Healthy Beginnings: Guidelines for Care During Pregnancy and Childbirth

This document was written and reviewed by members of the Clinical Practice—Obstetrics Committee and approved by the Executive and Council of the Society of Obstetricians and Gynaecologists of Canada (SOGC).

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INTRODUCTION

The main mission of the Society of Obstetricians and Gynaecologists of Canada (SOGC) is to promote optimal reproductive care for all Canadians. The Society and its members are highly involved and interested in the provision of care during pregnancy and childbirth. This field is in a state of constant evolution, particularly due to changing scientific evidence and greater consumers’ involvement in health. As a result, the appropriateness of some medical practices or hospital policies have been questioned, particularly when viewing a normal process such as childbirth.

Pregnancy and birth, as all of us who are health caregivers and/or parents know, is a unique life event. As physicians, we are concerned with the physiologic process—what is normal, what is abnormal and how to diagnose and treat abnormalities. Our patients seek medical care because it is also important to them that all goes well, but in addition, pregnancy and birth for them is an important life event. As Sheila Kitzinger says:

"Birth is a rite of passage which is not only important in the developing consciousness of a woman who becomes a mother, but usually also has special meaning for the father, the extended family of each, and the wider society within which birth takes place."1

The tendency for the medical model to treat pregnancy and childbirth as an illness rather than an expression of health has been criticized by women and their advocates. As a result of public pressure, there has been more of an emphasis over the past 20 to 30 years on promoting and enabling the “normal” process within the medical/institutional setting.

There are clearly many opportunities available for promoting and supporting pregnancy and birth as normal events while maintaining and improving the excellent medical surveillance and care that has contributed to our patients’ favourable perinatal and neonatal outcomes that Canadians have come to expect.

The cost of health care has also become a prominent force and should be considered when formulating obstetrical policies. Procedures or policies that have not proven to be clearly beneficial in improving outcome should be avoided.

In this context, the Obstetrical Clinical Practice Committee undertook an extensive review of the scientific and sociologic evidence concerning antepartum, intrapartum and postpartum care to determine what is essential to the provision of safe and effective care during pregnancy and childbirth. The committee has considered the provision of care in obstetrics at three different levels:

1. The human experience;
2. Evidence-based clinical practice;

To achieve its goal, the committee has extensively reviewed scientific data available from the Cochrane Pregnancy and Childbirth Database and from Medline searches. It also incorporated Clinical Practice Guidelines already completed by other SOGC committees (e.g. Maternal-Fetal Medicine Committee) and used the experience and expertise of its members, which reflect the diversity of obstetrical care across this country (geographic, university, community-based, and general practice and nursing).
All recommendations are based on the best scientific data available, and where scientific data are not available, this is clearly stated.

**THE HUMAN EXPERIENCE**

In the majority of cases, pregnancy and birth are normal, natural processes. Most births in Canada take place in hospitals, and it is therefore the responsibility of hospital administrators to provide and to create an environment that supports this important event. In this context, it is felt that the hospital should be a non-threatening environment in which the patient can openly express her preferences without feeling that she is contradicting hospital policy. The use of a “birth plan” is also effective and encourages the caregiver to adopt a more flexible way of working. In the last two decades, many hospital policies justifiably came under criticism due to their lack of flexibility, or were deemed unnecessary. The routine use of an enema and perineal shaving at the time of admission and the routine use of an intravenous line during normal labour are good examples of the latter and should be abandoned.

**SAFETY FACTORS**

Pregnancy and birth are natural, but those with experience in obstetrical care know the natural outcome of a pregnancy is not always perfect and sometimes can even be hazardous. This reality was also recognized in very ancient religious texts more than two thousand years ago, when a pregnant woman would not be expected to follow the different religious rites as soon as labour started because after this time, her life was considered to be in danger. Excluding those people who are ready to accept any outcome passively as the “Will of God”, the great majority agree that some form of standardized care and assistance is desirable for safety during labour and delivery. Jordan states: “Because of the importance of the birth event for individuals, for the continuity of families, the existence of communities and indeed the species, no society known to us has left the management of birth to the individual. Rather, people everywhere have regulated the event.” In the last few decades important advances in medicine, particularly the care of premature infants and promotion of the education of women during pregnancy, have contributed to a marked reduction in perinatal mortality.

In addition to these advances, the introduction of electronic fetal monitoring and ultrasonography have brought the hope that health care professionals would be able to control such risks of pregnancy as fetal growth restriction and intrapartum fetal asphyxia. These advances may have contributed to a significant rise in litigation as a result of the population’s attitude that all adverse outcomes are preventable and someone can be held accountable when things go wrong. New scientific data and current experience indicate that these techniques have limitations and they should be indicated only for specific purposes. Extensive and routine use may lead to an increase in the intervention rate without an accompanying advantage in outcome.

It is our responsibility as obstetricians to inform families of these facts and obtain consent to encourage realistic expectations. Medicine is not an exact science. It is an art. From this perspective, the care of every patient must be tailored to meet her needs. In every case, informed consent must be obtained, meaning the couple, particularly the woman, makes the final decision. When obtaining informed consent, the obstetrician should present the facts of the case and allow the couple...
to arrive at their own decision. This involves being supportive and non-judgemental of their final decision. For example, the risk of a miscarriage after an amniocentesis compared with the advantage of an antepartum diagnosis of Down’s Syndrome at a given mother’s age can be acceptable to the doctor, but considered too high a risk by the patient. Her final decision should be respected and supported. The same is true for all obstetrical procedures. Objective, informed, compassionate and personalized care is what brings art into obstetrics.

COST EFFECTIVENESS

All across Canada and the U.S., different projects like mother and baby care, self-care, cooperative care, as well as the labour/delivery/recovery (LDR) concept and the labour/delivery/recovery/postpartum (LDRP) concept (single-room maternity) have proven to be cost effective, while at the same time providing a better environment for personal and family-oriented care. Experience has shown that personalized obstetrical care has increased the tendency towards natural birth with a reduction in the number of interventions and consequently, a reduction in cost. The consumer’s priorities for physical facilities include: privacy, the availability of support people (family or friends), and the possibility of making choices.

It is our hope that hospital administrators and caregivers in obstetrics will consider these policies which have been shown to produce proven beneficial outcomes.

REFERENCES

Chapter 2

Antepartum Care

The goal of modern prenatal care is to assist the pregnant woman in ways that reduce perinatal mortality and morbidity, while supporting the woman’s medical, social and psychological needs. This document is designed to help physicians offer this kind of care in an effective manner with a minimum of intervention.

Preconceptual Care

Medical History

All women considering conception should be encouraged to discuss this with their physician. When approached on such a matter, the physician should review the woman’s medical history for diseases that might influence the pregnancy outcome or which could be adversely affected by the pregnancy. Serious conditions may require review by pertinent specialists. For example, a woman with valvular heart disease should discuss her plans with her cardiologist as well as with her obstetrician or perinatologist. Women with diabetes should strive for excellent control in the periconceptual period. This may require intensive monitoring or the aid of a specialist. The implications of any familial or genetic conditions should be discussed and referral to a geneticist considered.

Present Medications

All of the woman’s medications should be reviewed with regard to the optimal dosage. In some instances a woman should be advised to discontinue the medication or switch to another medication that is more appropriate during pregnancy. For example, women should not continue to take angiotensin converting-enzyme (ACE) inhibitors for chronic hypertension or coumadin for anticoagulation if they intend to conceive. Consideration should be given to choosing a medication that will give epileptic women good seizure control while offering the lowest possible risk to the fetus. These women should be stabilized on the new drug regimen prior to attempting to conceive. Some women with epilepsy may be able to stop their medication, if no seizures have occurred in the last two years. Comprehensive information about specific drugs and use during pregnancy is available.

Lifestyle Issues

Smoking, alcohol use, illicit drug use, nutritional status and general physical fitness should be reviewed and constructive advice given. Women who abuse drugs, alcohol or tobacco should be helped to alter their behaviour prior to discontinuation of reliable birth control. Prescreening for rubella and syphilis may be done and patients at risk of HIV infection should be offered testing for it and other sexually transmitted diseases.

Past Obstetrical History

A review of the woman’s obstetrical history should involve a discussion of past complications, such as intrauterine growth restriction and premature labour, that may repeat in future pregnancies. Advice on possible need for hospitalization or the likelihood of perinatal complications may play an important part in the woman’s decision regarding conception. A assessment by an obstetrician, perinatologist or neonatologist may be helpful.

Folic Acid

All women should be advised to take a minimum of 0.4 mg of folic acid supplementation or dietary equivalent according to Canada’s Food Guide for Healthy Eating, after discontinuation of reliable birth control and for 10 to 12 weeks after the last menstrual period (LMP). Women who have had a previous conception or baby affected by a neural tube defect should be advised to take four mg of folic acid daily in this same...
time period. Intermediate risk women include those with insulin-dependent diabetes, epilepsy treated with valproic acid or carbamazepine, or women with a first degree relative with a neural tube defect. These women should be advised to take one to four mg folic acid daily. To achieve this, extra doses of prenatal vitamins should not be used as toxicity may occur from other ingredients. Careful seizure monitoring is necessary in epileptic patients, as folic acid interacts with many antiepileptic medications. Details of interactions are provided in the SOGC Policy Statement on the Use of Folic Acid for the Prevention of Neural Tube Defects, published in March 1993. Folic acid supplementation is contraindicated in women with untreated pernicious anemia or undiagnosed anemia.

The physician should advise the woman on how to discontinue her current birth control and ensure that any questions regarding conception and pregnancy have been fully answered. One or two spontaneous menstrual cycles should occur before the couple attempts conception. Plans for early pregnancy follow-up should be made.

**Rubella**

At the preconceptual visit, rubella-susceptible women should be identified and, if not actively attempting to become pregnant, should be immunised. Screening by serology at the first prenatal visit is indicated. Rescreening of serologic-negative women after exposure or with possible rubella infection should be performed. Women who have negative serology should be immunised postpartum.

**Infertility Patients**

The opportunity should be taken with women undergoing investigation for infertility to advise them regarding preconceptual care.

**The First Prenatal Visit When**

Women should be encouraged to inform their physician as soon as pregnancy is suspected and ideally should be seen within 12 weeks of the last normal menstrual period. It is especially important that a woman be seen as soon as possible if a preconceptual visit did not occur. Teenage women should have their initial visits earlier and receive more intensive support during their pregnancies. It is also recommended that women over the age of thirty-five or with genetic risk factors be offered an early appointment to discuss the available genetic investigations. Women requesting chorionic villus sampling or amniocentesis should be referred immediately to an appropriate physician or genetics centre.

**Shared Care With Another Physician**

If the woman's usual physician does not attend deliveries, the patient should be informed and opportunities for shared care with another physician or transfer of care should be explored. The patient should visit the delivering physician early and plans for subsequent care must be clearly planned.

**Antenatal Record**

At the first prenatal visit, the following should be recorded on a standardized antenatal form:
- the woman's past medical history,
- obstetrical and family history,
- use of prescription and non-prescription drugs,
- known drug allergies and present symptoms, and
- physical findings.

This same antenatal form will then be used to record further progress during pregnancy. Risk factors for adverse pregnancy outcome should be identified and clearly highlighted on the antenatal record. The initial physician should transfer these forms with the patient to all subsequent physicians and also to the delivery room the patient expects to attend. If shared care is to occur, communication between physicians must be accomplished with efficiency and thoroughness.

**Previous Obstetrical History**

Notes from previous pregnancies may need to be reviewed to assess risk of recurrence of complications. Ideally, notes from previous Caesarean births should be reviewed to confirm that the incision was low segment transverse prior to planning an attempt at vaginal birth.

**Physical Examination**

Physical examination at the first antenatal visit should include observation of the woman's:
- height,
- weight,
- blood pressure,
- thyroid,
- breasts,
- chest and cardiovascular findings,
- abdomen,
- a Pap. smear if not done in previous six to twelve months,
- a bimanual examination for uterine size and adnexal findings,
- extremities.

A detailed examination of other body systems may be necessary in certain cases, depending on the complaints and past medical history.

LABORATORY INVESTIGATIONS

If pregnancy is confirmed, the following laboratory investigations should be offered and arranged for all patients:
- haemoglobin level,
- blood group and antibody screen,
- rubella titre,
- hepatitis B surface antigen assay,
- VDRL,
- HIV testing. (See Appendix 2-1: HIV Testing in Pregnancy.)

Urine microscopy or culture and sensitivity may be used to detect asymptomatic bacteriuria. Obese women should be screened for pre-existing diabetes. A full screening ultrasound at 16 to 20 weeks should be offered according to the SOGC Policy Statement on the Performance of Ultrasound.6 Earlier or subsequent scans should be offered only when medically indicated.

Other investigations are appropriate in certain circumstances, and include:
- cultures for herpes, gonococcus or chlamydia (refer to Chapter 3);
- hepatitis C screening (refer to Chapter 3);
- toxoplasmosis screening (refer to Chapter 3);
- maternal serum screening for chromosome anomalies and neural tube defects. There is fair evidence to offer triple-marker screening to women under 35 years of age within a comprehensive screening and prenatal diagnosis program including education, interpretation and follow-up. However, there are concerns with regard to these tests related to limited sensitivity of the screening test, the number of false-positive results, and the number of women who receive positive results but do not subsequently undergo amniocentesis.7,8 For women over 35, the evidence supports offering amniocentesis. Women may choose maternal serum screening as an alternative.

Laboratory test results from the initial and all subsequent investigations should be recorded directly on the antenatal forms with the date they were completed. All ultrasounds should be compared to the expected gestational age on the basis of the dating established at the first visit. A iterations in estimated date of confinement (EDC) should be clearly documented and explained to the patient.

FOLLOW-UP VISITS

When/How Often?

Visits every four to six weeks are appropriate for the beginning of pregnancy. After 30 weeks, visits should occur every two to three weeks and after 36 weeks, every one to two weeks until delivery. These assessments should focus on different issues appropriate to the gestational age. (See Appendix 2-2: Sample Prenatal Care Plan.) At each visit, blood pressure, uterine size, urine dipping for protein and glucose, and fetal heart rate should be recorded. The patient’s weight gain may also be assessed.

Further investigations

Further investigations such as ultrasound may be ordered if evidence of intra-uterine growth restriction (IUGR), pre-eclampsia, excessive growth or other abnormalities are identified.

All women who are Rh negative should receive Rh immune globulin at 28 weeks gestation if there is no evidence of isoimmunization.

The value of routine screening of all pregnant women for gestational diabetes remains unproven. Until further data are available, caregivers should maintain a low threshold for testing for this condition, or consider testing all patients with a 50 gram oral glucose challenge test at 24 to 28 weeks gestation, as per the SOGC Committee Opinion on Routine Screening for Gestational Diabetes Mellitus in Pregnancy.9

Group B Streptococcus (GBS) is a major cause of morbidity and mortality among newborn infants. Group B Streptococcus in pregnancy should be discussed with the patients. There are two acceptable options for screening (testing) for GBS.10 A doctor may choose to routinely culture (test) all pregnant women between the 35th and 37th week of pregnancy, and treat the mothers who are GBS colonized (positive) with antibiotics when labour starts. Alternatively, a doctor may choose
not to test every woman routinely, but rather to treat only those mothers who are at risk of passing the bacteria to their babies during the birth process.

The risk factors for which intrapartum chemoprophylaxis is recommended include:
1. Preterm labour (<37 weeks gestation).
2. Term labour (37 weeks gestation) with:
   a) Prolonged rupture of membranes. Chemoprophylaxis should be given if labour and/or ruptured membranes is likely to continue beyond 18 hours (neonatal benefits are optimally achieved if antibiotics are given at least 4 hours prior to delivery).
   b) Maternal fever during labour (>38°C orally).
3. Previous delivery of a newborn with GBS disease, regardless of current GBS colonization status.
4. Previously documented GBS bacteriuria.
If cultures were not done in the 35th to 37th week of pregnancy, or if the test results are not available at the time of delivery, it is essential that women at risk be treated with antibiotics.

In addition, particularly if the woman has a history of bladder or kidney infections, a doctor may test a woman’s midstream urine for bacteria. If bacteria are found in the urine but not in the vagina or rectum, the woman is considered colonized (positive) and will still be treated with antibiotics.

The woman should be made aware of the importance of regular fetal activity. Fetal movement counts may be advised routinely or selectively.

COMMUNICATION WITH THE PATIENT

Regular communication is important for the patient to understand her pregnancy fully, make informed decisions and prepare herself for the upcoming labour and delivery. The woman should be encouraged to ask questions and discuss concerns with her physician. Important topics may include:
- the role of the baby’s father,
- the patient’s social support network,
- prenatal classes or educational literature,
- exercise,
- diet,
- coitus during pregnancy,
- birth plans of the patient and the views of the delivering physician,
- the philosophy regarding breastfeeding,
- the physician’s enquiring about possible physical or sexual abuse and being attentive to indications of such that may not be directly expressed.

For further details, please refer to the Prenatal Care Plan (Appendix 2-2), as well as Chapter 3, “Health Education and Lifestyle Aspects of Prenatal Care,” for counselling information.

FETAL SURVEILLANCE/INDUCTION OF LABOUR

For patients with an uncomplicated pregnancy up to 41 completed weeks gestation, no special monitoring or induction of labour is warranted. For women who have pregnancies complicated by such other risk factors as hypertension, diabetes mellitus, IUGR, macrosomia, poly-hydramnios or multiple pregnancy, strong consideration should be given to fetal surveillance or elective delivery between 39 and 40-6/7 weeks gestation. If the pregnancy persists beyond 41 completed weeks, delivery by induction of labour, as described in SOGC guidelines on Induction of Labour, should be offered unless contraindicated. The woman should be informed of the lower risks of perinatal mortality, neonatal morbidity and Cae section associated with induction at this time. If she wishes not to proceed to induction, surveillance of the fetus should be instituted, consisting of a minimum of ultrasound assessment of amniotic fluid volume twice weekly. If fluid volume is decreased, consideration should be given to immediate delivery. Other forms of monitoring may be added to this, such as fetal movement counts, biophysical profile scores and non-stress tests.

ESTABLISHING THE RELATIONSHIP WITH THE PREGNANT WOMAN

These obstetric guidelines are based on an extensive literature review and broad-based clinical opinions that have stressed: (1) the importance that health care-givers view pregnancy and childbirth as a normal, unique event and allow for patient autonomy and choice; (2) that clinical practice policies and procedures be evidence-based; and (3) that cost effectiveness is considered.

In addition, the advice on preconceptual counselling, wellness counselling and routines of medical care emphasizes the need for models of care which enhance the education of our patients. This will allow them to possess the necessary knowledge needed to make well-informed choices about the health and well-being of their pregnancy. As obstetricians, we believe that the
first step we can make towards achieving this goal is to establish good communication channels. Studies which have examined women’s views of care during pregnancy and childbirth emphasize the need for improved communications and a caring approach.¹³

Some suggestions for facilitating communication and promoting healthy choices in pregnancy care include:
- a prenatal care plan,
- a “record of pregnancy” patient diary,
- a birth plan,
- specific information pamphlets or books.

**Prenatal Care Plan**

We have developed an outline for prenatal care as an example of how prenatal care could be managed, focusing on specific educational and counseling objectives and investigations at appropriate times during the care of a pregnancy (see Appendix 2-2). We have not focused on the ideal number of visits, but rather have given a range of times when each visit would address specific objectives. This may result in fewer visits, longer visits and fewer “routines”. It would also fit a model where alternate health care givers participate in some of the care. This outline could be given to the woman along with other information to serve as a tool to communicate the plan, answer questions and concerns, and provide comprehensive prenatal information.

**“Record of Pregnancy” Diary**

The woman should be encouraged to write down her concerns for discussion. This is another tool which could be used to facilitate communication with your patient as well as making her feel in control of the outcome of her pregnancy. A simple notebook or journal would be useful.

The patient education booklet—Healthy Beginnings—Your Handbook for Pregnancy and Birth¹⁴—which has been designed and written as a companion booklet to this Clinical Practice Guideline, has also been developed to use both as a source of information and as a diary of the woman’s pregnancy.

**Birth Plan**

The concept of a routine “birth plan” needs further elaboration. The underlying philosophy is one of respect for the woman’s wishes. If we as caregivers wish to be proactive, and recognize that all our patients have an increasing interest in a less technological and more flexible approach to birth, we can use the idea of a routine discussion of a birth plan. This will provide an opportunity to talk about the alternatives available, and provide reassurance that the only interventions taken would be those that are necessary and of proven value. An example of a birth plan that we have developed is included in Chapter 4.

