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Dermatologic Disorders of Pregnancy

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There are several common dermatologic disorders of pregnancy which are easily recognized and, when necessary, treated by most clinicians. However, more rare skin conditions, both physiologic and pathologic, which are seen less commonly in pregnancy, are worth reviewing periodically so that they may be recognized and treated when they present. This paper will briefly review the physiologic skin changes seen in pregnancy, as well as pathologic pregnancy-associated skin conditions and their implications for expectant mothers and their unborn babies.

PHYSIOLOGIC SKIN CHANGES DURING PREGNANCY

Hypermelanosis

Hypermelanosis, of some form, is seen in approximately 90% of pregnancies[i], especially in women with darker complexions. It may occur in a generalized manner, or be localized to areas containing more melanocytes, like the areolae, umbilicus, vulva, or perianal skin. Pigmented nevi, freckles, and recent scars may also darken. Of course, the classic example of hypermelanosis in pregnancy is the linea alba, which becomes the linea nigra, with which we are all familiar.

Melasma, or chloasma, is an acquired facial hypermelanosis, which may be somewhat distressing to a pregnant woman. It is thought to occur to varying degrees in about 70% of pregnancies.[ii] It presents as symmetric, well-defined hyperpigmented patches on the cheeks, chin, eyebrows, nose, and upper lip. The pathogensis of melasma is unknown, but it has been postulated that it may result because of estrogen stimulation of melanocytes, acting similarly to melanocyte-stimulating hormone[iii]. Treatment has been focused on protection from UV exposure, both during and after pregnancy, as up to 30% of women will have persistent hyper-pigmentation for as long as 10 years postpartum[i]. Hydrocortisone creams may be used during pregnancy, and chemical peels may be helpful in the postpartum period. Most women will experience spontaneous regression or resolution of melasma.

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Melanocytic nevi may increase in size during pregnancy, and new nevi may develop[iv]. As with any patient, suspicious moles should be biopsied to rule out dysplasia or melanoma. If melanoma is discovered during pregnancy, the overall prognosis is not affected by the pregnancy itself. However, we do know that because of its hematogenous spread it can cross the placenta and metastasize to the fetus.

Hair Changes

To the distress of affected patients, pregnancy can be associated with excessive hair growth, or hair loss. Hirsutism is seen commonly, with excessive hair growth on the face, extremities, and abdomen. Placental androgens, produced in normal pregnancy, may be responsible for a higher proportion of hair in the anagen (growing) phase than in the telogen (resting) phase[v]. Mild hirsutism usually regresses spontaneously following delivery, but may recur with subsequent pregnancies. Severe hirsutism with virilization always warrants further investigation.

Telogen effluvium is hair loss that may be seen 4-6 months postpartum. It is precipitated by a postpartum drop in estrogen which causes an increased proportion of hairs on the scalp to enter the telogen phase. These resting hairs are shed when the hair follicle is reactivated at the beginning of anagen hair growth. The result is hair loss that is 2-3 times the normal rate of 100 scalp hairs per day. Normal hair growth should return 6-15 months postpartum[v].

Stretch marks

Stretch marks, or striae distensae, are thin, atrophic pink or purple linear bands seen on the abdomen, breasts, and thighs of up to 90% of pregnant women[iii] (Figure 1). They usually fade in the postpartum period to thin, flesh-coloured, atrophic bands. The pathogenesis of stretch marks involves a combination of stretching of the skin, as well as adrenocorticosteroids and estrogen promoting tearing of the collagen matrix of the dermis and weakening of elastic fibres[i]. There are many commercial topical treatments which claim to reduce or eliminate stretch marks, but a surprising paucity of legitimate medical research on the topic. Based on the limited amount of research available, unfortunately no treatment has been demonstrated to resolve or prevent stretch marks. One study suggested that massage may be beneficial in treating stretch marks, regardless of which topical treatment is used[vi].

