



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

# **BORN Ontario Briefing**

## **A Case Study: NT Quality Assurance**

**Webinar**  
**April 26, 2012**

# Agenda

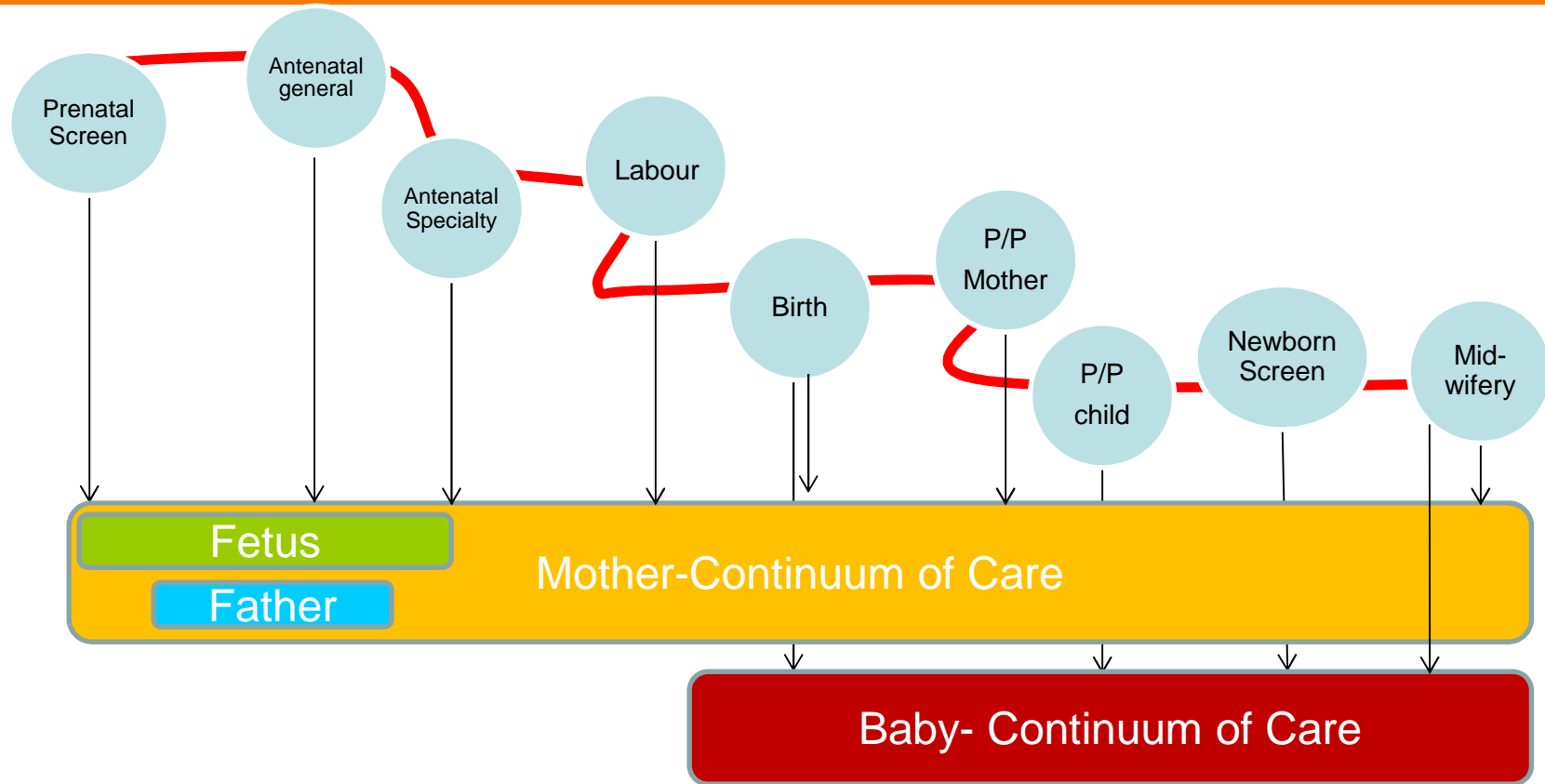
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- Facilitating and Improving Care
- Prenatal Screening in Ontario
- The role of Quality Assurance
- Implementing a Quality Assurance program for sonographers doing NT measurements

