



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

BORN Ontario: Update on New Data Collection Methods

Montreal, June 2014

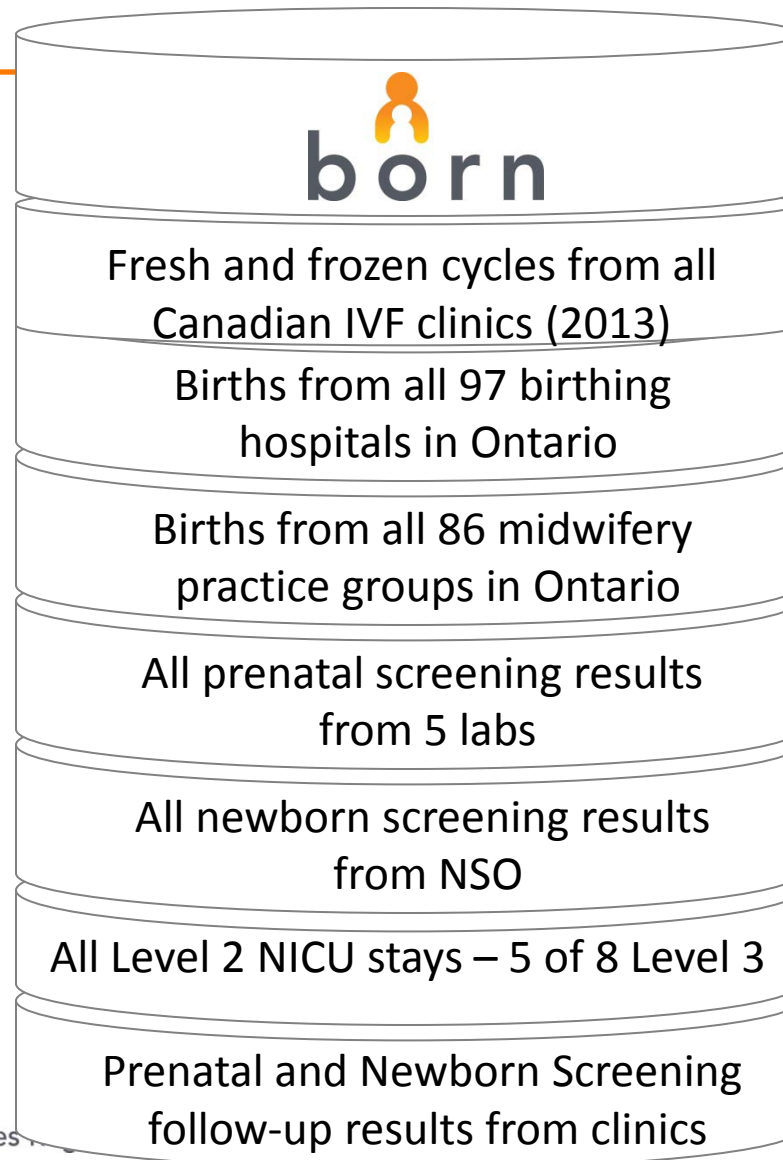
28

months since the BORN
Information System went Live



The BIS Overview

Linked and
matched across
the continuum



NEW - EMR Data!

~2000 18-month records

~1300 A1A2 records

B O R N 2 0 2 0

Person-Centred Data



Complete

Ensure comprehensive data on each individual in the registry

Flag & Alert

Identify and address care gaps wherever possible

Direct to Consumer

Engage women and families through mobile technology

Nurture Maternal Newborn, Champion the Child



Thrive

Continue investment and innovation in the existing maternal newborn program

Grow

Foster growth into child health by leveraging what we've built

Link

Promote the power of interplay between child and perinatal health data

Be a trusted source of maternal-child health information



Balance

Providing timely data access with appropriate safeguards

User Experience

Leverage leading-edge technology (functionality, usability, attractiveness)

Responsive

Understanding users' data and support needs

True Data, True Progress



Value

Maximize benefits to stakeholders for the investments made in data collection

Tools

Develop enablers of change – KPIs, dashboards, reports, audit tools, data quality

Action

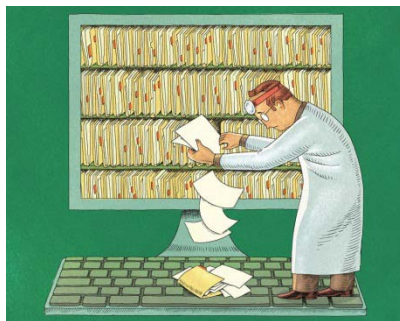
People, data and innovation combined to support clinical and systems improvement

What is an Electronic Medical Record (EMR)?

