

## Maternal Transport Policy

This policy statement has been reviewed by the Clinical Practice Obstetrics Committee and reviewed by the Executive and Council of the Society of Obstetricians and Gynaecologists of Canada

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The transport of pregnant women at high risk for problems to a facility that can provide the required obstetric and neonatal care is recognized as an essential component of modern perinatal care. Outcomes for the newborn are improved if women are transported antenatally, especially for those preterm infants who are born at less than 30 weeks' gestation.<sup>1</sup> Therefore, transferring a woman with the baby in utero is preferable to neonatal transport and should be a primary goal.

When antenatal transfers are necessary, the needs and requirements of mother and fetus as well as the capacity of local resources and facilities should be considered in order to determine the most appropriate accepting centre. This consultation and assessment may permit women to remain

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closer to their homes and more accessible to their families during a time of anxiety and uncertainty.

The "Family-Centred Maternity and Newborn Care: National Guidelines" provides the following description of the components of an effective regional referral and transport system:

- An assessment of problems that will benefit from consultation and/or transport
- A continuum of care provided to family members as they move between the referring and receiving centres
- Equipment and personnel to facilitate transfer in a safe and effective manner as required
- Interagency collaboration and communication
- Facilitating the family's ability to remain together
- Frequent updates, information, and support for the family in this time of stress and grief
- 24-hour availability of the referral and transport system
- Reliable, accurate, comprehensive communication systems between referring hospitals and between the transport teams and hospitals, regarding response times, capabilities, and facilities
- Systems for the mother to return to her community when appropriate, without undue financial stress
- Registries of requests for transport and how they are handled, for purposes of quality audit
- Ongoing performance evaluations
- Ongoing health-care professional and public education initiatives<sup>2</sup>

An important part of an effective regional transport system is the availability of transport personnel who have expertise, technical skills, and clinical judgment to provide proficient care for any emergency that may arise during transport. Regions and/or facilities may identify a pool of care providers with these attributes from which can be drawn the skill mix to meet the individual needs of women being transported. Care providers involved in maternal transport should have the ability to assess the condition of the mother and fetus; to respond in an appropriate fashion to any

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subsequent changes; and to conduct emergency birth. As well, all individuals involved in transport should be able to monitor neonatal vital signs, to perform neonatal resuscitation as well as adult cardiopulmonary resuscitation, and to administer intravenous therapy.

The reason for a maternal transport may be related to either the woman or the fetus, or both. Transport should be considered by the primary physician or midwife when the resources for both immediate and ongoing care of the pregnant woman or her infant, if born in the local community or at home, are inadequate to manage anticipated complications. Transport is indicated when, after assessment, it is determined that the pregnant woman requires the advanced resources and skilled personnel at a Level II or III facility, and/or if it is expected that the newborn will require specialized neonatal intensive care. Factors that need to be considered in planning for transport include the distance to the nearest appropriate facility and the geographic and climatic conditions at the time.

The most common indications for maternal transport may include, but are not restricted to:

- Preterm labour
- Preterm rupture of membranes
- Severe gestational hypertension or other hypertensive complications
- Antepartum hemorrhage
- Medical complications of pregnancy such as diabetes, renal disease, hepatitis
- Multiple gestation
- Intrauterine growth restriction
- Fetal abnormalities
- Inadequate progress in labour
- Malpresentation
- Maternal trauma

When pre-labour complications are anticipated, early consultation and referral as necessary to the appropriate facility is recommended. It is always desirable to avoid, if possible, emergency maternal transport.

Under some circumstances, transport is either not desirable or not possible. Contraindications to maternal transport may include the following:

- The woman's condition is insufficiently stable for transport.
- The fetus' condition is unstable and threatening to deteriorate rapidly.
- The birth is imminent.
- No experienced attendants are available to accompany the woman.
- Weather conditions are hazardous for travel, or present dilemmas for transport.

A number of important issues must be taken into consideration when developing a transport plan. Communication is fundamentally important to effective transport strategies, and all perinatal care providers and/or facilities must be familiar with the mechanisms in place for initiating transport and confirming the ability of the receiving institution to provide the necessary care. Each region should be responsible for developing transport protocols for specific clinical situations (such as preterm labour or gestational hypertension) that are based on the current evidence regarding best practices, and these should be documented and communicated to all partners in the region.

The need for transport must be communicated and discussed with the woman and her family, with adequate opportunity provided, as circumstances permit, for the woman's questions and concerns. Information provided to the woman and her family should include:

- The reasons for transport
- The scheduled date, time, and duration of the transport
- The destination of the woman
- The mode of travel
- The names of staff members who will accompany the woman and/or family
- The visiting hours and telephone numbers of the receiving hospital
- The anticipated length of hospital stay
- Travel directions/maps to receiving hospital by car, or information on other modes of transportation
- The accommodation options for family members<sup>2</sup>

Patients are transported from the care of one physician or midwife to another physician. Discussion between the referring physician/midwife and the accepting physician prior to transport is essential to the provision of optimal care. Components of the discussion must include the reason for the transport, the condition and stabilization of the mother and/or fetus, and the plan for transport. Decisions regarding the mode of transport (road or air ambulance) and the need for accompanying personnel and the required skill set will be made by the referring centre with input from the receiving centre.