**Specific Information Pamphlets**

It is important to suggest readings or other educational materials (in pamphlet or video format) which are easily accessible to the pregnant woman.

**References**


APPENDIX 2-1

HIV TESTING IN PREGNANCY

This document was prepared by the Maternal/Fetal Medicine Committee of the Society of Obstetricians and Gynaecologists of Canada and was approved by its Council in March 1997. It supersedes the Policy Statement published in the February 1996 issue of the Journal SOGC and distributed to SOGC Membership under the Obstetrical Policy Statement No. 17 in December 1995.

INTRODUCTION

The increasing rates of HIV infection in women,1,2 the potentially devastating effect on the neonate of vertical transmission from the mother,3 and the proven efficacy of AZT in reducing vertical transmission4 lend support to the concept of offering HIV testing to every pregnant woman during pregnancy. Such a recommendation has been made by the Infectious Diseases and Immunisation Committee of the Canadian Paediatric Society, the College of Family Physicians of Canada, the Canadian Medical Association, the American Academy of Pediatrics, and the American College of Obstetricians and Gynecologists.

RATIONALE

The prevalence of HIV seropositivity in women of childbearing age varies throughout Canada (1.13/10,000 in Nova Scotia; 15.2/10,000 in Montreal). Such variation will affect the acceptability and the cost effectiveness of universal testing. Nevertheless, the absence of known risk factors among a significant proportion of those women who are subsequently found to have transmitted the virus to the fetus/neonate during pregnancy or the neonatal period, the growing public awareness of the problem, and the increasing rate of seropositivity amongst pregnant women all lend support to the concept of offering universal testing.

RECOMMENDATIONS

In light of the above, the Maternal/Fetal Medicine Committee of the SOGC makes the following recommendations:

1. Providers of prenatal care should:
   a) be aware of the efficacy of AZT in reducing vertical transmission to the offspring of pregnant women who are HIV positive;
   b) provide basic information about HIV testing, including the risks and benefits of finding a positive result, and stressing the success of treatment in reducing vertical transmission;
   c) offer HIV testing for all pregnant women;
   d) carry out testing with the agreement of the woman and with due regard to confidentiality;10
   e) document refusal of HIV testing on the patient's chart.

2. Women so tested and found to be positive should be referred to an expert with special training in this area.

3. Pregnant women testing HIV-positive should be offered treatment with AZT as currently recommended.4

4. Further research on the applicability and cost effectiveness of universal testing in Canada is warranted.

5. A review of existing recommendations on pretest counselling with respect to HIV testing is warranted to bring such testing in line with other forms of prenatal testing.

REFERENCES

APPENDIX 2-2

SAMPLE PREGNATAL CARE PLAN

<table>
<thead>
<tr>
<th>Critical Path Time Frame</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Preconceptual Visit (Ideal)</strong></td>
<td></td>
</tr>
<tr>
<td>All</td>
<td></td>
</tr>
<tr>
<td>- Advice about diet, folic acid, exercise, lifestyle, work</td>
<td>- aware of effect and reasons for any changed behaviour</td>
</tr>
<tr>
<td>- Advice about cigarette smoking, alcohol, drugs</td>
<td>- Health status clear</td>
</tr>
<tr>
<td>- Complete physical and pelvic examination and selected investigations as necessary</td>
<td></td>
</tr>
<tr>
<td>Where Appropriate</td>
<td></td>
</tr>
<tr>
<td>- Advice about medical illness and medication, e.g. epilepsy, diabetes</td>
<td>- aware of effect of medical illness on pregnancy and of desired behaviour, e.g. any change in drugs</td>
</tr>
<tr>
<td>- Physical examination and investigations</td>
<td>- Health status clear</td>
</tr>
<tr>
<td>- Advice about prenatal diagnosis</td>
<td>- aware of risks/benefits and reasons for prenatal diagnosis</td>
</tr>
<tr>
<td>- previous pregnancy complicated outcome</td>
<td>- aware of any changes in behaviour to prevent complicated pregnancy outcome</td>
</tr>
</tbody>
</table>

| First Visit (6 to 12 weeks) | |
| - Advice about diet, exercise, lifestyle, work | |
| - Advice about cigarette smoking, alcohol, drugs | |
| - Complete physical and pelvic examinations and selected investigations as necessary | |
| - Outline prenatal care plan for pregnancy | |
| - Formal Prenatal Record | |
| - Arrange prenatal tests, including routinely offering HIV screening | |
| - Discuss ultrasound | |
| - Prenatal classes information | |
| - Advice about further reading | |
| - Patient Diary | |
| - Social Support | |
| | - aware of objective of visits and plan for care |

| Second Visit (Usually four weeks later) | |
| - Review healthy behaviour counselling and reinforce changes made | |
| - Limited physical examination—BP, abdominal examination and FHR determination | |
| - Review results of routine tests | |
| - Action on abnormal tests | |
| - Patient diary review | |
| | - aware and clear on necessary change |

| Visit(s)—16 to 24 weeks | |
| - Review and reinforce—as above | |
| - Specific discussion regarding rest/work, signs and symptoms of premature labour | |
| - Educational materials re same | |
| - Discuss common symptoms at this stage of gestation | |
| - Limited physical examination—BP, abdominal examination and SFH, FHR | |
| | - aware and clear on necessary change |
| | - aware of importance of rest/work |
| | - aware of signs and symptoms of premature labour and what to do |
| | - aware of significance of same |
| | - Health Status clear |


## APPENDIX 2-2 cont.

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<tr>
<th>Critical Path Time Frame</th>
<th>Outcomes</th>
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<td><strong>Visit(s)—16 to 24 weeks cont.</strong></td>
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<tr>
<td>- Patient diary or patient’s questions</td>
<td>- ♀ voices questions and concerns</td>
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<td>- Screening ultrasound—if doing routinely</td>
<td>- ♀ agree and understands reason for ultrasound</td>
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<td>- Other tests—e.g. urine culture</td>
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<td>- Maternal Serum Screening (where available as a comprehensive provincial programme)</td>
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<td><strong>Visit(s)—26 to 32 weeks</strong></td>
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<td>- Further discussion rest/work, premature labour</td>
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<td>- Discussion of common symptoms—3rd trimester</td>
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<td>- Fetal movement charting and/or awareness</td>
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<td>- Discussion of birth plan (may give written plan)</td>
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<td>- Limited physical—BP, abdominal examination, and SFH and FHR</td>
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<td>- Cervical examination if concerned about premature labour</td>
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<td>- Tests—e.g. glucose screen on selected patients</td>
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<td>- Rh immune globulin for Rh-negative patients</td>
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<td>- Patient diary</td>
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<td>- Discussion of Breastfeeding</td>
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<td><strong>Visit(s)—32 to 35 weeks</strong></td>
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<tr>
<td>- Review and reinforce previous visit</td>
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<td>- prematurity</td>
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<td>- common symptoms during 3rd trimester</td>
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<td>- fetal movement</td>
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<td>- childbirth preparation report</td>
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<td>- Review birth plan</td>
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<td>- Limited physical examination—BP, abdominal, SFH, FHR</td>
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<td>- Tests</td>
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<td>- Patient diary</td>
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<td>- Suggest appropriate reading and other education material</td>
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<tr>
<td>- Advice/discussion of childbirth preparation</td>
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<tr>
<td><strong>Weekly Visits—Starting 36-37 weeks to 40 weeks</strong></td>
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<tr>
<td>- Review or reinforce/reassure</td>
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<tr>
<td>- Signs and symptoms of labour and what to do</td>
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<td>- Fetal Movement</td>
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<td>- Common symptoms review</td>
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<td>- Physical examination—BP, abdominal, SFH</td>
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<td>- Tests</td>
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<td>- Option: Group B Strep. culture</td>
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<td>- Birth plan discussion</td>
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<td>- Childbirth preparation</td>
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<td>- what happens during labour</td>
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<td>- need for episiotomy</td>
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<td>- Baby care</td>
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<td><strong>Post-term Visit(s)—40+ weeks</strong></td>
<td></td>
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<tr>
<td>- Review of significance of postmaturity</td>
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<tr>
<td>- Physical examinations (in addition to usual—cervical examination)</td>
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<tr>
<td>- Discussion of need and method of induction and fetal surveillance</td>
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<td>- Fetal movement</td>
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<td><strong>Critical Path Time Frame cont.</strong></td>
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Chapter 3

Health Education and Lifestyle Aspects of Prenatal Care

Prenatal Education

Over the last 20 years, prenatal classes have expanded from focusing mainly on pain and pain relief strategies in labour to include such broader issues as nutrition, normal infant growth and development, as well as parenting. Prenatal education, both formal and informal, should foster health of the entire family by clarifying parental goals and expectations for labour and birth and providing accurate, current information. Today, prenatal classes strive to instill confidence in the family's ability to cope with this life transition.

Partners, close friends and children of labouring women often take a more active role through pregnancy, labour, and birth. In some Canadian cities, prenatal educators have responded to this family-centred philosophy by integrating partners into prenatal classes, offering dads' classes, sibling classes and other prenatal preparation for extended family members. Prenatal classes promote links to the community for women/families, thereby increasing their support system.

There is little scientific data about the effects of prenatal education. It is difficult to assess the effectiveness of prenatal classes using an evidence-based model. These classes vary greatly with regard to the educators (public health nurses, obstetrical nurses, midwives, physicians or independent childbirth educators), learning objectives, and philosophy. As a result, generalization cannot be made about the effects of formal prenatal education.

Review of the Literature

Following an extensive literature review and meta-analysis, Simkin and Enkin conclude that the only outcome that has been adequately supported in the literature is that prenatal education results in reduced analgesia use. These authors also suggest that increased patient satisfaction may be another result of prenatal education, though this effect is more difficult to measure. Providing women with information may increase their sense of control over their pregnancy, labour and birth, thus increasing satisfaction with the experience. In a small study of 21 women, Crowe and Von Baeyer reported that women most likely to have a positive childbirth experience felt well-informed and had formal prenatal preparation. It is likely that for many women and families, prenatal classes may increase family knowledge and participation throughout pregnancy, labour and birth, thereby contributing to satisfaction.

In a prospective study of 825 women who completed three questionnaires—two before birth and one six weeks after—Green, Coupland and Kitzinger found that information and feeling in control during labour and birth were of great importance to women. Therefore, the provision of accurate information prenatally may facilitate the woman's family's participation and satisfaction with the birthing experience.

Other effects of childbirth education classes have been measured with regard to such obstetric outcomes as length of second stage, operative delivery rate, and medication use during labour. In one such study, non-significant
differences were noted between 114 women who attended prenatal classes versus 93 women who had not attended. However, despite their findings the authors note that the “results must not be seen as a rebuttal to those who encourage prenatal classes.” Certainly the fact that the majority of expectant women attend prenatal classes reflects an interest in this form of prenatal preparation.

Some research has indicated that preterm prevention programmes may decrease the incidence of preterm birth. In one study, Yawn and Yawn reported that following implementation of a preterm prevention programme, the percentage of women accessing medical care early enough to receive tocolysis increased from 51 percent to 98 percent. In one meta-analysis reviewing factors that contribute to preterm birth, the authors found that the current literature supports the hypothesis that these programmes are effective. However, they also reveal that methodological differences among the studies (e.g., using low risk vs. higher risk populations) have “rendered a final verdict equivocal.”

It is important to note that these programmes focus specifically on preterm labour prevention and changing women’s habits, whereas most general prenatal education classes discuss this topic as part of a broader agenda. However, prenatal education provides the woman with information related to the early signs of preterm labour (excessive mucous vaginal discharge, premature rupture of membranes, low back ache, excessive uterine activity) and the implications, thus enabling her to make informed choices and seek appropriate, prompt medical attention.

Classes for expectant fathers are also described. One example of these “Dads’ Classes” is the Fatherhood Project offered in London, Ontario. These classes “focus on men’s transition to fatherhood and their changing relationship with both their spouse and their new baby”. The goal is to facilitate family health by promoting an active parenting role for fathers.

Prenatal education for siblings has also been reported. These classes may prepare siblings for attendance during labour and birth, or simply aim to facilitate the integration of another child into the family. Children may be assisted in identifying the unique qualities and value that they add to the family while parents learn about child growth and development, family interaction and coping strategies. Other classes attempt to prepare the child(ren) for labour and birth through discussion, drawing, videos, engaging in birth demonstrations using a doll, and other age-appropriate learning. Some hospitals in Canada currently welcome children into labour and birthing suites, but may require a support person available for each child to attend to their needs (leaving the birth if desired, for example) in addition to the woman’s support person.

In a small study examining the short-term effects of birth on children present for the birth of a sibling, Lumley reported that apart from asking more questions about the baby, there were no significant differences between children who had attended a birth and those who had not. It should be noted that this particular centre had developed a specific programme designed to promote family participation in labour and birth. Again, the evidence is scarce regarding the effects of sibling preparation classes.

Gaps in the Literature

Traditionally, formal prenatal education was directed toward middle-class, educated families. Today, however, health departments and hospitals have expanded their target population by offering programmes designed for adolescent teens and other specific populations. Further research is needed regarding the effectiveness of prenatal classes tailored to single mothers, dads, adolescents, culturally diverse populations, siblings, and lower income families.

One retrospective study of 100 pregnant adolescents compared perinatal outcomes of 50 pregnant teens who had attended a specialized prenatal education programme using a multidisciplinary team, to 50 pregnant teens who had not attended. The results demonstrate improved outcomes among the group who attended. There were lower frequencies of cephalo-pelvic disproportion (CPD), maternal medication use, required neonatal resuscitation, infection, and respiratory distress of the infant.

Postnatal classes are another option that may benefit women and their families. These may be offered on an informal basis, providing new families with an opportunity to share thoughts and experiences and support one another. In addition, women can be identified and linked to appropriate resources that may be required for breastfeeding support, where to find various infant supplies, or counselling. Education related to such issues as parenting, body image after birth and child growth and
development can also be implemented by appropriate educators (nurses, midwives, independent childbirth educators). In this way, networks are developed as members of the community continue to support one another. Further research is necessary in order to evaluate the need for and effectiveness of postnatal education.

Quantitative measures must also be used to identify any differences in obstetrical outcomes (e.g. forceps/vacuum rates, episiotomy rates, incidence of fetal distress) between those who attend prenatal classes and those who do not.

**Recommendations**

In one Canadian survey of early hospital discharge, postpartum women reported a need for such adequate support in the home as daily visits for one week by a registered nurse and a homemaker, and a 24-hour telephone service that could offer advice or answer questions.14

Given the current trend of reduced length of stay in obstetrical units, there will be fewer opportunities for providing information and listening to the concerns of the woman/family regarding the newborn. Effective prenatal preparation, along with appropriate follow-up in the home, may become a pivotal determinant of family health.15 To be effective in imparting knowledge and a sense of confidence in expectant families, prenatal education must be both proactive and responsive to the changing needs of the community resulting from new trends in the provision of health care.

Given the thousands of Canadian women and families who engage in some form of prenatal preparation every year, there seems to be a demand for this service. Perhaps it is because prenatal classes bring together women and families who are otherwise often isolated in Western society. The class environment provides an opportunity for expectant families to share experiences, wisdom and feelings while attempting to promote family health by addressing a broad range of issues. In this way, women are better able to make informed choices throughout pregnancy, labour, birth and early parenthood: “Choice relies on the availability of information: information about services, options, diagnosis and prognosis. Not having such information can be a serious impediment to quality decision making.”16 Wegner and Alexander write that following prenatal education, parents become clear and assertive in sharing their goals with health care professionals, thus promoting communication.17 These authors also note that most women and men can identify changes in behaviour that they made following prenatal classes.

**Nutritional Counselling**

Good nutrition has a positive influence on pregnancy outcome, especially birth weight, neonatal morbidity and mortality, and recovery of the mother. The degree of effect depends upon the preconceptual nutritional status of the mother.

Ideally, nutrition and education would be discussed during preconceptual counselling. A discussion of the use of folic acid supplementation to prevent neural tube defects is a good example of this. If nutrition screening did not occur then, it is important to identify, early in a pregnancy, disordered eating patterns and non-informed vegetarian practices as well as low socio-economic status.
Women identified as being at potential risk of nutrient deficiency or food insecurity require additional assessment.

**Nutrition Assessment and Counselling**

Nutritional assessment and monitoring should be part of every prenatal care plan. A dietary history should be obtained in the first visit, along with measurements of height and weight and screening for anaemia. Enquiries as to whether the patient chooses foods from the four food groups, as well as about smoking and her alcohol intake, are necessary. Canada's Food Guide to Healthy Eating suggests pregnant and breastfeeding women need three to four servings of milk products daily. Non-pregnant women consume an average of 1,900 to 2,400 calories per day. It is recommended that pregnant women should increase their energy intake by about 100 calories/day in the first trimester, by 300 calories/day in the second and third trimesters, and by 450 calories/day during lactation.1 Meeting calcium, iron and folic acid needs are special nutritional challenges for pregnant women. Food sources of these nutrients, such as milk products, orange and dark green vegetables and fruit, meat and/or legumes, should form an important part of the diet during pregnancy.

When nutritional risk factors have been identified, referral to a dietician or prenatal nutrition project targeted to at-risk women would be indicated.

During subsequent prenatal visits, women at nutritional risk should have their nutritional status re-evaluated. Screening for anaemia should be repeated at least once early in the third trimester.

The Preconception/Prenatal Nutrition National Guidelines2 provide detailed information on counselling pregnant women.

**Maternal Weight Gain**

Optimal maternal weight gain during pregnancy (varies from 6.8 to 18.2 kg) will depend on the pre-pregnancy weight. Underweight women and teenagers can be encouraged to gain at the upper end of the range. Weight loss by obese women is not recommended during pregnancy.3 It must be acknowledged that the issue of ideal weight gain during pregnancy is controversial.

**Vitamin Supplements**

Emphasis should always be placed on improving diet quality first. However, other women may benefit from nutrient supplements (e.g. folic acid). Adolescents and those who have had many births may require vitamin supplements. Initial prenatal nutritional assessment can help reveal evidence of poor nutritional status and/or such dietary practices as non-informed vegetarianism.

Routine iron supplements are not an essential component of early prenatal care for women who are not anaemic. Maintenance of maternal iron stores is usually assured if low level iron supplements are provided during the last half of the pregnancy. Measuring serum ferritin levels to evaluate iron stores has been shown to be a useful screening tool in research projects. Its use in routine assessment of iron stores is questionable.4

**Food Supplements**

Food supplements may be needed to fill the gaps between dietary intake and requirements. The choice of food provided needs to be based on respectful consideration of the woman's cultural, religious and dietary background. Food supplements and nutrition education should be available to all pregnant women with low incomes, especially teenagers. The experience of the Montreal Diet Dispensary (MDD) shows that the benefits of increased caloric intake and special dietary management during pregnancy are not confined to chronically malnourished women in developing countries, but can also improve the pregnancy outcomes of socially disadvantaged mothers in more affluent nations.5

Postpartum maintenance of maternal nutrition will facilitate breastfeeding. Vitamin and mineral supplements during lactation are not routinely required.

**Supplementary Advice about Nausea and Vomiting**

Advice is generally given that each patient should be encouraged to choose for herself the type of food or beverage which seems to improve her nausea. These flavours range from salty, bitter, crunchy, sweet, spicy, hot, cold or thick.6

Smells from various sources (e.g. coffee, perfumes) are factors contributing to the nausea, especially when high humidity and higher temperatures prevail.7 If cooking smells trigger nausea, the partner should do the cooking.

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1. Calorie needs are increased because of the growing fetus.
3. Optimal weight gain is important for the health of the mother and baby.
4. Serum ferritin levels are used to assess iron stores.
5. Montreal Diet Dispensary (MDD).
6. Flavours that are appealing to some women may not be appealing to others.
7. Cooking smells can trigger nausea in susceptible individuals.
Obviously, smells which increase nausea should be identified and avoided.

Sniffing fresh lemons or ginger, drinking lemonade, or eating watermelon slices are also recommended.

For further details, refer to Apendix 3-2: Guidelines for the Management of Nausea and Vomiting in Pregnancy.

WORK DURING PREGNANCY

In uncomplicated pregnancies, work is not associated with adverse pregnancy outcomes. Strenuous work, extended work that is more than 40 hours a week, and shift work may be associated with modest increases in the rates of low birth weight, prematurity and spontaneous abortions. Women should be asked early in the pregnancy about their type of work and advised to modify such activities, if possible.

