



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

Using BORN Data to Understand Maternal & Newborn Health Outcomes

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Delivered by



Agenda

- Overview of BORN
- Benefits of analyzing BORN data
 - to provide a snapshot of:
 - provincial maternal demographic profiles
 - perinatal risk factors
 - maternal/newborn health outcomes

643,739

births captured in the BIS.

Zoe is one of them.



17.4%

chance of being a multiple birth if her mother had IVF.

If Zoe were a twin, she would be twice as likely to be born early and spend time in the NICU.



20%

is Zoe's mother's risk of developing Type 2 diabetes within ten years of having tested positive for gestational diabetes in pregnancy.



46%

is the rate of elective repeat cesarean sections in low risk women happening earlier than they should.

Higher risk for Zoe to spend some time in the expensive NICU environment



1,438

potential missed screens reported to
Newborn Screening Ontario.

It's important to know if she's been
affected by one of the 29 rare diseases.



The best possible beginnings for lifelong health



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<https://www.bornontario.ca/>

Privacy

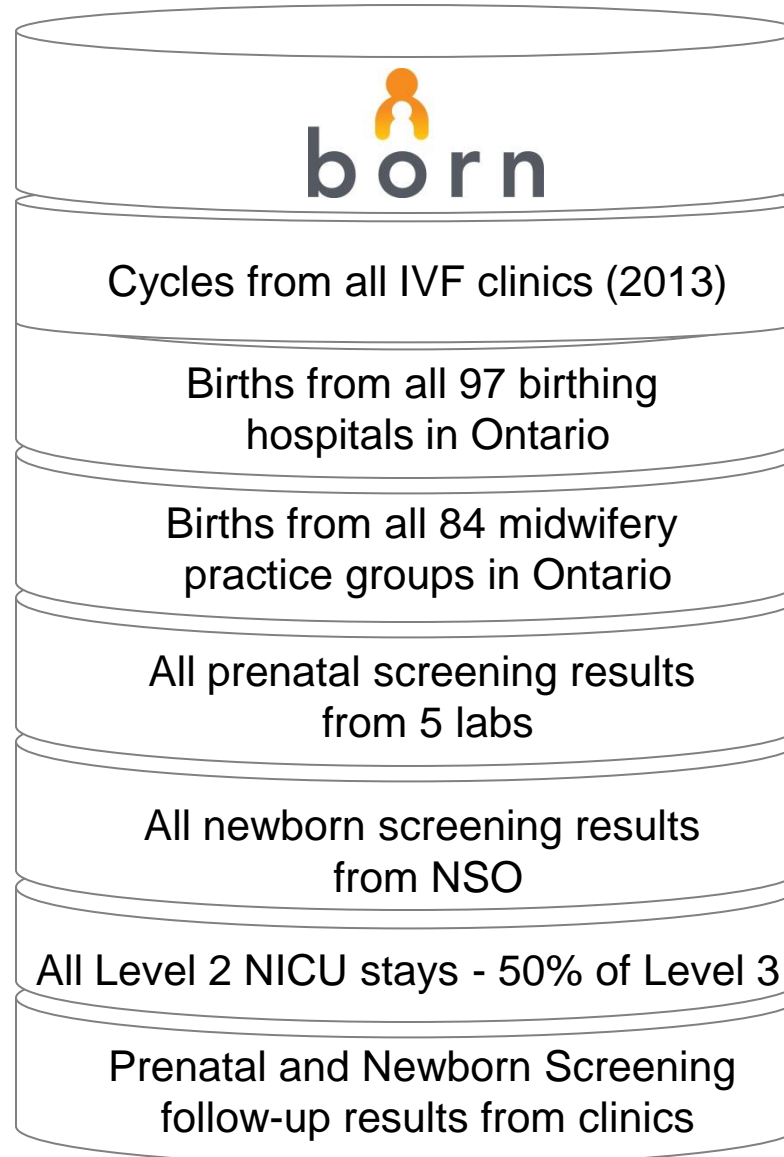


- Nov 2009 BORN was granted registry Status under the *Personal Health Information Privacy Act* (PHIPA)
- Authority to collect, use and disclose personal health information without consent “for the purpose of facilitating or improving the provision of health care”.

