

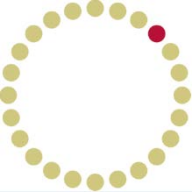


NEWBORN SCREENING ONTARIO
DÉPISTAGE NÉONATAL ONTARIO



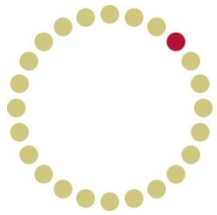
Performance Feedback and Proactive Alerts from the BORN Ontario Registry

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Objectives

- Introduce NSO and BORN
- Highlight two examples of how BORN's integrated information supports more timely and comprehensive newborn screening
 - Maternal Newborn Dashboard
 - Missed Screen Alerts
- Describe the work underway to evaluate these mechanisms and support the quality improvements

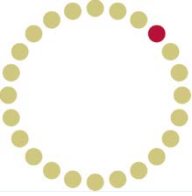


NEWBORN SCREENING
ONTARIO
DÉPISTAGE NÉONATAL
ONTARIO

- Screens ~145,000 samples annually for 29 diseases
- Extensive follow up program for unsats and screen positives
 - *“Ensure every newborn receives the highest quality screening and care...”*
- Variation in practice among ~200 submitters
- Birth registration records are incomplete so the “denominators” were unclear



- Ontario’s prescribed pregnancy, birth and childhood registry
- Authority to collect, use and disclose personal health information without consent
 - *“for the purpose of facilitating or improving the provision of health care ”*
- Every birthing hospital and midwifery practice in Ontario contributes data.
- Robust, web-based IS system for data collection and reporting



Maternal Newborn Dashboard

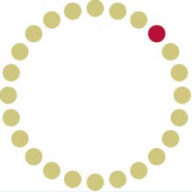
Key Performance Indicators	Rate (%)	Status	Benchmark rates (%)			Comparator rates (%)		
			Target (green)	Warning (yellow)	Alert (red)	Other Neonatal Level IIa hospitals	Other 1001-2499 birth volume hospitals	Ontario
1 Proportion of newborn screening samples that were unsatisfactory for testing	5.4		<2.0	2.0-3.0	>3.0	0.9	2.9	2.2
2 Rate of episiotomy in women who had a spontaneous vaginal birth	11.2		<13.0	13.0-17.0	>17.0	7.7	9.0	9.3
3 Rate of formula supplementation from birth to discharge in term infants whose mothers intended to exclusively breastfeed	17.0		<20.0	20.0-25.0	>25.0	21.4	31.0	24.9
4 Proportion of women with a cesarean section performed from ≥37 to <39 weeks' gestation among low-risk women having a repeat cesarean section at term	48.3		<11.0	11.0-15.0	>15.0	20.0	40.3	41.0
5 Proportion of women who delivered at term and had Group B Streptococcus (GBS) screening at 35-37 weeks' gestation	92.2		>94.0	90.0-94.0	<90.0	94.0	93.8	93.6
6 Proportion of women who were induced with any indication of post-dates and were less than 41 weeks' gestation at delivery	36.4		<5.0	5.0-10.0	>10.0	6.7	25.1	21.9

*“promote change, decrease practice variation and encourage best practices”
(JOGC 2013;35(1):29-38)*



Key Performance Indicator #1:

Proportion of newborn screening samples that were unsatisfactory for testing



Unsats by Region

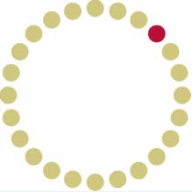


Benchmark rates (%)