Pregnant women should avoid exposure to chemical solvents and metal fumes. They should follow current guidelines available in the workplace for handling antineoplastic agents and exposure to radiation.

To define strenuous work, the American Medical Association (AMA) Council on Scientific Affairs has issued guidelines for continuation of various levels of work during pregnancy: These recommended limiting:

- Repetitive stooping and bending (>10 times per hour),
- Repetitive climbing of ladders/poles (>3 times/8-hour shift),
- Repetitive lifting (>23 kg) after 20 weeks gestation; prolonged standing (>4 hours) and lifting 11 to 23 kg at 24 weeks; repetitive stair climbing (>3 times/shift),
- Intermittent stooping, bending, and ladder climbing after 28 weeks; intermittent heavy lifting after 30 weeks; and standing over 30 minutes per hour after 32 weeks for otherwise healthy women. These “work during pregnancy guidelines” are an example of how to gauge strenuous work in pregnancy.

With these exceptions, employment may be continued to term. In addition, the AMA Council recommends careful evaluation to determine if work should be continued by women who have a number of medical conditions or prior adverse obstetrical outcomes or complications. These guidelines are in keeping with the earlier recommendations of both the American College of Obstetricians and Gynecologists and the National Institute of Occupational Safety and Health, and can be used as a reference when advising women about medical leave from work during pregnancy. There are no similar Canadian guidelines developed at present, however, the province of Québec has a “Preventative Leave” programme, where a woman’s workplace can be assessed and, if it is determined to present any danger to the pregnancy, the woman can be reassigned or given leave with full pay.

SUGGESTED READING


EXERCISE DURING PREGNANCY

FIRST PREGNATAL VISIT

All pregnant women should be given advice about exercise and physical fitness. During the first prenatal visit, they should be asked about daily routines, recreational and work related exercises, and plans for changes during pregnancy. The health care worker should ensure that there are no contraindications to exercise. Contraindications include:

- previous obstetrical problems such as an incompetent cervix or a history of preterm labour;
- clinically important cardiopulmonary disorders (e.g. ischaemic or valvular heart disease, uncontrolled hypertension, peripheral vascular disease, chronic obstructive pulmonary disease) which might compromise maternal cardiac output, uterine blood flow or arterial oxygen saturation;
- serious uncontrolled metabolic disorders (e.g. Type I diabetes mellitus or thyroid disease);
- infectious diseases (e.g. mononucleosis or hepatitis);
- multiple pregnancy;
- eating disorders, poor nutrition or very low maternal fat stores;
- medications that may alter maternal metabolic and cardiopulmonary capacities.
The level of exercise to be continued, or started, during pregnancy will depend on the general fitness of the woman and her level of exercise prior to pregnancy. Exercise-related activities should be reviewed during subsequent prenatal visits.

**Exercise Cautions**

A proper 10 to 15 minute warm-up and stretching of ligaments and muscles are important to prevent injury. A good stretch support is advised. The exercise workout should be 15 to 30 minutes long with a rest break if necessary and fluid intake during and/or after. A gradual 10 to 15 minute cool-down is important so as not to affect the fetal heart rate. **Exercises using large muscle groups**, particularly those that are rhythmical in nature, **are to be encouraged** and include:

- walking,
- swimming,
- stationary cycling,
- low impact aerobics.

The supine position should be avoided. A bdominal exercises should be modified to use the side-lying or standing positions. Pregnant women should avoid overstretching ligaments and tendons that may have increased laxity caused by gestational hormones. Good posture is important for decreasing back strain and fatigue. Kegel exercises are recommended to strengthen the pelvic floor muscles.

Those sports that require increased balance and coordination and those that involve the potential for injury, falls and blows should be modified or avoided. These include downhill skiing and mountain climbing. Exercises that strain the lower back and use of Valsalva’s manoeuvre (such as certain weight-lifting routines) should be modified or avoided.

Strenuous exercising in warm and/or humid environments should be avoided. Exposure to hot tubs, saunas and steam should be limited to avoid increases in core body temperature, which may lead to adverse fetal outcome. Scuba diving and water-skiing should be avoided throughout the pregnancy.

Pregnant women should be particularly aware of the **signs and symptoms of common obstetric problems indicating the need to consult their physician**. These include:

- evidence of bleeding;
- fluid discharge from the vagina suggesting premature rupture of membranes;
- sudden swelling of the extremities;
- unexplained abdominal pain;
- absence or decrease in fetal movement;
- persistent uterine contractions suggesting the onset of premature labour;
- insufficient weight gain;
- other symptoms including persistent headaches, visual disturbances, dizziness, or general fatigue.

A good fluid intake and diet (particularly carbohydrates) should be maintained. Canada’s Food Guide suggests ingestion of about 2200 to 2400 calories/day for pregnant women. Exercise and weight gain must be balanced. The caloric intake is important, so is the type of food being taken. Foods high in complex carbohydrates—such as rice, pasta, potatoes—should make up at least 30 to 40 percent of the total calories taken.

**Exercise Intensity**

Women should avoid anaerobic exercise or exercising to maximum heart rate. The American College of Obstetricians and Gynecologists suggests a safe upper limit of 140 beats per minute. For some women this is too low. Guidelines based on the maternal age, physical fitness, stage of pregnancy and other individual factors have been developed by fitness experts and are summarized in the following chart.

<table>
<thead>
<tr>
<th>Maternal Age (Years)</th>
<th>Suggested Heart Rate Target Zones for Aerobic Exercise in Pregnancy*</th>
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<tr>
<td>Less than 20</td>
<td>140-155</td>
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<tr>
<td>20 to 29</td>
<td>135-150</td>
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<td>30 to 39</td>
<td>130-145</td>
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<tr>
<td>Greater than 40</td>
<td>125-140</td>
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</table>

* These values apply to most healthy pregnant women. At the beginning of a new exercise programme and in late gestation, women should exercise at the lower end of the recommended heart rate target range.

The **rating of perceived exertion (RPE)** scales are recommended for use in addition to pulse target rate. The final test against overexertion is the "talk test"—that is, they should be able to carry on a conversation while exercising. There is agreement that pregnant women should **not increase the intensity or duration of habitual physical**
activity prior to the 15th week of gestation, in order to avoid the possibility of fetal teratogenic effects caused by exposure to exercise-induced hyperthermia during closure of the neural tube. It is also unwise to increase maternal exercise intensity, duration, or frequency after the 28th week, when fetal demands for nutrition and oxygen delivery are highest. There is good scientific evidence that previously inactive women can safely increase the quantity and quality of aerobic exercise between approximately the 16th and 28th week of gestation. This should be done gradually and systematically to avoid chronic fatigue.

Medical clearance to exercise should be withdrawn if serious obstetrical symptoms or problems arise:
- cardiac or pulmonary problems and anaemia;
- vaginal bleeding during pregnancy;
- pre-eclampsia/eclampsia;
- preterm labour;
- multiple gestation;
- abnormal glucose tolerance;
- intrauterine growth restriction (IUGR);
- clinically significant pubic or lower back pain.

Exercises could gradually resume during the postpartum period. Lactation is not a contraindication to exercise provided there is adequate fluid intake.

**Suggested Reading**

**SEXUALITY IN PREGNANCY**

This topic should be addressed during the prenatal visits. Where possible, the couple should be seen and counselled together. Sexual activity should be discussed with both partners, especially if restrictions are necessary. The promotion of a broad definition of sexuality beyond coitus will help to facilitate open and honest sexual communication within the couple’s relationship. The healthy, pregnant woman with an uncomplicated pregnancy can enjoy her sexuality and her sexual relationship throughout the pregnancy without risk to her or her fetus. Advice against coitus in pregnancy needs to be discussed in some situations where there is a complication, like threatened abortion, antepartum haemorrhage or threatened preterm labour. Patients may be informed regarding various coital positions and pleasuring techniques as well as information regarding avoiding vaginal insufflation during oral sex. Safe sexual practices and protection against sexually transmitted diseases should also be discussed.

**Suggested Reading**

**STRESS AND SOCIAL SUPPORT**

**Social Support**

A lack of perceived social support during pregnancy has been associated with higher levels of maternal depressive symptoms and adverse health behaviours. Physicians should use a proactive, holistic approach to women’s health care preconceptionally or prenatally by assessing the woman’s perception of the quantity and quality of her social support.
The ALPHA (Antenatal Psychosocial Health Assessment) form was created to facilitate systematic gathering of this information. Based on a systematic review, antenatal risk factors were chosen for screening which demonstrated association with poor postpartum family outcomes of woman abuse, child abuse, postnatal depression, marital (couple) dysfunction and increased physical illness. This tool is recommended because it has been shown to be useful for health care providers to identify pertinent new information about women and their families which can be used to help women make decisions about life situations or obtain support and assistance for psychosocial problems. Women are comfortable with this form of enquiry and providers have noted increased rapport with women following this assessment.

### Appendix 3-1: Antenatal Psychosocial Health Assessment (ALPHA)

Refer to Appendix 3-1: Antenatal Psychosocial Health Assessment (ALPHA) for a sample of the form, including questions and outcomes.

**Stress**

Changing self image, fetal well-being concerns and home/family life are among some of the major antenatal stressors reported by women. Stress can also be a sign of a perceived knowledge deficit. When physicians allow time for answering the woman's questions or concerns regarding the pregnancy, this may decrease her anxiety and increase her sense of control. Other studies indicate that maternal anxiety antepartum is negatively correlated with perceived satisfaction with the partner. In addition to validating expressed feelings of stress by actively listening to the woman's concerns in an understanding manner, physicians can also recommend various alternatives to promote relaxation and a woman's ability to cope.

Through preconceptual/prenatal counselling, the physician promotes family health by providing a safe environment for the woman to communicate her concerns and wishes related directly or indirectly to pregnancy. The physician should also be aware of available options and resources that the woman may choose to use.

### Abuse in the Obstetrical Population Incidence

The 1993 Violence Against Women Survey found in Canada:
- twenty-one percent (21%) of women abused by their marital partners were assaulted during pregnancy;
- forty percent (40%) of the women who were abused during pregnancy reported that the abuse began when they were pregnant;
- the women who were abused during pregnancy were four times as likely as other abused women to say they experienced very serious violence (beatings, chokings, gun/knife threats, sexual assaults);
- just over 100,000 women who were assaulted during pregnancy suffered a miscarriage or other internal injuries as a result of the abuse.

A Canadian study of 548 prenatal patients that identified a 6.6 percent rate of abuse during pregnancy also found that:
- almost 11 percent of the women studied reported that they had experienced violence before their current pregnancy;
- among the abused pregnant women, 86.1 percent reported previous abuse;
- almost two-thirds of the abused women (63.9%) reported that the abuse escalated during pregnancy.

A subsequent Canadian study found that 95 percent of women who were abused in the first trimester of their pregnancies were also abused in the three-month period...
after delivery. For these women, the abuse also increased after the baby was born.

In view of these sobering statistics, it is important that health care providers are knowledgeable about and screen for abuse in all obstetrical patients.

Screening for abuse should also occur in hospitals that care for women, particularly in labour and delivery, postpartum, and emergency wards.

The literature describes numerous (and often interrelated) complications and adverse outcomes associated with abuse during pregnancy. For professionals there are many potential “signs” of abuse. Professionals should keep in mind, however, that no single indicator may be definitive on its own. It is important to be open to the possibility that abuse may be occurring.7 A list of some of the potential signs of abuse during pregnancy follows.

**Physical signs that may be indicative of abuse:**
- unwanted or mistimed pregnancies;
- termination of pregnancy (including multiple abortions, miscarriages);8
- any injuries or complications during pregnancy, labour and birth (especially unexplained symptoms);
- low birth weight and preterm births;
- sexually transmitted diseases.

**Behavioural signs that may be indicative of abuse:**
- smoking or substance abuse during pregnancy (note: this may be a mechanism for coping with the stress of abuse);
- suicide attempts during pregnancy;
- inadequate or delayed prenatal care;
- frequent visits to hospitals, clinics, doctors’ offices (with a wide range of injuries or symptoms, often unexplained);
- poor nutrition and diet;
- parenting difficulties.

**Emotional signs that may be indicative of abuse:**
- depression (including postpartum), anxiety disorders and fear.8

A key warning sign:
Professionals should be particularly alert to situations in which a partner appears overly solicitous, answers questions on behalf of the woman, and is unwilling to allow the woman privacy.

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**COMPONENTS OF COUNSELLING**

The way in which a woman is approached may facilitate the identification of abuse. She may be experiencing feelings of shame about the abusive relationship.9 Physicians should be aware of their own attitudes about this issue and approach the woman in a non-judgemental manner.9,10 If a woman does choose to confide in her physician about abuse, it is crucial that she is made aware in a supportive, non-hurried manner of the full range of available options and resources.

Physicians should also provide pamphlets and other literature regarding domestic abuse in such private places as examination rooms or washrooms, to encourage safe access to information. Small cards (business-card sized) can be made available in these locations that include some facts about woman abuse and local resources. The size of these cards allows the woman to slip them in her shoe, concealing them from the abusive partner or the general public. Some hospitals and shelters in Canada have already done this and have made arrangements with cab companies for free transportation to such facilities if needed. In this case, this is also advertised on the card. Posters that address the issue of violence against women should also be available in these settings.

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**THE DO’s WHEN ABUSE IS IDENTIFIED**11

1. Provide a safe and private environment to discuss the situation.
2. Build trust by listening and being supportive.
3. Acknowledge the potential danger of the situation.
4. Validate her experiences, feelings and fears.
5. Discuss options and plans for her safety.
6. Explore with her available community resources such as:
   - Social Services or Department of Social Work
   - Women’s Shelters, Crisis Centres, Help Lines (phone numbers listed in front pages of most telephone books)
   - Young Women’s Christian Association (YWCA)—non denominational
   - Law Enforcement Agencies
   - Multicultural Societies, Intercommunity Health Agencies for immigrant women from varying cultural backgrounds (may also provide translators if necessary).
7. Support her choices.
8. Let her know that assault/abuse is a criminal offence punishable by law.
9. Assist the woman in identifying her internal strengths.10
The Antenatal Psychosocial Health Assessment Form

Many guidelines have been published stressing the importance of psychosocial assessment in pregnancy. The Antenatal Psychosocial Health Assessment (ALPHA) Form was developed by a multidisciplinary team at the University of Toronto. The ALPHA Form is an evidence-based tool to assess psychosocial health in pregnancy. It includes risk factors shown to be associated with the adverse postpartum outcomes of woman abuse, child abuse, postpartum depression, couple dysfunction and increased physical illness. The ALPHA Form has been extensively field tested and found to be acceptable and helpful to both women and health care providers.

The ALPHA Form is designed to be used by all obstetrical health care providers and to be used as a systemic guide to assessment of psychosocial health in all pregnant women. It can be filled out during a single visit or over several visits, usually during the second trimester when prenatal visits are somewhat quieter. The Form indicates suggested questions for inquiry into psychosocial areas. It is essential that a woman understands the purpose of the inquiry which is to help identify both strengths and areas of concern in her psychosocial situation and to assist her with areas she identifies as problematic.

The ALPHA Form includes a list of suggested resources. Obstetrical care providers should provide care or referral for identified psychosocial concerns according to their comfort and expertise.

There are ongoing studies of the effectiveness, reliability and validity of the ALPHA Form as well as dissemination strategies. Copies of a Guide and Video, giving further details about use of the ALPHA Form, are available through the Department of Family and Community Medicine, University of Toronto.

June C. Carroll, M.D., CCFP, FCFP
Co-Principal Investigator—Care in Pregnancy Project
Member of the ALPHA Research Group
Associate Professor
Department of Family and Community Medicine
University of Toronto
Antenatal psychosocial problems may be associated with unfavorable postpartum outcomes. The questions on this form are suggested ways of inquiring about psychosocial health.

Issues of high concern to the woman, her family or the caregiver usually indicate a need for additional supports or services. When issues of some concern are identified, follow-up and/or referral should be considered. Additional information can be obtained from the ALPHA Guide.*

Please consider the sensitivity of this information before sharing it with other caregivers.

<table>
<thead>
<tr>
<th>Antenatal Factors</th>
<th>Comments/Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Family Factors</strong></td>
<td></td>
</tr>
<tr>
<td>Social support (CA, WA, PD)</td>
<td></td>
</tr>
<tr>
<td>• How does your partner/family feel about your pregnancy?</td>
<td></td>
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<tr>
<td>• Who will be helping you when you go home with your baby?</td>
<td></td>
</tr>
<tr>
<td>Recent stressful life events (CA, WA, PD, PI)</td>
<td></td>
</tr>
<tr>
<td>• What life changes have you experienced this year?</td>
<td></td>
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<tr>
<td>• What changes are you planning during this pregnancy?</td>
<td></td>
</tr>
<tr>
<td>Couple’s relationship (CD, PD, WA, CA)</td>
<td></td>
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<tr>
<td>• How would you describe your relationship with your partner?</td>
<td></td>
</tr>
<tr>
<td>• What do you think your relationship will be like after the birth?</td>
<td></td>
</tr>
<tr>
<td><strong>Maternal Factors</strong></td>
<td></td>
</tr>
<tr>
<td>Prenatal care (late onset) (WA)</td>
<td></td>
</tr>
<tr>
<td>• First prenatal visit in third trimester? (check records)</td>
<td></td>
</tr>
<tr>
<td>Prenatal education (refusal or quit) (CA)</td>
<td></td>
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<tr>
<td>• What are your plans for prenatal classes?</td>
<td></td>
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<tr>
<td>Feelings toward pregnancy after 20 weeks (CA, WA)</td>
<td></td>
</tr>
<tr>
<td>• How did you feel when you just found out you were pregnant?</td>
<td></td>
</tr>
<tr>
<td>• How do you feel about it now?</td>
<td></td>
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<tr>
<td>Relationship with parents in childhood (CA)</td>
<td></td>
</tr>
<tr>
<td>• How did you get along with your parents?</td>
<td></td>
</tr>
<tr>
<td>• Did you feel loved by your parents?</td>
<td></td>
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<tr>
<td>Self esteem (CA, WA)</td>
<td></td>
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<tr>
<td>• What concerns do you have about becoming/being a mother?</td>
<td></td>
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<tr>
<td>History of psychiatric/emotional problems (CA, WA, PD)</td>
<td></td>
</tr>
<tr>
<td>• Have you ever had emotional problems?</td>
<td></td>
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<tr>
<td>• Have you ever seen a psychiatrist or therapist?</td>
<td></td>
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<tr>
<td>Depression in this pregnancy (PD)</td>
<td></td>
</tr>
<tr>
<td>• How has your mood been during this pregnancy?</td>
<td></td>
</tr>
</tbody>
</table>

**Associated postpartum outcomes**
The antenatal factors in the left column have been shown to be associated with the postpartum outcomes listed below.

Bold, italics indicates good evidence of association. Regular text indicates fair evidence of association.

