born Ontario

Early health. Lifelong health.
Début en santé. Longue vie en santé.

BORN Information System
Maternal Newborn Dashboard

BORN Ontario Webinar
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Overview

- Background
  - Quality in healthcare
  - Selection of the 6 Key Performance Indicators (KPIs) for the inaugural maternal newborn dashboard (MND)
  - Setting the benchmarks
  - Knowledge to action evidence summaries
- Development of the dashboard
  - Dashboard displays and report tables and graphs
  - Interpreting dashboard data
  - Use of MND to identify practice gaps
- Next steps
  - Communication strategies
  - Training sessions

Quality in Healthcare

- Definition
  - The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge (Institute of Medicine, 1990)
- Quality is a ‘key’ word in Ontario
  - New legislation enacted in 2010 (Bill 46 - Excellent Care For All Act) outlines what we HAVE to do to ensure we are providing quality maternal newborn care
- Bill 46 covers:
  - Health Quality Ontario
  - Quality committees
  - Quality Improvement Plans
  - Satisfaction Surveys (Patient and Employee)
  - Patient relations process
  - Declaration of values
  - Executive compensation

How do we Measure Quality Care?

Crossing the Quality Chasm, IOM report 2001

Quality Domains	KPI 1	KPI 2	KPI 3	KPI 4	KPI 5	KPI 6
Accessible						
Person-centered						
Equitable						
Effective						
Safe						
Appropriate						

BORN – Mission and Vision

- With a vision of providing the knowledge needed for
  - ***The best possible beginnings for lifelong health***,
- The mission of BORN is to:
  - **Facilitate and improve care** for mothers, children and youth by linking information and providers to *address care gaps* spanning the spectrum from normal to high acuity and rare conditions
  - **Be an authoritative source of accurate, trusted and timely information** to *monitor, evaluate and plan* for the best possible beginnings for life-long health
  - **Provide scientific and technical leadership** for Ontario's maternal, child and youth health system through the *support of research and innovation*
  - **Mobilize information and expertise** to *optimize care and contribute to a high-performing healthcare system*, improving the lives of individual mothers and children

The Dashboard Concept

- A dashboard is a performance measurement system that provides data on structure, process and outcome variables and incorporates the following functions:
  - Reports on a selected key performance indicators (**feedback)**
  - Compares performance to established ideal levels (**benchmark)**
  - Provides alerts to trigger action when performance is sub-optimal (**signal)**
- Dashboards have been used for a variety of purposes within health care, but are primarily implemented to drive quality improvement

Cochrane Review (2012)

- Explored the effects of audit and feedback on professional practice and healthcare outcomes
  - 82 comparisons from 49 studies
- HCPs are more likely to modify their practice when given performance feedback showing that their clinical practice is inconsistent with desirable targets
- The authors concluded that audit and feedback was more effective:
  - If baseline performance is low
  - If feedback is provided more than once
  - When the feedback includes explicit targets ***and*** an action plan.
- What the MND is designed to do
  - Provide site-specific and comparison data (**feedback)**
  - Visually indicate an evidence-practice gap **(signal)**
  - Provide direction for practice change **(benchmark)**

Dashboard KPI Possibilities

(Hermann & Palmer Framework, 2002)

- Key performance indicators (KPI) must be:
  - **Clinically meaningful**
    - important, serious, affects many people, high cost
  - **Feasible**
    - can be measured, access to high quality data
  - **Actionable**
    - can be changed without moving heaven and earth

Strongly Disagree

Strongly Agree

Approach to KPI Selection

- Maternal Newborn Outcomes Committee (MNOC)
  - Dashboard Sub-committee
    - Interprofessional membership of clinical experts from across the province
    - Representing obstetrics, neonatology, pediatrics, midwifery, nursing, and epidemiology

- Looked for high quality data in the BIS
  - Reflected current practice issues or hot topics
  - 24 KPIs identified

Quality Domain Framework?

