



Southern Ontario Obstetrical Network

Summer 2017

Dear Colleagues,

I hope 2017 is treating you well and that you are enjoying your summer!

We wanted to send a brief update on the recent activities taking place in the Southern Ontario Obstetrical Network (SOON). We are very excited about where our Network is going, what it being accomplished, and we wish you all success in the upcoming months.

QI Initiative: Reducing the Rate of Cesarean Section (C/S)

Please let us know if you are interested in joining Sunnybrook Health Sciences Centre, Mount Sinai, St Michael's Hospital, Trillium and Credit Valley sites of THP in their commitment to **improving local C/S rates through self-audit and feedback performance reviews**.

Amanda Cipolla will guide us through a **workshop at Credit Valley** on implementing a simple quality assurance project, using hospital and BORN data, to see if we can reduce the rate of C/S at your hospital, by focusing on a target indication that your hospital identifies as an opportunity for improvement.

To participate, each site will require the following:

1. A lead physician who will
 - a. **Coordinate** simple data collection from BORN and your hospital
 - b. **Present** baseline data/performance review to your department
 - c. **Present/distribute** prospective data/performance reviews to your department

An example of a project outline can be seen below.

Target Identified: "Failure to Progress"

"What data is needed for this project and how do I get it?"

1. **Baseline hospital data for C/S:** A review of 6-12 months of your site's C/S rates by Robson group (e.g. Robson 1, 2a, 3, 4a) (and compared to other similar-level hospitals in Ontario) - this is obtained from BORN through a request form
2. **Baseline hospital data for the target (e.g. Failure to Progress):** Review the proportion of C/S in labour done for Failure to Progress as compared to other similar-level hospitals in Ontario - also requested from BORN
3. **Baseline individual OB data:** Review 6 months of C/S rates for individual OBs at your site (this is obtained locally, usually from the informatics department of your hospital). The data is presented anonymously; each physician is identified by a letter of the alphabet only known to them
4. **The intervention:** Education on modern labour curves and evidence-based recommendations: Review literature on modern labor curves/progress and guidelines on C/S for failure to progress (ACOG, QBP, etc). Present the above "baseline data" and review the evidence/guidelines to your group (e.g. at Grand Rounds)
5. **Continue to audit and feedback** hospital and individual C/S data prospectively (2-4 months)

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- QI Initiative: Reducing the Rate of Cesarean Section
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- SOON 2017 Meeting

The Steering Committee

Jon Barrett, Chair, Sunnybrook Health Sciences Centre

Howard Berger, Teaching Hospital Representative, St. Michael's Hospital

Michael Geary, Teaching Hospital Representative, St. Michael's Hospital

Adrian Brown, Community Hospital Representative, North York General Hospital

Colette Rutherford, Community Hospital Representative, The Scarborough and Rouge Hospital, Centenary

Nathan Roth, Community Hospital Representative, The Scarborough and Rouge Hospital, Birchmount & General

Peter Scheufler, Community Hospital Representative, Trillium Health Partners

Gareth Seaward, University of Toronto Representative, University of Toronto

Ronald Heslegrave, Ethics Advisor, Mount Sinai Hospital

Elizabeth Asztalos, Neonatal Representative, Sunnybrook Health Sciences Centre

Prakeshkumar Shah, Neonatal Representative, Mount Sinai Hospital

Beth Murray-Davis, Midwifery Representative, McMaster University

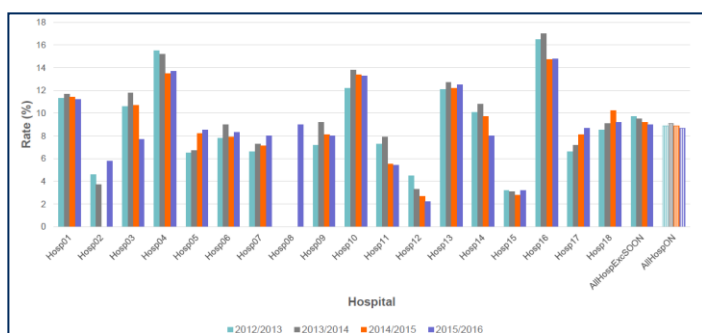
Sandra Dunn, BORN Liaison, Better Outcome Registry and Network (BORN)

If you would like to participate in this exciting initiative, please contact Amanda Cipolla at amanda.cipolla@gmail.com!

SOON Dashboard Indicators

If you would like to know your hospital number, please contact BORN directly via Holly Ockenden at hockenden@bornontario.ca.