CA—Child Abuse CD—Couple Dysfunction PI—Physical Illness PD—Postpartum Depression WA—Woman Abuse

*Addressograph
<table>
<thead>
<tr>
<th>Antenatal Factors</th>
<th>Comments/Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>substance use</strong></td>
<td></td>
</tr>
<tr>
<td>Alcohol/drug abuse (WA, CA)</td>
<td></td>
</tr>
<tr>
<td>• How many drinks of alcohol do you have per week?</td>
<td></td>
</tr>
<tr>
<td>• Are there times when you drink more than that?</td>
<td></td>
</tr>
<tr>
<td>• Do you or your partner use recreational drugs?</td>
<td></td>
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<tr>
<td>• Do you or your partner have a problem with alcohol or drugs?</td>
<td></td>
</tr>
<tr>
<td>• Consider CAGE (Cut down, Annoyed, Guilty, Eye opener)</td>
<td></td>
</tr>
<tr>
<td><strong>family violence</strong></td>
<td></td>
</tr>
<tr>
<td>Woman or partner experienced or witnessed abuse (physical, emotional, sexual) (CA, WA)</td>
<td></td>
</tr>
<tr>
<td>• What was your parents’ relationship like?</td>
<td></td>
</tr>
<tr>
<td>• Did your father ever scare or hurt your mother?</td>
<td></td>
</tr>
<tr>
<td>• Did your parents ever scare or hurt you?</td>
<td></td>
</tr>
<tr>
<td>• Were you ever sexually abused as a child?</td>
<td></td>
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<tr>
<td>Current or past woman abuse (WA, CA, PD)</td>
<td></td>
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<tr>
<td>• How do you and your partner solve arguments?</td>
<td></td>
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<tr>
<td>• Do you ever feel frightened by what your partner says or does?</td>
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<tr>
<td>• Have you ever been hit/pushed/slapped by a partner?</td>
<td></td>
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<tr>
<td>• Has your partner ever humiliated you or psychologically abused you in other ways?</td>
<td></td>
</tr>
<tr>
<td>• Have you ever been forced to have sex against your will?</td>
<td></td>
</tr>
<tr>
<td>Previous child abuse by woman or partner (CA)</td>
<td></td>
</tr>
<tr>
<td>• Do you/your partner have children not living with you? If so, why?</td>
<td></td>
</tr>
<tr>
<td>• Have you ever had involvement with a child protection agency (ie Children’s Aid Society)?</td>
<td></td>
</tr>
<tr>
<td>Child discipline (CA)</td>
<td></td>
</tr>
<tr>
<td>• How were you disciplined as a child?</td>
<td></td>
</tr>
<tr>
<td>• How do you think you will discipline your child?</td>
<td></td>
</tr>
<tr>
<td>• How do you deal with your kids at home when they misbehave?</td>
<td></td>
</tr>
</tbody>
</table>

**Follow-up Plan:**

- Supportive counselling by provider
- Additional prenatal appointments
- Additional postpartum appointments
- Additional well baby visits
- Public Health referral
- Prenatal education services
- Nutritionist
- Community resources / mothers’ group
- Homecare
- Parenting classes/ parents’ support group
- Addiction treatment programs
- Smoking cessation resources
- Social Worker
- Psychologist / Psychiatrist
- Psychotherapist / marital /
- Family therapist
- Assaulted women’s helpline / shelter / counselling
- Legal advice
- Children’s Aid Society
- Other: ______________________
- Other: ______________________
- Other: ______________________
- Other: ______________________
- Other: ______________________
- Other: ______________________
- Other: ______________________
- Other: ______________________

**comments:**

________________________________________________________________________________________________________________
________________________________________________________________________________________________________________
________________________________________________________________________________________________________________
________________________________________________________________________________________________________________
________________________________________________________________________________________________________________

Date Completed ________________  Signature ________________________________

* The ALPHA Guide is available through the Department of Family and Community Medicine, University of Toronto.
women (wife assault), its incidence (so women know they are not alone), and the fact that it is an unacceptable crime can be displayed throughout patient areas.

As advocates of women and their families, physicians will continue to promote women's health by increasing their own understanding of abuse and the various available resources. Physicians should encourage and participate in education programmes for all health care professionals within their organizations. Other professionals' expertise can be used through an interdisciplinary approach.

SMOKING AND PREGNANCY

Clear evidence exists that there is an association between smoking and pregnancy outcomes. Considerable information has come to light regarding adverse effects of second-hand smoke on infants and children. The major problems associated with smoking in pregnancy are prematurity and low birth weight. Increased risks have also been identified of tubal pregnancy, spontaneous abortion, placenta praevia or placental abruption, hydramnios, premature rupture of membranes, stillbirth, neonatal deaths, sudden infant death syndrome, congenital defects, and respiratory problems in babies and young children.1,2

Ideally, women should stop smoking prior to conception. Maximum reduction of risk is felt to occur if individuals quit smoking by sixteen weeks gestation, however, quitting smoking at any stage of gestation is advisable.3 It appears even reducing smoking can improve birth outcomes.1,6

In Canada in 1990, 28 percent of women over age fifteen reported smoking daily.7 To intervene successfully, one must first recognize women who are smokers. At the first prenatal visit, 20 to 40 percent of women will identify themselves as smokers. If few women seem to admit they smoke in your practice, you may not be asking the right question.9

There is some controversy as to what method of smoking cessation is best—“tapering” vs. “cold turkey”. Some of those who quit will relapse, but these women will have decreased smoke exposure to their fetuses, if only for a matters of weeks. Most smokers quit four to five times before they are permanently smoke free.

The most effective method for reducing smoking appears to be self-help (how-to) behaviour modification strategies.3-10 Initially, one should ascertain at the first prenatal visit the extent to which a woman is smoking, previous attempts to quit, and how she went about it. The amount of personal support a woman feels she would have is also an important factor. This will then delineate the extent to which a particular patient will benefit from hand-out materials of “quit tips”. Many of these strategies are included in “Guide your Patients to a Smoke-Free Future", a program of the Canadian Council on Smoking and Health.11

When counselling women about smoking cessation, it is important to understand the reasons why women smoke. For many, smoking is a relief from stress—a cigarette is seen as a reward, a break, a means of calming oneself down. It is helpful for women to discuss these issues so they can understand what motivates them to smoke. Cigarettes can be a relatively affordable and accessible means of relaxation or escape. It may take much guided advice and encouragement for women to seek out other more healthful ways of stress reduction.

Weight control and dieting is another reason many women smoke, and this concern over weight can also influence women who are pregnant to continue smoking. It is important to stress the links between smoking and poor pregnancy outcomes.

Smoking is increasing amongst adolescent girls.12 In Canada tobacco use is strongly linked to low income and other signs of social disadvantage. A borginal and Inuit women are more likely to smoke. Low income women and those with social disadvantage have fewer ways to try to quit than do women with more resources.4 It is therefore important for all health care providers to be sensitive to these types of barriers.

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THE DON'TS WHEN ABUSE IS IDENTIFIED

1. Don't discuss the issue in front of others. Be discreet.
2. Don’t impose solutions on the woman. She needs to be a part of the problem-solving process.
3. Don’t make judgements or blame the woman. Be aware of your body language to ensure non-verbal and verbal communications are consistent.
4. Don’t minimize the seriousness of the situation or her expressed feelings and concerns.
5. Don’t ignore the admission of abuse. This may be the only time she admits to the violence and, therefore, the only opportunity to offer support. Your response to her can have long-lasting effects.
6. Don’t tell her what to do or that she must leave the abusive situation. That must be her choice.
Besides office counselling about the risks of smoking and advice to quit, physicians need to be aware of these factors and be able to refer women to community resources that can provide women-centred support for smoking cessation.

In summary, the three keys to approaching smoking are:
1) ASK all pregnant women if they smoke.
2) ADVISE all who smoke about the benefits of quitting, risks of smoking to the fetus, and the effects of second-hand smoke.
3) ASSIST/ENCOURAGE all who smoke to reduce or quit.

**Patient Resource Materials**
- The Canadian Cancer Society pamphlets:
  - When a Woman Smokes
  - Where There's Smoke...It's usually second-hand
  - Growing Up in Smoke.
- Canadian Council on Smoking and Health pamphlet: A New Start in Life—About pregnancy and smoking.

**Health Care Provider Resources and Suggested Reading**
- Smoking Interventions in the Prenatal and Postpartum Periods. Ottawa: Health Canada, 1995:
  - Smoking and Pregnancy: A Woman’s Dilemma
  - Tobacco Resource Material for Prenatal and Postpartum Providers—A Selected Inventory
  - The Effects of Tobacco Smoke and Second-Hand Smoke in the Prenatal and Postpartum Periods—A Summary of the Literature
  - Tobacco Reduction in Prenatal and Postpartum Programs for High-Priority Families—Results of a Cross-Canada Survey
  - Smoking Interventions in the Prenatal and Postpartum Periods
  - Smoking and Pregnancy—Selected Program Profiles.
- Available from: Women and Tobacco Reduction Programs, 4th Floor Jeanne Mance Building, Tunney’s Pasture, Ottawa ON, K1A 1B4. Fax (613) 952-5188.
- ACOG. Healthy Moms, Healthy Babies, Healthy Families—Helping Your Patients Quit Smoking.

**Alcohol and Pregnancy**
All women should be questioned about alcohol use and should be encouraged to avoid alcohol and unnecessary drugs during pregnancy. It is important to increase the awareness of the public to the hazards of alcohol taken during pregnancy. Women substance abusers should be encouraged to seek treatment. The risks of alcohol consumption must be stressed during preconceptual counselling. Identification early in pregnancy of women who abuse alcohol, and referral to supportive agencies for treatment, should improve outcomes.

**Fetal Alcohol Syndrome (FAS)** is a pattern of abnormalities observed in children born to women with a history of alcohol consumption in pregnancy. Features of this syndrome include:
- growth restriction,
- central nervous system involvement,
- characteristic facial abnormalities.

A child must present with abnormalities in all three categories for the diagnosis to be confirmed. A Icohol Related Birth Defect (A RBD) is a term used to refer to anatomical or functional abnormalities attributed to pre-natal exposure to alcohol. Fetal A Icohol Effect (FAE) is an ambiguous term most commonly used to encompass a milder form of FAS, or a situation where not all the criteria of the Syndrome are met. There are five factors which account for the form and intensity of alcohol-related birth defects:
- quantity of alcohol consumed,
- gestational timing of the consumption,
- the mother's ability to metabolize alcohol,
- nutritional status and smoking habits of the mother,
- individual fetal susceptibility (genetic factors).

Fetal alcohol syndrome is more likely to occur following fetal exposure to continuous or heavy maternal intake of alcohol, but it remains unclear as to what quantity of alcohol consumption can be regarded as safe during pregnancy. On the basis that excessive or persistent alcohol intake has been associated with fetal alcohol syndrome, a prudent choice for women who are or may become pregnant is to abstain during pregnancy. A review of the literature suggests that occasional intake of alcohol during pregnancy is unlikely to cause problems for the fetus. Women who are concerned about the effect of occasional or inadvertent alcohol intake on fetal development and subsequent performance can be reassured.

SUGGESTED READING

DRUG USE AND ABUSE IN PREGNANCY

Ideally, adequate counselling regarding drug use and abuse should occur prior to conception. It is recommended that a drug history be obtained during the first prenatal visit. Women who are currently taking prescribed medication need to be evaluated for possible risks during pregnancy. Current available data should be reviewed with the patient. Dose modifications may also be required. Patients should be encouraged to consult their physician prior to starting new prescribed or over-the-counter medication.

Risk assessment regarding drug abuse and pregnancy should also be undertaken early in prenatal care. Women who abuse drugs are frequently poly-drug abusers, and are at higher risk of HIV infection if they or their partners are intravenous (IV) drug users. Drug abuse is often associated with other sexually transmitted diseases as well, and these need to be screened for and treated. A toxicology screen may be indicated if multiple drug use is suspected, or if history is vague, in order to identify the specific drugs used. Referral to a drug treatment programme for further drug history, diagnosis and treatment may be necessary. It is important to note that maternal withdrawal and detoxification from some drugs involves risk of fetal withdrawal, possibly resulting in death. A multi-disciplinary approach to risk reduction is very important.

Much more research has been done on fetal than maternal drug effects. For instance, marijuana has been linked to impaired fetal growth and decreased gestational length. Cocaine has been linked to poor fetal growth, malformation and impaired neurobehavioural development. Maternal heroin use has been related to low birth weights and neonatal abstinence syndrome (NAS). Other possible effects of illegal drug exposure in general include sudden infant death syndrome, developmental delays and learning disabilities, speech disorders, attention deficit disorder, and aggressive behavioural tendencies.
Educational and support pamphlets should be readily available in washrooms.

SUGGESTED READING

EXPOSURE TO INFECTIOUS DISEASES DURING PREGNANCY

Exposure to an infectious disease during pregnancy is a source of marked anxiety both for the couple and the health care workers. A prenatal care plan should outline the following guidelines:

EDUCATION TO RECOGNIZE SOME OF THE IMPORTANT COMPLICATIONS OF PREGNANCY

The prenatal care plan should include health education to enable the pregnant woman to recognize early some of the complications of pregnancy and instigate treatment where appropriate.

PRETERM LABOUR AND BIRTH

Preterm birth is a major financial burden because of the need for neonatal intensive care and care for children with handicapping conditions. Risk scoring has met with limited success due to its relative inability to predict preterm birth in primigravida women. Previous preterm birth is the most important risk factor for recurrence. Effective prevention and treatment of preterm labour have yet to be developed. General measures have
<table>
<thead>
<tr>
<th>Disease</th>
<th>Recommendation</th>
</tr>
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<tbody>
<tr>
<td>Chicken pox (Varicella-zoster)</td>
<td>Routine screening is not indicated. Pregnant women exposed to chicken pox (varicella-zoster virus) should first be tested to determine immunity before being given varicella-zoster immune globulin (VZIG), since about 80 percent of women with no history of chicken pox infection are in fact immune, and the cost of the immune globulin is about 16 times the cost of the immune status test. Because the risk of complications of chicken pox in pregnant women may be greater than in other adults, VZIG should be given to exposed susceptible pregnant women. Treatment of the newborn from a mother with recent active chicken pox with varicella-zoster immune globulin is indicated.</td>
</tr>
<tr>
<td>Chlamydia</td>
<td>Caregivers should offer screening to women felt to be at increased risk. This would include those in areas of high prevalence, women &lt;20, and those with multiple sexual partners (or a partner with multiple sexual partners) or history of sexually transmitted diseases. There is fair evidence to support routine screening of pregnant women for chlamydia.</td>
</tr>
<tr>
<td>Cytomegalovirus</td>
<td>No pregnancy screening is indicated. The potential public health effect of preconception screening remains to be determined because of the possibility of recurrent infections.</td>
</tr>
<tr>
<td>Gonorrhoea</td>
<td>Screening of high risk populations (as for chlamydia) by cervical culture at first visit and if symptomatic (i.e. cervicitis).</td>
</tr>
<tr>
<td>Group B Streptococcus</td>
<td>Until the results of Canadian studies are available, the SOGC recommends the following: 1. The strategy for decreasing early-onset GBS infection in the neonate should be considered an area where there is an urgent need for research in Canada. 2. Until more specific information is available, identification and management of women whose newborns might be at increased risk of GBS disease are acceptable by either of two methods: a) Universal screening of all pregnant women at 35 to 37 weeks gestation with a single combined vaginal-anorectal swab and the offer of intrapartum chemoprophylaxis to all GBS-colonized women. b) No universal screening but intrapartum chemoprophylaxis for all women with identified risk factors. This strategy should also be used in cases where universal screening is the policy but either was not done or the test results are not available.</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>All women should be screened for Hepatitis B surface antigen at the preconception visit or during pregnancy. Treatment of all infants of surface antigen-positive mothers with Hepatitis B immune globulin and immunisation is indicated. At the preconception or during the first prenatal visit, women at high risk for acquiring hepatitis because of habits or work situation may be screened for antibody status and, if not immune, immunisation is appropriate.</td>
</tr>
<tr>
<td>Herpes</td>
<td>Routine prenatal screening by culture is not indicated for those with a positive history. A single culture to confirm diagnosis is indicated when lesions are present. Delivery by Caesarean section is indicated only in the presence of clinically active lesions in the lower genital tract.</td>
</tr>
<tr>
<td>HIV</td>
<td>The SOGC recommends that providers of prenatal care: a) be aware of the efficacy of AZT in reducing vertical transmission to the offspring of pregnant women who are HIV positive; b) provide basic information about HIV testing, including the risks and benefits of finding a positive result, and stressing the success of treatment in reducing vertical transmission; c) offer HIV testing for all pregnant women; d) carry out testing with the agreement of the woman and with due regard to confidentiality; e) document refusal of HIV testing on the patient’s chart. Refer to Appendix 2-1 for full details.</td>
</tr>
<tr>
<td>Mycoplasma</td>
<td>No prenatal screening is indicated.</td>
</tr>
<tr>
<td>Rubella (German measles)</td>
<td>At the preconception visit, women at risk for rubella should be identified and, if not actively attempting to become pregnant, should be immunised. Screening by serology at the first prenatal visit is indicated. Rescreening of serologic-negative women should be performed after exposure or if they have a possible rubella infection. Women who have negative serology should be immunised postpartum.</td>
</tr>
</tbody>
</table>
included counselling about diet, smoking cessation and improving antenatal care. Advice regarding the reduction of strenuous work has also been pursued (see page 24). Rest has not been proven to be beneficial, however, it may be recommended for those considered in a high risk category. Education regarding the recognition of some of the early signs of preterm labour, including excessive mucousy vaginal discharge and/or excessive uterine activity, may be useful.

Preventive Strategies for Preterm Birth

Prevention of preterm birth continues to be the subject of ongoing research. In a recent review, Moutquin discussed those interventions which have shown some promise.1

Premature Rupture of Membranes

The possibility of premature rupture of membranes should be discussed with pregnant women during prenatal care, along with advice regarding immediate reporting of this occurrence. Patients with suspected premature rupture of membranes should be evaluated as soon as possible, whether this happens at term or preterm.

Antepartum Haemorrhage

The prenatal care plan should include discussion regarding vaginal bleeding during pregnancy. Pregnant women need to be informed that any bleeding during pregnancy is abnormal and should be brought to the attention of her physician immediately. The significance of abdominal pain in pregnancy, especially if associated with tenderness of the uterus, may be discussed.

Hypertensive Disorders in Pregnancy

The desire to improve the poor pregnancy outcome associated with hypertension was responsible for the development

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<table>
<thead>
<tr>
<th>Disease</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rubeola (Red measles)</td>
<td>If a pregnant woman has been exposed to measles and her immunity status is in doubt, she should be tested for measles antibodies. Immune globulin (0.25 ml/kg for a healthy adult; 0.5 ml/kg if immuno-compromised) is recommended within six days of the last exposure to measles if patient is immuno-compromised or if measles immune status is unknown/questionable and measles IgG serology is either negative or can’t be obtained before 6 days from the last exposure. Immune globulin is not recommended if the woman was born before 1957, has had documented natural measles, or has had two doses of vaccine a minimum of one month apart.4</td>
</tr>
<tr>
<td>Syphilis</td>
<td>Screening by serology at the preconception and/or early pregnancy visit is indicated as per provincial regulations. For women at risk, a repeat test in the third trimester is indicated.</td>
</tr>
<tr>
<td>Toxoplasma</td>
<td>An educational programme at the preconception and/or first pregnancy visit is appropriate. Screening by serology at the first pregnancy visit may be appropriate, but only for those known to be at risk (have a new or outside cat or eat raw meat), with a repeat test at 16 to 20 weeks. Converters may be referred to a tertiary centre for percutaneous fetal blood sampling and culturing and, if positive, treatment or termination. Due to the high prevalence and seriousness of maternal infection and prenatal transmission, a potential health benefit to routine preconception screening exists. The presence of antibodies provides reassurance about immunity. The absence of antibodies underscores the need for education and vigilance.</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>Screening by skin testing should be performed only in women at high risk for the disease or in high-risk populations or in endemic areas.</td>
</tr>
</tbody>
</table>
of much of the prenatal care system as we now know it. Hypertensive disease occurs in six to eight percent of pregnancies. Associated risk factors include low socio-economic and educational status, poor nutrition, and primigravid status. It occurs more frequently in association with other conditions, including chronic hypertension, diabetes, renal disease, multiple gestation and polyhydramnios. It is one of the major causes of maternal mortality.

The problem of hypertensive disorders in pregnancy should be discussed with pregnant women. In the majority of cases, this disease is essentially asymptomatic. Taking blood pressure values before conception or during early prenatal visits may provide important information about existing conditions, such as chronic hypertension, and provide base-line values—useful for comparison later in the pregnancy. Failure to demonstrate a normal decline in blood pressure during the second trimester may be used to predict the risk of pre-eclampsia.

Evaluation for protein in the urine may be useful in some prenatal visits. Some patients with pre-eclampsia have severe proteinuria with minimal hypertension, whereas in others, hypertension is more prominent. Edema is the third clinical sign traditionally evaluated when considering the diagnosis of pre-eclampsia. Edema, even of the hands and face, is such a common finding in pregnant women that if present by itself, it is not an important diagnostic clue nor a reason for treatment.

Pregnant women with mild hypertensive disease or chronic hypertension should be counselled about the possible deterioration of the disease and some of the associated symptoms, which include: frontal headaches, visual upsets, and/or epigastric pain.

Fetal Movement

Part of prenatal care should include education about fetal movement patterns during the second half of the pregnancy. Observing them is a non-invasive, inexpensive and universally available tool for fetal surveillance in which the pregnant mother may actively participate. It is a valid method for assessing fetal health and well-being. A decrease and/or cessation of fetal movements may be indicative of possible fetal hypoxia, and should be evaluated further.

Summary

Health education during pregnancy should be promoted for all pregnant women and their partners. This may include:

1. Counselling to promote and support healthy behaviour (for example, nutrition, exercise, stress reduction, and smoking cessation).
2. General knowledge of pregnancy, fetal growth and development, labour and delivery, parenting, as well as possible complications of pregnancy.
3. Information on the proposed prenatal and birthing care plans.