Canada Health Infoway definition:

- An electronic medical record (EMR) is a computer-based medical record specific to one clinician's (e.g. physician) practice or organization.
- It is the record clinicians maintain on their own patients, and which detail demographics, medical and drug history, and diagnostic information such as laboratory results and findings from diagnostic imaging.
- It is often integrated with other software that manages activities such as billing and scheduling.

www.infoway-inforoute.ca/



eHealth (eHO) Ontario

Driving EMR Adoption

eHO is funded by the Ministry of Health and Long-Term Care, responsible for:

- Delivering a comprehensive, patient-focused, secure and private electronic health record (EHR) system to improve the way patients receive care, enhance the clinical experience and make the system more sustainable.
- Connecting physicians and health care providers, allowing for the transmission of electronic health data across a wide network of electronic health record (EHR) systems throughout the province.
- Building platforms like the Ontario laboratories information system (OLIS), so doctors and clinicians can access to important medical tests and results in one centralized registry.
- Implementing the government's ehealth agenda and creating electronic health records for Ontarians. eHealth Ontario funds and oversees the Electronic Medical Records Adoption Program managed by OntarioMD.

www.ehealthontario.ca

OntarioMD

Implementing EMRs in Ontario



About OntarioMD

- OntarioMD was established by the Ontario Medical Association and the Ministry of Health and Long-Term Care in 2004 to work closely with physicians to help them transition from paper records to Electronic Medical Records (EMR) and to provide them with easy access to information and resources to improve the quality of patient care and practice efficiency.
- Since 2004, OntarioMD has been managing the EMR Adoption Program, which is funded by eHealth Ontario.
- The program assists physicians to acquire, implement and adopt health IT.
- Also responsible for certifying EMRs (and vendors) to be eligible for funding in Ontario and updating EMR specifications to align with eHealth objectives and physicians requirements

So.. What's a FHT?



- Family Health Teams are primary health care organizations that include a team of family physicians, nurse practitioners, registered nurses, social workers, dietitians, and other professionals who work together to provide primary health care for their community.
- They ensure that people receive the care they need in their communities, as each team is set-up based on local health and community needs.
- Family Health Teams were created to expand access to comprehensive family health care services across Ontario.
- Since 2005, 185 Family Health Teams have been operationalized through five waves of implementation, with the last 50 implemented in 2011/12.
- There are currently over 3 million Ontarians enrolled in Family Health Teams in over 200 communities across Ontario

<http://www.health.gov.on.ca/en/pro/programs/fht/>

EMR vendors in Ontario

Funded EMR Vendors as at April 30th, 2014 (New Adoption & Primary Care IT Program)

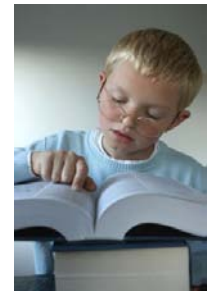
Rank	Vendor	# Local Funded Physicians	# ASP Funded Physicians	Total	Market Share %
1	Telus Health Solutions	2,786	355	3,141	31.7%
2	OSCAR EMR	1,773		1,773	17.9%
3	QHR Software ¹	1,526		1,526	15.4%
	Optimed Software Corp.	1,284		1,284	13.0%
	Healthscreen Solutions Inc.	200		200	2.0%
	CLINICARE Corporation	42		42	0.4%
4	Nightingale Informatix Corp. ²	30	1,339	1,369	13.8%
5	Bell Canada		504	504	5.1%
6	P&P Data Systems Inc.	441		441	4.4%
7	ABELSoft Corporation	329		329	3.3%
8	Jonoke Software Development Inc.	305		305	3.1%
9	Canada Health Systems Inc.	255		255	2.6%
10	YMS Inc.	115		115	1.2%
11	Med Access Inc.	81		81	0.8%
12	Alpha Global iT Inc.	35		35	0.4%
13	YES Medical System	20		20	0.2%
14	Offerings not Spec. 3.0 certified	17		17	0.2%
	Subtotal	7,713	2,198	9,911	100.0%
	Total		9,911		