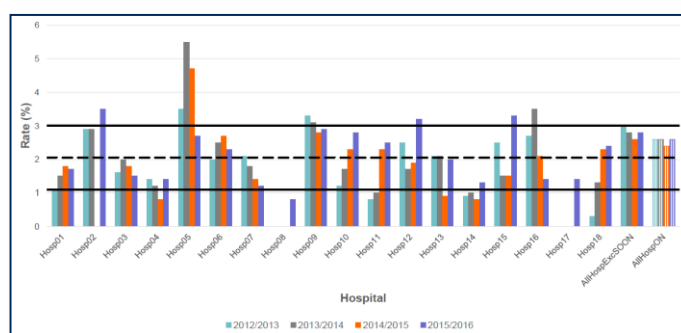
Indicator 1: Rate of Admission to NICU at Term



Data Source: BORN Ontario 2012/2013 - 2015/2016

Definition of Indicator: The rate of term infant NICU/SCN admission, by SOON hospital, expressed as a percentage of all live term (≥ 37 weeks gestation) births, excluding infants with at least one confirmed major sentinel congenital anomaly.

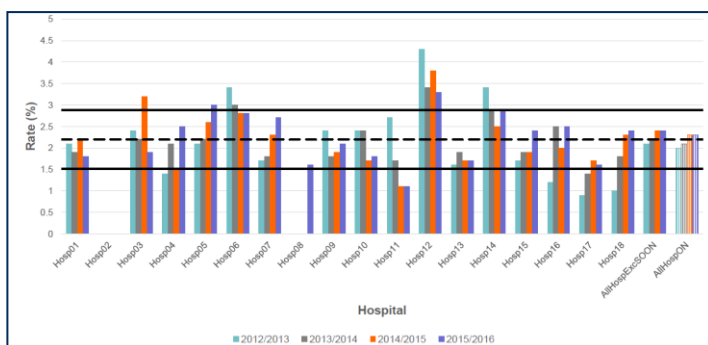
Indicator 4: Rate of Postpartum Hemorrhage



Data Source: BORN Ontario 2012/2013 - 2015/2016

Definition of Indicator: The rate of women who had a PPH as a complication as a percentage of all live deliveries at ≥ 24 weeks' gestational age in Ontario, by SOON hospital

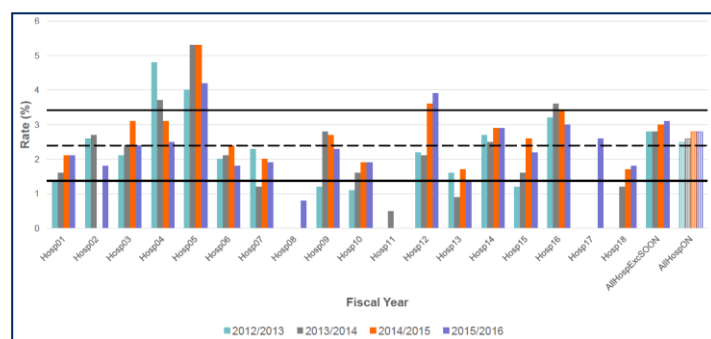
Indicator 2: Rate of Cesarean Section at 2nd Stage



Data Source: BORN Ontario 2012/2013 - 2015/2016

Definition of Indicator: The rate of term infant NICU/SCN admission, by SOON hospital, expressed as a percentage of all live term (≥ 37 weeks gestation) births, excluding infants with at least one confirmed major sentinel congenital anomaly.

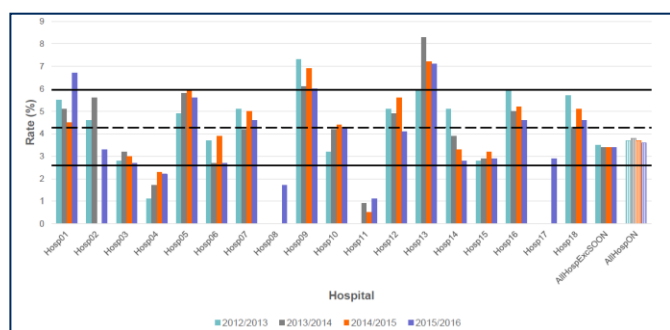
Indicator 5: Rate of Shoulder Dystocia



Data Source: BORN Ontario 2012/2013 - 2015/2016

Definition of Indicator: The rate of women who had a shoulder dystocia as a complication expressed as a percentage of all live vaginal deliveries at ≥ 34 weeks' gestational age in Ontario, by SOON hospital

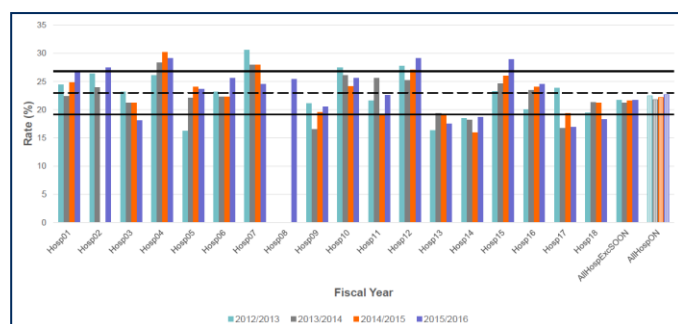
Indicator 3: Rate of Anal Sphincter Injuries



Data Source: BORN Ontario 2012/2013 - 2015/2016

Definition of Indicator: The rate of women who had a vaginal delivery complicated by OASIS tear expressed as a percentage of all live vaginal deliveries at ≥ 34 weeks' gestational age in Ontario, by SOON hospital. OASIS tears mean obstetrical anal sphincter injury, 3rd grade or 4th grade perineal tears.