The proposed receiving hospital should document the request for transfer. The following is required information: the names of the woman and her physician/midwife; the reason for the transport; the current condition of the woman and fetus; any decisions regarding treatment and transport; the type of health professional accompanying the woman/fetus; and the name and contact information for the accompanying support person. This documentation should be completed whether or not a decision is made to transport.<sup>2</sup>

The referring physician/midwife or institution should complete a maternal transfer form, which should be available from their health-care institution. Photocopies of the antenatal record, the pertinent hospital records, and ultrasound reports should be included, and, if unavailable at the time of transport, should be faxed or otherwise forwarded as soon as possible.

Interventions necessary for stabilization, such as initiation of intravenous infusion, should be conducted prior to transport. The availability and functioning of all transport equipment should be checked before departure (see Appendix A). Sufficient oxygen for transport should be available. For air transport, consideration should be given to administering oxygen to the woman during high-altitude flights.<sup>3</sup>

During transport, care should be individualized to meet the nature of the problem and should take into consideration the distance and conditions of the transport. All assessments should be documented on the maternal transfer form. Both mother and fetus need to be monitored during transport, with the frequency of monitoring dependant upon their condition and the judgment of the attendant. Assessments should include uterine activity, maternal vital signs, and fetal heart rate. The noise level will need to be considered with respect to determining the appropriate

instruments for assessment; for example, the noise levels in air transport may necessitate the use of a digital sphygmomanometer and fetal Doppler with digital display. In order to minimize the risk of supine hypotension and fetal hypoxia, the woman should be positioned on her side during transit. The care of the woman during transport is the responsibility of the referring institution, unless the receiving institution has sent a transport team.

All care providers involved in maternal transport must be attentive to the emotional needs of the woman and her family during what is frequently a frightening and sometimes grief-filled experience. The establishment of a support system is important to the woman's well-being. Even in emergency situations, it is important not to neglect the principles of family-centred care.

## **REFERENCES**

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2. Health Canada. Family-centred maternity and newborn care: national guidelines. Ottawa: Minister of Public Works and Government Services; 2000.
3. Society of Obstetricians and Gynaecologists of Canada. Guidelines for physicians and nurses in maternal/fetal transport. Ottawa: Author; 1992.

## **Appendix A**

### **EQUIPMENT FOR MATERNAL TRANSPORT\***

#### **Basic Equipment**

Check that all equipment is available and functioning before departure. The equipment and kits should be ready at all times and all staff should know where they are located. Check with local ambulance services to determine what equipment is available in the ambulance.

#### **General Equipment**

- Maternal transfer form
- Stethoscope
- Thermometer
- Emesis basin
- Flashlight
- Sphygmomanometer
- Doppler (battery operated or fetal stethoscope)
- Infusion pump (battery operated)
- Sterile gloves (3 pairs, various sizes)
- Peripads

- Sterile lubricant
- Antiseptic solution

#### **IV Fluids and Maternal Medications**

- 1000 cc 5% D/W
- 1000 cc Ringer's Lactate
- 2 solusets
- Tape
- Tourniquet
- Intracaths: 2 each of # 16, # 18, # 20
- Butterfly: 2 of # 21
- Assorted needles and syringes
- Alcohol swabs
- 5 ampules magnesium sulphate 1 g/amp
- 4 ampules oxytocin 10 units/mL
- 2 ampules hydralazine 20 mg/amp
- 2 ampules Valium 10 mg/amp
- Indomethacin 50 mg suppositories or nifedipine 10 mg tablets

**Emergency Birth Sterile Kit**

- 1 pair scissors
- 2 Kelly's forceps
- Six 4 x 4 gauze squares
- 1 small drape
- DeLee mucous suction or a mechanical suction and # 10 Fr. suction catheters
- 2 cord clamps
- 2 plastic bags (placenta and garbage)
- Blanket for baby
- Mylar emergency blanket

**Infant Resuscitation Equipment**

- Neonatal laryngoscope and small straight blade, size 0
- Neonatal self-inflating bag and masks, sizes 0, 1, 2, to administer 100% oxygen
- Clear endotracheal tubes with stylets and connectors, size 2.5 to 4

- Epinephrine 1:10 000 – 1 mL ampules x 3 or preloaded syringes
- Naloxone 0.4 mg/mL – 1 mL ampules x 3 or preloaded syringes
- 1 mL syringes
- 2 mL syringes
- # 20 needles
- # 25 needles
- Orogastric feeding tubes
- Elastoplast tape and scissors

**Adult Resuscitation Equipment**

- Oxygen – check availability and amount in ambulance
- Self-inflating bag and mask
- Airway # 3

\*Adapted from "Family-Centred Maternity and Newborn Care: National Guidelines"<sup>22</sup>