Contributions of Midwives to Perinatal Health Surveillance in Ontario

Invitational Gathering Birthing and Midwifery May 2008
Acknowledgements

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Objectives

- To briefly review the history of the Ontario midwifery database
- To describe the current state of perinatal surveillance in Ontario
- To outline initiatives underway to enhance and expand the collection and use of perinatal data in the province and Canada
- To discuss how high quality data can be used to improve planning and the coordination of the delivery of maternal-newborn care
- To report outcomes of Ontario midwifery services
Midwifery Data – History

- In 1994, Ontario was first province in Canada to regulate midwifery but no database was established in conjunction with the funding program.

- The Association of Ontario Midwives initiated data collection process but voluntary nature (70% participation) prevented reliable data for sensitive indicators

- Ministry studied feasibility of comprehensive data system with multi-stakeholder participation in 2001-02.

- April 2003 – introduction of ministry-funded mandatory ministry system of manual entry and validation of clinical/financial/utilization data (incorporating AOM indicators)

- August 2005 – launch of web-based access to data via a reporting and analysis tool (Metrics3D)

- September 2006 – online data entry and processing

- March 2008 – four full years of clinical/financial/utilization data available
Midwifery Database Indicator Components

Maternal - General
- age
- location
- smoking
- obstetric history
- visit profile

Maternal - Antepartum
- prenatal visit
- multiple gestation
- miscarriage-abortion
- Group B Strep

Maternal - Intrapartum
- labour type
- induction/augmentation
- indications
- pain relief
- episiotomy/laceration
- birth location
- hospital admission date/time

Maternal – Postpartum
- discharge date/time
- maternal conditions/complications
- hospital care, consultations and ToC

Infant Health
- feeding
- conditions/complications
- hospital care
- consultations/ToC

Infant - Neonatal
- Apgar 1, 5
- birthweight
- resuscitation
- congenital anomalies
- hospital details
- neonatal death
- infant hearing screen

Infant - Birth
- date/time
- mode
- presentation
- indications

Administrative Details
- MPG/TPA Information
- Billing Information
- Provider Information
- Client details - GA
- Service dates
Current state of perinatal surveillance in Ontario
Ontario Perinatal Surveillance System (OPSS) Membership

- Mr. Jim Bottomley          Ms. Ann Mitchell
- Dr. Pranesh Chakraborty   Dr. Renato Natale
- Ms. Liz Darling           Dr. Terry O’Driskoll
- Mr. Paul Fleiszer         Dr. Arne Ohlsson
- Ms. Wendy Katherine       Dr. Anne Summers
- Dr. Peter Kim             Dr. Mark Walker
Niday Perinatal Database

- Developed by PPPESO
- Web-based database
- 95% of births in Ontario
- “Real-time” perinatal data
- Partnership with hospitals, midwives and public health units
- Program management, benchmarking, CQI, planning, evaluation and research
- Funded through Ontario Midwifery Program
History and Evolution of Niday

1997
Common logbook/definitions

1998
Computerized data entry program installed in 16 hospitals

1999
Regional reports produced

2000
Data quality audit
PPPESO using data for priority setting process
...History and Evolution of Niday

- **2001**: Moved to Web-based Criticall platform
- **2002**: Early Years Challenge Fund
- **2003**: Development of Neonatal module
- **2004**: New partner: CHN
- **2005**: 1st Ontario perinatal Report
- **2005/06**: 1st OPSS report
  - NPD, M/W, FAN
- **2005**: New partners: SWOPP, MOHLTC
Fetal Alert Network

- To improve the **access quality** and **delivery** of health care for pregnant woman whose babies are diagnosed with birth defects

- Clinical care

- Outreach and education

- Surveillance

- Research
Ontario Maternal Multiple Marker Screening Database

• The repository of prenatal screening data for the province since 1993

• Dependent on input from multiple sources – labs, clinics, hospitals, MOHLTC

• Includes information on patient demographics, pregnancy details, test and interpretation results, counseling, cytogenetics and ultrasound, birth outcomes

• Evaluation of screening tests, regional and provincial programs.

• Generate hypotheses and perform research

Courtesy Anne Summers
Newborn Screening

• Population based attempt to identify disorders in neonates that, if undetected, would lead to mental retardation or have life-threatening consequences and where treatment is available.”