Physicians, as important members of the health care team, should encourage patients to participate in health education and prenatal classes.

**BREASTFEEDING**

**BENEFITS OF BREASTFEEDING**

1. Improved newborn immunity while breastfeeding will lower the frequency of infant respiratory and gastrointestinal problems.\(^2\)

2. Unlike cows’ milk protein found in many formulas, breast milk lowers the incidence and severity of allergic responses.\(^2,3\)

3. Breastfeeding is a less expensive alternative than formula feeding, with no preparation time required.\(^4,5\)

4. Breast milk is more easily digested and its nutrients more readily absorbed by the infant.\(^3\)

5. Breastfeeding promotes mother-infant bonding.\(^6\)

6. Only breast milk contains Omega 3 fatty acids which are vital for brain development.

**COMPONENTS OF COUNSELLING AND PATIENT EDUCATION**

The prenatal counselling process provides a wonderful opportunity for the physician to offer the woman accurate, updated, and consistent information. The woman is thus assisted in making informed choices about breastfeeding. Using such effective communication skills as listening and asking open-ended questions, the physician encourages the woman to express her understanding of breastfeeding. The Canadian Paediatric Society states, “the best food source for the first six months of life is breast milk...”.\(^4\) Similarly, the World Health Organization (WHO) together with the United Nations Children’s Fund (UNICEF) recommends that infants should be exclusively breastfed from birth to four to six months of age.\(^7\) The rationale behind counselling is to assist a woman in making an informed decision, and should include discussions of the benefits and common myths about breastfeeding.

First, the woman’s knowledge level and beliefs (such as cultural beliefs) about breastfeeding should be assessed. Following this assessment, teaching should be begun based on the woman’s learning needs. UNICEF and the WHO recommend the following approach:\(^7\)

Physicians can promote breastfeeding by increasing their understanding about the benefits of breastfeeding and then passing this information on to women. Physicians should be familiar with the various community resources for breastfeeding mothers for those women who choose to seek access to further support. Breastfeeding mothers should be encouraged to contact their physician, midwife or a certified lactation consultant immediately if they encounter difficulty with infant feeding.

**COUNSELLING AND PATIENT EDUCATION**

1. Facilitation of exclusive breastfeeding for four to six months, which should be initiated and supported in hospital by:
   - not giving artificial feeds of water (only breast milk);
   - breastfeed on demand (usually 8 to 12 times in 24 hours);
   - do not use bottles or pacifiers because this can encourage poor sucking technique.

2. Dispel such breastfeeding myths as:\(^4,7,8\)
   - expression of colostrum antenatally;
   - nipple preparation or breast massage antenatally;
   - routine application of creams or ointments to the nipple.

3. Promote early initiation of breastfeeding:
   - within one hour post-vaginal birth;
   - within 30 minutes of the mother’s ability to respond to her newborn post-Caesarean section.

**REFERENCES**

**PRENATAL EDUCATION**


NUTRITIONAL COUNSELLING


WORK DURING PREGNANCY


STRESS AND SOCIAL SUPPORT


Abuse in the Obstetrical Population
10. WomanKind. 8 steps to support and safety. Fairview Health System, Minneapolis, MN, 1994.

Additional References — Abuse in the Obstetrical Population

Smoking and Pregnancy

Alcohol and Pregnancy
DRUG USE AND ABUSE IN PREGNANCY

EXPOSURE TO INFECTIOUS DISEASES DURING PREGNANCY

EDUCATION TO RECOGNIZE SOME OF THE IMPORTANT COMPLICATIONS OF PREGNANCY

BREASTFEEDING

APPENDIX 3-2
GUIDELINES FOR THE MANAGEMENT OF NAUSEA AND VOMITING IN PREGNANCY

This Committee Opinion was prepared by the Clinical Practice—Obstetrics Committee of the Society of Obstetricians and Gynaecologists of Canada and approved by its Council in June 1995.

The SOGC wishes to acknowledge Dr. Sandra de la Ronde of Calgary as the principal author and Dr. Jayne Hirak, R.D., PhD, Foothills Hospital, Calgary, for her contribution on nutritional information.

Nausea and vomiting affect at least fifty percent of pregnant women. Traditionally, these symptoms have been called “morning sickness” and are most common in the first and early second trimesters. However, the symptoms may be present throughout the day and may last for the entire pregnancy. While nausea and vomiting are considered to be a “normal” part of the pregnant state, their effects on the pregnant patient’s sense of well-being have probably been underestimated. A descriptive study by O’Brien and Naber showed that eighty-three percent of women felt that these symptoms had affected their ability to perform usual activities, and in one-third they were severe enough to affect the woman’s ability to function in family, social, and occupational spheres.1

Hyperemesis gravidarum occurs in about one percent of pregnancies and is defined as vomiting severe enough to produce weight loss, dehydration, acid-base disturbances, ketonuria, and electrolyte imbalances. Each year, a significant number of women are admitted for hyperemesis gravidarum and may require such interventions as total parenteral nutrition. Early recognition and management could therefore have a significant effect on the quality of life during pregnancy, as well as a financial impact on the Health Care System.

MANAGEMENT

Management of this problem is multi-faceted. It includes early recognition, dietary and lifestyle advice, as well as pharmaceutical and alternative forms of therapeutic interventions.
**Early Recognition**

Careful questioning of the patient, early in the pregnancy, about the frequency and intensity of the symptoms of nausea and vomiting allows the practitioner to intervene with diet and lifestyle adjustments as well as medication, with the aim of preventing progression to hyperemesis. Too often, patients are seen after the worst of the symptoms have subsided or intervention is not offered until they are already quite severe.

**Diet**

Traditionally, women with nausea and vomiting of pregnancy, especially hyperemesis, have been told to eat frequent small meals consisting of dry, bland foods. Patients admitted with severe symptoms have been starved and given intravenous fluids. When they can eat, they have been given clear fluids only. More recent recommendations suggest that, as soon as they are hungry, women should be encouraged to eat frequent small amounts of whichever foods appeal to them. Emphasis is placed on intake rather than content until the symptoms have subsided. Suggestions for foods which appeal to pregnant women because of taste and texture are listed in Table 1.

**Lifestyle**

Fatigue seems to exacerbate nausea and vomiting. Women should be encouraged to increase their rest while they are symptomatic and to seek assistance in such daily activities as child care.

Pregnant women seem to have an increased sensitivity to odours, probably due to the effect of increased levels of estrogen on the area postrema in the brain. Consequently, aromas of cooking food as well as odours in the workplace may initiate nausea (e.g. perfume, smoke). The partner should be encouraged to cook.

It would, therefore, seem appropriate for health care providers to adopt a liberal attitude towards providing letters for leaves-of-absence from work. Such a policy will ultimately shorten the time lost from outside employment.

**Therapeutic Intervention**

a) Non-pharmacological

Current public information cautions pregnant women to limit the use of all medications except vitamins. Hence, many pregnant women are hesitant to use any drug even when the drug has been proven to have no harmful effects on the fetus. They may, however, be amenable to alternative forms of treatment.

The Cochrane Pregnancy and Childbirth Group (CPCG) reviewed three controlled trials studying the effect of acupressure at the P6 (Neiguan) point. This point is located on the inner aspect of the wrists, just proximal to the flexor crease. A randomized double-blind cross-over trial comparing placebo using bands with pressure and blunted points showed a significant reduction in the symptoms of nausea and vomiting. The CPCG concluded there was a significant positive effect and that acupressure was safe. Currently, Sea-Bands are available for patients who wish to try this form of therapy.

The effects of ginger (Zingiber officinale) on nausea and vomiting have been studied in patients with hyperemesis gravidarum. A double-blind randomized cross-over trial compared placebo and 250 mg q.i.d. of powdered ginger root and found a significant beneficial effect on symptoms. However, there is insufficient information about the effects of larger doses of ginger on the fetus, and until further trials are completed, ginger cannot be recommended as a treatment for nausea and vomiting in pregnancy.

Vitamin B6 (pyridoxine) has also been studied as a treatment of nausea in pregnancy. The CPCG reviewed one available trial and found a positive effect. More trials are needed.

b) Pharmacological

Doxylamine Succinate 10 mg, in combination with Pyridoxine HCl 10 mg (Diclectin), were approved for use in the treatment of nausea and vomiting in pregnancy by the Health Protection Branch of Health and Welfare Canada in 1990. To date, this formulation is the only anti-nauseant approved for such use.

Health practitioners and pregnant women who are concerned that this drug has the same formulation as Bendectin, which was withdrawn from the market in the USA in 1983 after several unsuccessful lawsuits against it, should know that in spite of the most vigorous testing of any drug in pregnancy, no evidence of teratogenicity has been found. In fact, the Australian obstetrician who originally stated the drug was a teratogen has been found guilty of scientific fraud in his experiments related to the drug.

Multiple studies have reviewed Debendox (Bendectin) and concluded that the drug is a safe, effective treatment for nausea and vomiting of pregnancy and that there is no evidence that it is a teratogen.
Doxylamine Succinate 10 mg, in combination with Pyridoxine HCl 10 mg (Diclectin) is a delayed release tablet. Most women experience their symptoms in the morning. Therefore, it is recommended that they should start with two tablets at night before bed. If symptoms are not relieved, one tablet in the morning and another in midafternoon can be added. The dosing regimen can also be tailored to fit each woman’s peak of symptoms.

CONCLUSION

Nausea and vomiting are frequent symptoms in pregnant women which can affect their quality of life significantly. It is recommended that all health practitioners should question women early in their pregnancies about the presence of these symptoms and offer intervention with advice about DIET, LIFESTYLE adjustment and MEDICAL treatment.

TABLE 1

<table>
<thead>
<tr>
<th>SUGGESTIONS FOR FOODS WHICH APPEAL TO PREGNANT WOMEN BECAUSE OF TASTE AND TEXTURE</th>
</tr>
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<tbody>
<tr>
<td>Salty</td>
</tr>
<tr>
<td>Tart/Sour</td>
</tr>
<tr>
<td>Earthy</td>
</tr>
<tr>
<td>Crunchy</td>
</tr>
<tr>
<td>Bland</td>
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<tr>
<td>Soft</td>
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<tr>
<td>Sweet</td>
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<tr>
<td>Fruity</td>
</tr>
<tr>
<td>Wet</td>
</tr>
<tr>
<td>Dry</td>
</tr>
</tbody>
</table>

REFERENCES

Chapter 4

Birthing Guidelines

**Philosophy**

The great majority of births in Canada take place in hospitals, and the perinatal mortality rate has steadily improved in all provinces in the last two decades. A rate at or below 10/1000 births has been achieved in all provinces. This highlights the effectiveness of the medical community at working together in a regional team.

In 1994, Health and Welfare Canada, with representatives from many national organizations—including the Society of the Obstetricians and Gynaecologists of Canada—undertook a revision of its recommended Standards for Maternity and Newborn Care, and published the updated Family-Centred Maternity and Newborn Care: National Guidelines in 1998. This document promotes a change from the traditional rigid and routinely organized hospital setting towards a more consumer-oriented one, where the family receives highly individualized and personalized care. Obstetrical units are advised to abandon their routines and practice family-oriented, evidence-based medicine.

A report issued by the Canadian Institute of Child Health on routine maternity care policies and practices in Canadian Hospitals showed that the guidelines are widely used. However, they are implemented differently across Canada, where surprising inter- and intra-provincial variations, as well as variations based on hospital size, still exist. These findings indicate the need to adopt specific implementation policies to influence and perhaps define the provision of obstetrical care across Canada more uniformly.

This document is a step towards this goal of updating guidelines to reflect current evidence while promoting family-centred practice.

**Hospital Policies and Standards**

**Family-Centred Care**

Hospital policies should favour a family-centred approach because this concept is central to meeting the needs of everyone concerned with the childbearing experience. When this philosophy is successfully applied, the parents will have a fulfilling experience of labour and delivery, free from unnecessary interventions. The hospital will become user-friendly and, barring unforeseen problems, will allow maximum flexibility and freedom of choice to the family regarding procedures, settings, labour and delivery positions, and selection of techniques for pain reduction. There will also be acceptance of the wide variation of religious and cultural differences, an important consideration in our multiethnic country.

Applying this philosophy will allow women and their families to feel not as though they are done “to”, but “with.” The following quote is indicative of how people may feel if this is not attended to:

“I felt increasingly more ‘managed.’ I knew what I was doing; my husband had it all down, too. Labour, push, baby, suction, oxygen, placenta, nurse, clean up. Birthing in eight easy steps. Physically it was the best yet, but emotionally? Poof. I was stunned. No quite time for quiet reflection. I missed it.”
For the successful operation of maternity and newborn care units, it is essential that written policies and guidelines be established. These should clearly reflect the family-centred approach described above and such policies should be regularly reviewed and revised in view of evolving or changing knowledge about perinatal care.

These written policies and guidelines should address:

1. The roles and objectives of the unit, including a statement of philosophical objectives and population to be served by the unit.
2. The administrative structure, including the chain of command and the relationship between different levels of responsibility within the unit, including medical, nursing and/or midwifery.
3. A list of the policies and procedures that should include criteria for admission, medical coverage, responsibilities of unit staff, guidelines for recommended or mandatory consultation, guidelines on the writing of orders (including policies that would keep standing orders to a minimum), guidelines for the operation of a quality assurance programme, a means to regularly evaluate the outcomes of services provided, and all other aspects of the unit operation that deserve to be defined in a procedure manual.

**FACILITIES**

It is well understood that the age and capacity of all obstetrical units in Canada vary greatly. It is therefore difficult to make specific guidelines regarding facilities. It is clear that the widely accepted advantage of family-centred care has to be supported not only by the people, but also by a proper environment for care.

**Labour/Delivery/Recovery/Postpartum (LDRP) Rooms**

In the last two decades, the design of the birth suite for the safe monitoring and coaching of labour and birth has undergone a dramatic transition. It is clear that separating labour, birth and recovery rooms is a thing of the past and should be abandoned, if at all possible. The traditional obstetrical theatre should be used only for Caesarean delivery or complicated vaginal deliveries such as breech or twins, because of the immediate availability of general anaesthesia and advanced resuscitation equipment. The concept of labour/delivery/recovery/postpartum (LDRP) rooms offers total care of the mother from the time of her admission. Different kinds of special labour and delivery beds are available which facilitate the first and second stages of labour and promote the philosophy...
of low intervention rates and individualized care. Experience shows that the use of variable positions during labour and delivery and not limiting the second stage of labour results in a reduced incidence of operative deliveries and episiotomies. In addition, such an approach increases patient satisfaction. If necessary, operative deliveries and other emergency obstetrical procedures can also be safely accomplished in these beds.

It is believed that most obstetrical units can expand or convert to the LDRP concept without major renovations. In order that the LDRP concept achieve the full potential of family-centred care, it must ideally be integrated in facilities that also permit the following:

- **Adequate triage area**: Trained nurses or midwives can evaluate the situation and decide if the patient should be admitted to the active labour area, discharged, or sometimes kept in a separate lounge where the patient and her family can experience the latent phase of labour in a quiet environment without medical intervention and under the discreet supervision of the triage personnel. This special lounge should be available for women who live far enough away that they cannot be sent home. A dequate triage at the time of admission could help solve the problem of the high rate of primary Caesarean sections being done during the latent phase of labour. In 1994 the Alberta Perinatal Audit and Education Programme assessed results of an educational strategy that focused on management of the latent phase of labour. The percentage of low-risk primigravida who underwent Caesarean sections for stage 1 arrest at <4cm dilation decreased from 36.1 percent to 24.6 percent following implementation of the educational programme. Triage is also useful to identify other risk factors as well as medical or social problems, thus allowing the design of a personalized care plan for each family.

- **Facilities should provide enough privacy for rooming in with the baby**. Families and family members should be welcomed at all times at the mother’s discretion, taking into account privacy and consideration for other patients. When appropriate, fathers should also be able to room in. Maternity hospital rooms should be designed and furnished so as to ensure that families are comfortably accommodated.

- **The well baby nursery can be considerably downsized** to accommodate only the babies from mothers experiencing medical complications and/or by special request. The observation of the normal newborn must also take place in the mother’s room to ensure maximum contact with the family during these very important moments after birth. Traditionally, the newborn nursery has been considered “cleaner” than the mother’s room. However, when an infant stays in the same room as the mother, the mother does most of the handling. In the nursery, the infant is handled by many different nurses, all of whom may be handling other infants as well. Despite guidelines regarding hand washing, the potential for infections is probably greater in the nursery.

  When these three points are taken into account, in addition to the desire of consumers for greater privacy, comfort, and the ability to make choices, the labour/delivery/recovery/postpartum (LDRP) room seems to be a logical evolution for the design of future facilities or for those facilities undergoing major renovation. This concept includes the postpartum period into the same private labour/delivery/recovery (LDR) rooms common in many facilities today.

  The LDR and LDRP concepts associated with the family-centred approach to care seem to be the way of the future in obstetrics. Numerous studies have demonstrated these facilities are cost-effective, however, this does not completely prevent the traditional setting from being used with a family-centred approach. In fact, the philosophy of a unit is carried more by the people than by the facilities themselves, but it should be understood that adequate physical plant will be necessary when implementing a corresponding policy or philosophy.

### STAFFING

The actual trend in the provision of care in normal obstetrics is to move away from technology and bring back people who can offer human support and understanding to the family.

Many studies addressing labour support by trained professionals, and recent guidelines by SOGC on assessing fetal well-being in labour, favour a one-to-one ratio of nurse or midwife to mother and fetus during labour. This ratio was shown to reduce intervention rates and improve outcome.

Although there is no objective study available measuring the cost of the one-on-one care against the potential economies produced by the reduced intervention rate
and hospital stay, it is conceivable that this measure is
cost-effective and could be implemented after revision of
the traditional duties, with a minimum increase in staff.
To ensure consistency and continuity of care, it is
also recommended that the same nurse take care of
mother and baby.

**ALTERNATIVE DELIVERY SETTING**

**HOME BIRTH**

The Society of Obstetricians and Gynaecologists of
Canada resolved in June 1981, and reiterated in Sep-
tember 1997, that it strongly disapproves of home births
because they are not in the best interest of optimal
maternal-fetal health care. The Society agrees with
and encourages the establishment of hospital pro-
grammes by hospital obstetrical departments which will
promote, in every possible way, the development of
close, normal family relationships and enhance parent-
child contact without jeopardizing the safety of either.

With the increased emphasis on family-centred deliv-
ery, the move towards early discharge and the availability
of postpartum home care, there should be reduced requests
for home delivery. Health care providers who choose to
carry out home deliveries must adopt strict screening pro-
cedures, easily accessible physician consultation, and rapid
transport availability in the event of an emergency.

**ALTERNATIVE BIRTHING CENTRE OUTSIDE THE
HOSPITAL**

There has been discussion of the concept of free-
standing “birthing centres” in Canada. These centres
may not be as cost effective in urban centres as larger vol-
ume hospital units that can offer the same personalized
and family-oriented care, in addition to the rapidity of
intervention in case of emergencies. Small birthing cen-
tres may be useful in some areas where, for geographic
reasons, it is necessary to separate normal low-risk moth-
ers from their family for an extended period around the
expected date of confinement. In these situations, proper
selection of patients and the availability of emergency
transportation is crucial.

**STRATEGIES TO ADDRESS INTERVENTION RATES**

The rates of Caesarean section and other obstetrical
interventions (e.g. episiotomies, forceps or vacuum) have
drawn criticism of “medical-based care”, and strategies
to reduce their risks have been extensively addressed in
the current literature. There is no single reason for these
high intervention rates.

The following is a set of strategies to reduce inter-
vention rates in hospital.

1. **Eliminate the routines.** Many routines in hospitals
were established out of necessity to establish policies
and procedures in an institutional setting. With the
exception of such things as mandatory administra-
tion of Rh gamma globulin to Rh-negative mothers
with negative Coombs’ test, and rubella immunisa-
tion for a non-immune mother, nothing should be
automatic. It should be possible for a woman with a
normal, low-risk pregnancy to come into hospital,
deliver normally and leave having had no intravenous,
no medication, and no blood tests during her stay,

2. **A void “worst case” philosophy.** Many hospital poli-
cies prefer to keep the mother fasting during labour
in case of an emergency, which is based on a “worst
case” philosophy. The same applies for routinely
starting an intravenous on every patient during
labour. General policies based on such reasoning
should be avoided and decisions on every case should
be made on an individual basis. It is certainly advis-
able to learn from unfavourable experiences and
these should represent an opportunity to ensure that
all national guidelines and standards are reasonably
met. In so doing, policies should be modified in order
to decrease intervention rates.