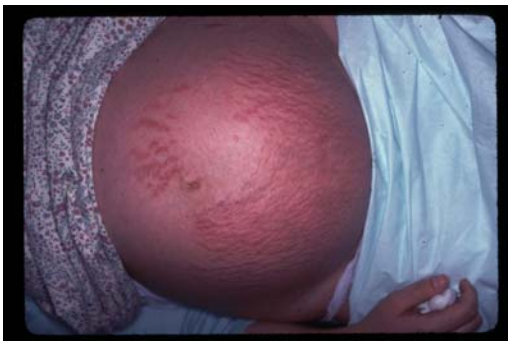


Figure 1: Striae distensae on pregnant abdomen. Photo courtesy of Dr. Lyn Guenther, MD.

Vascular Changes

Elevated estrogen levels in pregnancy causes proliferation of cutaneous blood vessels. Vasomotor instability may result in pallor, flushing, or mottling of the skin in response to temperature changes. Petechiae may develop on the lower body due to increased cutaneous capillary hydrostatic pressure and fragility. Spider angiomata on the face, trunk, and arms may be seen in up to 70% of pregnant white women[i] (Figure 2). Capillary hemangiomas are not compressible, unlike spider angiomata, and are also not as common (occurring in only about 5% of pregnancies). They usually involute following delivery, but large hemangiomas may persist, and can rarely be associated with arteriovenous shunting, and even high-output cardiac failure[v]. Palmar erythema (Figure 3) is a benign finding in pregnancy, when it is purely a manifestation of pregnancy, and not associated with underlying liver disease.

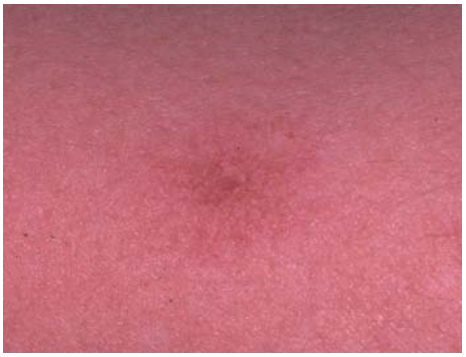


Figure 2:

Spider angioma. Photo courtesy of Dr. Lyn Guenther, MD.

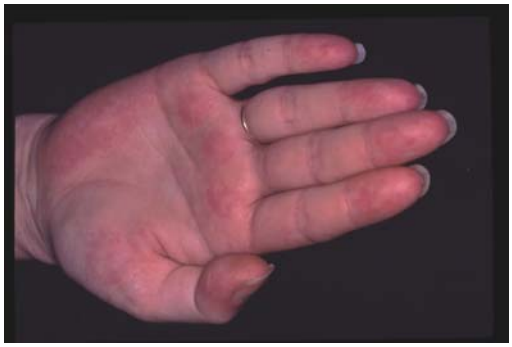


Figure 3: Palmar erythema. Photo courtesy of Dr. Lyn Guenther, MD.

Although considered a physiologic skin change of pregnancy, pyogenic granuloma, or granuloma gravidarum, can be quite striking and distressing to patients because they are rapidly developing, and bleed easily. Pyogenic granuloma occur in about 2% of pregnant women. They are usually solitary lesions, and can occur anywhere on the skin or mucous membranes. They are brightly erythematous, sessile or pedunculated friable papules with a collar of thickened epidermis at the base (Figure 4). Histologically, they appear similarly to granulation tissue, and are thought to be an abnormal inflammatory response to minor trauma, although most patients cannot recall any trauma to the affected area[v].

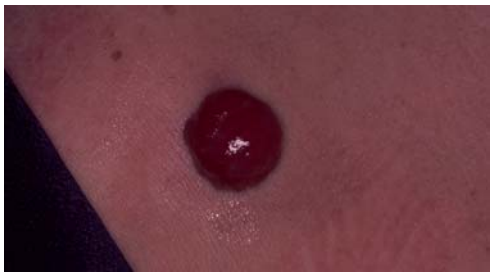


Figure 4: Pyogenic granuloma. Photo courtesy of Dr. Lyn Guenther, MD

DERMATOLOGIC CONDITIONS ASSOCIATED WITH PREGNANCY

Pruritis affects 3-14% of all pregnant women[vii], and is a feature of most pregnancy-specific inflammatory skin diseases. In these skin disorders, it is important to distinguish between pruritis with primary skin lesions, and pruritis without rash, or with secondary excoriations (Table 1). Skin distension alone can be a cause of pruritis. As with any patient population, pruritis in the pregnant patient can also be caused by atopic dermatitis, liver disease, thyroid dysfunction, diabetes, drug eruptions, parasites, malignancy, and infection.