Indicator 6: Rate of Cesarean Section in Low-Risk Primiparous Women



Data Source: BORN Ontario 2012/2013 - 2015/2016

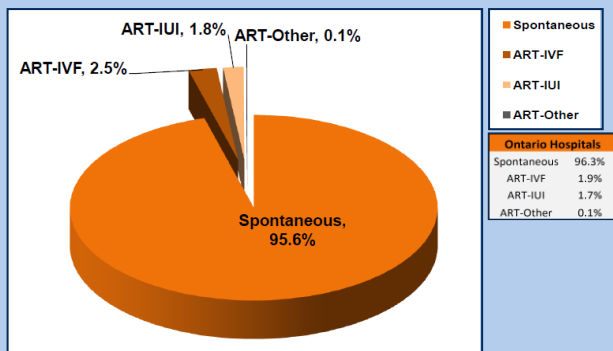
Definition of Indicator: The rate of cesarean section, expressed as a percentage of all singleton deliveries of low-risk primiparous women excluding deliveries $< 37+0$ weeks in Ontario, by SOON hospital. Low-risk pregnancies excluded any women with: diabetes, hypertension, preeclampsia, IUGR, fetal anomalies, breech and transverse presentation, placenta previa, multiples.

SOON Data Report for 2014-2016

We are excited to share with you the most recent SOON data from BORN as of May 2017. Data was included for hospital births from the SOON hospitals, and therefore Ontario comparator data include hospital births only. We have highlighted some interesting trends below.

PREGNANCY

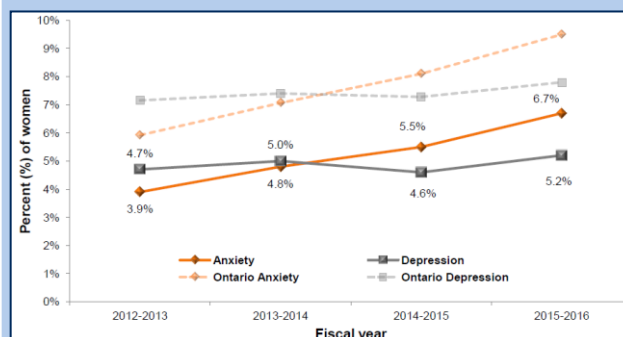
Distribution of Conception Type
(SOON, 2014-2015 to 2015-2016)



Data Source: BORN Ontario, 2014-2015 to 2015-2016

Definition of Indicator: Distribution of conception type expressed as a percentage of the total number of women conceived from spontaneous conception or assisted reproductive technology (ART). Data analysis was based on aggregate pregnancy data in BORN Information System (BIS).

Rates of Anxiety and Depression among Pregnant Women
(SOON, 2014-2015 to 2015-2016)



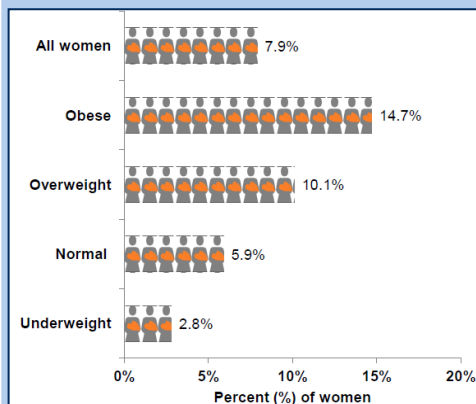
Did you know?

Mental health screening will be added in Ontario Perinatal Record in 2017.

Data Source: BORN Ontario, 2014-2015 to 2015-2016

Definition of indicator: Rates of anxiety and depression, expressed as a percentage of women who reported anxiety or depression in mental health concerns during pregnancy by fiscal year. These two categories are not mutually exclusive.

Pre-Pregnancy Maternal Body Mass Index (BMI) and Giving Birth to an LGA Baby
(SOON, 2014-2015 to 2015-2016)



Did you know?