BORN is engaged with these vendors

Transitioning out of the EMR business; in partnership with QHR for the transition

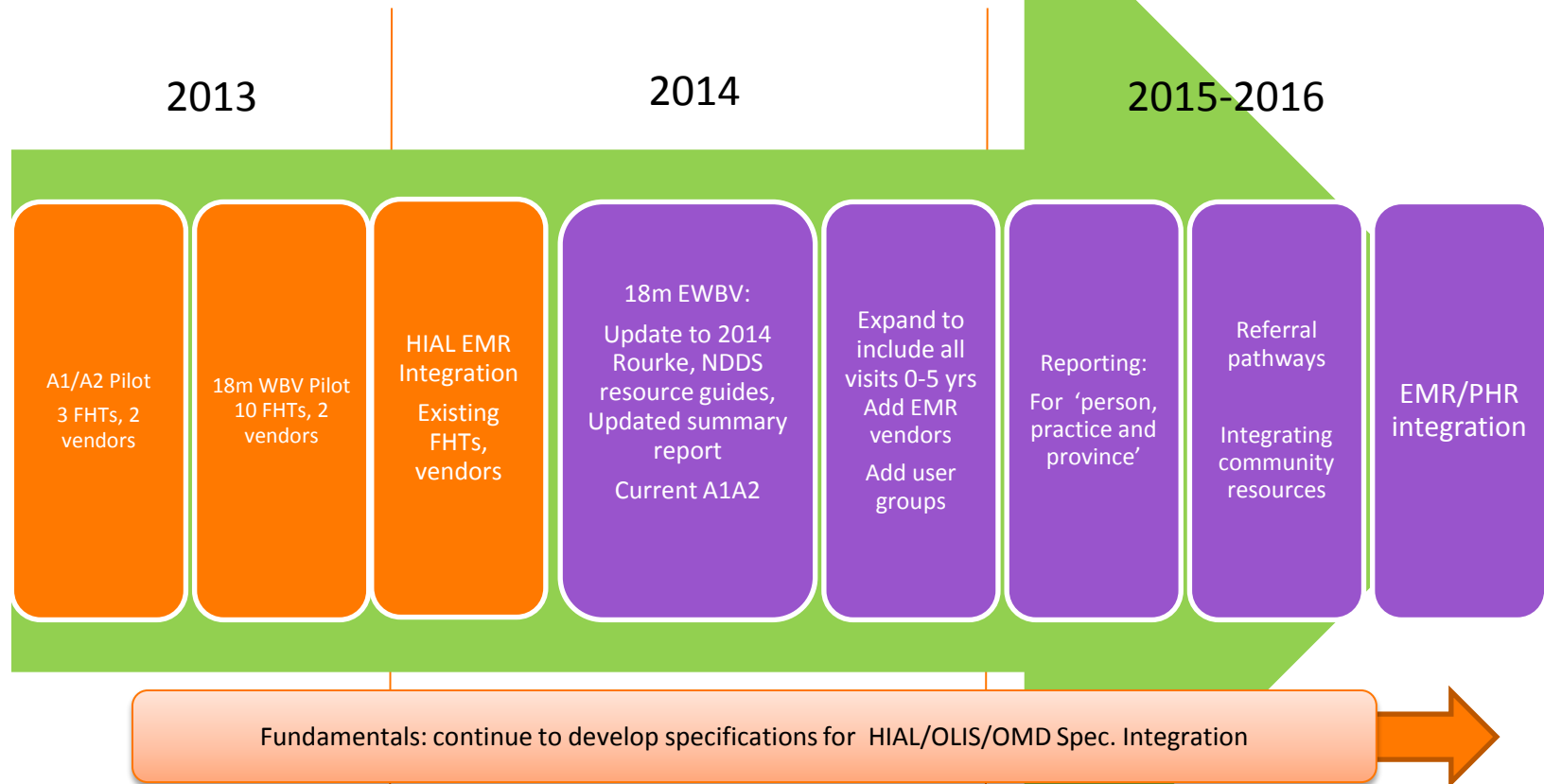
Does not include non-funded providers who are using an EMR

Why does BORN want to invest in primary/community care and EMR Integration ?










