



THE NEW AND REVISED NOVA SCOTIA PRENATAL RECORD

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The NS Prenatal Record offers prenatal care providers a standardized format to document assessment, investigation and treatment during pregnancy. The prenatal record:

- Outlines a systematic, sequential approach to prenatal care
- Provides information regarding screening and testing at specific gestational ages
- Encourages documentation of the prenatal care provided
- Provides a format to share information with referring physicians and other care providers
- Is a medico-legal document
- Is a teaching and research tool and is a data source for the Nova Scotia Atlee Perinatal Database
- Is a source of information to assess quality of care
- Is a means of maintaining a pregnancy-related problem list/care plan
- Is a record that the woman should have the option to carry a copy of (many prenatal care providers offer a copy of the prenatal record to women after 36 weeks and some provide a copy for the entire pregnancy).

The RCP has been creating and distributing the prenatal record, free of charge, to prenatal care providers for over twenty-five years. The newly revised NS Prenatal

Record was launched at the end of July. Prenatal care providers will recognize the format, which is very similar to the previous prenatal record. However, there are a number of changes which arose from the valuable feedback we received from prenatal care providers around the province, from changes to clinical practice guidelines, from the latest evidence and from expert consensus. In addition, information was gathered through piloting of a draft at three obstetrical clinics in the province.

In addition to a number of minor changes, four main topics have been modified, enhanced, or added to the new prenatal record. The new sections address:

- 1) race and ethnicity
- 2) pregnancy dating
- 3) genetic screening
- 4) prenatal screening

Race and Ethnicity

Individuals of certain ethnic groups have an increased risk of being carriers of inherited diseases and may have an increased risk of having a child with specific genetic conditions. Carriers of these conditions are generally healthy. Therefore, in order to perform appropriate carrier screening, asking each woman's and her partner's ethnic background is important. The choices for selection were carefully chosen using data from

Statistics Canada, the document entitled "A Cultural Competence Guide for Primary Health Care Professionals in Nova Scotia" from the Nova Scotia Department of Health, and information about prominent ethnic groups in Nova Scotia with specific inherited disorders.

This information may be gathered by asking the woman directly or by offering the top (demographic) portion of the Prenatal Record 1 to the woman to fill out.

Pregnancy Dating

Accurate pregnancy dating is necessary as there are a number of prenatal tests that are offered only during certain weeks of the pregnancy.



The LMP is the first day of the last menstrual period and is felt to be an accurate method of dating the pregnancy if the woman is certain about the dates and her periods are regular with a normal cycle length. Ultrasound dating is only used if there is an uncertain LMP; cycles are irregular/long, the periods are abnormal and/or the woman was using oral contra-ceptives during conception.

Ultrasound dating may also be used if there is discordance between menstrual and ultrasound assessment. (i.e. > 5 days difference in the first trimester or >10 days difference at the 18-20 week U/S). Re-dating should be done cautiously if a patient is certain of the LMP and cycles.

Genetic Screening

Reasons for genetic screening may include:

- Family History:
- Consanguinity** (if biological parents are related). This should be discussed if there



is a family history of an autosomal disorder.

- Previous child with a genetic condition or congenital anomaly
- Predisposition to certain conditions
- Carrier screening related to certain ethnic backgrounds
- Abnormal ultrasound finding
- Exposure to chemicals or medications during pregnancy
- History of miscarriages, infertility or stillbirth

Some genetic conditions associated with specific ethnicities include:

Ashkenazi Jewish: Canavan, Familial Dysautonomia, Tay- Sachs

Bas-St-Laurent French: Tay-Sachs

Saguenay-Lac-St-Jean French: ARSACS, COX-SLSJ, Cystic Fibrosis, HMSN, Tyrosinemia

Yarmouth County Acadian: Alström, Niemann-Pick type C.

*See Diagram 1, page 4

Further information and definitions of the above conditions are available on the **Maritime Medical Genetics** website at <http://www.iwk.nshealth.ca> click on *Care Services* then *M*, choose *Maritime Medical Genetics Service* or call (902) 470-8754. A genetic counsellor is available Monday to Friday 8:30am-4:30pm.

Prenatal Tests

There are two types of prenatal tests available: screening tests and diagnostic tests.

Screening tests include the first and second trimester maternal serum tests, integrated maternal serum testing, early pregnancy review and integrated prenatal testing. These tests provide women and care providers with risk information about specific conditions.