Crossing the Quality Chasm, IOM report 2001

Mapped the selected BIS data elements for antepartum, intrapartum, postpartum, and newborn care to the Quality Domain Framework

Quality Domains	KPI	KPI	KPI	KPI	KPI	KPI
Accessible						
Person-centered						
Equitable						
Effective						
Safe						
Appropriate						

Approach to KPI Selection

- Modified Delphi process:
  - Seek feedback about the potential indicators of quality
  - Establish face validity
  - Prioritize the list to a manageable number of KPIs for the inaugural MND

- Online survey
  - Shortlist the KPIs based on Hermann & Palmer's Framework
    - Most clinically relevant
    - Most amenable to change

- Validate the KPIs as appropriate for use across the province
  - Extracted data from the BIS for fiscal years 2009-2010 to assess historical and current performance on these KPIs across Ontario's 14 LHINs

Maternal Newborn Dashboard

- Final list of 6 KPIs for the inaugural MND

1. Rate of episiotomy in SVB
2. Rate of formula supplementation in healthy term babies whose mothers intended to BF
3. Rate of repeat C/S in low risk women not in labour, done prior to 39 weeks
4. Proportion of laboring women delivering at term who had GBS screening at 35-37 weeks
5. Proportion of women induced with an indication of post-dates who are <41 weeks
6. Rate of unsatisfactory samples for newborn screening

KPIs across the Quality Domains

Crossing the Quality Chasm, IOM report 2001

Quality Domains	KPI 1	KPI 2	KPI 3	KPI 4	KPI 5	KPI 6
Accessible						
Person-centered						
Equitable						
Effective	GBS screening at 35-37 weeks	Formula supplementation	Episiotomy in SVB			
Safe				ERCS<39	Unsatisfactory NB screening samples	
Appropriate						Induction for post-dates (<41 weeks)

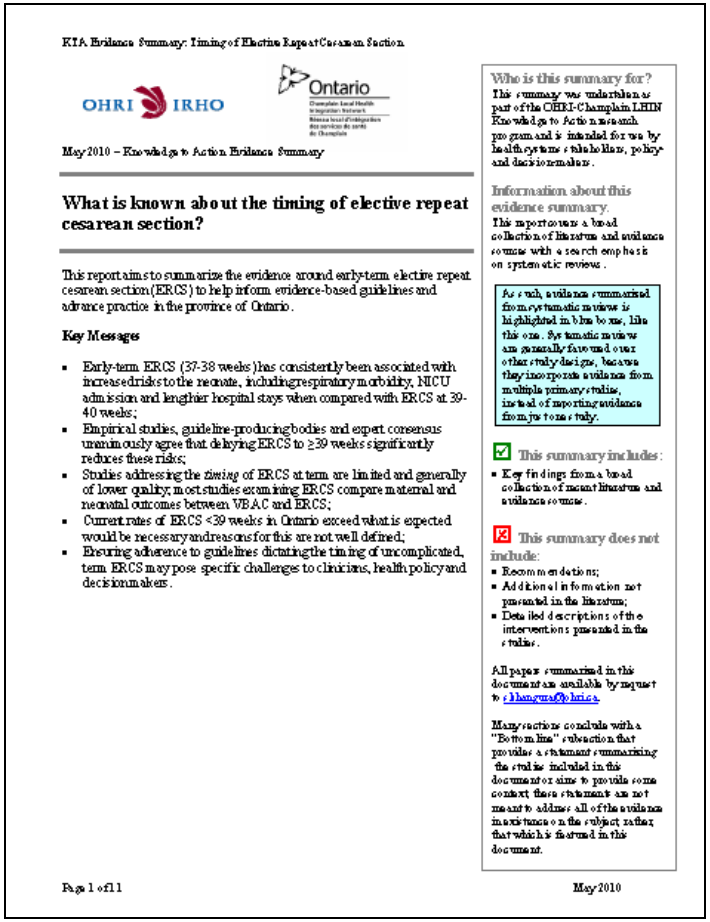
Performance Benchmarks

- Used various forms of evidence to establish performance benchmarks
  - Peer-reviewed literature
  - Current clinical practice in Ontario
  - Clinical expertise of our committee

- Set benchmarks for
  - Target (green light)
  - Warning (yellow light)
  - Alert (red light)

KTA Evidence Summaries

- Evidence summaries have been developed for each KPI
  - In collaboration with the OHRI Knowledge to Action Research Centre
  - Information will be posted on the BORN website



KTA Evidence Summary: Timing of Elective Repeat Cesarean Section

OHRI IRHO Ontario

May 2010 – Knowledge to Action Evidence Summary

What is known about the timing of elective repeat cesarean section?

This report aims to summarize the evidence around early-term elective repeat cesarean section (ERCS) to help inform evidence-based guidelines and advance practice in the province of Ontario.