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# INFORMATION TO FACILITATE AND IMPROVE CARE

# The Continuum



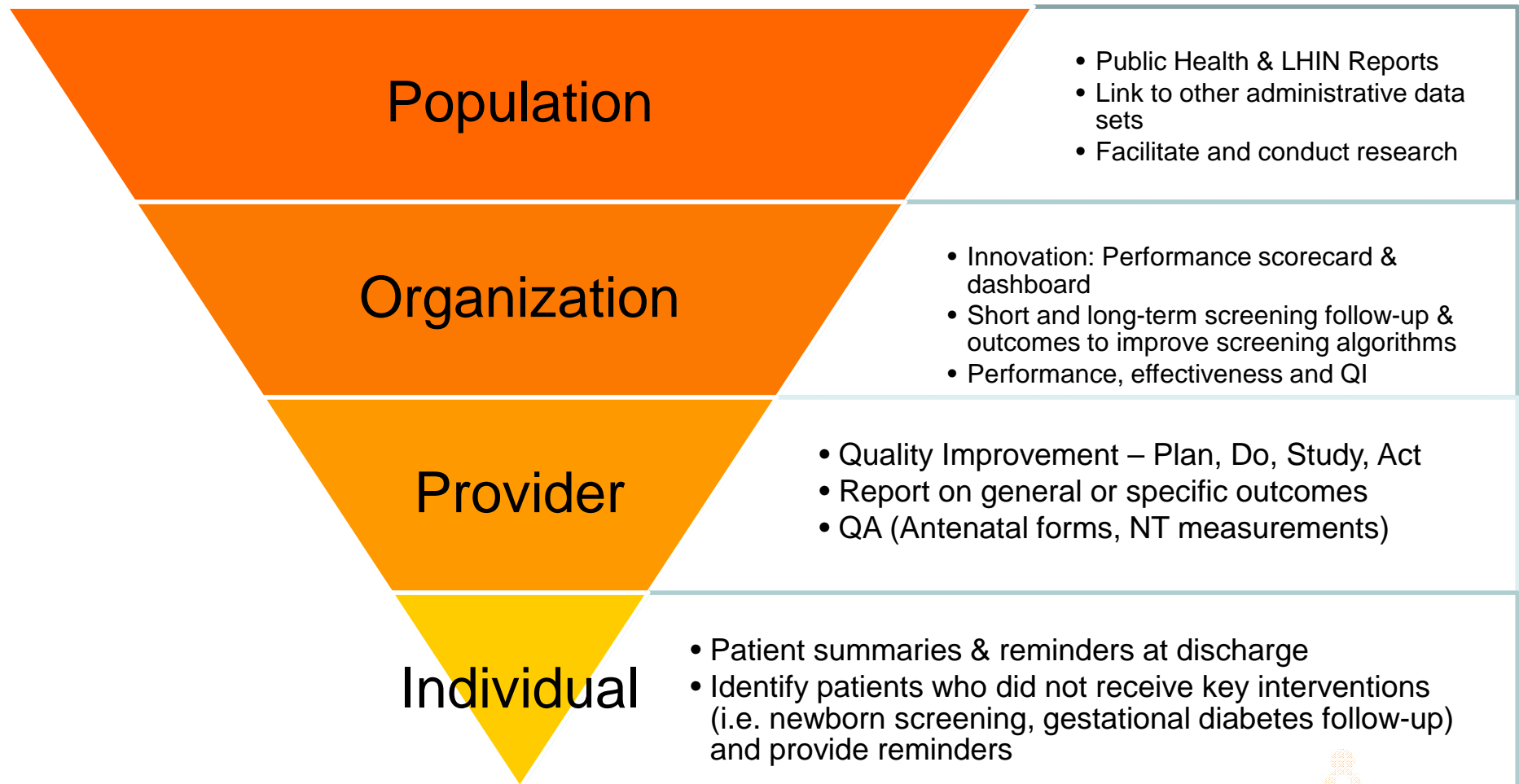
# Data Dictionary

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[www.BORNOntario.ca/data-dictionary](http://www.BORNOntario.ca/data-dictionary)

# BORN Impact

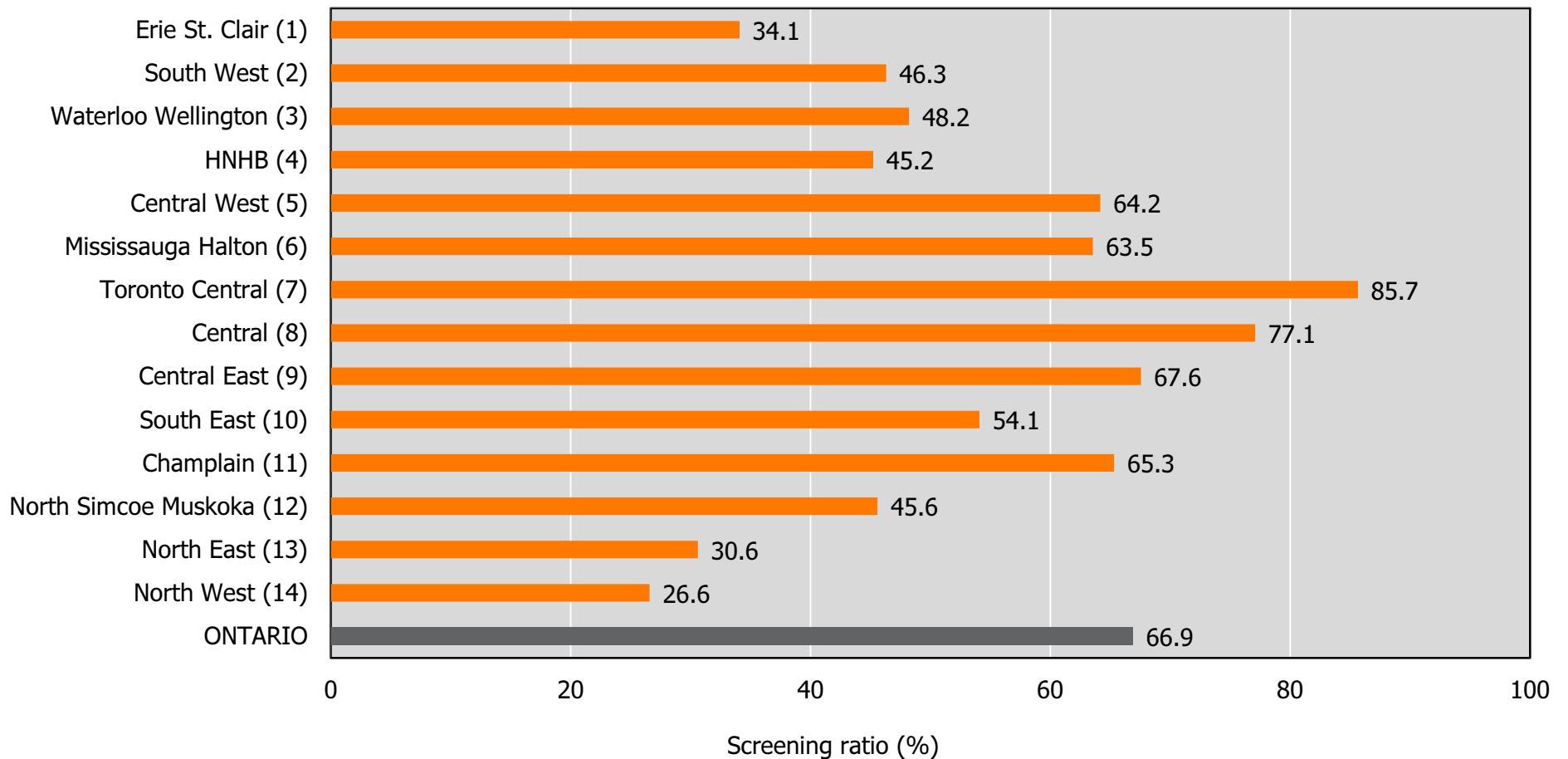


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# PRENATAL SCREENING IN ONTARIO