Growing into Child with the “Kidcare Strategy”

Evolution of the A1/A2-18mo. EWBV project



Current EMR Integration Projects

Project	Objectives	Partners	Time Frame	Progress	Strat. Dir.
A1/A2	Collect A1/A2 data from EMRs in the BIS	eHO	2013-14	Pilot complete, Ongoing data feeds	 
18m EWBV	Collect 18m WBV data from EMRs in the BIS	eHO, MCYS	2014	Evaluation underway	
HIAL	Send A1/A2 and 18m data through eHO HIAL	eHO	Jan-Sept 2014	Begin build soon	
Kidcare	Expand collection to more time points, more vendors, more FHT. Improved reporting, referrals, etc...	eHO, MCYS, TargetKids	Apr 2014-2016	Signing contracts, early spec design	  

18 month Enhanced Well Baby Visit.. The Cornerstone of the EMR Roadmap

- Expert panel decided that this was the time point that made the most impact for early intervention
- Funded “Enhanced WBV” with formal tools to be used
- Created a billing code for physicians to use for extra time required

Rourke Baby Record

Rourke ON 18 Months - Beach, Sandi

Title: Rourke ON 18 Months Not Reviewed

Description:

DOS: 2013-Aug-09 4:0... Provider: Adams, Fred

©2011 Drs. I. Rourke, D. Leduc and J. Rourke
Revised July, 2011
www.rourkebabyrecord.ca

Rourke Baby Record: Evidence-Based Infant/Child Health Maintenance

One visit/page format - GUIDE IVa: 18 months (national)

Date of visit: 2013-08-09 Signature:

NAME: Sandi Beach

Birth Day (d/m/yr): 2012-Jan-01 Gender: F

Gestational Age:

GROWTH¹ use WHO growth charts. Correct percentiles until 24-36 months if < 37 weeks gestation

Height: 2013-Aug-12: 24.0 in Weight: 2013-Aug-12: 10.0 lb Head Circ.: 2013-Aug-12: 4.0 in

PARENT/CAREGIVER CONCERNS

NUTRITION¹

☒ Breastfeeding¹ ☐ Avoid sweetened juices/liquids

☒ Homogenized milk ☒ No bottles

[500-750 mLs (16-24 oz) /day¹]

EDUCATION AND ADVICE

☒ discussed and no concerns ☐ Parent/child interaction

☐ if concerns ☐ Discipline/parenting skills programs³

☐ Injury Prevention ☐ Choking/safe toys¹

☐ Car seat (child)¹ ☐ Family

☐ Bath safety¹ ☒ Parental fatigue/stress/depression³

☐ Choking/safe toys¹ ☒ High-risk children¹

DEVELOPMENT¹

(Inquiry and observation of milestones)

Tasks are set after the time of normal milestone acquisition.

Absence of any item suggests consideration for further assessment of development.

NB-Correct for age if < 37 weeks gestation

☒ if attained ☐ if not attained

PHYSICAL EXAMINATION

Evidence-based screening for specific conditions is highlighted, but an appropriate age-specific focused physical examination is recommended at each visit.


☒ if normal ☐ if abnormal

PROBLEMS AND PLANS

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15 | **born:** Better Outcomes Registry & Network




Emotional
Self-Help

nippissing district developmental screen™

The following **activities** for your child will help them play their part in their child's development.




I feel safe and secure when I know what is expected of me. You can help me with this by following routines and setting limits. Praise my good behaviour.



I like toys that I can pull apart and put back together – large building blocks, containers with lids, or plastic links. Talk to me about what I am doing using words like “push” and “pull”.

I'm not too little to play with large crayons. Let's scribble and talk about our art work.



Don't be afraid to let me see what I can do with my body. I need to practise climbing, swinging, jumping, running, going up and down stairs, and going down slides. Stay close to me so I don't get hurt.

Play some of my favourite music. Encourage me to move to the music by swaying my arms, moving slowly, marching to the music, hopping, clapping my hands, tapping my legs. Let's have fun doing actions while listening to the music.

Let me play with balls of different sizes. Take some of the air out of a beach ball. Watch me kick, throw, and try to catch it.