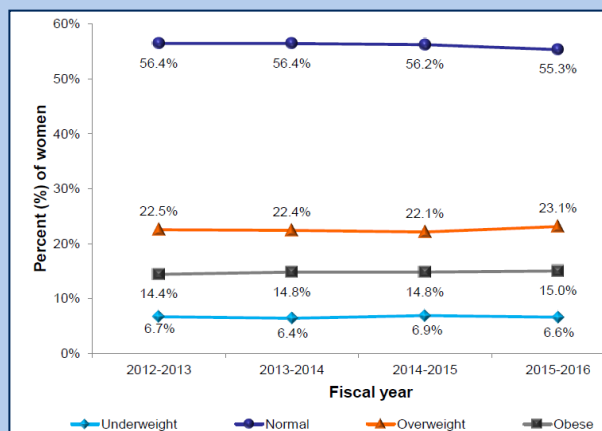
In 2014-2016, 14.7% of women whose pre-pregnancy BMI was classified as obese gave birth to a large-for-gestational-age baby (a birth weight for sex and gestational age above the 90th percentile). Only 2.8% and 5.9% of women with underweight and normal weight pre-pregnancy BMI's gave birth to large-for-gestational-age babies, respectively.

Ontario Hospitals	
All Women	10.1%
Obese	17.6%
Overweight	12.1%
Normal	7.3%
Underweight	3.9%

Data source: BORN Ontario, 2014-2015 to 2015-2016

Definition of indicator: Large-for-gestational-age (LGA) is defined as a birth weight (BW) greater than the 90th percentile for that gestational age (taking into account sex). Women giving birth to singletons were included. BMI categories were defined as underweight (<18.5 kg/m²), normal weight (18.5-24.9 kg/m²), overweight (25.0-29.9 kg/m²), and obese (30.0+ kg/m²).

Maternal Pre-Pregnancy Body Mass Index (BMI) by Fiscal Year
(SOON, 2012-2013 to 2015-2016)



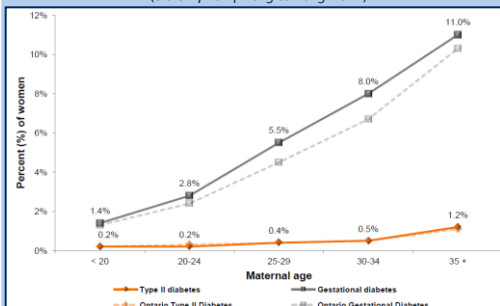
Did you know?

In the latest year, in total, 38.1% of women were seen for all categories of BMI in Ontario hospitals. In the latest year, in total, 42.1% of women who gave birth in an Ontario hospital were considered overweight or obese coming into pregnancy.

Data source: BORN Ontario, 2012-2013 to 2015-2016

Definition of indicator: Trend of distribution of BMI categories, expressed as a percentage of the total number of women who had a live birth or still birth in each BMI category by fiscal year. BMI categories were defined according to the World Health Organization (WHO) Guidelines as: underweight (<18.5 kg/m²), normal weight (18.5-24.9 kg/m²), overweight (25.0-29.9 kg/m²), and obese (30.0+ kg/m²).

Distribution of Diabetes by Maternal Age
(SOON, 2014-2015 to 2015-2016)



Did you know?

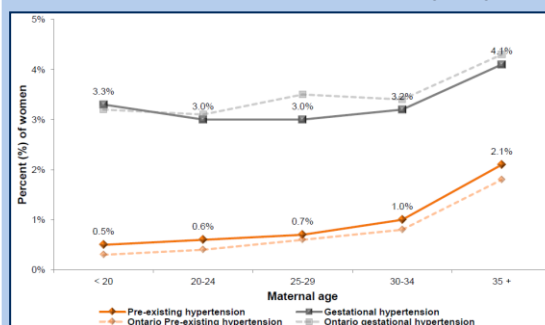
7.8% of women in all age groups in SOON hospitals had gestational diabetes

0.7% of women in all age groups in SOON hospitals had type II diabetes

Data Source: BORN Ontario, 2014-2015 to 2015-2016

Definition of Indicator: Distributions of type II diabetes and gestational diabetes, expressed as a percentage of the total number of women who had type II diabetes and a percentage of the total number of women who had gestational diabetes.

Distribution of Hypertension by Maternal Age
(SOON, 2014-2015 to 2015-2016)



Did you know?

3.4% of women from SOON hospitals in all age groups had gestational hypertension

1.2% of women from SOON hospitals in all age groups had pre-existing hypertension

Data source: BORN Ontario, 2012-2013 to 2015-2016

Definition of Indicator: Distributions of pre-existing and gestational hypertension, expressed as a percentage of the total number of women who had pre-existing hypertension and a percentage of the total number of women who had gestational hypertension by age categories.