Rigorous privacy policies have been reviewed and approved by the Ontario Information and Privacy Commissioner

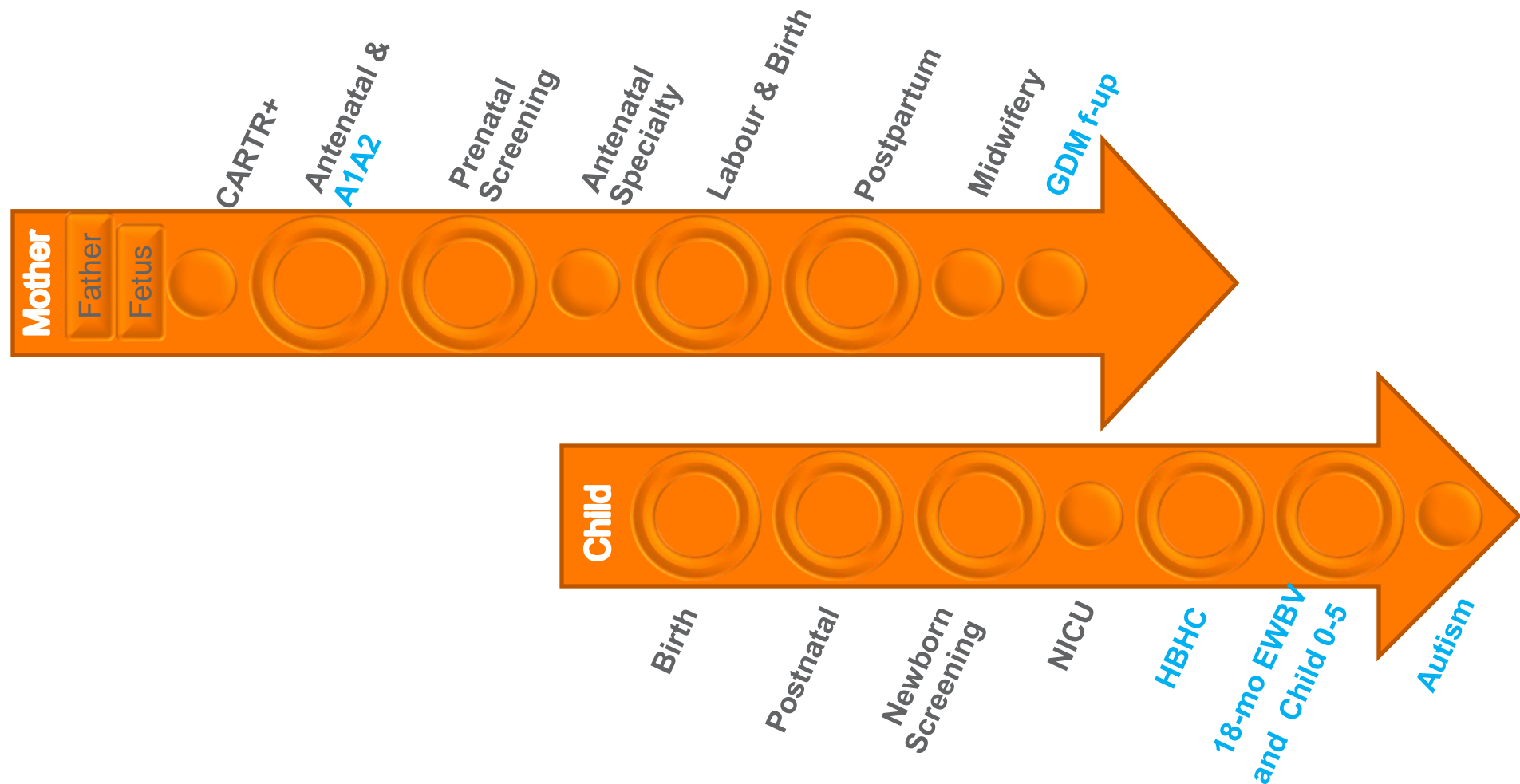
The BIS Overview

99.9% uptime since go live
(except planned interruptions)!