3. **Provide adequate professional labour support by
nurses or midwives.** This point will be discussed sub-
sequently in the document; however, there is evi-
dence that such support may contribute to improved
outcomes.

4. **If possible, move away from routine electronic fetal
monitoring for normal, uncomplicated labour.**

5. **Provide adequate physical facilities.** It is strongly
believed by the authors that LDR and LDRP con-
cepts are very effective when associated with the
other intervention-reducing strategies. They allow
for personalized management of the first and second
stages of labour, which may directly influence the
incidence of operative delivery and episiotomy.

6. **Make an official policy for accepting birth plans.**
Initially, it is difficult to adapt to change and it may
take time for professionals to learn to modify their
routines, thus offering a more personalized service. Birth Plans are discussed in Appendix 4-1. It has been the experience of some centres that when birth plans are accepted they can become an important instrument in changing attitudes towards tolerance and personalized care. The effect is still important even when the birth plan is not extensively used.

7. Establish special specific programmes and make them known to the public. This does not refer to costly new technologies, but rather certain areas of obstetrical care that are already accepted but may not yet be fully implemented in a given centre. The most commonly used are VBAC and vaginal breech birth programmes that address special obstetrical challenges. Others are more specific to the needs of a particular population—for example, the natural birth programme that is aimed at balancing the home delivery trend or programmes aimed at serving different ethnic or linguistic minorities. These programmes are useful for implementing progressive but lasting changes in a given unit.

Implementation of Progressive and Lasting Changes

This is a gradual process which may be summarized as follows:

1. Make somebody responsible for reviewing the existing literature and guidelines on the subject. This person should demonstrate a vested interest and would eventually be responsible for the planning of the change to be implemented.

2. Involve all levels of professionals concerned with the development and implementation of the new policy or programme, ensuring that all team members agree with the final draft.

3. The implementation plan should include a presentation of the policy to all members of the unit. A question and answer period must be included. The presentation should also include publicity to the consumer. This can be achieved through prenatal courses and physicians' offices. It is also very effective to use alternative non-professional routes like the local newspaper or alternative birthing associations. This will ensure the enrolment of very motivated patients, which in turn will increase the chance of success during the initial stages of the programme. It is to be expected that eventually, the programme will run by itself without the need of a specific person in charge of publicity.

It is advisable that a promotional flyer/brochure be created and distributed to interested groups. This pamphlet should include information about the different procedures available. It is important for the patient to be well-informed concerning the risks, but also the advantages must be stressed.

4. Be consumer-oriented. The satisfaction of the family members during their experience of birth should be a high priority in any obstetrical unit. The degree of satisfaction can be monitored by regularly questioning the consumers. As mentioned earlier, consumers' demands are often what initiate change. This is especially true when they feel they have the ability to make choices.

References


APPENDIX 4-1

FAMILY BIRTHING CENTRE

DESCRIPTION OF THE UNIT

The birthing unit for the family is comprised of _ _ private rooms fully equipped to deal with the labour, delivery, recovery and postpartum stay. Rooming-in 24 hours a day for the baby and the significant other is included.

PHILOSOPHY OF THE UNIT

The unit favours a familial, natural and individual approach in which the medical personnel—nurses and others—work towards making the birthing and postpartum experience a positive and enriching one for the family.

In order to accomplish this, there are very few pre-established routines and care should be tailored to each individual’s needs. All hospital resources will be made available. In order that the philosophy of the family birthing centre is maintained, other technical resources will be used only when absolutely necessary.

LABOUR

- Admission to a birthing room with therapeutic bath.
- No shaving, no enema.
- Fetal monitoring for the first 15 to 20 minutes and if all is normal, further monitoring is done either intermittently or at regular intervals.
- Freedom to walk about at all times during labour and ability to use the therapeutic bath as needed.
- Intravenous line used only for special or high risk cases.
- Choice of positions for the delivery.

Full participation from the patient, her partner and/or other family member is encouraged. The baby is immediately placed on the mother’s abdomen after the birth and the primary care and observation of the baby will be done in the room with the couple and other family members. Rooming-in is available 24 hours a day.

All interventions will be performed only if they are medically indicated and will be well explained to the couple in advance.

The hospital stay varies between 24 hours and three days, depending on the circumstances. Such special programmes as vaginal birth after Caesarean section (V B A C) and vaginal breech births are available. It is also possible to leave the hospital immediately after the birth, but this must be discussed with the treating physician.

SAMPLE BIRTH PLAN

We encourage you to write down your wishes and desires for the birth and to discuss these with your physician. (Use additional sheet, if necessary)

Your support people: ____________________________

Your preferences about pain control: ____________________________

Medical interventions during labour: ____________________________

Second stage and delivery: ____________________________

Most important issues: ____________________________

Concerns or fears: ____________________________

Infant feeding: ____________________________

Newborn Procedures: ____________________________

THIS BIRTH PLAN HAS BEEN REVIEWED AND DISCUSSED WITH ME.

Patient’s signature: ____________________________

Doctor’s signature: ____________________________
Chapter 5
FIRST STAGE OF LABOUR

EARLY ASSESSMENT

Labour and birth are both normal physiological events. However, for many women, labour may be a time of fear, uncertainty, excitement and anxiety as well as anticipation. Caregivers of labouring women must always bear in mind that women’s perceptions and memories of this experience remain with them throughout a lifetime. In order to facilitate a positive experience, the SOGC recommends a philosophy of care that emphasizes respect for individual family choices and needs, flexibility in the provision of care, and collaboration between the family and the health care team. This family-centred approach should guide the management of all labouring women.

Women presenting in suspected labour at term should be greeted in an early assessment room. If possible, this unit should use rooms other than those allocated for actively labouring patients. The initial assessment should include a brief review or familiarization with the woman’s past medical and obstetrical history and the history of this pregnancy, as well as a record of the presenting problem and vital signs.

Details of the current situation, such as onset time of contractions, the pattern of their development, and the history and time of spontaneous rupture of membranes, should be recorded on a partogram (see Appendix 5-2 for example). Unless otherwise contraindicated, a cervical examination should be performed in triage and membrane status confirmed by speculum examination. The couple’s birth plan should be reviewed once the examination has been completed.

Latent and active phases of the first stage of labour should be diagnosed using the criteria set out in the SOGC Dystocia Guidelines.2

For active labour to be confirmed, cervical dilation should be 3 to 4 cm and 80 to 90 percent effaced in primigravidas, or 3 to 4 cm and 70 to 80 percent effaced in multiparous women.

If active labour is confirmed, arrangements may be made for admission to an LDR or LDRP room. If the woman is found to be in the latent phase of labour, she and her partner will need to be reassured about the health of the pregnancy and informed as to the current situation. Relaxation techniques may be reviewed and advice given about comfort measures that may be taken after returning home. If necessary, the patient may remain in the triage area or appropriate lounge for reassessment in several hours, or discharged home with specific instructions.

Women who have confirmed rupture of membranes but who are not yet in active labour may be offered a choice of induction or planned reassessment in a few hours time. The triage assessments may be done by qualified personnel in communication with the attending obstetrician, family physician or midwife.

MANAGEMENT OF THE FIRST STAGE OF LABOUR

Ideally, all women with uncomplicated term pregnancies should have access to labour/delivery/recovery room facilities with continuous professional support. Unfortunately, such facilities may not always be available. In using other facilities, the caregivers should hold as top priorities the woman’s need for privacy, the need for her to be able to move freely to different positions during her labour, as well as the ability to provide safe and continuous professional care in the presence of support people of the woman’s choosing.
Diet/Routines

A woman in active labour should be offered a light or liquid diet according to her preference. Some of the nutrients should contain glucose and the woman should be encouraged to maintain a good fluid intake. Routine use of intravenous fluids is discouraged; however, certain situations such as epidural use or oxytocin administration may require intravenous rehydration or an access site.

There is no evidence to support the routine use of shave preparations, enemas, and catheters. Caregivers are encouraged to develop a flexible approach to assisting a woman with her labour—a approach which reacts not only to the need for safe, effective care, but also to the preferences of the woman and her family. Supportive care that avoids imposing routines leads to higher patient satisfaction and lowers the need for intervention.

Pain Relief: Medicinal or Non-Medicinal

Each centre caring for labouring women should offer both medicinal and non-medicinal methods of pain relief. Many non-pharmacological approaches have proven benefits for women in labour. Available services should include continuous professional labour support using such methods as breathing and relaxation techniques, massage, positioning and comforting touch.

- Continuous professional support by caregivers dedicated to helping women achieve an unmedicated birth is imperative to the success of this process. Further information on specific techniques can be found in the subsequent section on Labour Support.

- Water Therapy: Aside from labour support, there is good evidence for water therapy as a method of pain relief in labour. Showers, jacuzzis and tub baths are all effective in increasing the likelihood of unmedicated birth and may promote satisfaction with the birthing experience. The literature indicates that tub baths and jacuzzis facilitate the first stage of labour by promoting relaxation and decreasing the woman's pain perception, due to the buoyancy that the heated water provides while supporting tense muscles. Water therapy can and should be used in conjunction with other labour support techniques and has been found to be most beneficial when women are in the active phase of the first stage of labour. More information on the administration and safety of hydrotherapy can be found in Appendix 5-1. Caregivers should encourage upright postures and ambulation during the first stage of labour as this appears to promote progress, relieve maternal discomfort, and reduce the requirement for analgesia.

- Narcotic Analgesia: The use of narcotic analgesia, given either intramuscularly or intravenously, has been shown to be effective therapy for pain of labour. However, these drugs are associated with a higher risk of lowering the Apgar score. Physicians should familiarize themselves with the pharmacokinetics of each agent they use and always bear in mind the effects on both the fetus and the mother.
Regional Anaesthesia: Regional anaesthesia techniques have been used for many years for pain relief in the first stage of labour. Epidural analgesia is the most popular and effective method. Although the safety of epidural anaesthesia is well documented, it is important to recognize the effect it has on the progress of labour. Centres should use relatively low concentrations of local anaesthetics in attempts to minimize motor blockade while maintaining good pain control. This philosophy should allow the woman more freedom of movement in the first stage and eliminate the routine use of supine positioning. Women requesting epidurals should be partners in a thorough discussion of the procedure, its risks and benefits and the expected outcome.

Fetal Monitoring

As suggested in the SOGC Policy Statement on Fetal Health Surveillance, monitoring of the fetus during the active phase of the first stage of labour should be done with intermittent fetal auscultation with a Doppler device every 15 to 30 minutes for one full minute following a contraction. This document suggests reserving the use of continuous electronic fetal heart rate monitoring to situations of non-reassuring auscultation, prolonged labour, and labour which is induced or augmented. Fetal scalp sampling should be used in conjunction with electronic monitoring to resolve the interpretation of non-reassuring patterns. Routine use of continuous electronic monitoring has been shown to lead to higher intervention rates and to date, no improvement in outcome for the neonate has been demonstrated.

Monitoring Labour Progress

The progress of labour should be monitored at regular intervals. The caregivers should time the frequency and duration of contractions often and assess the intensity by palpation. When the labouring woman is using epidural anaesthesia, cervical examinations should be performed at least every two to four hours throughout the labour. In unmedicated labours, the need for and timing of cervical assessments may be based on the woman’s behaviour. If a woman experiences an overwhelming desire to bear down, an assessment should be made to determine the feasibility of her starting to push.

Findings should be recorded on a partogram which, when well designed, will permit the assessment of the progress of labour at a glance. (See Appendix 5-2: World Health Organization Partograph.)

Slow progress in labour is not uncommon.

The SOGC Dystocia Guidelines suggest that a diagnosis of dystocia be considered when less than one-half centimetre of change in cervical dilation per hour occurs over a four hour period.

Since there is considerable variation in the normal rate of progress in labour, and because the intra- and inter-observer errors in cervical assessments are also large, a reasonable length of time must be allowed in which to make this diagnosis. Approaches to the management of slow progress in labour include: continuous professional support, upright postures in the first stage, cervical ripening prior to induction of labour, the use of low dose epidurals and oxytocin, and amniotomy.2

Early Amniotomy

Early amniotomy may be performed if the woman is in agreement and the fetal head is well applied to the cervix and not ballotable. The benefit of early amniotomy appears to be only that of shortening the labour. Although variable decelerations may be more common after amniotomy, these are usually well tolerated by a well-grown fetus at term.2

Labour Support

Professional caregivers of labouring women (nurses, midwives and physicians) are able to provide effective, positive labour support better when labour and birthing suites accept and practise a philosophy of care that emphasizes:

1. respect for family choices and individual needs;
2. freedom for women to define who they consider as family and who they would like to participate in their care (may involve nurses/midwives and physicians working in partnership with family members, close friends, or doulas/patient-paid labour support);
3. collaboration between health care professionals and the woman/family in the planning and implementation of care.
4. **flexibility** in the provision of care (freedom to question traditional routines seeking evidence-based rationale, increasing alternatives and options offered to labouring women).

**Benefits of Labour Support**

Augmented psychological support in labour appears to have a wide range of benefits to women and can reduce the rate of negative outcomes. Such an approach will promote labour progress and decrease the use of analgesia/anaesthesia, incidence of perineal trauma (>1° laceration or episiotomy), rate of operative birth, maternal fever, postpartum depression, and negative ratings of childbirth experience. Most of these studies have been conducted in countries other than Canada, in settings that vary greatly from Canadian labour and birthing suites, and/or using lay women or doulas as labour support personnel.

One study conducted in Canada using the continuous presence of self-employed “birth attendants/labour coaches” or “lay midwives” also identified some improved maternal outcomes. These authors recommend a rethinking of nursing priorities, emphasizing the need for more such traditional care as the provision of psychological support. Such recommendations are applicable to Canadian models of obstetrical care where nurses and midwives are the trained professionals already at the bedside of labouring women.

In addition, the SOGC Policy Statement on fetal health surveillance in labour states: “... intermittent auscultation of the fetal heart would appear to be the method of fetal health surveillance of choice, particularly with regards to spontaneous labour that is progressing normally.” In response to these recommendations, nurses and midwives will have to be more readily available to women during active labour for fetal health surveillance and should be offering continuous supportive care at the same time. Therefore, Canadian obstetrical models of care will provide a greater opportunity to offer various skill sets (both supportive and technical) by the same nurse or midwife, decreasing fragmentation of care while increasing continuity of holistic care.

Other studies have found that **nursing care is a key element in influencing satisfaction** of women. Personalized care, respect for the mother’s/family’s opinion, encouragement, and the demonstration of knowledge have been reported by postpartum women as helpful nursing behaviours. The perception of **social support from nurses enhances a woman’s coping efforts and positive feelings** about her labour experience.

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**The Art of Labour Support Techniques**

Labour support is more than simply implementing a variety of physical comfort measures. It involves using effective interpersonal skills and a commitment to promoting a satisfying birthing experience for the woman and her family. What works for a woman at one point of labour may not work at others. It is vital to assess continually the effectiveness of the various techniques and the woman’s receptivity through observation and open communication. Given the emphasis on interpersonal skills throughout nursing and midwifery education, nurses and midwives are ideal professionals to be providing labour support alongside the woman’s family. Ongoing education and training should become a priority for nurses and midwives offering care to labouring women. This education should be evidence-based and involve “hands-on” practice and the sharing of experience/techniques with one another. This can be readily achieved through a workshop environment.

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**Examples of Labour Support Techniques**

**Vocalization:**

Vocalization during labour is not a negative coping mechanism. Some women find moaning or chanting to be a way of relaxing and coping with the pain of labour. Ritual routines and repetition which women may initiate on their own (e.g. rocking, moaning, etc.) can be an effective means of dealing with pain and should not be interrupted if the woman is comfortable coping in this manner.
Patterned Breathing:
- often used in conjunction with relaxation techniques;
- enhances relaxation;
- may provide the woman with a sense of control over her own behaviour;
- effective comfort measure.

First Stage (Active labour, 3-7 cm)
It is important first to identify and facilitate breathing patterns that the woman may have practised prenatally. If these measures are not effective according to the woman’s perspective, then the following breathing patterns may be encouraged.

a) Slow Breathing: Patterned breathing varies depending on the stage of labour and what works best for the woman, which can change from time to time. The first stage of labour usually involves slow, rhythmic breathing which tends to calm the woman while diverting her attention somewhat away from uterine contractions. Women are encouraged to take a deep breath in through the nose or mouth then allow the slow release of exhalation (usually at a rate of 12 breaths per minute). With every breath out she is instructed to “blow the contraction away” and allow her muscles to relax (useful to use in conjunction with relaxation and visualization).

b) Light/Accelerated Breathing: Women with intense, frequent uterine contractions may feel more comfortable with light breathing patterns. She begins with a slow breathing pattern, then shortens and lightens her breaths as the contraction intensifies. At the peak of the contraction, she is breathing lightly through her mouth with silent breaths in and blowing sounds out (rate of 30 to 120 breaths per minute). With every breath out she is instructed to “blow the contraction away” and allow her muscles to relax (useful to use in conjunction with relaxation and visualization).

Transition (7-10 cm)
This pattern of breathing is often used during transition, when the woman is experiencing the most intense moments of labour and is no longer able to use slow breathing. Here she may feel an increasing pressure on the perineal area and a strong desire to push despite a non-fully dilated cervix. Transitional breathing refers to a “pant-pant-blow” pattern. By guiding her to take one deep breath in, breaking the exhalation with two short pants followed by a longer blow to empty her lungs, she is able to feel some release of pressure while avoiding pushing on the cervix (of particular concern in primiparous women).

Visualization (Guided and Self-Guided Imagery):
- decreases anxiety;
- promotes a feeling of security and comfort;
- provides a distraction;
- promotes relaxation.

Guided imagery involves assisting the woman to visualize herself in a different situation, away from the experience of labour (e.g. at a beach, in a forest, climbing a mountain). She is walked through the image and assisted to imagine the sights, sounds, and smells of the scene. Self-guided imagery occurs when the woman imagines a place or time personal to her that brings with this memory positive, peaceful feelings. Here she guides herself through this experience. She may imagine her cervix slowly opening or the descent of the fetus. Encouraging women to listen to their body cues and “tune into the baby” can be a liberating experience. Women may vary as to which, if either, type of imagery is useful to them. Visualization can be implemented together with touch and other techniques to promote relaxation (may be useful between or during contractions).

Relaxation:
Relaxation is the common goal of most support techniques. It provides the woman with an opportunity to re-energize and gain a sense of control over her body and mind. Progressive muscle relaxation can be effective in achieving this goal. This is done by encouraging the woman to take a deep breath in and as she exhales, letting all of the muscles in her face “go limp” and relaxed, then the neck, shoulders, arms, and so forth down to her toes. This occurs over a period of several contractions while focusing on new muscle groups with each contraction. The Roving Body Check can also be incorporated into muscle relaxation by focusing on specific areas of tension, such as the neck and shoulders, with the woman’s support person(s) putting light pressure on these areas, allowing the woman to “let go” either between or during contractions.

Touch and Massage:
Touch is a universal way of communicating. Touch can convey caring, acceptance, support, comfort, and competence. It may range from a gentle pat, stroking a
lock of hair, light massage (sometimes called effleurage) to a tight embrace. Studies have shown that women find touch helpful in coping with labour.27

Other Labour Support Techniques:
- Hydrotherapy—showers, Jacuzzis, tub baths (see Appendix 5-1);
- Counterpressure (often over lower back);
- Body positioning (the woman chooses positions most comfortable to her);
- Hot/Cold Packs to lower abdomen/groin or perineum (hot packs are not recommended if the woman has an epidural);
- Transcutaneous Nerve Stimulation (positioned on abdomen and/or back);
- Music Therapy;
- Birthing Ball (a rubber ball of 65 cm diameter, available through most physiotherapy catalogues at a cost of about $30.00). The woman sits on this ball in a supported squatting position with minimal counter-pressure to the perineum (much like sitting on a toilet). Her support person is placed in a chair either behind or facing the labouring woman while she is free to rock back and forth or bounce gently. This assists in promoting rhythmic movement, distraction, relaxation, and may improve the dimensions of the pelvis (increasing the pelvic diameters), thus promoting labour progress and fetal descent.

Note: Psychological/emotional support must accompany all physical labour support.