Key Messages

- Early-term ERCS (37-38 weeks) has consistently been associated with increased risks to the neonate, including respiratory morbidity, NICU admission and lengthier hospital stays when compared with ERCS at 39-40 weeks;
- Empirical studies, guideline-producing bodies and expert consensus unanimously agree that delaying ERCS to ≥39 weeks significantly reduces these risks;
- Studies addressing the *timing* of ERCS at term are limited and generally of lower quality; most studies examining ERCS compare maternal and neonatal outcomes between VBAC and ERCS;
- Current rates of ERCS <39 weeks in Ontario exceed what is expected would be necessary and reasons for this are not well defined;
- Ensuring adherence to guidelines dictating the timing of uncomplicated, term ERCS may pose specific challenges to clinicians, health policy and decision makers.

Who is this summary for?

This summary was undertaken as part of the OHRI-Champlain LHIN Knowledge to Action research program and is intended for use by health systems stakeholders, policy and decision makers.

Information about this evidence summary.

This report covers a broad collection of literature and evidence sources with a search emphasis on systematic reviews.

As such, evidence summarized from systematic reviews is highlighted in blue boxes, like this one. Systematic reviews are generally favoured over other study designs, because they incorporate evidence from multiple primary studies, instead of reporting evidence from just one study.

This summary includes:

- Key findings from a broad collection of recent literature and evidence sources.

This summary does not include:

- Recommendations;
- Additional information not presented in the literature;
- Detailed descriptions of the interventions presented in the studies.

All papers summarized in this document are available by request to [redacted].

Many sections conclude with a "Bottom line" subsection that provides a statement summarizing the studies included in this document or aims to provide some context. These statements are not meant to address all of the evidence in existence on the subject, rather, that which is featured in this document.

Page 1 of 11 May 2010

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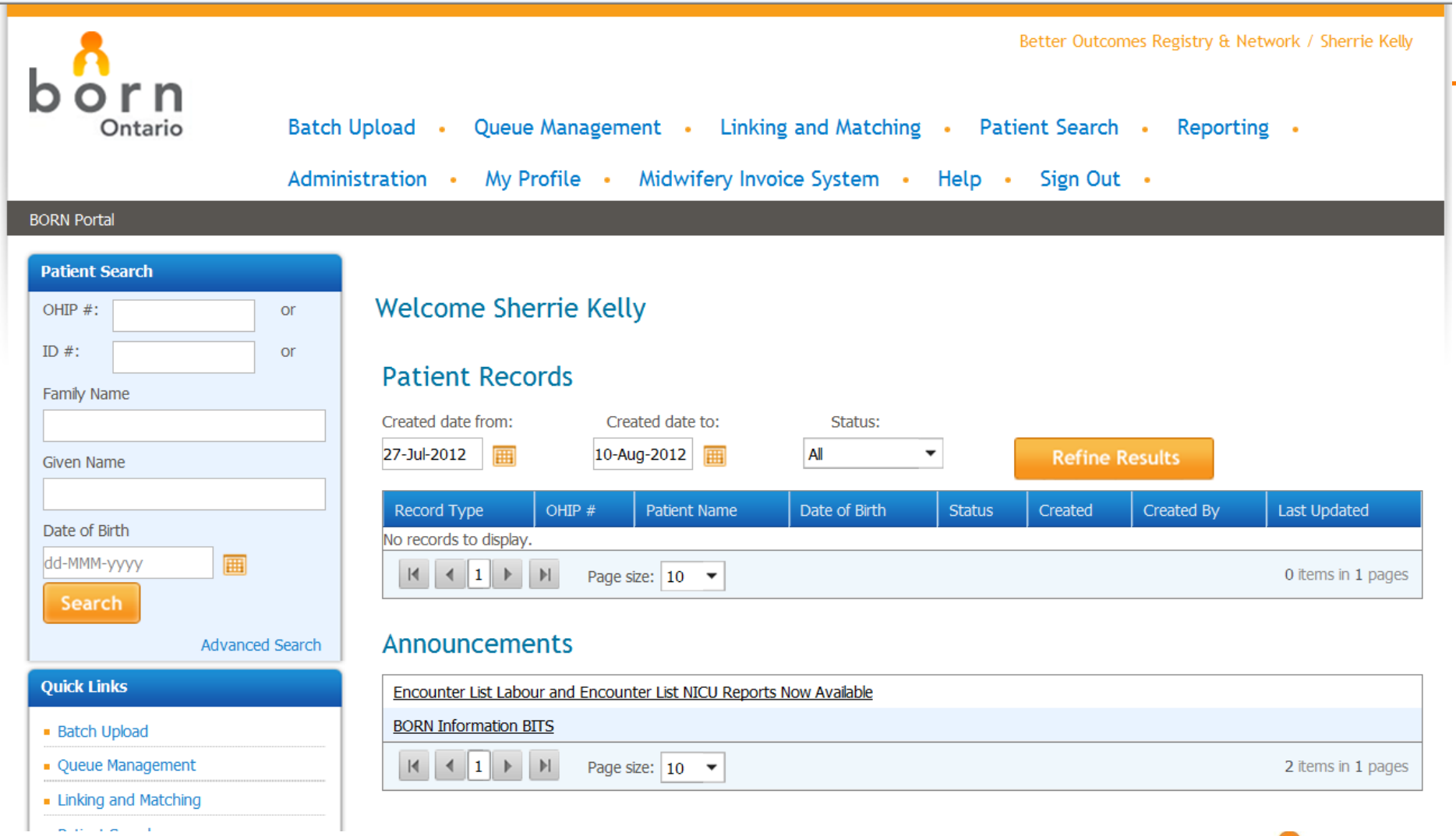
Accessing the BORN Information System