“Visit Encounter Report”

18 Month Baby Summary - Beach, Sandi

Title: 18 Month Baby Summary Not Reviewed

Description: DOS: --None-- Provider: ClinicalViewer1, Physician

Patient Summary Links & Handouts

Birth Date: 2012-Jan-01
Chronological age at time of visit: 2 Yr
Patient Gender: F
Postal code for child's residence:

Please indicate child's:
Height: 60.96 cm
Weight: 4.54 kg
Head Circumference 10.16 cm

At birth was the child:
☐ Premature
☐ High risk
☐ No concerns Apgar score: 1 minute 5 minute

Has the child been exposed to second hand smoke?
☐ In utero
☐ Since birth
☐ No exposure

Has the child been exposed to substance abuse in utero?
☐ Yes ☐ No

If yes, please indicate:
☐ Drugs ☐ Alcohol

NIPissing DISTRICT DEVELOPMENTAL SCREEN
"NO" flags on completed Nipissing Developmental Screen
(Please indicate)

<input checked="" type="checkbox"/> 1	<input checked="" type="checkbox"/> 5	<input type="checkbox"/> 9	<input type="checkbox"/> 13	<input type="checkbox"/> 17
<input checked="" type="checkbox"/> 2	<input checked="" type="checkbox"/> 6	<input type="checkbox"/> 10	<input type="checkbox"/> 14	
<input type="checkbox"/> 3	<input type="checkbox"/> 7	<input type="checkbox"/> 11	<input type="checkbox"/> 15	
<input type="checkbox"/> 4	<input checked="" type="checkbox"/> 8	<input type="checkbox"/> 12	<input type="checkbox"/> 16	

ROURKE BABY RECORD HIGH RISK MARKERS

4	# Parent/family issues (E.g. parent/child interaction, parental stress/depression, high risk markers)
2	# Social/Emotional issues
2	# Communication skills issues
1	# Motor skills issues
0	# Adaptive skills issues
1	# Sensory impairment issues (problems with vision or hearing)

More than one developmental area affected
☒ Yes ☐ No

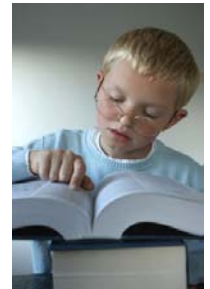
Need for additional assessment
☒ Yes ☐ No

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KidCare Project 1: Child 0-5 EMR Integration

- Roll out to all Ontario users for the 2 Beta vendors to have 18mo. EWBV functionality available and ability to upload data to BORN
 - Activities coordinated with HIAL project activities
- Add 3rd Vendor
- All Rourke Baby Record (RBR) and NDDS visits
 - Develop and implement all RBR well baby visits (wbv) 0-5yrs
 - enhanced functionality available for 18mo. Visit
 - 18mo. Rourke, NDDS, ‘tear sheet’,
 - Update to 2014 Rourke forms
 - Add pick list values to support nutritional/lifestyle reporting



KidCare Project 1: Child 0-5 EMR Integration

- Develop Encounter Summary Reports for all visits 0-5yrs
- Work with provincial stakeholders, end users to test an updated summary report for an encounter/visit
 - Are there data elements and functionality that should be added to support reporting at a patient and practice level?
 - Are there features that would greatly enhance EMR workflow, support adoption?
 - Test usability features under consideration

KidCare Project 1: Child 0-5 EMR Integration

- Expand integration with EMR vaccination module
- Include vaccination data for 0-6yrs

KidCare Project 2: Child Health Reporting

- Create patient level reporting
 - Encounter/visit summary report
 - Summary of all well baby visits 0-5 yrs
- Create practice level reporting
 - How many well baby visits being conducted? By age, provider?
 - What concerns are being identified?
 - Sites indicating BMI, breastfeeding cessation, timely care reporting are key areas for practice level reporting
 - What actions are being taken as a result? (referrals/follow up)

What's currently missing from EMRs... (the value add)