CONCLUSION

As technology has rapidly progressed throughout health care, so has the emphasis on “high-tech” aspects of care. Nursing priorities often reflect this trend, as evidenced by the frequency of monitoring and epidurals. When the beneficial outcomes of continuous labour support are considered, the need for nurses to reprioritize and balance their care must be recognized.19 Rather than focusing education and time solely on the technical aspects of labour, nurses and midwives must continue to develop their abilities to provide expert labour support alongside the woman’s family. This does not simply involve implementation of various techniques, but must also follow a philosophy of respect for the woman/family, flexibility in routines, and emotional and physical support through the ongoing presence of a nurse or midwife.

Summary of Recommendations

1. Based on the demonstrated improved outcomes, the continuous presence of a nurse or midwife to provide psychological support and comfort measures should be a key component of all intrapartum care.
   - May require an increase in nursing staff or flexibility of staffing, increasing the availability of nurses at peak periods.19

2. Ongoing education and training of existing health care professionals (nurses, midwives and physicians) regarding the benefits of labour support and various comfort measures and options that should be offered to labouring women.
   - Involves a shift in focus of care from “high tech” to “high touch”, leading to greater balance of care.
   - Must have the support of administrators and physicians throughout this ongoing process.

3. The provision of a supportive environment that embraces and practises a family-centred philosophy and approach to care outlined earlier in this document.
   - Needs to be developed using a collaborative, interdisciplinary approach with consumer representation.

REFERENCES

APPENDIX 5-1

HYDROTHERAPY

Aside from providing support, there is good evidence of the beneficial effect from showers, Jacuzzis, and tub baths. Types of tub baths range, depending on the facility, from regular Jacuzzi baths similar to home Jacuzzis to larger tubs that allow the woman greater mobility and choice of positions.

The bath water is maintained at approximately 37 degrees Celsius to minimize vasodilation and dehydration. Fluid intake or sucking ice chips should be encouraged to compensate for the increased diuresis noted with tub use. Length of labour does not seem to be affected by the use of tub baths. It has been suggested that a decreased perception will lead to decreased adrenaline production, allowing oxytocin and endorphin levels to rise. The result may be increased comfort and a more (coordinated) regular uterine contraction pattern. Some authors report that the frequency of uterine contractions may decrease in some women when Jacuzzis are used during latent labour. This option is generally encouraged once active labour is established. This approach should be individualized for each woman based on her preference, pattern and stage of labour. Syntocinon and administration of prostaglandin during hydrotherapy have not been adequately studied. However, one centre considers syntocinon a contraindication for tub baths due to a potential risk of hyperstimulation. This same centre does allow tub use for women being induced with prostaglandin E2 gel once the fetus has been monitored for two hours following insertion of the gel.

THE BATHS: MATERNAL/FETAL INFECTIONS

Maternal and fetal infections have also been considered in the literature about tub baths. The potential sources for infection of the uterus and/or fetus are organisms originating from the woman herself, or from previous users of the tub. Such organisms might migrate up...
into the reproductive tract. Of all the studies reviewed, none have reported an increase in maternal or fetal infections directly related to use of Jacuzzis in labour, regardless of membrane integrity. It is likely that the length of time with ruptured membranes is of greater importance than the use of tubs in labour. In one Canadian randomized, controlled trial of Jacuzzi use in labour, the authors reported no increased incidence of maternal or fetal infections in the group with ruptured membranes and they recommend this pain relief option.

Cleaning of Tubs

Because the types of Jacuzzis/tubs found in each facility may vary, so too will the appropriate method of cleaning. Labour and birthing suites can collaborate with Infection Control Departments within their centre to determine methods of cleaning and tracking infection rates related to the use of tubs. One article describes the cleaning of tubs at their facility. The tubs are 3-1/2 feet by 2 feet and 20 inches deep. They are filled with water until the jets are covered and then one cup of chlorine bleach is added and the jets are turned on. Water is circulated through the plumbing for several minutes. Next, the tub is drained and surface cleaned with a nonabrasive cleanser. Finally, the tub is rinsed and labelled “clean”. Weekly cultures taken from their tubs showed no increased organism count.

The literature indicates a slight increase in maternal temperature and fetal heart rates for approximately fifteen to thirty minutes after tub use. Maternal vital signs should be assessed and recorded prior to entry into the Jacuzzi and about thirty minutes following use. The fetal heart can be auscultated during the first stage using a hand held Doppler or fetoscope. The woman must lift her abdomen out of the water by either standing, sitting on the edge of the tub or tilting (lifting) her abdomen out of the water.

Other strategies for helping women in labour include labour support techniques (see section on other labour support techniques), including various positions for labour and birth, and physical support. All options should be made available in all birthing facilities.

References


Conclusion

The use of tub baths during labour appears to enhance relaxation and provides another pain relief option for women. The choice should be an informed one with appropriate teaching by the physician, nurse or midwife regarding the importance of fluid intake and continued fetal health surveillance. Tub therapy can be used in conjunction with various other labour support measures such as touch, visualization and patterned breathing.
### APPENDIX 5-2

**PARTOGRAPH**

<table>
<thead>
<tr>
<th>Name</th>
<th>Gravida</th>
<th>Para</th>
<th>Hospital no.</th>
<th>Date of admission</th>
<th>Time of admission</th>
<th>Ruptured membranes</th>
<th>hours</th>
</tr>
</thead>
</table>

**Fetal heart rate**

| 180 | 170 | 160 | 150 | 140 | 130 | 120 | 110 | 100 | 90 | 80 | 70 | 60 | 50 | 40 | 30 | 20 | 10 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |

**Liquor Moulding**

| 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |

**Cervix (cm)**

| Plot X |

**Descent of head**

| Plot 0 |

**Contraction per 10 mins**

| 5 | 4 | 3 | 2 | 1 |

**Oxytocin U/L drops/min**

| 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |

**Drugs given and IV fluids**

| 180 | 170 | 160 | 150 | 140 | 130 | 120 | 110 | 100 | 90 | 80 | 70 | 60 |

**Pulse and BP**

| 150 | 140 | 130 | 120 | 110 | 100 | 90 | 80 | 70 | 60 |

**Temp °C**

| 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |

**Urine**

| protein | acetone | volume |

**Source:** Maternal Health and Safe Motherhood Programme—Division of Family Health, World Health Organization, Geneva, 1994
Chapter 6
SECOND STAGE OF LABOUR

The definition of the second stage of labour has traditionally been a simple anatomic one and as such, includes the period of time from full cervical dilation to the birth of the baby. This definition has perhaps been artificial and if strictly adhered to, may result in unnecessary intervention. It does not take into account the fact that labour is a process and that the progress of labour must be viewed as a continuum. When the evidence is examined for effective care during the second stage, particularly focusing on birth as a physiologic event, a definition of the second stage emerges which additionally takes into account the onset of the spontaneous urge to push and the station of the presenting part of the infant.1

Because these conditions vary from patient to patient, individualized management of the second stage becomes essential. It thus becomes important for providers to be responsive to cues from the woman rather than providing arbitrary routine directions, while at the same time being knowledgeable and aware of the parameters of maternal and fetal safety and best practice. This section will attempt to outline what is known about these considerations and thus provide a guide for individualized and optimal care. The concepts already outlined for first stage management—that of provision of caring, responsive professional support—are obviously also the foundations for care during the second stage.

WHEN TO PUSH/HOW TO PUSH

The urge to bear down occurs spontaneously in most births and is thought to be due to the Ferguson reflex. This reflex is triggered when the fetal presenting part distends the pelvic floor, stimulating stretch receptors and the release of oxytocin. It may not always be associated with full dilation of the cervix. If the cervix is fully dilated and there is no urge to push, Roberts (a prominent researcher on physiologic second stage) recommends not to encourage pushing until the presenting part is at 0 to +1 station.2 Others recommend using such upright positions as squatting or sitting on the toilet to encourage the bearing down reflex if none is experienced within 10 to 20 minutes.3 If there is an irresistible urge to push, the woman may be “permitted”, although not encouraged, to push if the cervix is soft, 8 to 9 cm, and the fetal position (occipito-transverse or occipito-anterior) seems favourable for descent. These conditions are particularly applicable to multiparous women.

In general, pushing with cervical dilation less than eight to nine cm and occipito-posterior (OP) position of the fetus, and especially in primigravida, should be discouraged as this may lead to cervical injury. Measures should be taken (knee-chest position, transitional breathing, improved analgesia) to alleviate the parturient’s distress if the urge is irresistible.

In an observational study of women allowed to follow spontaneous bearing-down efforts without instruction, Roberts has shown that they exhibited three to five relatively brief (four to six second) bearing-down efforts with each contraction, with the number of bearing-down efforts increasing as second stage progressed. Most of these efforts (75 percent) were accompanied by the release of air and with several breaths between efforts.2 This is in contrast to the sustained bearing-down efforts involving the Valsalva manoeuvre which are commonly encouraged in most obstetrical units.

The evidence from controlled trials comparing these two methods of pushing shows a slightly longer duration of second stage for the “physiologic” pushing in two of three trials, with the difference ranging from 12 to 19 minutes greater. N evertheless, studies of cord blood gas results showed higher pH values for the group of women whose
bearing-down efforts did not exceed six seconds than those who were accompanied by sustained breath holding.\textsuperscript{5,6} These results, while not statistically significant, imply a trend consistent with observations that show that the Val- salva manoeuvre, particularly in combination with supine position, may alter cardiovascular dynamics which could compromise fetal oxygenation. Other factors which may make the “physiologic” method of pushing more beneficial may be that allowing the woman to follow her body’s spontaneous urges helps her to feel in control and more satisfied with the accomplishment of the birth.

Some women may also experience a phenomenon of “holding back” at the beginning of the second stage which can be related to fears and ambivalence about this transition to new motherhood. The birth attendants should be aware of this “holding back behaviour,” acknowledge it and allow the woman to express her fears or ambivalence.\textsuperscript{7} This recognition will allow the woman to proceed to the completion of the birth process with strength and confidence.

Although specific coaching for pushing is often helpful, especially for primigravida and patients with epidurals, caregivers should be sensitive about being too directive or overbearing in their attitude and allow the woman space to summon her own resources.

CONCLUSION

Supporting a woman in physiologic pushing (3-5 shorter [4-6 second] bearing-down efforts per contraction) has some definite advantages from a psychological perspective, as well as possible advantages for fetal well-being. It may result in a marginally longer second stage but this in itself is not detrimental and may in fact have advantages of allowing slower, steadier distension of the pelvic floor with decreased risk of tears or episiotomy.

Pushing should not generally be encouraged until the cervix has reached full dilation and the presenting part has reached a station of 0 to +1 and/or there is a strong urge to push. Second stage management is therefore individualized depending on these factors.

MATERNAL POSITION

Upright or Semi-Sitting Posture

There is clear evidence that adopting an upright or semi-sitting posture for delivery is advantageous from fetal and maternal points of view. Most trials show a modest decrease in the length of second stage for an upright versus recumbent position, likely related to improved uterine contractility. Mean umbilical arterial pH has been shown to be higher in babies born to women who had used the upright posture for delivery.\textsuperscript{8} In addition, upright postures favour descent and have been shown to result in improved efficiency of pushing. Others themselves also prefer this position as being more comfortable, and facilitating bonding.

The traditional lithotomy position commonly used in obstetric units can certainly be modified to obtain a semi-sitting posture and hence achieve the benefit derived from the upright position. This can be facilitated readily with currently available models of birthings beds which allow individualization of posture and foot placement. Older style beds can also be adapted for this purpose by using specially constructed wedges. Strapping women’s legs in restrictive stirrups in the supine position is to be avoided.

Left Lateral or Sims’ Position

The left lateral or Sims’ position also avoids the adverse haemodynamic effects of the supine position and results in the delivery of less acidotic babies. Irwin, in a presentation of his own experiences of 102 deliveries using the left lateral position, reports that “the delivery technique is easily mastered, most easily applied for spontaneous or uncomplicated outlet forceps, of special advantage in breech deliveries, congestive heart failure, hip joint restriction and leg varicosities; and well accepted by women looking for less restricted and more natural delivery experience.”\textsuperscript{8} He gives some specific and practical advice in this paper for those interested in working with this position.

Squatting Position

The squatting position has two advantages. First, it maximizes bearing-down efforts by allowing the uterus to fall forward with the force of gravity, thereby straightening the longitudinal axis of the birth canal and facilitating the descent of the fetus.\textsuperscript{9} Squatting has also been shown radiographically to increase the pelvic outlet measurements by 0.5 to 1.5 cm.\textsuperscript{10} Flexing the thighs against the abdomen also contributes to increasing the diameter of the pelvis in the sagittal plane and thus the sitting,
semi-sitting and exaggerated lithotomy positions retain some of these mechanical advantages, although the last of these loses the added benefits of the upright position. Squatting for delivery has been perceived as inconvenient for birth attendants, and uncomfortable for North American women unused to assuming this position. Nevertheless, recent adaptations of standard birthing beds with squatting bars, as well as other practical techniques for adapting hospital obstetrics to this position, have been described.10,11

**Delivery on All Fours**

“Delivery on all fours” is another choice of delivery position. This approach is popular practice among midwives, and may be a reasonable option for some women. The effects on duration of second stage and fetal well-being have not been studied, however, some birth attendants believe that the position may be particularly useful in facilitating spontaneous rotation of persistent OP position. “When a gravid woman is placed in a hands-and-knees posture, the heaviest part of the fetus or back is in a superior position to other fetal parts. If gravitational and buoyancy forces are sufficient, the fetal body will rotate.”12 Although not of proven benefit, this may be a useful position to try.

**Birthing Chairs or Stools**

Birthing chairs or stools have been developed because of the known benefits of the upright position, but these devices have been shown to be associated with an increased risk of postpartum haemorrhage,13-15 probably secondary to perineal trauma (prolonged use results in excessive perineal edema). Use of a birthing chair is not the recommended way of adopting an upright position in labour.

**Water Births**

Water births have become a choice for a number of women in some hospitals in Europe, England and North America. Pools for this purpose range from simple portable pools filled and emptied with hose pipes to built-in Jacuzzi-style baths. They are large enough for the woman to move around and the water is about three feet deep so she can submerge herself. There is evidence that such baths promote relaxation and result in a decreased need for analgesia.16 Water temperature is best maintained at about 37°C. If the birth itself is allowed to occur in the water, it is imperative that the baby’s head is lifted out of the water as soon as it is born. Deaths of babies (in a home setting) have been reported when the baby was kept submerged for many minutes because of the mistaken impression that if the umbilical cord is pulsating, fetal oxygenation was still occurring.16

**Conclusion**

Women should be free to choose a position that is comfortable for them and enhances pushing efforts and delivery. Upright (semi-sitting, squatting) and left lateral postures have many points in their favour, and should be encouraged. In contrast, the traditional lithotomy position has distinct disadvantages and should therefore be reserved for cases of operative delivery. The lithotomy position can often be modified to a semi-sitting position for most purposes to avoid the adverse haemodynamic consequences of supine position and to benefit, at least in part, from a more upright posture.

**Duration of the Second Stage**

Historically, the upper limits of the second stage have been set at two hours for primigravida and one hour for multigravida. The reason for setting such limits has been the association between prolonged second stage with such undesirable outcomes as perinatal mortality and maternal morbidity from postpartum haemorrhage and infection. However, the question remains: in the absence of any indication of fetal or maternal problems, is it necessary to curtail the length of second stage to an arbitrary time limit? The results of two trials indicate that limiting the length of time of the second stage can result in overall higher cord artery pH, probably because of the normal decline with time over the course of labour.17,18 It has also been shown that the duration of “bearing-down period” plays a more important role in influencing fetal outcome than the duration of the whole second stage of labour.19 This fact is particularly pertinent to patients with epidurals and others who, because of insufficient fetal descent in the presence of full dilatation, may not have been encouraged to push at the onset of “defined” second stage. Length of second stage and fetal condition at the time of birth could also be influenced by the method of bearing down and maternal position. In studies with pushing as related to epidurals, there seems to be no advantage to mother or baby in encouraging a policy of bearing down early in the second stage.
An arbitrary time limit for the second stage is not necessary. Maternal status, fetal status and rate of descent should be the basis of individualizing delivery management. Failure of descent and fetal distress are indicators for intervention. Second stage durations that fall out of the normal range should cause the practitioner to be especially alert to the diagnosis of a problem of disproportion or malposition. Interventions would depend on the clinical situation and include position change, augmentation with oxytocin, episiotomy, forceps delivery or vacuum extraction, or Caesarean section. If progress is being made and in the absence of evidence of fetal compromise there is no necessity for intervention.

MONITORING FETAL HEALTH

As stated in the SOGC Fetal Health Surveillance document, the preferred method of fetal health surveillance for low risk women during labour in birthing units with one-to-one nursing is intermittent fetal auscultation using either stethoscope or hand-held Doppler. Such auscultation should occur immediately after a contraction for a full minute and be performed and documented every 15 to 30 minutes in the active phase of the first stage of labour and every five minutes in the second stage of labour once the patient has begun pushing.

If the auscultated fetal heart rate (FHR) gives cause for concern, then a continuous record of FHR should be obtained using electronic fetal monitoring (EFM). A reduction or absence of amniotic fluid before labour and the appearance of meconium are indications for continuous FHR monitoring during labour. Fetal scalp blood sampling will be appropriate if the EFM record also causes concern.

Although a non-reassuring FHR tracing is a sensitive indicator that there is a problem with the fetus, the predictive value of such tracings has been low because of a large number of false positive results. “Fetal heart rate tracings that are most likely to be associated with fetal acidosis are marked patterns of total decelerations (i.e. >30 percent of contractions are associated with a deceleration) and moderate and marked patterns of late decelerations.”

Variable decelerations often occur in the presence of normal fetal acid-base state. There is evidence that as the frequency of variable decelerations increases, a correlation with fetal hypoxia may appear. This might be anticipated in view of the relationship between cardiac rate and cardiac output in the fetus. One study which analyzed fetal heart rate tracings for prognostic significance of variable decelerations described “atypical variables as predictive of a high incidence of fetal acidosis and low Apgar scores. Prognostically, unfavourable decelerations with features indicative of fetal hypoxia include: slow return of FHR to baseline, loss of variability during and between the deceleration, loss of initial and/or secondary acceleration, persistence of secondary accelerations (over-shoot), continuation of the FHR at a lower level and biphasic deceleration.”

It has been shown that a longer duration of a non-reassuring fetal heart rate tracing is more predictive of acidosis. In one study, only 16 percent of patients with non-reassuring tracings (severe late or variable decelerations) had an initial pH in the acidotic range. The remaining cases showed a remarkably low incidence of acidosis in the first 120 minutes of abnormal tracing. The incidence of acidosis reported associated with an abnormal FHR (severe late or variable decelerations) varies between 30 and 60 percent. When only cases of FHR lasting for more than 120 minutes were analyzed, the incidence of acidosis was found to be 78 percent. This emphasizes the importance of confirming abnormal tracings with fetal scalp pH measurements and repeating this test every 20 to 30 minutes if non-reassuring fetal monitor tracings persist. It is speculated that in the majority of situations in which the fetus is exposed to hypoxic stress, the levels are mild enough for compensatory mechanisms to maintain acid-base homeostasis, while at the same time exhibiting changes in the fetal heart rate pattern. With the passage of time—and this amount of time is variable depending on the pre-existing state of the fetus—these compensatory mechanisms will be overwhelmed and acidosis will develop. A term low-risk fetus can be expected to withstand a longer period (90-100 minutes in this study) of this stress than a fetus who may be compromised by IU GR or prematurity. It should be noted that the limited correlation between fetal metabolic acidosis and immediate and long-term morbidity commonly reported is not surprising and indeed desirable, indicating the fetal hypoxia has been identified at an early stage before fetal compromise has occurred. On the other hand, these are at-risk infants in whom, if the pathophysiological process is allowed to continue, morbidity or mortality will result.

CARE OF THE PERINEUM/DELIVERY

Minimizing trauma to the perineum is important in order to reduce early postpartum discomfort and thus
allow the new mother to devote her energies to her infant and to reduce long term perineal discomfort which can give rise to sexual dysfunction. Other factors which are of concern are damage to the anal sphincter and rectum, and damage to the muscles of the pelvic floor. Liberal use of episiotomy had been advocated since the 1900s in order to prevent such problems. In order to address this issue, there have been three randomized controlled studies comparing restricted use of episiotomy to routine or liberal use.26-28 In the large trial by Sleep, liberal use of episiotomy (51 percent) was not shown to reduce the rate of serious perineal (3rd or 4th degree tears) or vaginal trauma from the restricted episiotomy group (10 percent episiotomy rate). Klein concluded that “preserving the perineum intact conferred benefits in perineal trauma prevention, perineal pain reduction, improved sexual functioning and in avoidance of pelvic floor relaxation. The liberal or routine use of median episiotomy fails to prevent the trauma or the pelvic floor relaxation that it was designed to prevent.”28 In addition, there was no difference in evidence of trauma to the fetal head, rates of genital prolapse or long term urinary incontinence (in restricted vs. routine use).