Maternal Serum Testing (MST):

These are blood tests that measure naturally occurring substances that are produced during pregnancy. The tests are offered to all women.

The first is completed between 9-13⁺⁶ weeks gestation and the second is completed between 15-20⁺⁶ weeks gestation.

Integrated Maternal Serum Testing

(IMST): This test incorporates maternal age, first trimester maternal serum test (MST) and second trimester maternal serum test (MST) into a combined or integrated assessment of risk for fetal chromosomal abnormalities (i.e. Down syndrome), open fetal defects such as spina bifida and placental abnormalities.

Early Pregnancy Review (EPR): Women with specific risk factors and all women over age 35 years at their EDD should be offered an early pregnancy review in the Fetal Assessment and Treatment Centre (FATC) at the IWK Health Centre. An EPR is an ultrasound that reviews viability, dates, early development and assessment of fetal abnormalities through specific markers, particularly a nuchal translucency. This

test is best if used in conjunction with the maternal serum test for assessment of risk for Trisomy 21.

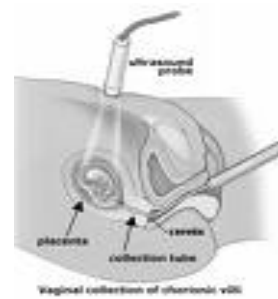


Diagnostic tests include: CVS (chorionic villus sampling) and amniocentesis. These tests

provide absolute diagnostic information about certain conditions.

CVS involves the removal of a small sample of placental tissue, chorionic villi, which contain cells of fetal origin. It is usually done between 11-13 weeks of pregnancy. The procedure is ultrasound-guided. Depending on factors such as the location of the placenta, this procedure may be done either by inserting a needle through the abdomen (like

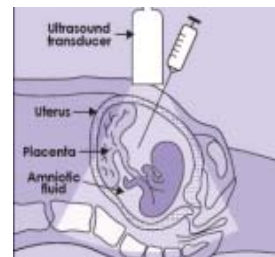
an amniocentesis) or by small biopsy forceps inserted through the cervical canal.



CVS can detect a chromosome abnormality. In some circumstances it may also be used to detect other genetic conditions that have previously been identified in a family.

The results of testing take 2-3 weeks for chromosome abnormalities. For other genetic conditions the results can sometimes take a bit longer. The chance of miscarriage for any woman at this stage of pregnancy without CVS, is about 4%. Women who have a CVS have an additional 1% (procedure-related risk) chance to have a miscarriage.

Amniocentesis is an ultrasound-guided procedure in which a needle is directed into the gestational sac and a sample of amniotic fluid is withdrawn. This fluid contains cells of fetal origin that are isolated and cultured in the lab. It is usually



done between 16 to 18 weeks of pregnancy. An amniocentesis can detect a chromosome abnormality. It may also be able to detect other genetic conditions for individuals whose baby has a higher risk. It usually takes 2-3 weeks to obtain the results of chromosome testing. Results for other genetic conditions may take longer. The risk of miscarriage for any woman in the second trimester of pregnancy is about 2-3%. Women who have an amniocentesis have an additional 1/200 to 1/400 chance of miscarriage due to the procedure-related risk.