Linked and
matched across
the continuum

BORN Information: Continuum



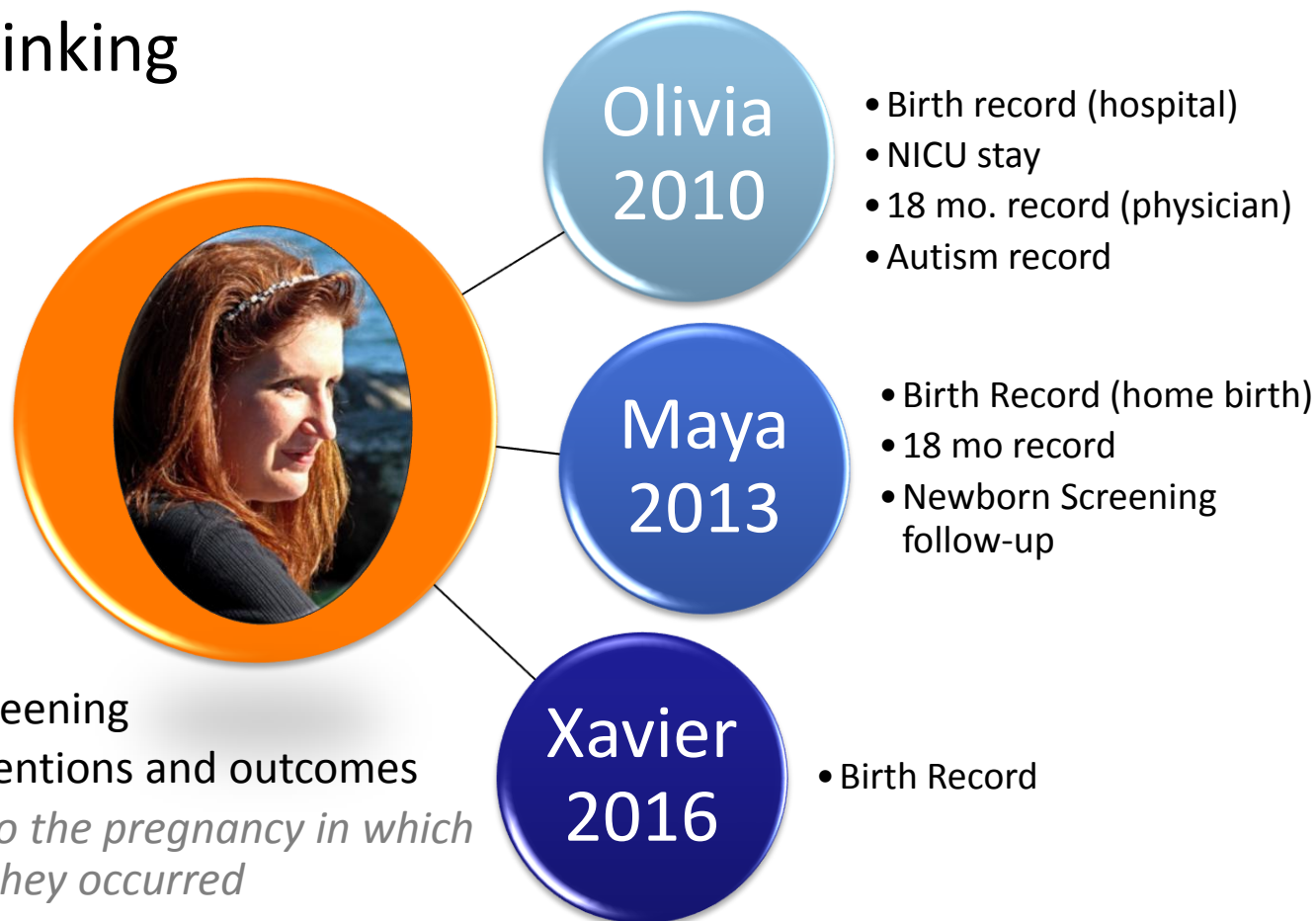
BORN Information: Data Details



www.bornontario.ca/en/data/data-dictionary/

Data and Patient Linking

Patient Linking



- IVF cycles
- Prenatal screening
- Birth interventions and outcomes

Each linked to the pregnancy in which they occurred







How to use the data

Role of Information in maternal-newborn care



- If you can't measure it, you ...
 - can't understand it
 - can't manage it
 - can't improve it