Distribution of Births (SOON, 2014-2015 to 2015-2016)

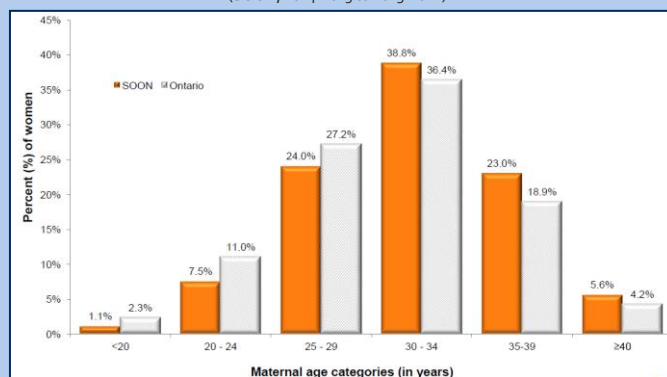
Hospital	Number of Hospital Births			
	2014-2015		2015-2016	
	n	%	n	%
Hospital A	1,719	2.9	1,756	2.9
Hospital B	5,161	8.8	5,156	8.5
Hospital C	3,085	5.3	3,246	5.3
Hospital D	2,185	3.7	2,109	3.5
Hospital E	4,227	7.2	4,061	6.7
Hospital F	6,219	10.7	7,305	12.0
Hospital G	2,427	4.2	2,304	3.8
Hospital H	2,651	4.5	2,600	4.3
Hospital I	2,401	4.1	2,556	4.2
Hospital J	0	0.0	1,451	2.4
Hospital K	3,262	5.6	3,330	5.5
Hospital L	2,762	4.7	2,745	4.5
Hospital M	2,767	4.7	2,551	4.2
Hospital N	5,084	8.7	5,330	8.8
Hospital O	2,094	3.6	2,050	3.4
Hospital P	3,059	5.2	2,977	4.9
Hospital Q	5,701	9.8	5,650	9.3
Hospital R	3,566	6.1	3,596	5.9
Total SOON Hospitals	58,370	100.0	60,773	100.0
Total Ontario Hospitals	137,752		138,295	

Data Source: BORN Ontario, 2014-2015 to 2015-2016

Definition of Indicator: Total number of live and stillbirths in SOON hospitals.

Disclaimer: One hospital opened obstetric services in fall, 2015 and therefore no data is provided for 2014/2015 FY. In addition, data from one hospital has not been fully acknowledged for 2014/2015 FY and is subject to change.

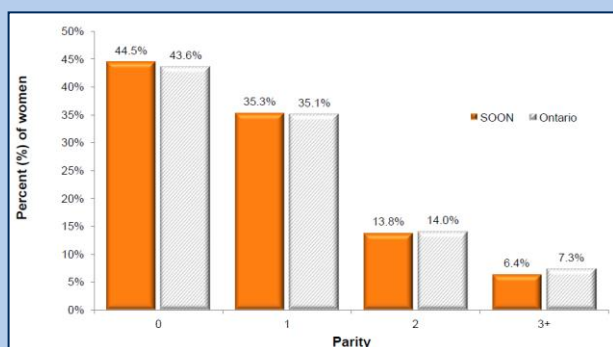
Distribution of Maternal Age at Birth (SOON, 2014-2015 to 2015-2016)



Data Source: BORN Ontario, 2014-2015 to 2015-2016

Definition of indicator: Distribution of maternal age categories, expressed as a percentage of the total number of women who had a live birth or still birth.

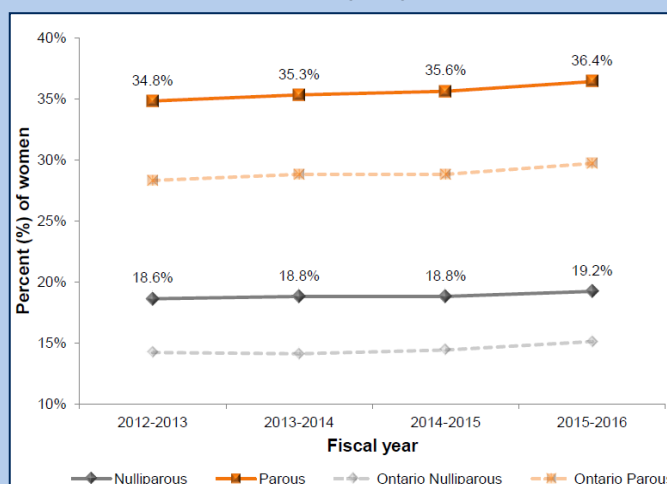
Proportion of Women ≥ 35 years, by Parity (SOON, 2014-2015 to 2015-2016)



Data source: BORN Ontario, 2014-2015 to 2015-2016

Definition of indicator: Distribution of parity, expressed as a percentage of the total number of women who had a live birth or stillbirth greater than or equal to 20 weeks' gestation. Parity is defined as the number of previous live births or stillbirths (0, 1, 2, 3+), excluding the current pregnancy.

Proportion of Women ≥ 35 years, by Parity (SOON, 2014-2015 to 2015-2016)



Did you know?