https://my.bornontario.ca

Dashboard landing page *to appear*



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Maternal Newborn Dashboard - Landing Page

Hospital, 1-Apr-2012 - 30-Jun-2012

Key Performance Indicators	Rate (%)	Status
Rate of unsatisfactory samples for newborn screening	5.0	
Rate of episiotomy in women having a spontaneous vaginal birth	14.0	
Rate of formula supplementation in term infants whose mothers intended to breastfeed	15.0	
Rate of repeat cesarean section in low risk women not in labour at term with no medical or obstetrical complications done prior to 39 weeks' gestation	16.0	
Proportion of labouring women delivering at term who had Group B Streptococcus (GBS) screening at 35-37 weeks' gestation	97.0	
Proportion of women induced with an indication of post-dates who are less than 41 weeks' gestation at delivery	5.0	

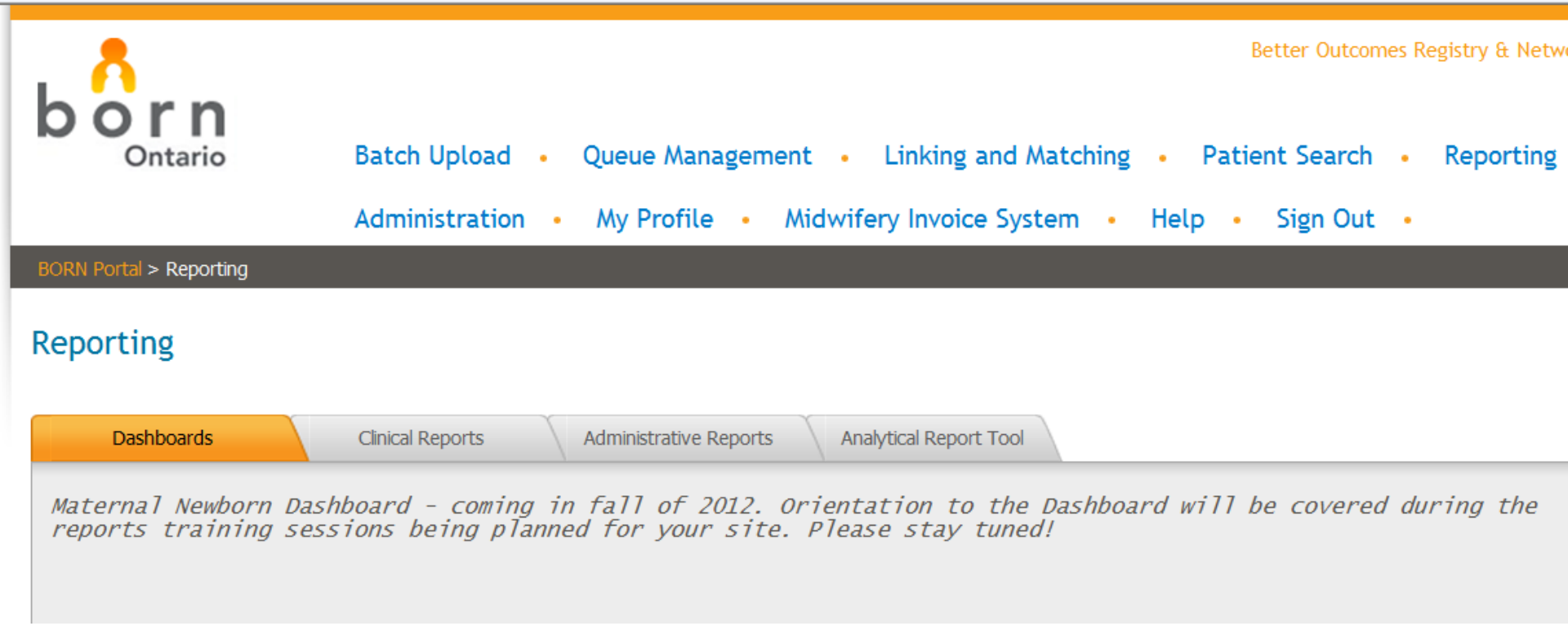
Data source *BORN Ontario, 2012-2013*

Notes

1. Rates and status are based on the three previous months of data for which data submission has been acknowledged for all three months.

2. Please complete month end acknowledgement for Key Performance Indicators with missing values for rate and grey coloured statuses if applicable.

Dashboard home page *coming soon*



Maternal Newborn Dashboard - Home Page

Hospital, 1-June-2012-31-Aug-2012

Key Performance Indicators	Rate (%)	Status	Status Range (%)			Mean comparator rates (%)		
			Target (green)	Warning (yellow)	Alert (red)	Other same level of care hospitals	Other similar birth volume hospitals	Ontario
Proportion of newborn screening samples that are unsatisfactory for testing	5.0		<2.0	2.0-3.0	>3.0	4.0	0.0	0.0