# Ratio of maternal multiple marker screening, by LHIN of residence

*Ontario†, 2009–2010*

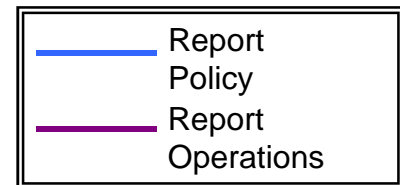
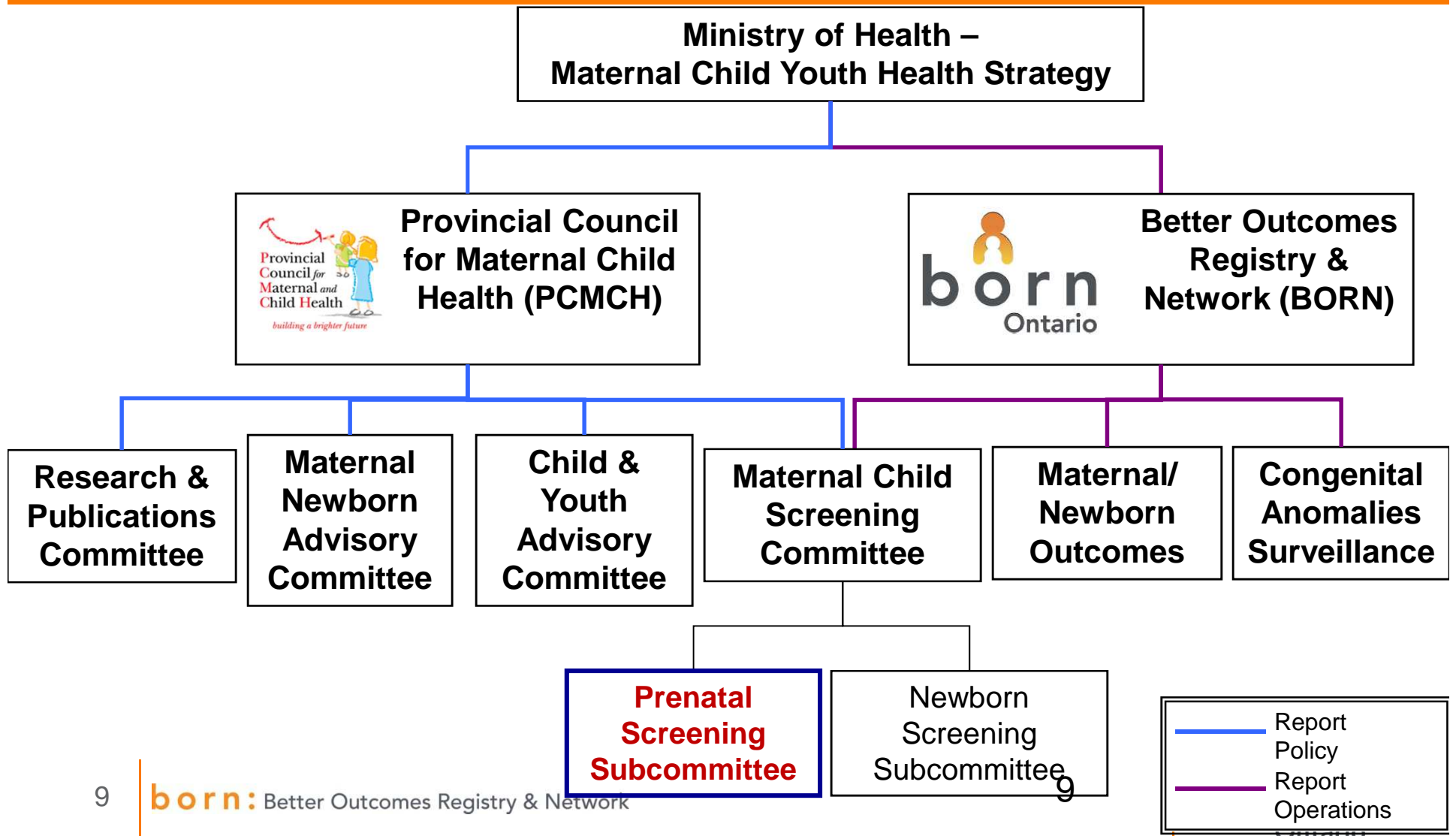


Source – BORN Ontario (Ontario Maternal Multiple Marker Screening Program Database and Niday Perinatal Database), 2009–2010

† Ontario residents only



# Committee Structure



# Prenatal Screening Subcommittee



- Previous ad hoc Ontario Consultative group for prenatal screening
- Multiple Marker Screening Database often first data collection point for information in pregnancy
- Not Provincial Prenatal Screening Program (there is none)

## Membership

- Genetic Counseling
- Genetics
- Radiology
- Maternal Fetal Medicine
- Midwifery
- Family Medicine
- Obstetrics
- Laboratory Medicine (biochemistry of screening)
- BORN
- Epidemiology/Research

# www.prenatalscreeningontario.ca



## QUICK LINKS FOR PARENTS

- ▶ What is Prenatal Genetic Screening?
- ▶ Conditions Screened
- ▶ What do My Results Mean?

## WHAT'S NEW?

Coming Soon...!