Provincially--hospitals are using a dashboard of 6 KPI (key performance indicators) -2012

Key Performance Indicators	Rate (%)	Status
Proportion of newborn screening samples that were unsatisfactory for testing	1.7	
Rate of episiotomy in women who had a spontaneous vaginal birth	16.8	
Rate of formula supplementation at discharge in term infants whose mothers intended to breastfeed	40.1	
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	52.8	
Proportion of women who delivered at term and had Group B Streptococcus (GBS) screening at 35-37 weeks' gestation	97	
Proportion of women who were induced with an indication of post-dates and were less than 41 weeks' gestation at delivery	9.5	

Public Health: Reporting Tools

(Dec 2013)

Standard Reports

- Pre-defined indicators
- For querying BORN data beginning April 1, 2012 onward
- Select time frame and PHU
- Comparator data* given:
 - Same Peer Group (if >3 PHU within peer group)
 - Ontario

* Comparator data given with six month delay from today's date. i.e. 12-13 FY available for individual PHUs now, while full year comparator data was available August 2014

Cube

- Tool for designing custom queries, allowing user to select multiple dimensions and measures. Like a pivot table.
- For querying BORN data beginning April 1, 2012 onward
- Filter data based on needs – “slice and dice” data

PHU Standard Reports

PHU – Pregnancy	PHU – Birth	PHU – Newborn
<ul style="list-style-type: none"> • Age group • Parity • Prenatal classes • First trimester visit • Intention to breastfeed • Pre-pregnancy BMI • Maternal weight gain • Smoked during pregnancy • Alcohol exposure • Drug exposure • History of depression or anxiety • Hypertension disorder in pregnancy • Gestational diabetes 	<ul style="list-style-type: none"> • Number of women, births, live births, stillbirths (< 500g, >500g) • Location of birth (home, hospital or another location) • Type of attending health care provider • Women in midwifery care that gave birth at home • Type of birth • Labour induction • Pain Management in labour • Assisted vaginal birth (forceps, vacuum or both) • CS delivery (primary vs. repeat CS) • Indication for CS • Anesthesia in Cesarean Section 	<ul style="list-style-type: none"> • Number of women, births, live births, stillbirths (< 500g, >500g) • Preterm birth • Multiple birth • Birth weight • Small for gestational age (10th percentile) • Large for gestational age (90th percentile) • Infants with HBHC Screen complete • Congenital anomalies rate (any type) • Infant feeding at hospital discharge

Using the data

Things to remember with data translation

LHIN of maternal residence	Intention to breastfeeding	Fiscal year			
		2012-2013		2013-2014 [#]	
		n	%	n	%
LHIN X	Yes	9,160	94.4	7,634	94.9
	No	541	5.6	409	5.1
	Missing	1,287	11.7	2,502	23.7
	Total	10,988	100.0	10,545	100.0
LHIN Y	Yes	6,892	95.8	7,196	96.2
	No	304	4.2	283	3.8
	Missing	4,410	38.0	3,903	34.3
	Total	11,606	100.0	11,382	100.0

Data from the BIS in fiscal year 2013-14 is not closed. 94% of the organizations have acknowledged that their monthly data entry has been verified (Nov 30, 2014).

Values with greater than 10% but less than 30% missing data should be interpreted with caution

Values with greater than 30% missing data should not be reported

The view from a hospital or health unit perspective

Hospital Y	Yes	2,278	92.5	2,309	92.5
	No	186	7.5	186	7.5
	Missing	165	6.3	99	3.8
	Total	2,629	100.0	2,594	100.0

PHU X	Yes	8,704	94.0	7,551	95.1
	No	553	6.0	392	4.9
	Missing	220	2.3	1,070	11.9
	Total	9,477	100.0	9,013	100.0