Target	Warning	Alert
<2.0	2.0-3.0	>3.0

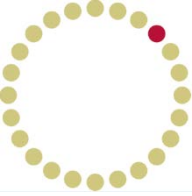
	Apr 2012 - Jun 2012	Jul 2012 - Sep 2012	Oct 2012 - Dec 2012	Jan 2013 - Mar 2013	Apr 2013 - Jun 2013	Jul 2013 - Sep 2013	Oct 2013 - Dec 2013	Absolute improvement
	%	%	%	%	%	%	%	%
LHIN 2 - South West	5.8	4.2	4.0	3.1	1.8	1.1	1.0	4.8
LHIN 6 - Mississauga/Halton	3.3	2.8	4.9	2.5	0.6	0.7	0.7	2.6
LHIN 12 - North Simcoe Muskoka	3.9	2.0	2.5	1.1	1.4	1.2	1.8	2.1
LHIN 9 - Central East	3.1	1.7	1.5	1.7	1.5	0.8	1.2	1.9
LHIN 5 - Central West	3.2	3.9	3.9	4.5	2.3	1.7	1.5	1.7
LHIN 7 - Toronto Central	3.8	2.3	3.5	2.4	1.5	2.0	2.1	1.7
LHIN 4 - Hamilton Niagara Haldimand Brant	2.6	1.3	1.9	2.0	1.1	0.8	1.1	1.5
LHIN 10 - South East	3.3	3.6	3.5	2.9	1.6	0.9	2.2	1.1
LHIN 11 - Champlain	1.9	1.0	0.8	1.2	0.5	0.4	1.0	0.9
LHIN 8 - Central	2.4	1.4	1.8	1.7	1.5	1.0	1.7	0.7
LHIN 14 - North West	4.3	2.0	5.7	4.4	2.5	1.8	3.6	0.7
LHIN 1 - Erie St. Clair	1.0	0.8	0.7	1.2	1.3	0.7	0.4	0.6
LHIN 3 - Waterloo Wellington	0.9	0.7	0.8	0.7	0.5	0.4	1.2	-0.3
LHIN 13 - North East	3.4	2.9	3.4	4.0	4.0	2.7	3.8	-0.4
Ontario	3.0	2.1	2.6	2.2	1.4	1.1	1.5	1.5

- Overall unsatisfactory sample rate went from 3.0% to 1.5% in first year.
 - One region had a 4.8% decrease overall
 - Some seasonal difficulties in the Northern regions are noted



Maintenance and Evaluation

- Monitoring is required to ensure maintenance of the change
- Consideration could be made to changing the benchmarks over time
- BORN is evaluating the effectiveness of the Dashboard as a tool for knowledge translation
- NSO is evaluating the effectiveness of educational initiatives such as Submitter Workshops on practice changes