Rate of episiotomy in women having a spontaneous vaginal birth	14.1		<13.0	13.0-17.0	>17.0	0.1	0.2	0.1
Rate of formula supplementation at discharge in term infants whose mothers intended to breastfeed	15.0		<20.0	20.0-25.0	>25.0	0.2	0.2	0.2
Proportion of women with a cesarean section performed prior to 39 weeks' gestation among low-risk women having a repeat cesarean section at term	16.0		≤10.0	11.0-15.0	>15.0	0.1	0.4	0.4
Proportion of ~~labouring~~ women delivering at term who had Group B Streptococcus (GBS) screening at 35-37 weeks' gestation	97.0		≥95	90.0-94.0	<90.0	0.9	0.9	0.9
Proportion of women induced with an indication of post-dates who are less than 41 weeks' gestation at	5.0		<5.0	5.0-10.0	>10.0	0.0	0.0	0.0

Data source *BORN Ontario, 2012-2013*

Notes

1. Rates and status are based on three prior months of data that are acknowledged for submission, allowing a one month lag.

2. Grey status indicates incomplete month end acknowledgement for key performance indicators. Please ensure month end acknowledgement is complete for each month in the reporting period.

3. Comparator data is represented as the mean rate from a minimum of three or more hospitals who have acknowledged their data for the three month reporting period, within a given comparator category. The compartor rates for other same level of care hospitals and other similar birth volume hospitals exclude the reporting hospital, whereas the rates for Ontario include the reporting hospital.

Dashboard Report

Benchmark rate (%)

- <10.9 (Target)
- 11.0-15.0 (Warning)
- >15.0 (Alert)

Proportion of women with a cesarean section performed prior to 39 weeks' gestation among low-risk women having a repeat cesarean section at term, by hospital and comparator groups