Women requiring additional screening or diagnostic tests beyond the maternal

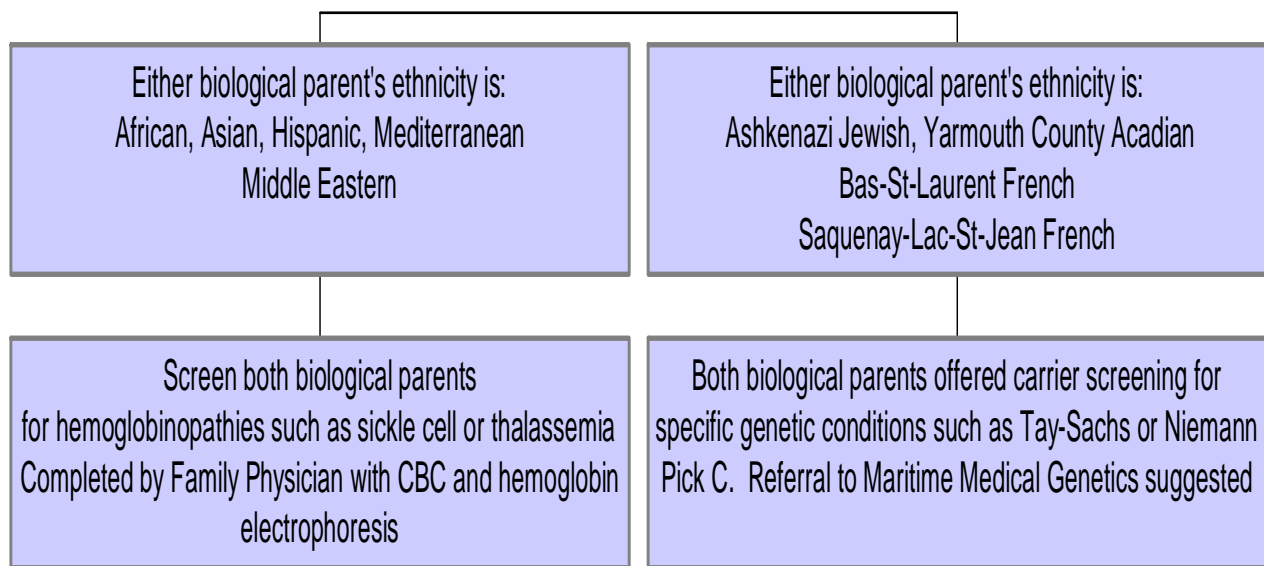
serum testing should be referred to the Fetal Assessment and Treatment Centre (FATC) at the IWK Health Centre. For information about FATC please call (902) 470-6654.

If you have comments or questions about the Nova Scotia Prenatal Record please contact Annette Ryan at annette.ryan@iwk.nshealth.ca or (902) 470-6619.

To order Nova Scotia Prenatal Records and the associated materials please contact RCP at (902) 470-6798 or check out the website at <http://rcp.nshealth.ca>

Diagram 1

Genetic Screening Based on Ethnicity



A detailed reference list can be found in the Nova Scotia Prenatal Record Companion document (sent out to all prenatal care providers) or on the web at <http://rcp.nshealth.ca>

Addendums to NS Prenatal Record Companion document

Page 5: Definition for Para should also state "or stillbirths which are greater than or equal to 500g or 20 weeks gestation."

Example of parity of twins should read "For twins there is one pregnancy but two fetuses..." and it should be G_1P_1

Page 22 Disregard text "Type title here" in Rubella diagram

Healthy Pregnancy Weight Gain

Information about healthy pregnancy weight gain from Clinical Nutrition Services at the IWK Health Centre is included as an insert.

New Canadian Hyperbilirubinemia Guidelines

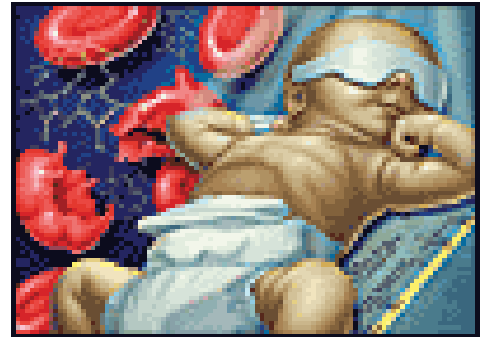


Canadian
Paediatric
Society

The Canadian Paediatric Society (CPS) published a new position statement in June 2007. "*Guidelines for detection, management and prevention of hyperbilirubinemia in term and late preterm newborn infants (35 or more weeks' gestation)*" outlines new recommendations for screening and provides guidance for follow-up of infants at risk for developing severe hyperbilirubinemia. The statement also provides recommendations for laboratory investigations and treatment of infants in this population. The CPS position statement can be downloaded from the Canadian Paediatric Society's website: <http://www.cps.ca/english/statements/FN/fn07-02.pdf>

There are many components of the CPS position statement that reinforce practices already in place in Nova Scotia. There are other aspects, however, that require discussion and planning to implement fully. Specifically, we need to ensure that every baby has a screening bilirubin done within the first 72 hours of life (serum or transcutaneous), has his/her risk for developing severe hyperbilirubinemia assessed, and that appropriate follow-up is arranged. These aspects of the CPS position statement require timely communication among caregivers and lab staff in hospitals and caregivers in the

community. The treatment recommendations outlined in the statement are consistent with current practices but provide a helpful review of 'conventional' and 'intensive' phototherapy as well as the importance of such practices as continued breastfeeding for breastfed babies with hyperbilirubinemia.