- Key Indicators Dashboard
- Benchmarking
- Comparator Rates

Kid Care Dashboard

Key Performance Indicators	Rate (%)	Status	Benchmark rates (%)			Comparator rates (%)		
			Target (green)	Warning (yellow)	Alert (red)	Other clinics in this LHIN	Other clinics caring for 1k-3k kids	Ontario
1 Rate of kids who received their 18 month enhanced well baby visit between 15 and 21 months	97.0	●	>94.0	90.0-94.0	<90.0	97.1	96.9	97.3
2 Rate of kids with height and weight measured at last visit	40.1	●	>94.0	90.0-94.0	<90.0	97.1	96.9	97.3
Rate of kids in the top 10th percentile of BMI	10.1		<20.0	20.0-25.0	>25.0	8.1	8.7	8.3
Rate of kids in the bottom 10th percentile of BMI	5.0		<11.0	11.0-15.0	>15.0	4.8	5.3	5.0
3 Rate of kids who were offered their vaccinations within 2 months of recommendation	97.0	●	>94.0	90.0-94.0	<90.0	97.1	96.9	97.3

Data source

BORN Ontario, 2012-2013

Notes

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

KidCare Project 3: Integrate Referral Pathways & EMR Referral module

- Link the EMR referral module to the Rourke baby record directly to collect provider and resource specific referral data
- Link EMR's to external links for community based resources-maintained by data source, not BORN or EMR vendors
- Enhance Library functionality to allow user maintained content

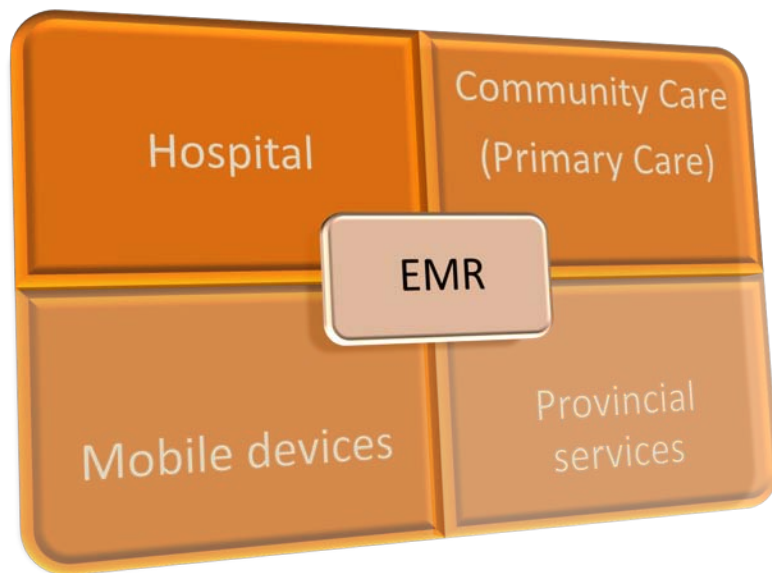
KidCare Project 4: PHR Integration

- Integrate EMR *patient portal data* to BIS data collection as appropriate
 - All Beta vendor as VERY actively engaged in PHR development
- Other portal data sets, eNDDS
 - Look for additional opportunity to enhance workflow, patient engagement, reduce data entry

KidCare: Foundational Requirements

- Ongoing Integration with the HIAL project
- eHealth Blueprint
- Provincial Standard-inclusion in the OntarioMD specification
- Integration with the Provider Registry

EMR Integration projects aren't only primary care...





EMR integration continues to evolve between:

- primary/community care
- hospitals
- individuals

Ensuring our success in this space requires ongoing engagement with all our stakeholders to continue to:

- Understand all the common and unique requirements for each environment
- Incorporate workflow enhancements where possible
- Understand how and where data intersects and can be exchanged

Mobile Apps and EMRs

Project	Objectives	Partners	Time Frame	Progress	Strat. Dir.
O-Mama	Create prenatal pathway and tools (App, website and PHR) to evaluate the best ways to involve mom in her care	eHO, SOGC	April 2014-2016	Environmental scan, developing RFP requirements	
Immunize CA	Import vaccination data from App and match with EMR data. Report back to PHU.	CPHA, OHRI, OPH, eHO	Summer –Fall 2014	Contract signing	