Hospital 1, 1 Apr 2011-30 June 2012

	Hospital					Comparator groups								
						Other same level of care hospitals			Other similar birth volume hospitals (mean)			Ontario		
	Low-risk women who had a repeat cesarean section at term (≥37 weeks)	Women who had a cesarean section performed prior to 39 weeks' gestation		Missing data		Women who had a cesarean section performed prior to 39 weeks' gestation		Hospitals with acknowledged data submission	Women who had a cesarean section performed prior to 39 weeks' gestation		Hospitals with acknowledged data submission	Women who had a cesarean section performed prior to 39 weeks' gestation		Hospitals with acknowledged data submission
	N	n	%	n	%	% (mean)	95% CI (mean)		% (mean)	95% CI (mean)		% (mean)	95% CI (mean)	
All births <39 wks	1,530	204	13.3	37	2.4	14.8	(13.2 - 15.3)		15.0	(14.9 - 15.3)		16.9	(14.9 - 15.3)	
2011-2012	1,237	157	12.7	26	2.1	15.1	(13.0 - 15.3)		15.0	(14.9 - 15.3)		16.9	(14.9 - 15.3)	
Q1	320	40	12.5	1	0.3	15.0	(12.9 - 15.7)		15.2	(14.6 - 15.3)		16.9	(14.6 - 15.3)	
Q2	287	39	13.6	20	7.0	15.1	(13.2 - 16.3)		15.1	(14.9 - 15.6)		16.8	(14.9 - 15.6)	
Q3	329	40	12.2	2	0.6	14.9	(13.2 - 16.3)		14.8	(14.6 - 15.3)		16.9	(14.6 - 15.3)	
Q4	301	38	12.6	3	1.0	15.3	(13.2 - 16.3)		14.9	(14.3 - 15.3)		17.1	(14.3 - 15.3)	
Jan 2012	110	12	10.9	2	1.8	15.2	(13.2 - 16.3)	15 of 15	15.1	(14.9 - 15.8)	40 of 40	17.0	(14.9 - 15.8)	105 of 105
Feb 2012	98	11	11.2	1	1.0	15.0	(13.2 - 16.3)	15 of 15	14.8	(14.9 - 15.5)	40 of 40	17.2	(14.9 - 15.5)	105 of 105
Mar 2012	121	15	12.4	0	0.0	15.7	(13.2 - 16.3)	15 of 15	14.7	(14.3 - 15.3)	40 of 40	17.1	(14.3 - 15.3)	105 of 105
2012-2013	293	47	16.0	11	3.8	14.6	(13.2 - 16.3)		15.0	(14.9 - 15.3)		16.9	(14.9 - 15.3)	
Q1	293	47	16.0	11	3.8	14.6	(13.2 - 16.3)		15.0	(14.9 - 15.3)		16.9	(14.9 - 15.3)	
Apr 2012	97	15	15.5	1	1.0	15.0	(13.5 - 16.0)	12 of 15	15.0	(14.9 - 15.3)	39 of 40	16.4	(14.9 - 15.3)	85 of 105
May 2012	101	18	17.8	0	0.0	14.5	(12.6 - 15.7)	10 of 15	14.0	(12.5 - 15.5)	34 of 40	17.4	(12.5 - 15.5)	81 of 105
Jun 2012	95	14	14.7	10	10.5	14.3	(12.5 - 16.0)	10 of 15	15.9	(14.6 - 16.3)	32 of 40	17.0	(14.6 - 16.3)	80 of 105

Data source — *BORN Ontario, 2011-2013*

Definition of indicator — *The number of women with a cesarean section performed prior to 39 weeks' gestation, expressed as a percentage of the total number of low-risk women who had a repeat cesarean section at term (in a given place and time).*

Notes

1. Repeat cesarean section in low-risk women is defined as a cesarean section performed prior to the onset of labour, and in the absence of medical or obstetrical indications for delivery among women with a history of one or more previous cesarean sections. For this analysis, the definition includes women with a singleton live birth, between 37 and 42 weeks of gestational age, with no maternal medical problems, no obstetrical complications, and none of the following indications for cesarean: cord prolapse, fetal anomaly, intrauterine growth restriction/small for gestational age, large for gestational age, non-reassuring fetal status, placenta previa, placental abruption, preeclampsia, or preterm rupture of membranes.

2. Reporting hospital data are shown only if data have been acknowledged for a given month.

Interpreting Dashboard Data

Hospital data

- 3 previous months of data acknowledged for dashboard status to be displayed
- Benchmarks
- Missing data