# Prenatal Screening Tests

Initial Laboratory Investigations			
Test	Result	Test	Result
Hb		HIV	
MCV		<input type="checkbox"/> Counseled and test declined	
ABO		Last Pap	
Rh		YYYY/MM/DD	
Antibody Screen		GC/Chlamydia	
Rubella immune		Urine C&S	
HBsAg			
VDRL			
Sickle Cell			

Ultrasound			Additional Lab Investigations	
Date	GA	Result	Test	Result
		Dating scan (if done)	Hb	
		18-20 weeks for morphology	ABO/Rh	
			Repeat ABS	
			1 hr. GCT	
			2 hr. GTT	
			GBS	

Discussion Topics		
<input type="checkbox"/> Exercise	<input type="checkbox"/> Preterm labour	<input type="checkbox"/> Breastfeeding
<input type="checkbox"/> Work plan	<input type="checkbox"/> PROM	<input type="checkbox"/> Circumcision
<input type="checkbox"/> Intercourse	<input type="checkbox"/> APH	<input type="checkbox"/> Discharge planning
<input type="checkbox"/> Travel	<input type="checkbox"/> Fetal movement	<input type="checkbox"/> Car seat safety
<input type="checkbox"/> Prenatal classes	<input type="checkbox"/> Admission timing	<input type="checkbox"/> Depression
<input type="checkbox"/> Birth plans	<input type="checkbox"/> Pain management	<input type="checkbox"/> Contraception
<input type="checkbox"/> On call providers	<input type="checkbox"/> Labour support	<input type="checkbox"/> Postpartum care

Prenatal Genetic Investigations	Result
a) All ages-MSS, IPS, FTS	
b) Age ≥ 35 at EDB-CVS/amnio	
c) If a or b declined, or twins, then MSAFP	
d) Counseled and test declined, or too late	<input type="checkbox"/>

# Prenatal Screening Tests: U/S

## Ultrasound (U/S) Information Sonographer or ordering provider to complete.

### Singleton/Twin A:

U/S Date: \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_  
          yyyy      mm      dd

CRL: \_\_\_\_\_ mm    BPD: \_\_\_\_\_ mm    NT: \_\_\_\_\_ mm  
          Crown-Rump Length    Bi-Parietal Diameter    Nuchal Translucency  
          CRL **41-84 mm** (45-84 mm preferred)

**Twin B:**  dichorionic  
 monochorionic  
 uncertain

CRL: \_\_\_\_\_ mm    BPD: \_\_\_\_\_ mm    NT: \_\_\_\_\_ mm  
          Crown-Rump Length    Bi-Parietal Diameter    Nuchal Translucency  
          CRL **41-84 mm** (45-84 mm preferred)

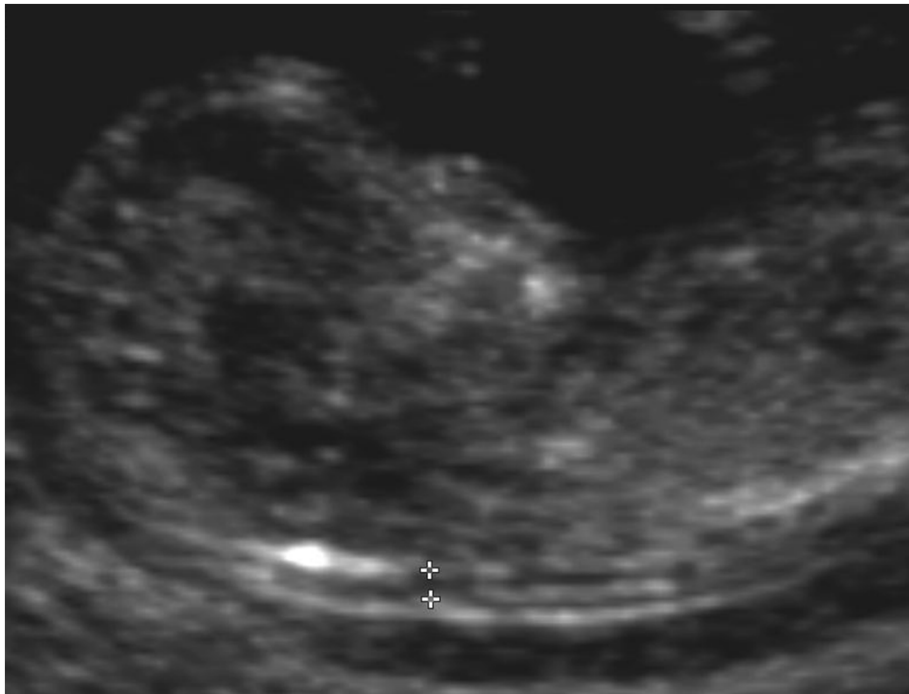
U/S Operator Code: \_\_\_\_\_ Initials: \_\_\_\_\_ U/S site: \_\_\_\_\_ U/S phone #: \_\_\_\_\_  
(only required if NT is measured)

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# THE IMPORTANCE OF QUALITY ASSURANCE

# Nuchal Translucency

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- Established concept for NT with literature supporting need
  - NT single most powerful predictor for DS
  - Important to minimize variation
- QA quantifies a standardized approach to a screening test

Back Forward fetalanomaly.screening.nhs.uk/onlineresources Reload Stop how to take a screenshot on a mac Home

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# NHS Fetal Anomaly Screening Programme

Screening Programmes

Home National Programme Quality Screening Information Local Screening Help
Search  GO

Screening Information > Professionals > Online resources

**Public**

**Professionals**

- Consent standards and guidance for Down's syndrome and Fetal Anomaly screening
- Online resources
- Cost for Down's syndrome screening strategies
- Projects
- Standards
- Education and Training
- Professional Publications - staff handbooks
- Glossary

## Online resources

The NHS Fetal Anomaly Screening Programme has recently completed the development of a number of online resources to support health professionals involved in fetal anomaly and Down's syndrome screening.