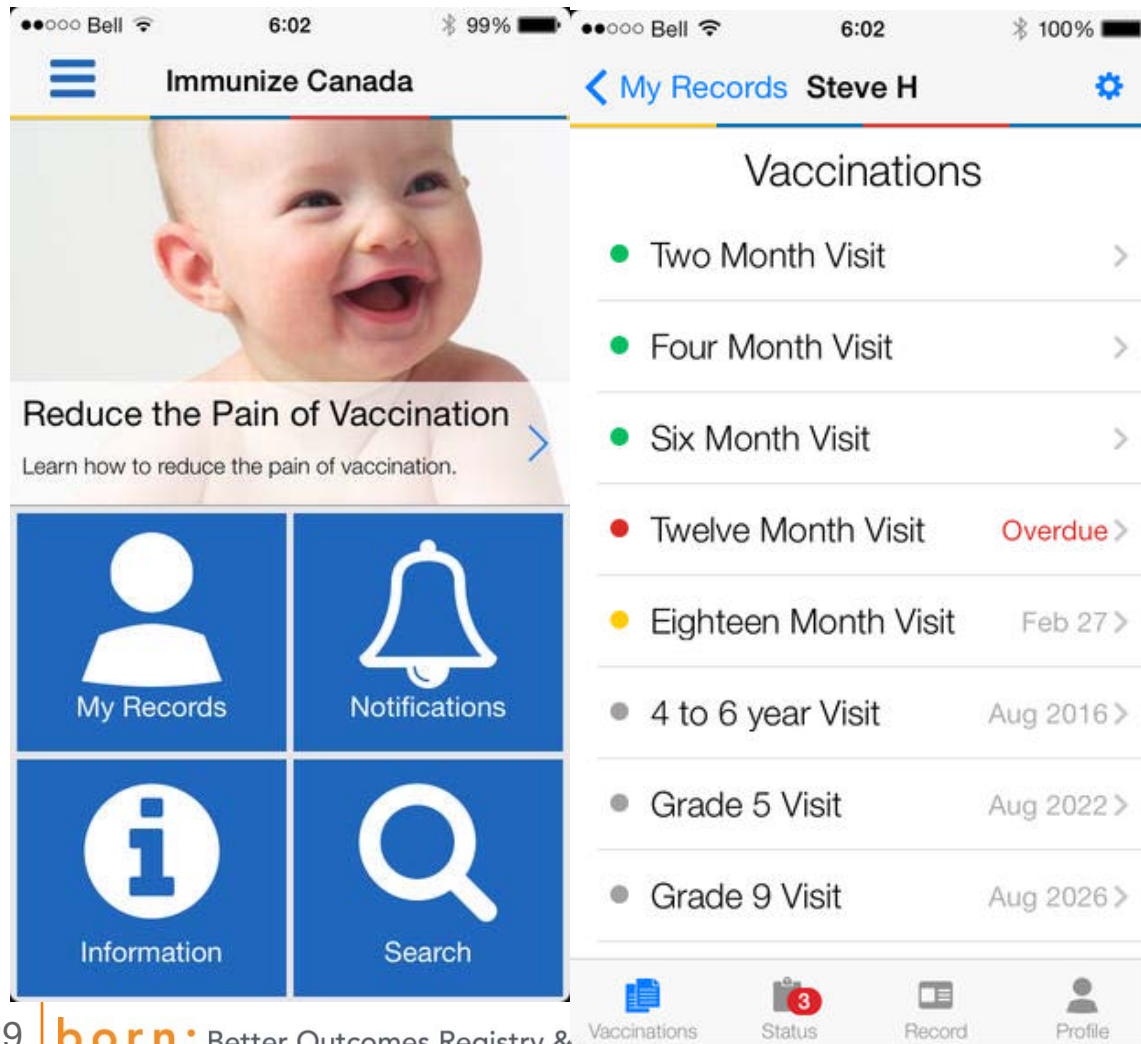
O-Mama - Goals

1. Develop a *maternal antenatal pathway* using existing documentation and evidence.
2. To engage women further in their care by providing them with tools to manage, update and better understand their own health information during pregnancy.
3. To facilitate care to women by *enabling additional communications* between the woman and her provider
4. To better understand the optimal technology solution to meet objectives #2 and #3.
5. To identify the benefits, costs, challenges and risks to government 'agencies' meeting healthcare objectives through the use of consumer e-health solutions
6. To determine if this might be an effective tool in health promotion activities related to weight gain in pregnancy, breastfeeding and smoking cessation
7. To evaluate (via a multiple methods study) the effects of these tools/processes on care