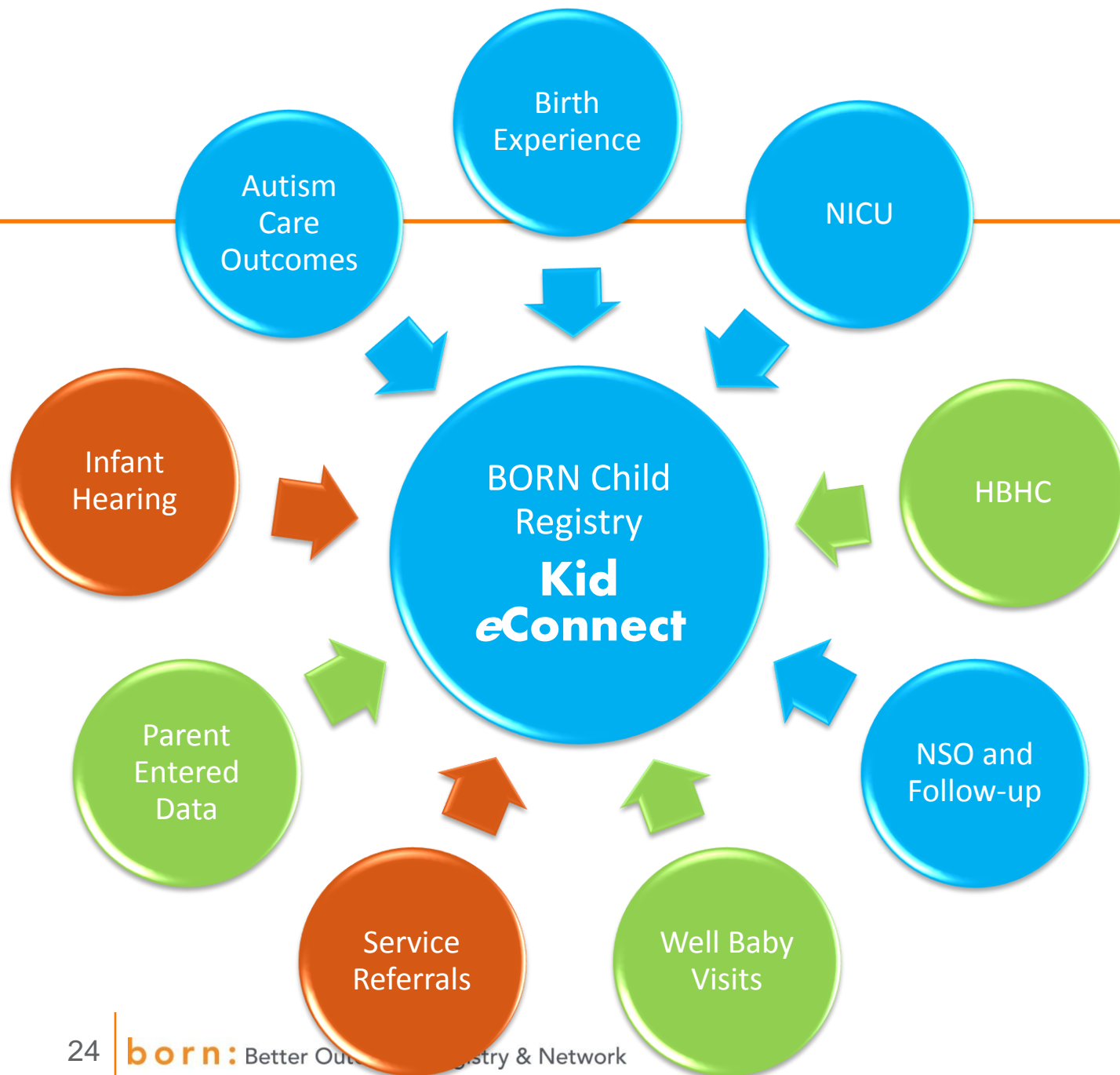
Growth & Development

BORN Growth and Development

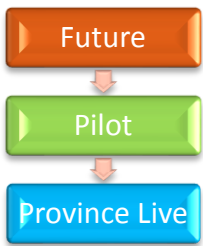
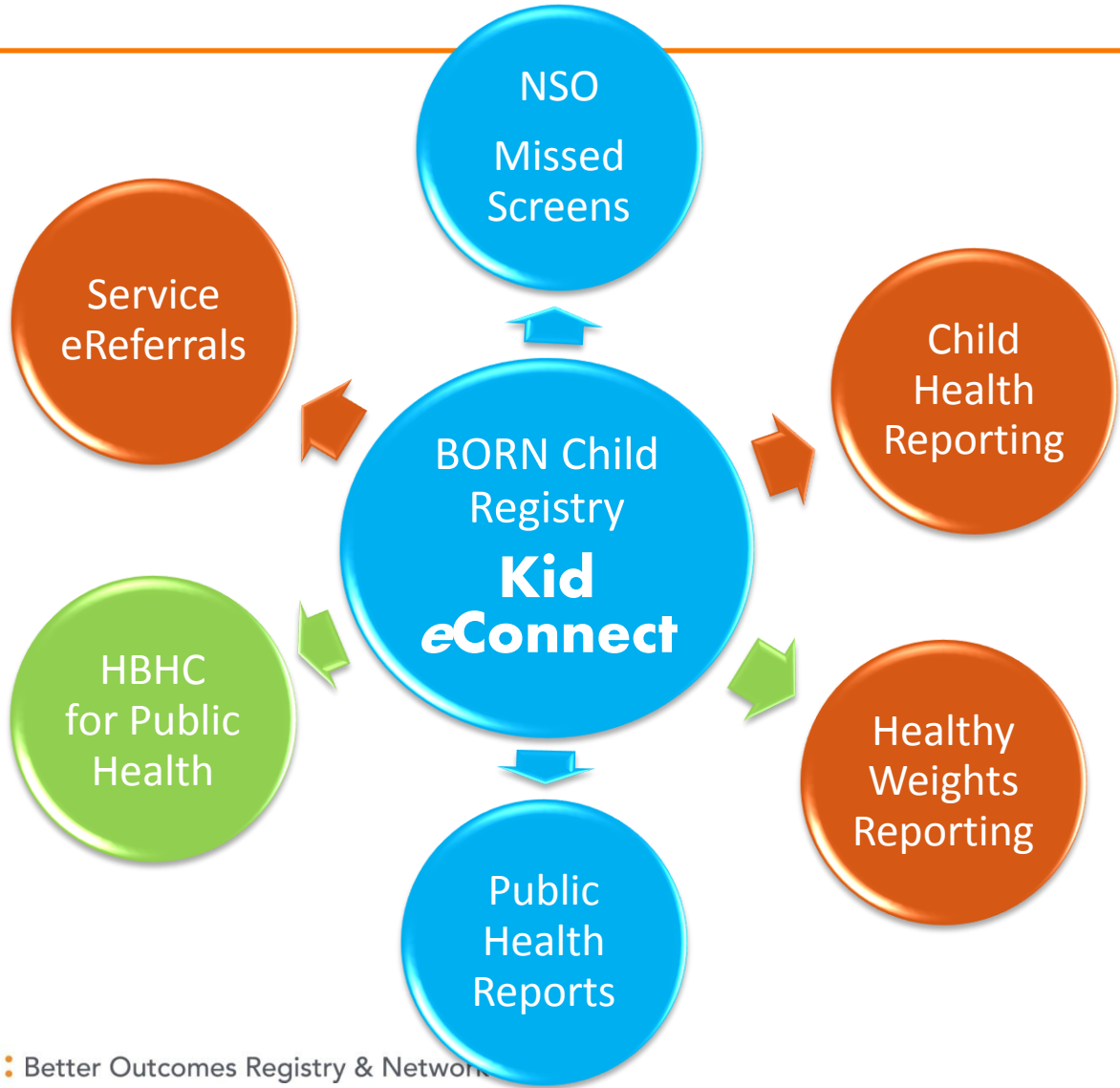
- To mirror the growth and development of the babies that are in the BORN system
- Add new data sources to improve and facilitate care to the children as they continue to grow