These resources include a number of tool kits, detailed information on the screening process and extra information to support continuing professional development.

1. **\*NEW\*** Resource portal - screening resources for parents and professionals
2. FMF-FASP Basic fetal echocardiography online training resource
3. The 18+0 - 20+6 weeks fetal anomaly screening scan - Your online resource
4. Files

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**1. \*NEW\* Resource portal - screening resources for parents and professionals**

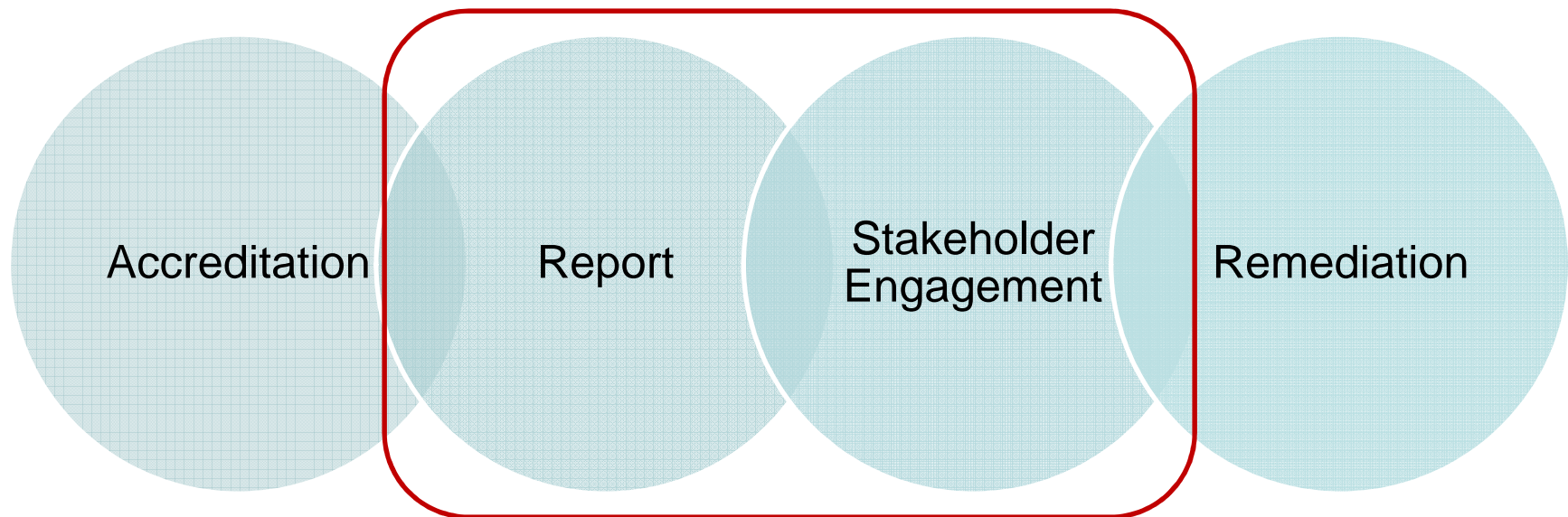
The resource portal has been developed and launched in the summer of 2011 to allow FASP to audit how their online resources are used, and in which region, to allow the screening programme to tailor education and training objectives effectively.

Popular NHS FASP resources such as the [Online Nuchal Translucency Training Resource](#) and [Condensed Education Module for Trisomy 21 \(CEMT21\)](#) are available to use within the portal, and new resources for parents and professionals are coming soon!



# Implementation Plan

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# NTQA Implementation Team

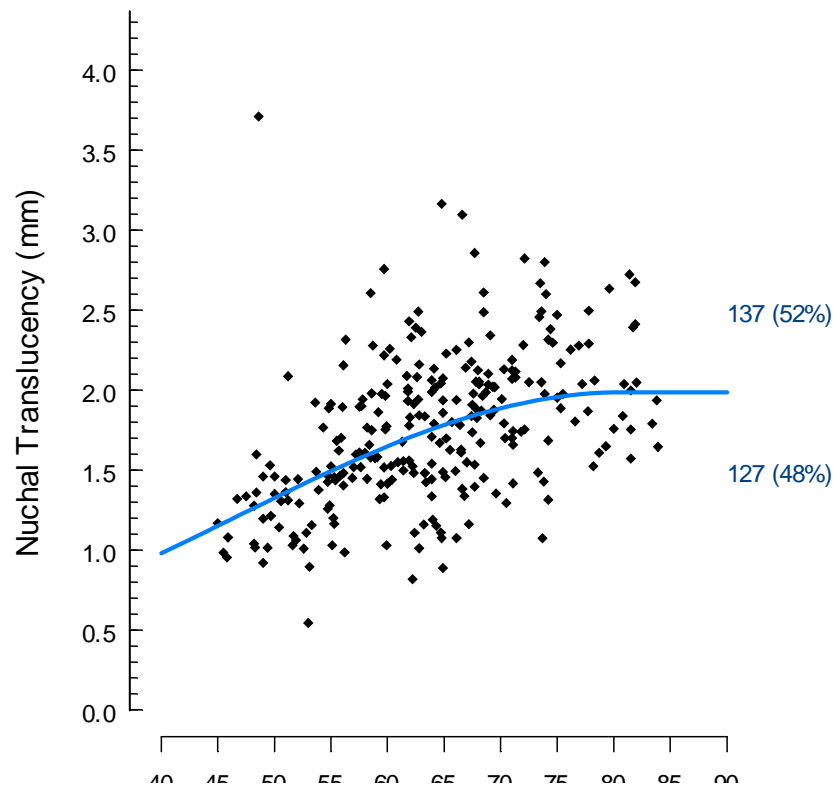
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- Prenatal Screening Subcommittee is overseeing the work
- BORN will be issuing interval reports to all accredited sonographers
- NTQA working group is building the program