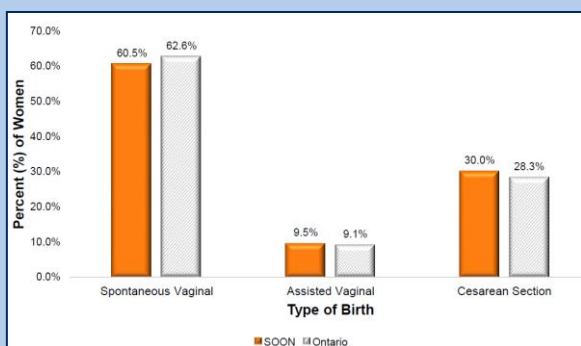
Overall, more women in SOON hospitals were ≥35 years old at time of birth regardless of parity compared to all hospitals in Ontario.

In the latest year, 29.0% and 23.5% of women were ≥35 years old for SOON hospital and Ontario hospital births, respectively.

Data source: BORN Ontario, 2014-2015 to 2015-2016

Definition of indicator: Trend of distribution of parity for women ≥35, expressed as a percentage of the total number of women who had a live birth or still birth by fiscal years.

Distribution of Type of Birth (SOON, 2014-2015 to 2015-2016)



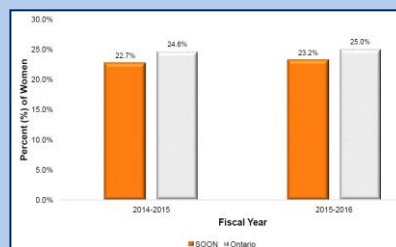
Did you know?

30.0% of births in SOON hospitals were cesarean sections with 14.1% induced or spontaneous labour cesarean section births and 15.9% no labour cesarean section births.

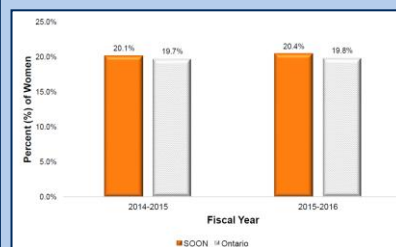
Data source: BORN Ontario, 2014-2015 to 2015-2016

Definition of indicator: Distribution of type of birth, expressed as a percentage of the total number of women who had a live birth or still birth.

Induction Rate among Low Risk Women (SOON, 2014-2015 to 2015-2016)



Caesarean Section Rate among Low Risk Women (SOON, 2014-2015 to 2015-2016)

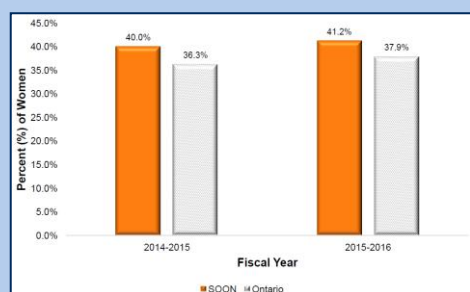


Data source: BORN Ontario, 2014-2015 to 2015-2016

Definition of low risk women: Hospital birth, nulliparous, full term (between 37 and 42 weeks of gestational age), singleton, live birth, cephalic presentation, without or minor complications of pregnancy, without or minor pre-existing maternal health conditions, no diabetes in pregnancy, no hypertension disorder in pregnancy and age at 35 years old or under.

Rate of Attempted VBAC Among Eligible Women with 1 or 2 Previous Cesarean Sections

(SOON, 2014-2015 to 2015-2016)

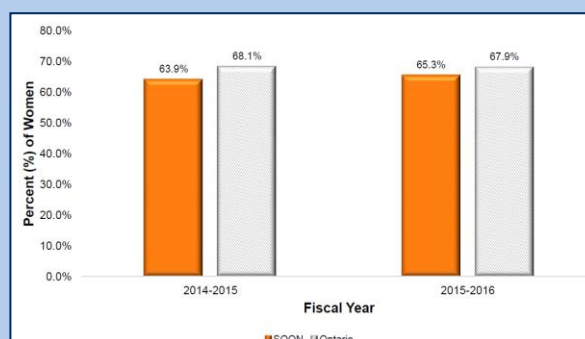


Data Source: BORN Ontario, 2014-2015 to 2015-2016

Definition of indicator: Rate of attempt by eligible women, expressed as a percentage of women with 1-2 previous cesarean sections who attempted a trial of labor. We excluded: 1. Women without previous CS; 2. Previous uterine rupture; 3. Women declined TOL with planned scheduled repeated CS; 4. Women with placenta previa or placenta abruption or mal-presentation; 5. Not eligible for VBAC is clearly identified in dataset

Successful VBAC Rate in Eligible Women with 1 or 2 Previous Cesarean Sections

(SOON, 2014-2015 to 2015-2016)