Growth of a Child Registry



Child Registry Outputs



18 month well baby visits

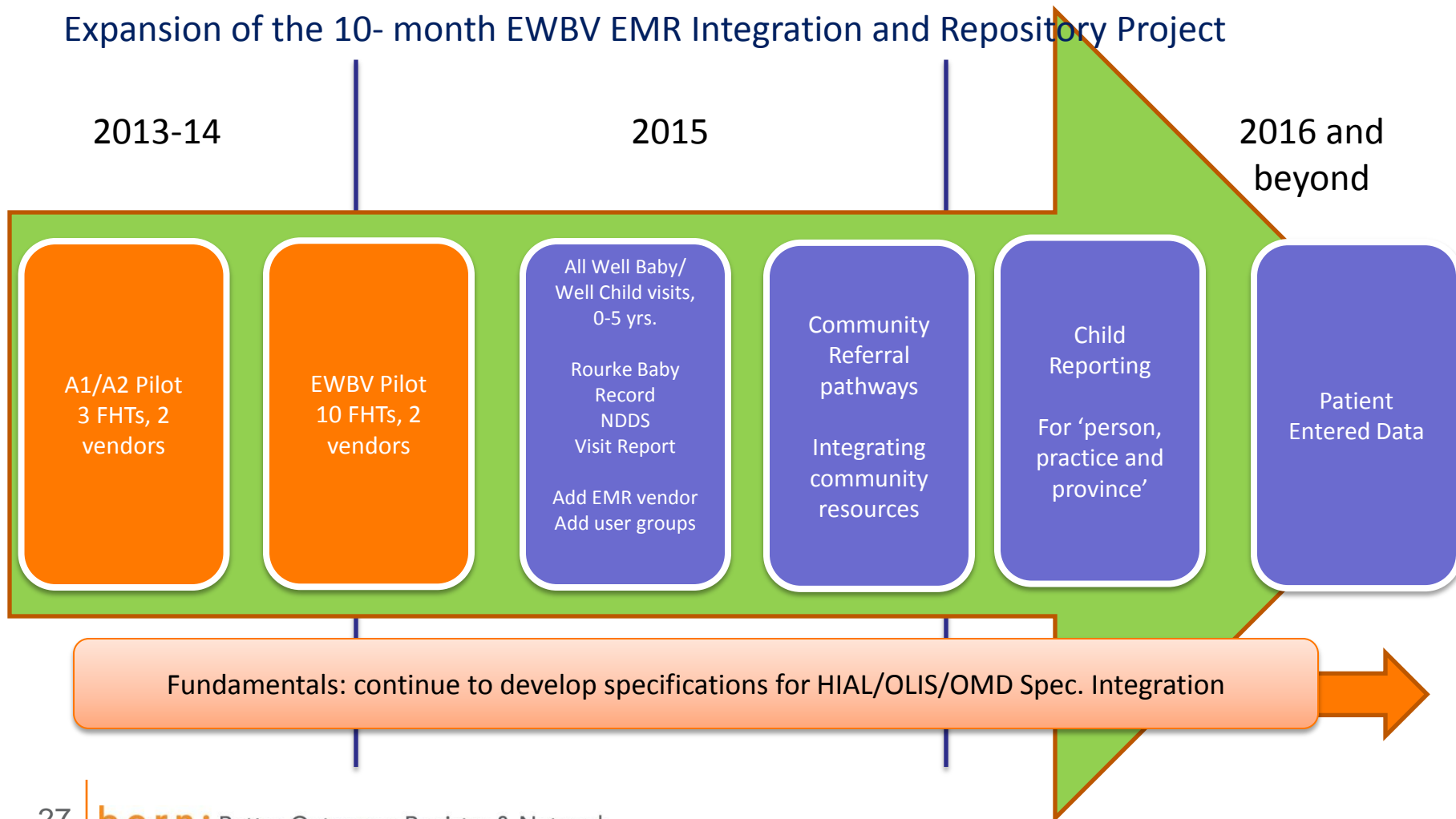
10

family health teams
participating in 'Child' pilot
projects to help us grow



Primary Care: Growing into Child with the “Kid eConnect Strategy”