Immunize CA

- Easily record and store vaccine information
- Access vaccination schedules
- Manage vaccination appointments for the entire family
- Access evidence-based and expert-reviewed information about recommended and routine vaccinations for children, adults and travellers
- Receive alerts about disease outbreaks in their area

Immunize CA

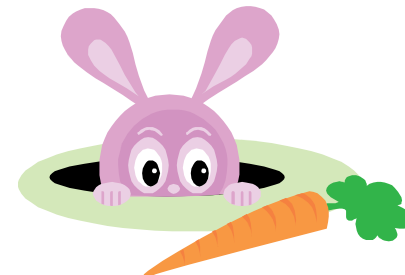


Plan:

- Build capability to send data from app to BORN
- Build parental consent form when downloading app (from a particular geography)
- Compare data from parental app and EMR
- Share data with PH

Data Quality in and EMR world

- No such thing as imposed “completeness” for data being submitted currently
- We don’t control the forms or data elements - But we do have a seat at the table to inform improvement and standardization of data elements collected going forward. Ie. Rourke 2017
- Just because they have the EMR functionality, doesn’t mean they will use!
- Will take what we get to inform how primary care data can be improved
- No sticks, all CARROTS

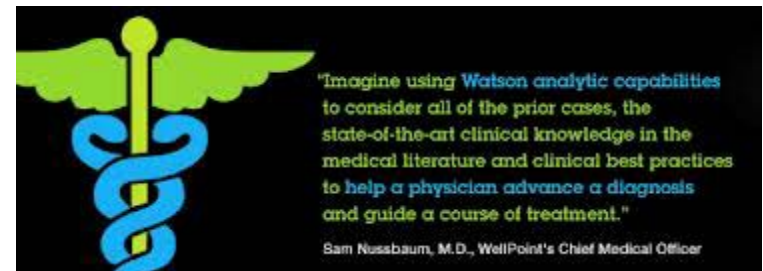


What's Next

- Data from devices/sensors
 - Hearing, glucose, biofeedback, weight, fitness

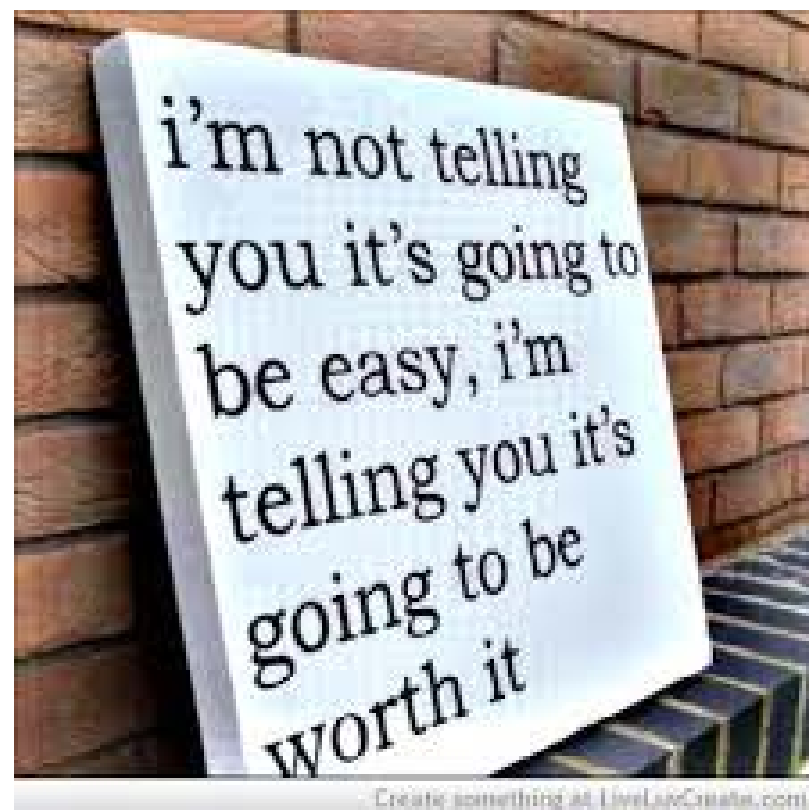


- IBM Watson
- IBM Connected-Care



New Data Sources – Lessons Learned

- Start small and build
- Invest strategically
- Build partnerships
- Work with innovators



Coming Attractions!



CONFERENCE 2015

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Using data to improve maternal-child care and outcomes

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