Temporary urinary incontinence is common post-partum and persists in many individuals. There is evidence that this is related to damage to the perineal branch of the pudendal nerve. There is no logical reason or evidence to show why liberal use of episiotomy should affect this, but it is possible that pelvic floor exercise pre- and post-delivery could make a difference.4 The effect of perineal massage, oil, and hot compresses has not been supported or refuted by any satisfactory methodological studies.4

“The there is no evidence for the advantage of routine episiotomy.”4

The general philosophy described in these guidelines has espoused a more physiologic approach to second stage management. This philosophy of intervening only for clear maternal and fetal indications will tend to minimize perineal trauma during childbirth. A adopting more upright position, “physiologic” pushing, no definite time limits on the second stage, and an unhurried, gentle delivery of the head (short pushing efforts with periods of panting) will allow the tissues to relax and distend and therefore be much less likely to sustain injury.

**Shoulder Delivery**

Delivery of the shoulders occurs after they have internally rotated to the anterior posterior (AP) diameter of the pelvis. When the mother is half-sitting, the anterior shoulder may deliver first. In the squatting, kneeling or left lateral position, the posterior shoulder is often delivered first.

**Shoulder Dystocia**29

Shoulder dystocia is defined as impaction of the anterior shoulder above the symphysis or inability to deliver shoulders by usual methods. Following delivery of the head, there is an impaction of the anterior shoulder under the symphysis pubis in the AP diameter, in such a way that the remainder of the body cannot be delivered. There may be a sucking back of the head against the maternal buttocks, known as the “turtle sign”. There may be no restitution. Incidence increases from one in 1000 for babies weighing less than 3500 grams to over 16 in 1000 for babies over 4000 grams. Despite numerous studies attempting to identify factors predicting this problem, more than 50 percent of cases occur without anticipation or warning. Maternal obesity and post-term pregnancy are the most important risk factors.

Brachial plexus injury (Erb’s palsy) of varying degree is common, but rarely results in permanent damage. Fractures of the clavicle (and sometimes the humerus) can occur following overzealous manoeuvres. Most worrisome
is the potential for fetal asphyxia resulting in permanent neurological damage or even death.

Episiotomy may facilitate performance of these manoeuvres. The physician should enlist the cooperation of the mother and her labour support partner—tell them what you are doing and what they need to do (i.e. hyperflex both legs). Suprapubic pressure should be applied from the posterior aspect of the anterior shoulder to dislodge that impacted anterior shoulder into the oblique position. The posterior arm may be released by flexing it at the elbow by exerting pressure in the antecubital fossa, and sweeping the hand across the chest by grasping the wrist. On occasion, fracturing the humerus may be necessary, but this injury is preferable to fetal asphyxia.

Cord compression is common in shoulder dystocia. In the fetal monkey model the fetal pH drops by 0.04 per minute when the cord is totally occluded. If all has been well up to that time, you have seven minutes and the pH will drop by only 0.28, which is reassuring.

**A void the 4 Ps:**

1. Don’t pull
2. Don’t push
3. Don’t panic
4. Don’t pivot.

If nothing works and all the procedures have been tried again, then some have suggested:

1. Deliberate fracture to clavicle;
2. Symphysiotomy;
3. Zavenelli (reversing the cardinal movements of labour). So:
   
   rotate
   flex
   rotate
   push up
   disengage.

A adapted from SOGC’s Advances in Labour and Risk Management (ALARM) course.

**SUMMARY OF RECOMMENDATIONS**

1. The definition of start of the second stage should consider factors such as position of the presenting part and the presence of the urge to push, in addition to complete cervical dilation.

2. If the cervix is fully dilated and there is no urge to push, waiting and encouraging pushing only when the presenting part is at 0 to +1 station is recommended.

3. Women should push when they have the urge to bear down if the cervix is fully dilated and should be allowed to push at eight to nine cm if the cervix is soft and conditions for descent ideal (OA, 0 to 1+ station). This is particularly the case for multipara.

4. Physiologic bearing down (several short pushes without breath holding), while resulting in a slightly longer second stage, may result in improved maternal-fetal gas exchange and maternal satisfaction with her birth experience. Discussion of this type of pushing should occur antenatally.

5. Mothers should be allowed to choose their preferred position for second stage and delivery. Upright postures (semi-sitting, squatting) confer many benefits including a shorter, more comfortable second stage and improved cord artery pH values of newborns, and should be encouraged and taught antenatally.

6. The length of the second stage should not be arbitrarily defined but should be individualized so that if there is evidence of progress and the mother’s and the baby’s conditions are satisfactory, there is no need for intervention. Abnormal descent, which should be suspected but not necessarily present with excessive duration of second stage (>2 hour primigravida, >1 hour multigravida), and fetal distress are indications for intervention.

7. Routine monitoring in the second stage as described in the SOGC Fetal Health Surveillance document. Fetal blood sampling is recommended if non-reassuring heart rate tracings or other factors (meconium, oligohydramnios) indicate the need to evaluate fetal acid-base status. If the fetal acid-base status is normal, repeat measurements should be taken every 30 minutes if non-reassuring fetal heart rate patterns persist.

8. Episiotomy should be used only to expedite delivery in the case of fetal compromise or maternal distress and lack of progress.

9. In order to minimize perineal trauma, delivery of the head should be unhurried and gentle, over the course of several contractions, in order to allow the tissues to relax and distend.
REFERENCES

Chapter 7
BABY ARRIVES

GENERAL PHILOSOPHY

Promotion of family-centred maternity care can be carried out by viewing the mother-newborn as an inseparable unit. Disruption of the close mother-child relationship during the crucial few hours following birth is to be avoided, and direct physical contact is strongly encouraged. The initial mother-infant bond is the wellspring of all the infant’s subsequent attachments and is formative in the child’s sense of security. This issue is one of attachment. Early events have long-lasting effects. The benefit to the mother cannot be underestimated, as this early prolonged contact with the baby affirms her sense of accomplishment and starts to confirm her own beliefs in her power as a mother.

Prolonged early contact is also a positive predictor for success with breastfeeding. Separation from mothers immediately after delivery jeopardizes successful establishment of lactation. It appears the initial prolonged contact of mother and baby is the critical factor. Correct positioning of the baby at its first feed (cuddle at the breast) is very important. The issue of the duration and frequency of feeding and the cues to the baby’s hunger are important education issues for the mother. According to the WHO Guidelines for Baby-Friendly Hospitals, healthy breastfed newborns do not require supplementation and the practice of distributing free samples of formula to breastfeeding mothers should be discouraged.

Thirst should guide healthy lactating women to maintain their hydration. There is no evidence to suggest “pushing fluids” will increase milk supply.

This is not to say that issues of physical health should be discounted, but all areas of care and concern could be carried out with healthy newborns and mothers in a combined care setting. A decrease in the number of caregivers interacting with mother and baby will increase continuity and consistency of care. This philosophy would translate into minimal separation of the mother and baby and integration of the care and teaching given.

MANAGEMENT AT THE TIME OF BIRTH

As the head delivers, the baby starts to clear its own secretions because of the pressure of the vagina on the baby’s thorax. At this point, suction is of proven benefit only if particulate meconium is present in the amniotic fluid, and should be abandoned in other situations. Prolonged early contact is to be strongly promoted. This may be achieved by placing the dried newborn on the mother’s abdomen or alternatively, placing the newborn in an infant warmer which is in close physical proximity to the parents. The parents need to have an unobstructed view of their newborn and to be able to touch their baby.

Cord clamping has been extensively investigated. Proponents of delay suggest the infant receives additional oxygen in the first minutes after birth. Those in favour of early clamping suggest the increase in blood volume may aggravate jaundice in the newborn period. More study is needed to make a strong recommendation in this regard.

The baby should be dried, whether on the mother’s abdomen or in the infant warmer. The basic principles of neonatal resuscitation are Dry, Stimulate, and Evaluate. The blankets surrounding the baby need to be changed so as to be warm and dry. Handling of the baby should be gentle, with support of the baby’s head.

Apgar scores have been a common measurement index in the first minutes following birth. The one-minute Apgar correlates with the need for resuscitation, but is not predictive of long-term outcome. The five-minute Apgar has some correlation with long-term outcome and should be repeated at ten minutes if less than six at five minutes.
Obstetrical and nursing staff working in Labour and Delivery ideally should be trained in neonatal resuscitation programmes, and updated regularly. Each centre should endeavour to have staff trained for support at the time of delivery. There are various protocols established for monitoring neonatal well-being in the first few hours of life. These routines should NOT necessitate the separation of the mother and baby.

SUGGESTED READING
Chapter 8

The Third Stage of Labour

Passive Management

Immediately after delivery of the infant, as long as the uterus remains firm and there is no unusual bleeding, watchful waiting until the placenta is separated is the usual practice. The height of the uterine fundus and its consistency are ascertained, and the hand is rested on the fundus frequently to make certain that the uterus does not become atonic or fill up with blood behind the separated placenta.

Some people will rub the fundus of the uterus gently, which is acceptable. The usual signs of placental separation should be recognized. If the placenta is felt digitally to be in the lower uterine segment, gentle traction on the umbilical cord is permitted to pull the placenta from the uterus after separation, or the mother may be asked to bear down. Aristotle appears to have been the first person to have advocated cord traction as a means of expediting delivery of the placenta.

Placental Expression

Placental expression or excessive uterine massage should never be used before placental separation lest uterine inversion occur. Draining of the umbilical cord will diminish the amount of blood left in the placenta and decrease fetal/maternal transfusion, and this is especially important in Rh-negative mothers. Routine manual removal of the placenta, routine manual exploration of the uterus, and routine examination of the cervix is extremely discomforting to the patient and should be discouraged unless there is active uterine bleeding. In this case, a general anaesthetic or some strong anaesthesia will be required to do this examination correctly.

Active Management of the Third Stage of Labour

Because of the spectre of postpartum haemorrhage, which continues to dominate the management of the third stage, it is widely acceptable to be involved in a certain amount of active management to reduce the rates of postpartum haemorrhage and retained placenta. The essential components of active management are the use of oxytocic drugs, early clamping and division of the umbilical cord, as well as controlled cord traction for delivery of the placenta. If there is any excessive bleeding in the postpartum period, the source must be rapidly determined and corrected. If it is traumatic, this will require surgical repair. If it is due to uterine atony, the uterus must be stimulated either by rubbing up a contraction or by the use of oxytocics. Oxytocin and ergometrine have been the traditional means to achieve uterine contractions. Prostaglandins have been shown to have a dramatic effect in arresting uterine haemorrhage when all other measures have failed and it is worthwhile for labour and delivery units to keep prostaglandins on hand in case all else fails.

In the United Kingdom and in other countries, it has now become standard teaching to advocate routine oxytocin administration before delivery of the placenta for managing the third stage of labour. Nine trials have been published comparing women who did not and who did receive oxytocic preparations and the data suggest that routine administration of oxytocics decreases the frequency of postpartum haemorrhage by 40 percent. There is also some suggestion from these limited data that routine administration of oxytocics reduces the risk of retained placenta. There is an increase in the risk of
hypertension if ergometrine is used. Maternal deaths from cardiovascular complications have been reported, but they are so rare and the available randomized trials cannot provide useful estimates of the extent to which they may be attributed to the use of the oxytocin agent.

**On balance, the evidence supports the routine of oxytocin administration with delivery of the anterior shoulder.**

**RETAI NED PLACENTA**

Retained placenta is the failure of the placenta to deliver before a certain time limit. The limit leading to diagnosis is not consistently defined, but Beischer & Mackay allowed 20 minutes. Few would dispute the diagnosis after an hour has elapsed. The conventional treatment of retained placenta is manual removal following digital separation of the placenta from the uterine wall, usually under either general anaesthesia or epidural block. Selinger et al noted that waiting 60 minutes before resorting to manual removal will decrease by almost half the number of women who will require this procedure.

**INVERSION OF THE UTERUS**

This will occur as a result of excessive cord traction in the presence of a relaxed uterus or with vigorous fundal pressure. Treatment involves replacement of the inversion manually with the patient under some form of anaesthesia.

**EARLY CLAMPING AND DIVISION OF THE UMBILICAL CORD**

Precisely when the umbilical cord should be ligated and divided has been a controversial matter for many years. Active management of the third stage of labour usually entails clamping and dividing the umbilical cord relatively early, prior to beginning controlled cord traction. There appears to be general agreement that delayed cord clamping is associated with placental transfusion to the baby varying between 20 and 50 percent of neonatal blood volume, depending on when the cord is clamped and at what level the baby is held prior to the clamping. The results of two trials confirm that early cord clamping leads to heavier placenta and a higher mean residual placental blood volume. However, both trials concluded that early cord clamping reduces the length of the third stage.

Three trial reports showed no statistically significant effect of the timing of cord clamping on the postpartum haemorrhage rate. Three other trials showed that free placental drainage after early cord clamping is associated with a reduced risk of feto-maternal transfusion. Fifteen controlled trials compared the effects of different cord management practices on the neonate. Haematological indices confirm that early cord clamping reduces the extent of placental transfusion to the baby. Babies born after early cord clamping have lower haemoglobin values, however, the difference in haemoglobin levels virtually disappears by six weeks of age and is undetectable six months after birth. Two trials had suggested that late cord clamping resulted in less neonatal respiratory distress, but the effects were not statistically significant. In four out of five trials in which neonatal bilirubin levels were measured, they were lower in the babies born after early cord clamping. Two trials of the effect of early cord clamping on neonatal jaundice were flawed and did not provide conclusive evidence.

**CONCLUSION**

Early cord clamping reduces the length of the third stage of labour. The available evidence does not reveal any effect on blood loss or postpartum haemorrhage. In Rh-negative women, it should be avoided due to the increased risk of feto-maternal transfusion.

**REPAIR OF PERINEAL TRAUMA AFTER CHILDBIRTH**

Seventy percent of women are likely to require repair of perineal trauma following childbirth, and even three months later as many as 20 percent may still have problems such as dyspareunia, likely to be related to perineal trauma and its repair. Suture materials used for perineal repair in a random sample of fifty English maternity units studied included plain catgut, chromic catgut, polyglycolic acid (Dexon), polyglycolic acid plus lactic acid (Vicryl), glycerol-impregnated catgut (Softgut) silk and nylon. Chromic catgut for all layers was the most popular, being the choice in 50 percent of the units surveyed. No controlled studies have comprehensively compared the various techniques for perineal repair. Four controlled studies showed that continuous, subcuticular sutures are associated with less pain than interrupted subcutaneous sutures in the immediate postpartum period. There was no substantial difference in respect of long-term pain and dyspareunia. In one trial, 18 percent of the women who had continuous sutures and 29 percent of the women who had interrupted sutures had to have them...
removed in the first 10 days postpartum, and a further 26 percent and 37 percent respectively had to have the sutures removed during the first three months after delivery. However, 30 percent of the repairs in this trial were performed by midwives.

In choosing which absorbable suture to use for perineal repair, seven studies showed that perineal pain and dyspareunia were equally common in the groups three months after delivery. Comparisons of catgut and polyglycolic acid when used to repair all layers have shown lower use of analgesia and less pain in the immediate postpartum period, as well as less requirement for resuturing, in the polyglycolic acid group.

Polyglycolic acid sutures cause minimal tissue reaction and this contrasts with chromic catgut and silk, both of which elicit a polymorphonuclear reaction. Dexon and Vicryl have been compared in various studies and different knotting techniques are required for the two materials. The two materials have comparable losses of tensile strength, with 50 percent loss in 20 days and 100 percent in 30 days. Other studies have compared absorbable with non-absorbable sutures such as silk, and they showed less pain and analgesia in the polyglycolic acid group in the short term but no clear difference in the longer term.

The skills of the operator are as important, if not more important, than the materials and techniques used, and the British Royal College of Midwives’ Representatives meeting in 1985 “deplored the fact that repair of episiotomy is still undertaken by medical students and junior obstetricians.” However, they obviously ignored the fact that the Southmead trial, where midwives had performed 30 percent of the repairs, required the patients having half their sutures removed in 20 to 30 percent of cases within the first three months after delivery. This reinforces the notion that the skill of the person performing episiotomy is important.

REFERENCES
9. Ibid., Table 67.15.
10. Ibid., Table 67.16.
11. Ibid., Table 67.17.
12. Ibid., Table 67.18.
14. Ibid., Table 68.2.

SUMMARY OF RECOMMENDATIONS
1. The implications for current practice show that evidence from controlled trials supports the routine use of oxytocic drugs in the third stage of labour, because they give a reduced risk of postpartum haemorrhage, which risk is in the order of 30 to 40 percent. This advantage must be weighed against the relatively small risk of hypertension and the disadvantages attending the routine use of injections.
2. The evidence available provides no support for the continued prophylactic use of ergometrine. This drug offers no advantage over oxytocin in reducing blood loss and it is associated with a greater risk of hypertension and vomiting.
3. Early cord clamping reduces the length of the third stage of labour. The available evidence does not reveal any effect on blood loss or postpartum haemorrhage. In Rh- negative women it should be avoided due to the increased risk of feto-maternal transfusion.
4. Active management of the third stage of labour is superior to expectant management by virtue of its significant protective effect against postpartum haemorrhage.
5. On the basis of current available research evidence, polyglycolic acid sutures (Dexon, Vicryl or Monocryl) should be chosen for both deep layers and skin and a continuous subcuticular stitch appears to be preferable to interrupted transcutaneous sutures.
Chapter 9
Postpartum Care

Management of Postpartum Care

After the birth of the baby and completion of the third stage of labour, most caregivers recognize a “fourth” stage, usually lasting one to two hours, when there is a need for closer supervision of mother and baby while both re-adapt to their changed physiologic state. Concurrent with this, there is a time when there is a heightened responsiveness of both mother and baby to each other, which represents an important window of opportunity for bonding and initiation of breastfeeding. The necessary observations of vital signs, monitoring of uterine flow, and of the baby’s physiological status should therefore be done with mother and baby together, while simultaneously facilitating the natural process of maternal-infant interaction.

Following this, the aim of care for the mother and newborn infant should follow along the continuum of family-centred care, addressing the individual needs of families while providing safe care. This includes prompt treatment for any complications, such as haemorrhage or infection. These complications will occur in a minority of patients and are usually apparent within the first twenty-four hours. In the absence of such complications, the specific and most important needs of the mother in the postpartum period are rest, education about care of the new baby, professional support and advice regarding breastfeeding, and observation and advice about her own physical status.

The baby’s specific needs are establishment of a good feeding pattern and observation to assure normal newborn physiologic transition and absence of signs of infection or congenital problems.

By providing the proper care and support, the health care team will be able to meet the individualized educational and psychosocial needs of the families and provide safe and effective care.

Length of Hospital Stay

Length of stay (LOS) has changed remarkably over the past two decades, reflecting the low risk of serious postpartum complications and changing medical and societal attitudes toward birth. There continues to be debate about the appropriate length of stay. There have been numerous reports, including three randomized controlled studies which have shown that early discharge (12-48 hours post-delivery), with appropriate follow-up in the home, results in a low and acceptable rate of readmission of mothers and babies.1,2,3 Some studies have shown positive effects on such factors as maternal postpartum adjustment, time spent by fathers with their infants in the immediate postnatal period, and breastfeeding success.2,4,5

Experience in some centres regarding short length of stay (LOS) with home care for the majority of a large group of patients have similarly shown reassuring outcomes.

Experience in the United States with very short LOS with no home care follow-up has shown poorer outcomes with unacceptable rates of readmission (15 percent) for mothers and babies.

It is appropriate to have the length of stay reflect individualized and family needs, as previously indicated. The vast majority of mothers and babies will have effective care with a short LOS (24 to 48 hours) if there is early post-discharge home follow-up to address physical

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and psychological needs and ongoing teaching. This presumes that there is adequate support in the home and the mother and baby are healthy. For those who do not meet these requirements, a longer hospital stay may be more appropriate. Those individuals who have greater needs may need more prolonged or additional support at home.

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