Expansion of the 10- month EWBV EMR Integration and Repository Project



BIS/HBHC Screens

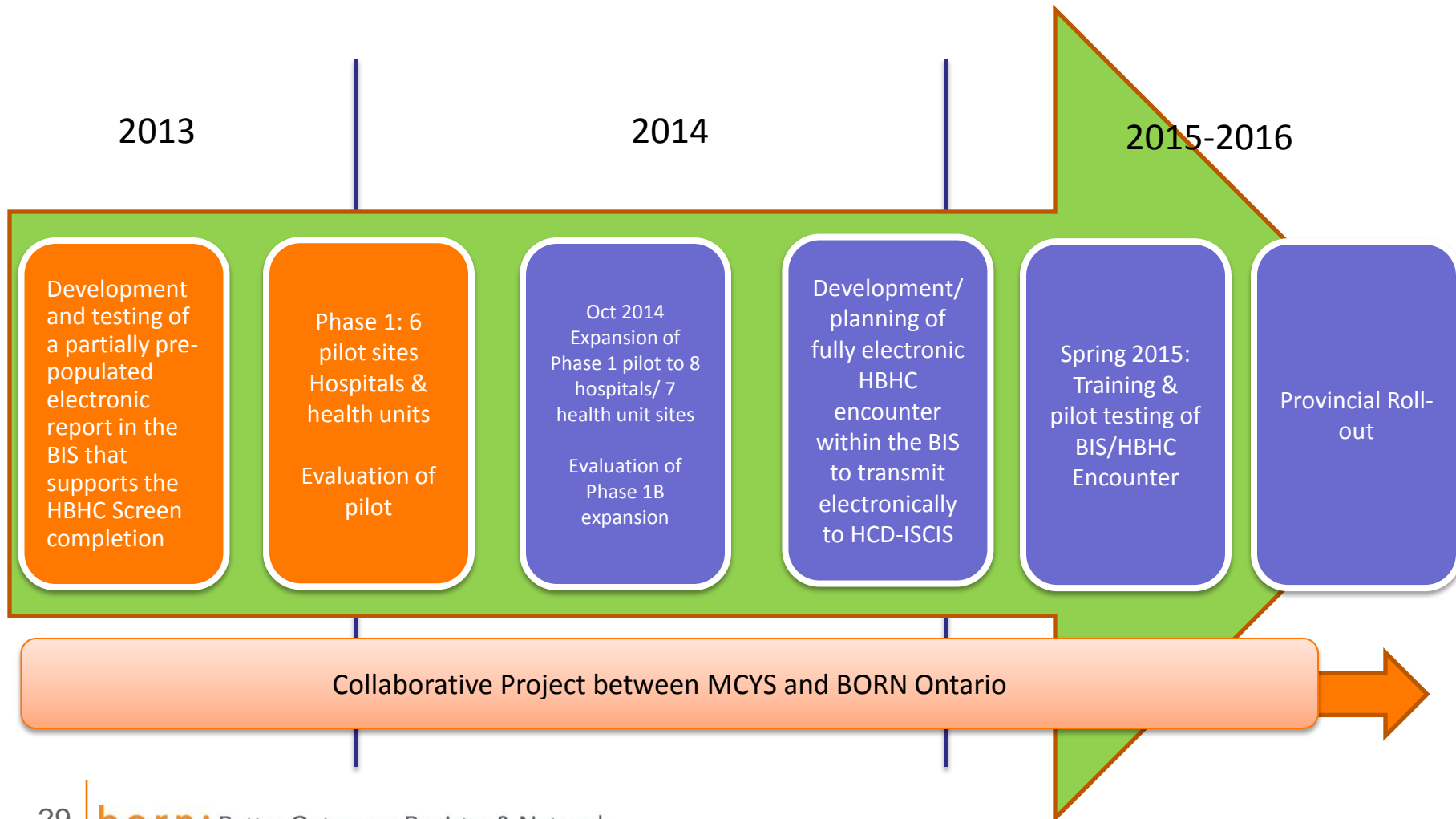
2013: Pilot

6 hospitals

6 health units



BORN Information System (BIS)/HBHC Screen



O Mama

- Listen to Women
- Build a website
- Build an app
- Build a PHR (personal health record)
- Test and Evaluate
- Publish Results





Questions

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