In Nova Scotia we have formed a Hyperbilirubinemia Guideline Implementation Working Group. This group will develop a plan to implement the CPS hyperbilirubinemia guidelines in Nova Scotia, including the screening recommendations and treatment components of the position statement. A larger Reference Group with representatives from each District Health Authority and the IWK will review the materials produced by the Working Group and add provincial context to the plan. Good communication across the continuum of care and strengthening the primary health care system for new families has advantages that extend beyond prevention and treatment of hyperbilirubinemia. As a province, we are looking at implementation of the CPS position statement as an opportunity to refocus our energy on this important time period. Many aspects of our provincial guidelines for postpartum and postnatal care, "*Healthy Babies, Healthy Families: Postpartum & Postnatal Guidelines*" will be helpful in developing a comprehensive plan for transition of newborns and new mothers from hospital to home and community (<http://rcp.nshealth.ca/files/PostpartGuideBooklet.pdf>).



Updating the Rh Program Database

*Marg Parsons, Coordinator, Rh Program
&
Barry Campbell, Programmer, RCP*

The Rh Program of Nova Scotia is about to get a database upgrade. Both the Rh Program and the Reproductive Care Program of NS are excited about the benefits the new upgrade brings.

The Rh Program focuses on the prevention of alloimmunization and the management of problems caused by antibodies during pregnancy. The program also provides an education and consultation service to health caregivers throughout Nova Scotia and when asked, the Maritimes. Maternal alloimmunization occurs when a woman's immune system is sensitized to foreign red blood cell surface antigens, stimulating the production of immunoglobulin G (IgG) antibodies. The Rh factor, an inherited characteristic, is an antigen found on the red blood cells of about 84 percent of the North American population. Those who carry this factor are Rh "positive" while the remaining 16 percent who do not are called Rh "negative". While prevention of Rh alloimmunization is only possible for Rh negative women, any woman who is pregnant can develop antibodies that are harmful to her baby. Antibodies cross the placenta to the fetus and destroy fetal red blood cells, potentially causing fetal anemia during pregnancy and jaundice (hyperbilirubinemia) in the newborn. To prevent antibody production, candidates are given injections of a blood product called Rh (D) immune globulin (WinRhoSDF™ or "WinRho").

RCP has managed the Rh database since 1988 when it was in SIR (Scientific Information

Retrieval), a database management system popular among researchers in the 1980's. RCP moved the database to the Oracle platform in 2002, adding a graphical interface.

This brought benefits such as easier data entry and data searching but due to insufficient resources to reorganize the data, the system retained many of its original limitations. The Rh Program uses their database daily to monitor patient care and provincial standards for care of pregnant women with Rh negative blood.

In this, the system's third incarnation, the RCP database team has completely overhauled both data structures and data entry forms to more closely reflect how the Rh Program fulfills their role. Data are now organized around pregnancy events rather than around the clinical procedures triggered by those events. Examples of such events are antepartum bleeding, amniocentesis, 28 week milestone and delivery.

Marg Parsons, Coordinator of the Rh Program says, "it will now be easier to assess how different events may impact pregnancy". The new data format also makes it easier to monitor care for women with unusual complications. The development of anti-D antibodies, for example, may be related to a previous antenatal bleeding event where fetomaternal hemorrhage (FMH) testing or WinRho administration was omitted. A Kleihauer-Betke ("Kleihauer") test is performed routinely on Rh negative women to determine the presence and volume of fetal red blood cells in the mother's circulation, a condition that may require additional WinRho beyond the standard dose. The ability to more easily track unusual complications will help to improve clinical care.

The new system is more flexible for data entry. The antibody status of a patient can be changed and records of multiple births can be input more readily. Both of these situations required re-entry of data in the previous system. All old data have been migrated

to the new format including data from version one, which were not directly available in the previous system.

While the Rh Program uses the database primarily as a clinical management tool, captured data also benefits research. For instance, the Society of Obstetricians and Gynaecologists of Canada stated in 2003¹ that currently there is poor evidence for including or excluding routine post-partum FMH testing since the cost-benefit for Rh negative mothers at risk has not been determined. Data from the Rh database will allow researchers to explore topics such as the incidence of elevated Kleihauer results requiring additional WinRho beyond the routine dose. Once Rh data are linked to the NS Atlee Perinatal Database, also maintained by RCP, combined data will allow researchers to study pregnancy outcomes in relation to antenatal management of women with antibodies.

The new Rh database will help to fulfill the long time goal of having a better body of evidence with which to evaluate the effectiveness of the Rh Program in the prevention and management of allo-immunization in pregnancy.