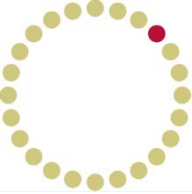


Missed Screens

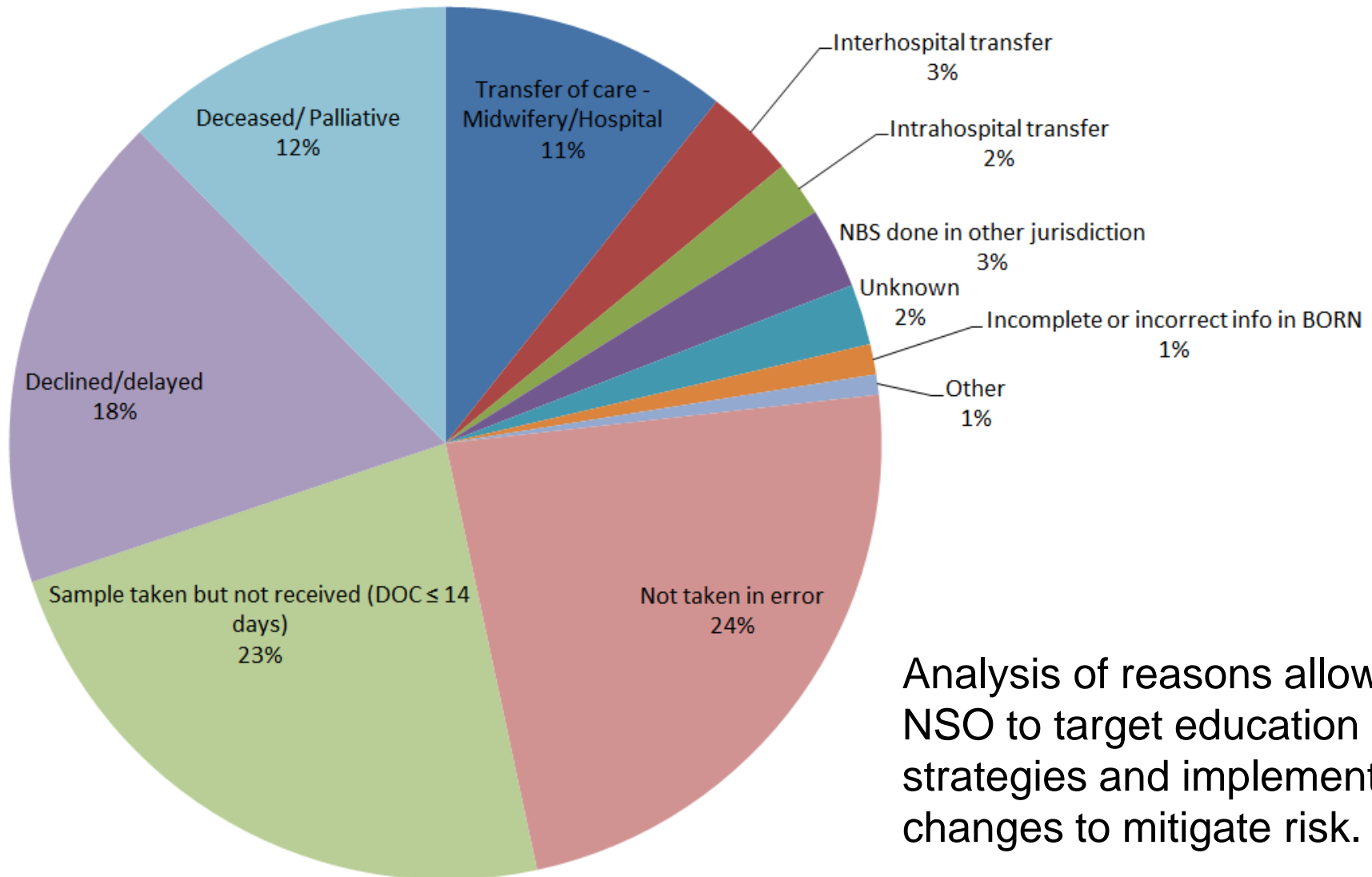
- **Missed Screen Alert:**

Daily communication from BORN to NSO to notify of all infants where a birth has been recorded in BORN, but no NBS record has been matched to the patient by 14 days of age

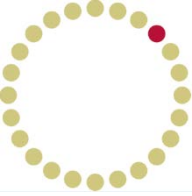
- >1300 missed screen alerts since Jan. 2012
(0.3% of samples)
- NSO follows up on all alerts to determine if it is a true missed screen and why, and to retrieve a sample where needed



Missed Screens by Reason

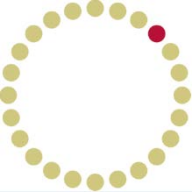


Analysis of reasons allows NSO to target education strategies and implement changes to mitigate risk.

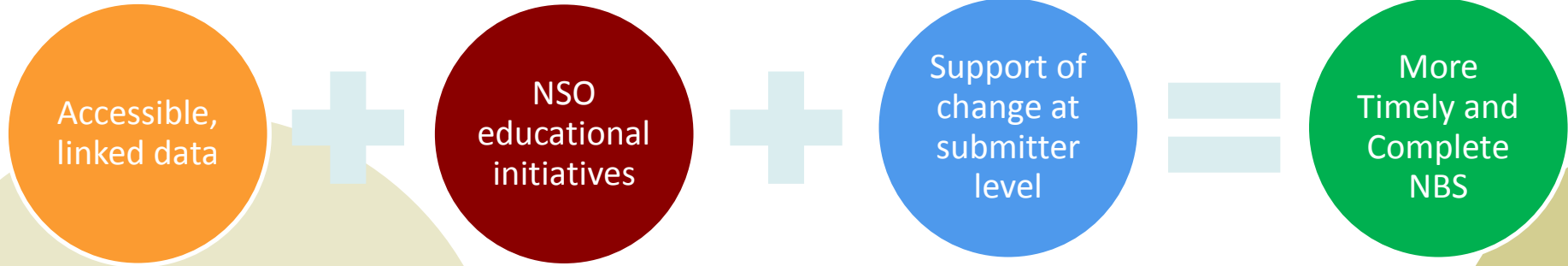


More Comprehensive Screening

- Before BORN, many of these infants may have ‘fallen through the cracks’ and never received newborn screening.
- The full population (ie. denominator) is known
 - NSO has a better understanding of the number of declined or deferred screens.
- Due to better awareness and corrective actions put in place, in the last year there has been a 13% decline in the average monthly number of missed screen alerts requiring follow up.



Conclusions



The information produced by BORN allows both submitters and NSO to identify gaps and variability in preanalytical practices and implement corrective actions, for more comprehensive and timely newborn screening.