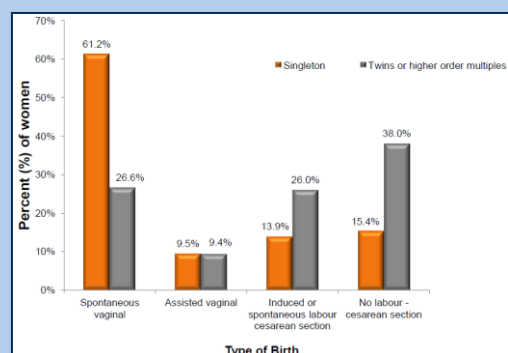


Data Source: BORN Ontario, 2014-2015 to 2015-2016

Definition of indicator: Successful vaginal birth after attempted trial of labour following 1-2 previous cesarean sections among all women who attempted VBAC

Distribution of Delivery Type for Singletons and Twins or Higher Order Multiples

(SOON, 2014-2015 to 2015-2016)



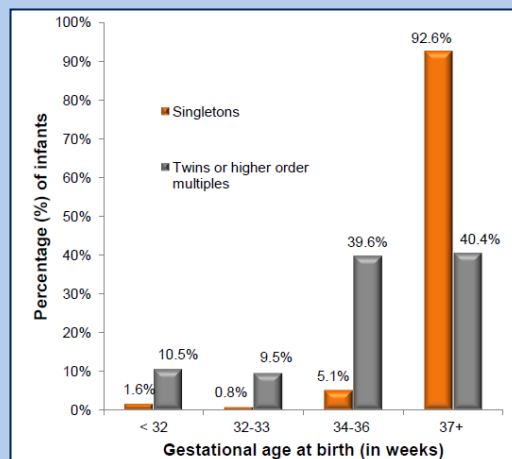
Ontario Hospitals		
	Singletons	Multiples
Spontaneous Vaginal	63.2%	30.0%
Assisted Vaginal	9.1%	9.1%
Induced or spontaneous labour cesarean section	13.2%	24.1%
No labour - cesarean section	14.5%	36.8%

Data source: BORN Ontario, 2014-2015 to 2015-2016

Definition of indicator: Distribution of delivery type by singletons and twins or higher order multiples, expressed as a percentage of the total number of women who delivered live and still births. We excluded birth records with pregnancy outcome of termination and/or gestational age at birth <20 weeks.

Distribution of Gestational Age at Birth for Singletons and Twins or Higher Order Multiples

(SOON, 2014-2015 to 2015-2016)



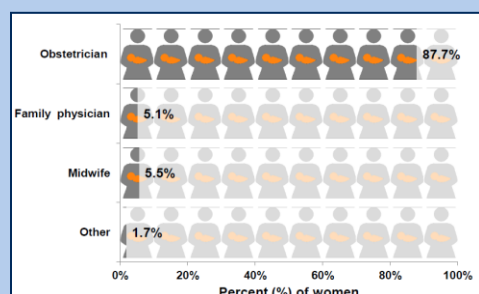
Ontario Hospitals		
	Singletons	Multiples
< 32	1.1%	8.3%
32-33	0.7%	8.4%
34-36	4.8%	38.4%
37+	93.4%	44.9%

Data source: BORN Ontario, 2014-2015 to 2015-2016

Definition of indicator: Distribution of gestational age at birth in weeks, expressed separately for singletons and twins or higher order multiples from gestation pregnancies as a percentage of the total number of infants with live and still births.

Distribution of Delivery Types by BMI Categories

(SOON, 2014-2015 to 2015-2016)



Ontario Hospitals	
Obstetrician	81.3%
Family physician	8.4%
Midwife	7.5%
Other	2.8%

Did you know?

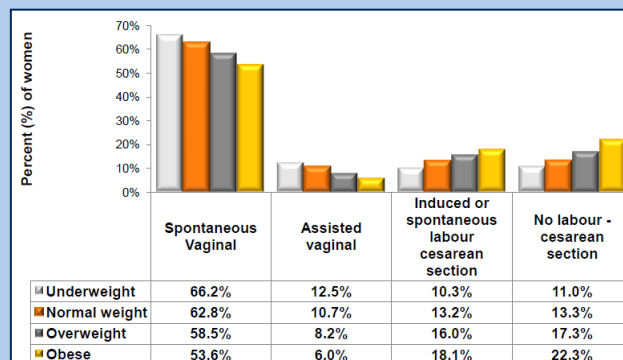
In 2014-2016, obstetricians attended the births of almost 88% of women in SOON hospitals; this rate decreased slightly compared with 89.3% in 2012-2014. The proportion of births attended by a midwife has increased to 5.5% from 4.9% in 2012-2014.

Data source: BORN Ontario, 2014-2015 to 2015-2016

Definition of indicator: Distribution of type of health care provider who attended the birth, expressed as a percentage of the total number of women who gave birth. The calculation was based on the element of 'health care provider who caught baby', not the element of 'billable course of care midwifery' in BORN data.