For further information or questions about the Rh Program, please contact Marg Parsons at (902) 470-6458 or by e-mail marg.parsons@iwk.nshealth.ca.

Reference

1. Prevention of Rh Alloimmunization. SOGC Clinical Practice Guidelines. JOGC. No. 133, September 2003.

IMPORTANT

MUMPS VACCINE is a live vaccine and should not be administered in pregnancy. Women should be asked about pregnancy or offered a pregnancy test prior to being vaccinated.



The Ages & Stages Questionnaires® (ASQ): A Parent Completed, Child Monitoring System

Public Health Services (Capital District Health Authority) is pleased to offer families a new option to learn about their children's development. The Healthy Beginnings Program (formerly the Family Health Team) is using *The Ages & Stages Questionnaires® (ASQ): A Parent Completed, Child Monitoring System (2nd Ed.)* (Bricker & Squires, 1999) to provide families with this learning opportunity.

The Ages & Stages Questionnaires are a series of 19 questionnaires that are written for families to complete on their children. Originally developed in 1980 at the University of Oregon, the tool has been well researched. The questionnaires are grouped into the five domains of development: communication, problem solving, fine motor, gross motor, and personal-social. Each domain has six items which are responded to as yes, sometimes, or not yet. Prematurity (37 weeks gestation or younger) is corrected for until (not including) the 24 month old questionnaire. The questionnaires have predetermined cut off points for the scores (two standard deviations below the mean score). Concurrent validity studies comparing a child's score on the ASQ with other diagnostic tools (Bayley, Gesell, McCarthy Scales, and Stanford-Binet) averaged 84% across questionnaires.

The Developmental Screening option will be introduced in the Healthy Beginnings Program in two phases. Families who are screened at birth to be 'at risk' and are already being seen by an Enhanced Home Visiting Initiative Public Health Nurse are now being told of the Developmental Screening option. Many of these families will participate in the Enhanced Home Visiting Initiative

as usual and will have a Community Home Visitor who will be able to support them as they learn about the new questionnaires. Community Home Visitors will be providing as much support as each family needs in completing the questionnaire. The second phase will include all families with new babies in the Capital District Health Authority (targeting to begin in fall 2007).

Should anything be identified that does not appear to fit within typical developmental trajectories, families will be provided with contact information for the appropriate resources in their community (developmental resources or family resource centres). Families will be encouraged to contact their Family Physician as well. In addition, upon entry to the project, a program note will be sent to the Family Physician indicating the family's participation.

Talks are ongoing with provincial and district public health representatives as to whether this program will be available in other parts of the province in future.

More information regarding the tool can be found at: <http://agesandstages.com>.

For information related to the project, please do not hesitate contacting:

Sarah Melanson, Early Childhood Consultant, 481-5926, sarah.melanson@cdha.nshealth.ca

Dr. Gaynor Watson-Creed, Medical Officer of Health, 481-5883, gaynor.watson-creed@cdha.nshealth.ca

Reference

Bricker, D.D., Squires, J., & Mounts, L. (1999). *Ages & Stages Questionnaires: A Parent-completed, Child-monitoring System*. Baltimore, MD: Paul H. Brookes Publishing Co.

Hot Topics!



Changes to Fetal Health Surveillance Guidelines

The Society of Obstetricians and Gynecologists of Canada (SOGC) released new and updated guidelines for Fetal Health Surveillance in Labour in September 2007. A national working group met in October 2007, prior to the AWHONN conference, to discuss revisions to the Canadian



Perinatal Regionalization Coalition manual that was created using information from the SOGC's previous guidelines on Fetal Health Surveillance in Labour released

in 2002. Changes to Fetal Health Surveillance workshops provided by the nurses at RCP will be made throughout the fall and a new Fetal Health Surveillance education program will be offered in the spring of 2008. We encourage care providers to check out the SOGC website (www.sogc.org) for a copy of the new Fetal Health Surveillance guidelines.

35 YEARS!!!

RCP will be celebrating its 35th year in 2008/09. We are looking for celebration ideas. If anyone has conference/workshop ideas involving research and/or clinical topics in perinatal care or if you have particular keynote speakers in mind, please send your ideas to Marilyn Muise, RCP Program Manager at marilyn.muise@iwk.nshealth.ca

To submit articles or photos for the next newsletter please contact Annette Ryan at (902) 470-6619 or annette.ryan@iwk.nshealth.ca by January 31, 2008