# NTQA Report: Sample



◆ ID: Sample (n = 264)



Cycle

From: NA  
To: NA

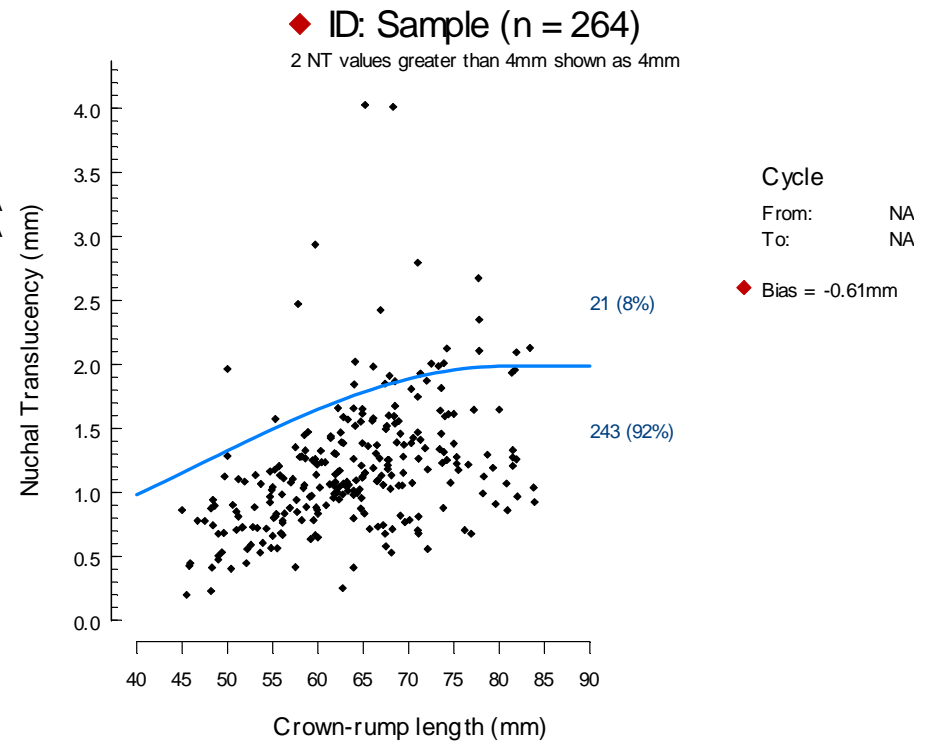
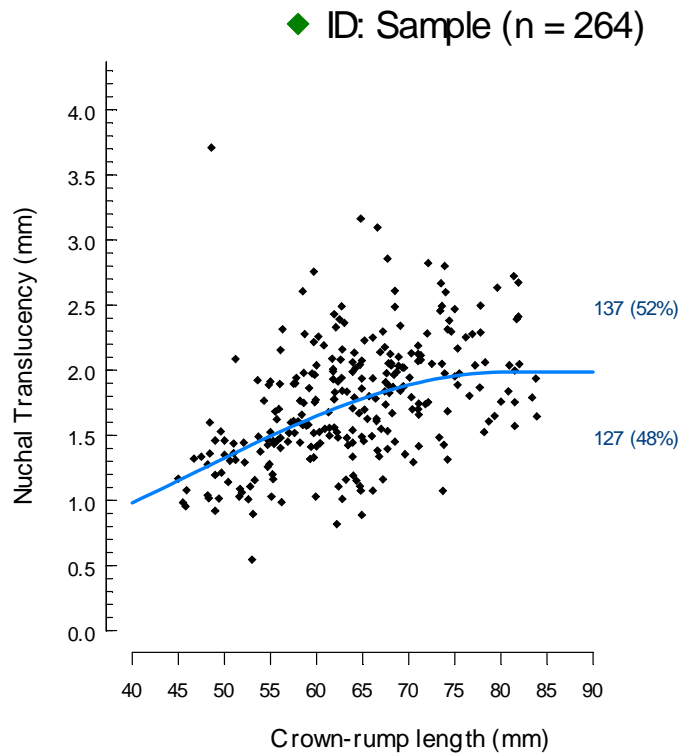
◆ Bias = 0.01mm