Comparator data

- Mean of 3 previous months of data acknowledged
- Confidence intervals

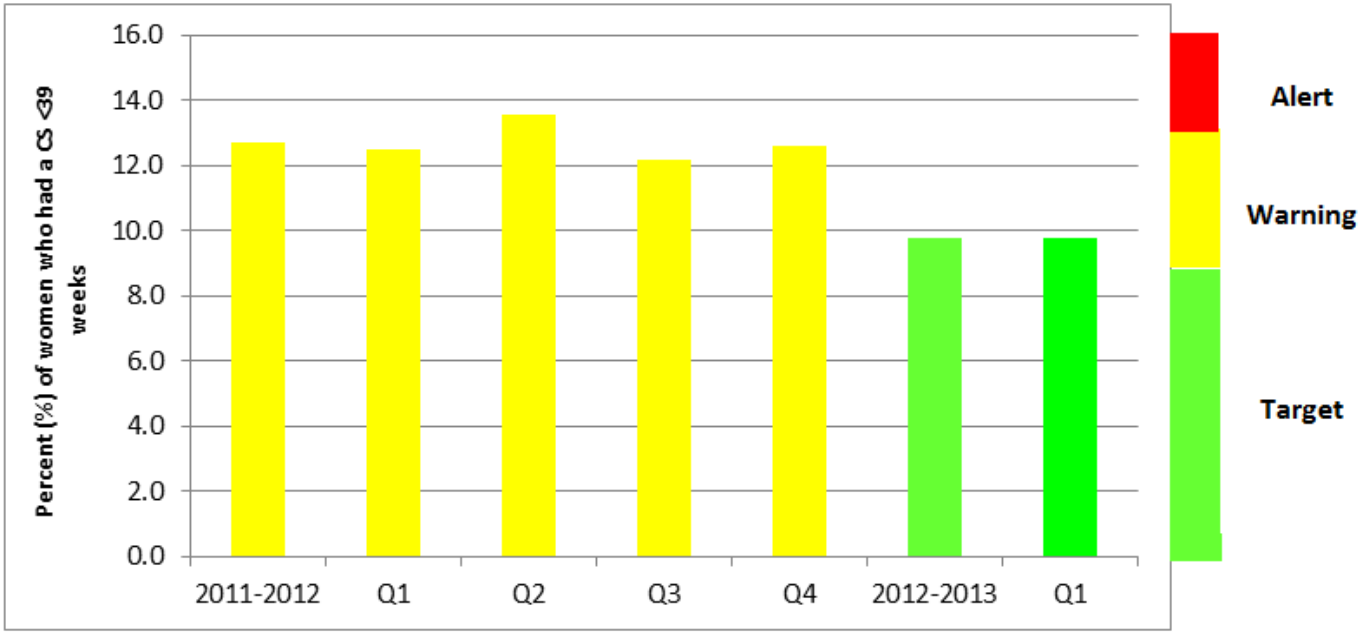
Dashboard report functionality

- Data displayed in the report will be updated daily.
- Report can be exported, saved, and printed.

Dashboard Report - Trending

Rate of repeat cesarean section in low risk women not in labour at term with no medical or obstetrical complications done prior to 39 weeks' gestation, by hospital of birth and compartor groups

Hospital, 1-Apr-2011-30-Jun-2012



Data source BORN Ontario, 2011-2013

Definition of indicator The number of women with a cesarean delivery performed prior to 39 weeks' gestation, expressed as a percentage of the total number of women having a repeat cesarean delivery at term (in a given place and time).

Next Steps

- Communication
  - BORN Bulletin *(July 2012)*
  - BORN Ontario Webinar *(Aug 2012)*
  - Targeted messaging (CEOs, Hospital Chiefs) *(Sept 2012)*
  - Partnership with PCMCH
- BORN Training Webinars *(Stay tuned)*
- BORN Support *(ongoing)*
  - Regional Coordinators
  - BORN Science Team
  - Clinical experts
  - Use of the MND
  - Interpretation of the data
  - Knowledge translation support
- New dashboards will be developed for other program areas
  - Clinical programs and laboratories (e.g. NICU/SCN, NSO, PSO, Midwifery) being approached to identify additional maternal-newborn key performance indicators

Key Messages

1. The MND is an innovative, **evidence-informed** (the integration of experience, judgment and expertise with the best available external evidence from systematic research) **'audit and feedback tool'** designed to assist HCP and organizations

    - Monitor performance
    - Identify evidence-practice gaps
    - Share best practices, and
    - Facilitate practice change to enhance quality care.

2. The inaugural MND is primarily about performance in hospital
    - However, the capability is there for everyone to use this tool to enhance quality
    - To be effective it is important for all hospital care providers (midwives, nurses, physicians, administrators) to understand how this tool works and what they will see.

3. The MND is the first example of a number of dashboards that can be designed and incorporated into the BIS.

4. **Timely, valid and reliable data is key!**
    - Getting complete and validated data into the system as close to real-time as possible is what drives the dashboard displays, generates the comparison data, and will increase the reliability of the information provided.

References

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4. Ministry of Health and Longterm Care (2010) Bill 46: Excellent Care for All Act. Toronto, Legislative Assembly of Ontario.

Questions?