Distribution of Delivery Types by BMI Categories

(SOON, 2014-2015 to 2015-2016)



24.8% of records were excluded for missing data on BMI

Data source: BORN Ontario, 2014-2015 to 2015-2016

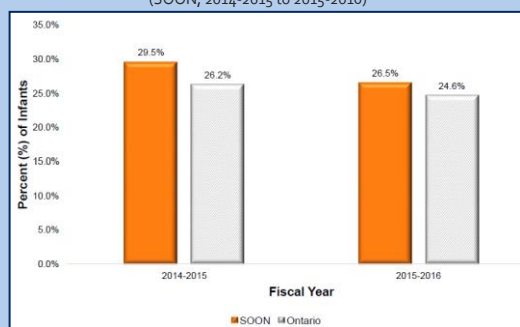
Definition of indicator: Distribution of delivery types by BMI categories, expressed as a percentage of the total number of women in each BMI category. BMI categories were defined according to the World Health Organization (WHO) Guidelines as: underweight (<18.5 kg/m²), normal weight (18.5-24.9 kg/m²), overweight (25.0-29.9 kg/m²), and obese (30.0+ kg/m²).

Did you know?

Similar patterns were seen for distribution of delivery types by BMI categories in all Ontario hospitals. A lower percentage of women had vaginal deliveries and higher percent had cesarean sections for women who were classified as overweight or obese BMI than those who were classified as underweight or normal weight.

Breastfeeding Initiation - Supplementation Rate with No Medical Indications

(SOON, 2014-2015 to 2015-2016)



Data Source: BORN Ontario, 2014-2015 to 2015-2016

Definition of Indicator: The overall supplementation rate, expressed as the percentage of breastfed infants who received at least one feed other than human milk (human milk substitute, water, or other fluids with the exception of medications, or vitamins or mineral drops) in the hospital without any documented medical reason(s) among all live births.

Breastfeeding Initiation - Supplementation Rate with Medical Indications

(SOON, 2014-2015 to 2015-2016)

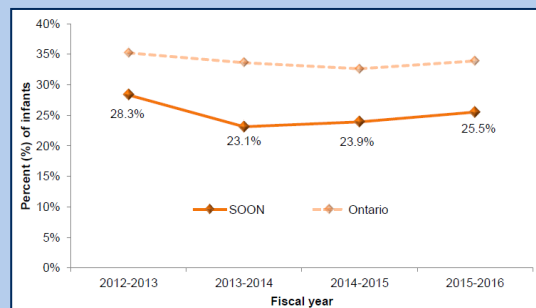


Data Source: BORN Ontario, 2014-2015 to 2015-2016

Definition of indicator: The supplementation rate with medical indications was expressed as the percentage of breastfed infants who received at least one feed other than human milk (human milk substitute, water, or other fluids with the exception of medications, or vitamins or mineral drops) in the hospital with documented medical reason(s) among all live births.

Proportion of Infants Born at < 32 Weeks Gestation Outside of a Level 3 Facility

(SOON, 2014-2015 to 2015-2016)



Did you know?

About 28.3% of infants born less than 32 weeks gestation in SOON hospitals were born outside of a level 3 facility in 2012-2013. The rates dropped to 23.1% and 23.9% in 2013-2014 and 2014-2015 respectively, and then increased again slightly to 25.5% in 2015-2016.

Data source: BORN Ontario, 2014-2015 to 2015-2016

Definition of indicator: Proportion of infants born at less than 32 weeks gestation outside of a level 3 facility by fiscal year, among all infants born less than 32 weeks gestation by fiscal year 2012-2013 to 2015-2016. Hospital birth, live birth and Ontario residents were included.

Unable to Report on Due to ≥30% Missing Data

- ❖ Mean gestational weight gain (kg) by pre-pregnancy maternal body mass (BMI) categories
 - (38% missing data for SOON)
- ❖ Pain relief measures used during newborn screening or bilirubin sampling
 - (37% missing data for SOON)

Disclaimer:

- Although significant effort has been made to ensure the accuracy of the information presented in this report, neither the authors nor BORN Ontario nor any other parties make any representation or warranties as to the accuracy, reliability or completeness of the information contained herein.
- We may inaccurately estimate some indications including maternal health conditions due to incomplete data entry in a few hospitals prior to this report completion.
- Any values with greater than 10% but less than 30% of missing data should be interpreted with caution. We are unable to report on any values greater than 30% missing data.
- Data was included for hospital births from the Southern Ontario Obstetrical Network (SOON) hospitals. Ontario comparator data therefore includes hospital births only.

SOON Meeting 2017

We hope you will join us this fall for our **Annual SOON Meeting of 2017!** Connect with your fellow physicians to learn about and be part of the current projects of the Network. The date is TBA, so keep in touch for more information near the end of the summer!

With very best wishes to all of you,

Jon Barrett

Chair, Southern Ontario Obstetrical Network