◆ pass

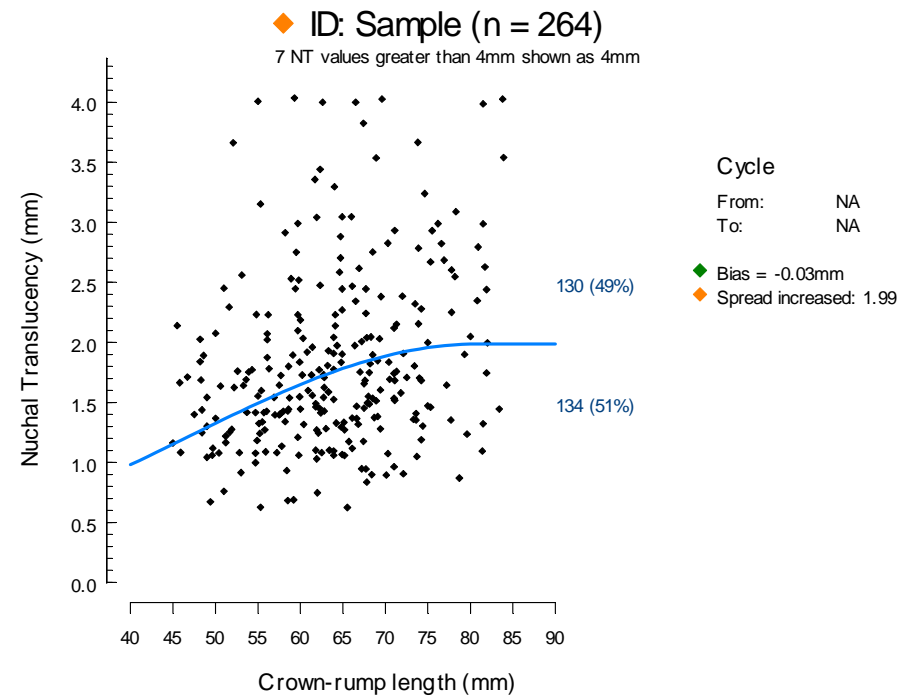
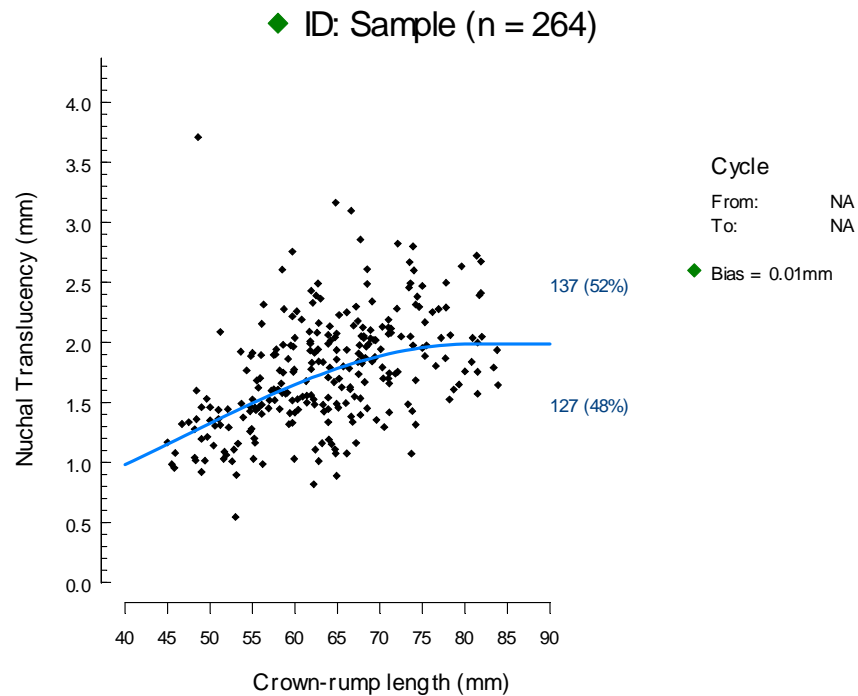
◆ warning

◆ fail

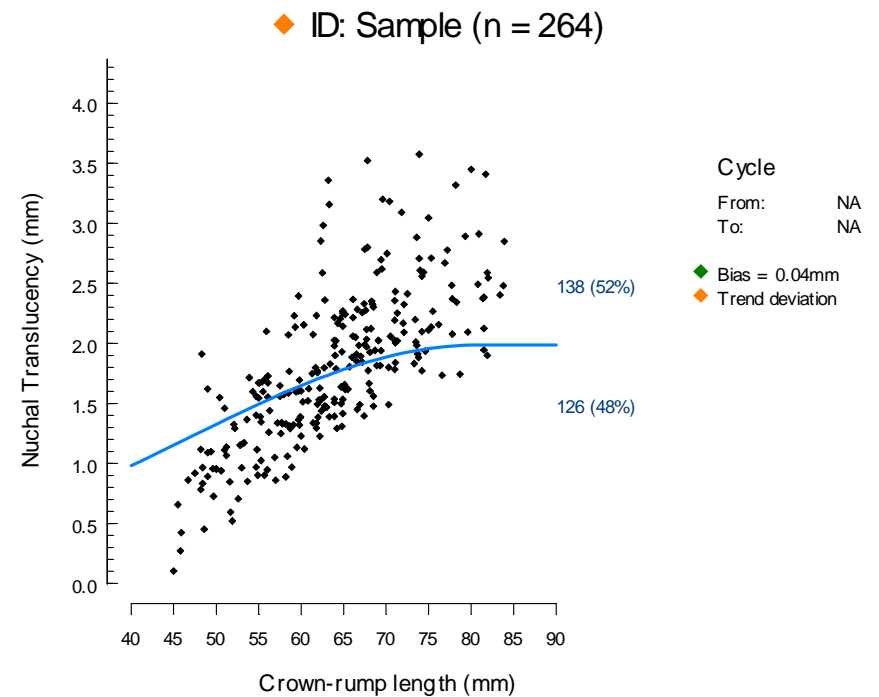
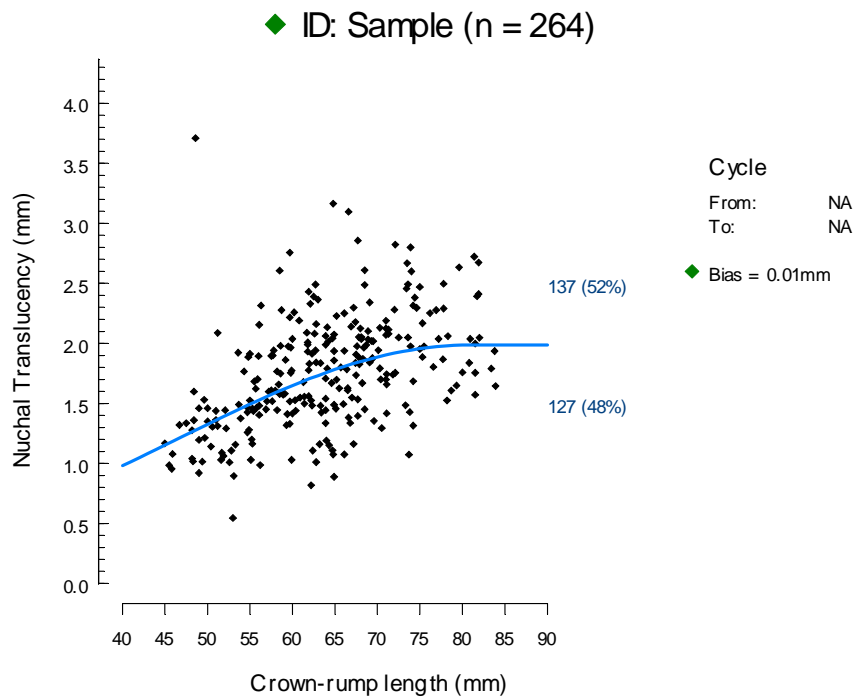
# NTQA Report: Bias



