women who delivered by cesarean had lower scores than those who delivered vaginally, but this was not statistically significant.

CONCLUSION: Postpartum sexual functioning as measured by the SHOW-Q appears to be associated with depression and exclusive breastfeeding, and may be related to delivery mode. Further research with larger sample sizes are needed to gain a better understanding of these relationships.

Adjusted regression coefficients of overall SHOW-Q and sexual satisfaction subscale scores

	Overall SHOW-Q score for sexually active women		Sexual satisfaction scale for all participants	
	Adjusted Estimate	p-value	Adjusted Estimate	p-value
Age	-0.73	0.10	-0.71	0.18
Ethnicity				
African American	-4.54	0.54	6.02	0.46
Latina	4.50	0.63	12.84	0.22
Asian	11.85	0.08	16.62	0.07
Caucasian	--	--	--	--
Education: some college or less	10.60	0.08	5.10	0.46
Multiparous	7.15	0.16	4.23	0.54
Married	-10.75	0.11	-8.40	0.28
Cesarean delivery	-9.98	0.13	-7.49	0.35
Depression	-9.76	0.06	-16.42	0.01
Exclusive breastfeeding	-6.27	0.20	-15.73	0.01
Vaginal tearing	-4.27	0.42	-0.10	0.99