• Targets 28 diseases:
  
  • Inborn errors of metabolism (e.g. PKU, MCAD)
  • Congenital hypothyroidism
  • Congenital adrenal hyperplasia
  • Sickle Cell disease
  • Cystic Fibrosis
A review of existing maternal-newborn data holdings funded by the Ministry of Health reveals that:

- There are many rich sources of data, however:
  - There is duplicate data collection
  - Data element definitions are misaligned
  - There are few appropriate and timely health system planning and accountability measures
  - There is little data linkage

- Partnership is needed to ensure a comprehensive data solution that will effectively support the activities and goals of the emerging strategy
Initiatives underway to enhance and expand the collection and use of perinatal data:
Ontario’s Proposed Maternal, Child and Youth Health Strategy

- Primary Care
- Secondary Care
- Tertiary Care
- Quaternary Care

Prevention & Promotion

- Fertility & Preconception
- Prenatal & Perinatal
- Infant
- Child
- Youth
- Transition to adulthood

- Timely and Integrated Access to High Quality Services
- Improved Health Through Early Intervention
- Enhanced System Planning & Integration
The comprehensive data solution will:

- Support evidence-based strategy development and implementation
- Provide high quality data that supports innovative health planning and health system management / evaluation
- Eliminate redundancies and enhance efficiency
- Mandate data standards
- Improve linkages between data holdings
- Track individuals through the “continuum of care”
- Support research and innovation
OPSS Data Vision

OPSS Web Portal
One stop shopping
Users are given privileges to access certain components of portal
Data transfer occurs seamlessly to appropriate organizations

Common data fields
ie. demographics

Niday
Midwifery
FAN
Newborn Screening
Maternal Serum Screening

Privilege-based data retrieval
OPSS Deliverables

- Reduce Duplication
- Allow one point of data entry
- Appropriate access for users
- Privacy Status
- Design, develop and implement portal system
- Birth registration
How does Ontario compare with Canadian Perinatal Surveillance System

- Real time data (not vital stats and CIHI)
- More robust variables
- Able to track anomalies less than 20 weeks
- CIHI has no information on newborn screening or prenatal screening
- Birth registration and vital stats issue in Ontario
- Need unique identifier for linkage
High Quality Data can Improve Planning and Coordination of the delivery of care

- Indicator Reporting
- Quality Improvement
- Health Services Planning
- Clinical research
- Potential for longitudinal population health research
Health Services Research

MSS | Fetal | Nid-Mid | Newborn | ICES

0 12-20 weeks 20-41 weeks Birth Childhood

Health | Education | CIHI
Examples of Ontario Perinatal Outcomes and Midwifery Services
Figure 1 - Ontario Hospitals with Intrapartum Services by Birth Volume 2006-07

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<th>LHIN</th>
<th>Regions</th>
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<tr>
<td>1</td>
<td>Erie St. Clair</td>
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<tr>
<td>2</td>
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<tr>
<td>3</td>
<td>Waterloo Region</td>
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<td>North West</td>
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Birth Volume
- No obstetric beds and 1-5 births (6)
- 1-100 births (18)
- 101-250 births (7)
- 251-1000 births (23)
- 1001-3000 births (25)
- 3001-5000 births (13)
- >5000 births (2)

Source: Ontario Midwifery Program February 2008
Self reported maternal smoking rate by LHIN

Source: Niday Perinatal & Midwifery Databases
Preterm birth rate by LHIN - live births <37 weeks

Source: Niday Perinatal and Midwifery Databases 2006-07
Preterm birth rate – midwife-attended live births

Source: Ontario Midwifery Program Database, Ministry of Health and Long-Term Care
Low birth weight rate by LHIN – live births <2500g

Source: Niday and Midwifery Databases 2006-07
Rate of low birth weight - midwife-attended births

Source: Ontario Midwifery Program Database, Ministry of Health and Long-Term Care
Induction rate by LHIN - Ontario

Methods: Amniotomy, Oxytocin, Cervidil, Cytotec/Misoprostol, Mechanical, Other
Niday and Midwifery Databases 2006-07
Induction rate - midwifery care in Ontario

Source: Ontario Midwifery Program Database, Ministry of Health and Long-Term Care
Operative birth rate by LHIN

Source: Niday Perinatal & Midwifery databases 2006-07
Operative birth rate – live births in midwifery care

Source: Ontario Midwifery Program Database, Ministry of Health and Long-Term Care
Detailed feeding status on discharge by LHIN

Feeding on discharge (Healthy infants 37+ weeks) 2006/07

Source: Niday Perinatal & Midwifery databases