# NTQA Report: Spread



# NTQA Report: Trend



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# IMPLEMENTATION IN ONTARIO

# Data is available in the BIS

		and second samples r		
MMMSS0011	AFP level	Reported measurement level of alpha-fetoprotein (AFP) assay result based on maternal serum screen and fluid test	numeric (6,2)	
MMMSS0013	uE3 level	Reported measurement level of unconjugated estriol level (uE3) assay result based on maternal serum screen. (Cunningham, 2005)	numeric (6,2)	
MMMSS0015	hCG level	Reported total level of human chorionic gonadotrophin (hCG) assay result. (Cunningham, 2005)	numeric (6,2)	
MMMSS0017	NT level	Measurement of the nuchal translucency (NT), an echolucent area seen in longitudinal views of the back of the neck on ultrasound reported in millimeters. (Cunningham, 2005)	numeric (6,2)	
MMMSS0019	F?-hCG level	Measurement of free ? human chorionic gonadotrophin (F?-hCG) assay result (unadjusted). (Cunningham, 2005)	numeric (5,2)	
MMMSS0021	PAPP-A level	Measurement of pregnancy-associated plasma protein A (PAPP-A) assay result (unadjusted). (Cunningham, 2005)	numeric (6,2)	



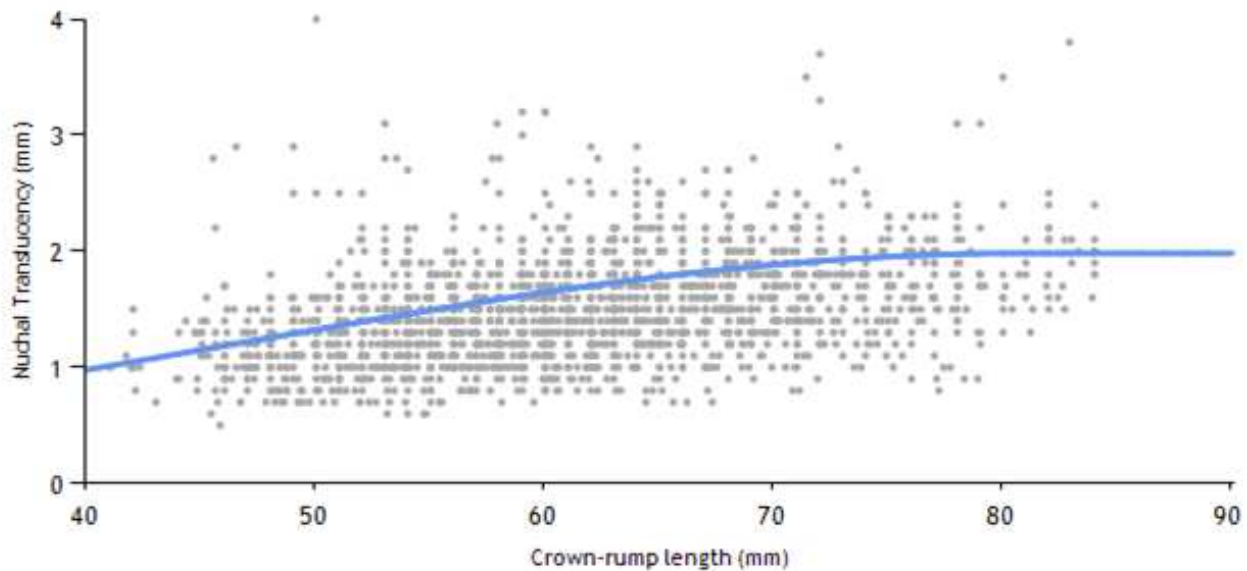
# NTQA Report: Sonographer Data



## Quality Assurance of Nuchal Translucency Measurements

### Sonographer - U



























Encounters created from 23-Mar-2011 to 31-Mar-2012



Median bias	Spread	Trend	# of scans	# of valid scans
◆ -0.2 mm	◆ 1.4	0.0	2,110	2,014

Data source: BORN Ontario, 2011-2012

# NTQA Report: Clinic Level Data

		<b>Quality Assurance of Nuchal Translucency Measurements</b>			
<b>PSO Lab Mount Sinai Hospital Summary</b>					
Encounters created from 01-Jan-2011 to 30-Mar-2011					
Sonographer	Median bias	Spread	Trend	# of scans	# of valid scans
001	 0.0 mm	0.0		1	1
002	 0.0 mm	 0.1	 -0.00912	4	4
003	 -0.2 mm	0.0		1	1
004	 0.5 mm	 0.0		1	1
005	 -0.1 mm	0.0		2	2
006	 0.1 mm	 0.0		1	1
007	 -0.2 mm	0.0		1	1
008	 -0.5 mm	 0.0		1	1
009	 0.3 mm	0.0		1	1
010	 0.0 mm	 0.9	 0.09082	2	2
011	 0.0 mm	0.0		1	1
012	 -0.9 mm	 0.0		1	1
013	 0.1 mm	0.0		1	1

# Stakeholder Engagement

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- John Lai & Shelley Dougan leading the efforts to inform the community of the work being done
  - Postings on relevant society websites
  - Upcoming communication to Quality Advisors
  - Ongoing gathering of contact information to facilitate further communication

# Work still to do

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- Identify how best to get the reports to the sonographers and their Quality Advisors
- Determine remediation recommendations

# Questions?

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[www.BORNOntario.ca](http://www.BORNOntario.ca)

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