Intrahepatic Cholestasis of Pregnancy (ICP)

ICP is not a primary skin disorder, but is included in this discussion because of its associated pruritis. It is the only disorder we will discuss which involves pruritis without primary skin lesions, but secondary excoriations may develop as a result of scratching. Pruritis develops mainly on the palms of the hands and soles of the feet, but may become generalized. ICP affects approximately 0.5% of pregnancies, and usually develops in the second and third trimesters[v].

Intrahepatic cholestasis is propagated by estrogen and progesterone, leading to increased serum bile acid levels and deposition of bile salts in the skin, which causes pruritis. In severe cases, jaundice may develop[vii]. The diagnosis is confirmed by elevation of hepatic transamniases and bilirubin levels in the serum. Bile acids cross the placenta and can accumulate in the fetus, which may be toxic. More concerning than the obvious maternal morbidity of pruritis, fetal risks with ICP include preterm birth, fetal distress, meconium-stained amniotic fluid[viii], and intrauterine fetal demise[ix].

There are a number of treatments for ICP, but treatment may not eliminate the risks of fetal complications, and most clinicians would advocate for early delivery (around 38 weeks) to avoid them. Ursodeoxycholic acid (UDCA) alleviates pruritis by partially restoring a normal bile acid profile, normalizing bile acid transport across the placenta, and may have a fetal cardioprotective effect[x]. S-adenosylmethionine works synergistically with UDCA. Cholestyramine alleviates pruritis but has no documented fetal benefit. Also, it interferes with the absorption of fat-soluble vitamins, including vitamin K, which may predispose treated individuals to postpartum hemorrhage[x].

Polymorphic Eruption of Pregnancy

In 1979, Lawley *et al* coined the term “pruritic urticarial papules and plaques of pregnancy”,

or PUPPP[xi]. This terminology is still widely used, but the variable skin features of this disorder are better described by the term "polymorphic eruption of pregnancy" (PEP)[v].

PEP is quite common, occurring in 1 in 200-240 pregnancies[v]. The etiology and pathogenesis is unknown, but several speculations have been put forth. Women with PEP have been noted to have lower serum cortisol levels than women who do not develop PEP[xii]. The majority of women who develop PEP are primigravidas with prominent striae, or women with multiple gestations or polyhydramnios, implicating a possible role for increased skin tension in the development of PEP[xiii]. Also, 70% of patients with PEP deliver male fetuses, and skin biopsies have shown detectable male fetal DNA[xiv].

Lesions usually develop in abdominal striae in the third trimester, and eventually spread to the thighs, buttocks, and arms. The periumbilical area and face are usually spared. The lesions are 1-2 mm erythematous papules surrounded by a pale halo of vasoconstriction. The papules then coalesce into urticarial plaques, and small vesicles may develop on the plaques (Figure 5).[v]

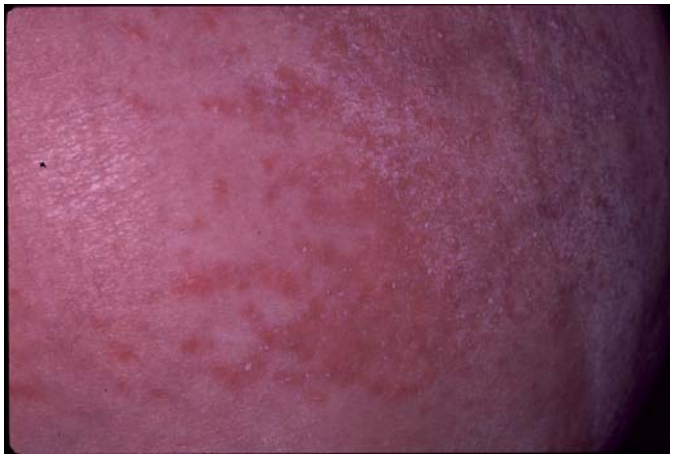


Figure 5: PEP rash in the third trimester. Photo courtesy of Dr. Lyn Guenther, MD

The goal of treatment is relief of pruritis for maternal comfort. There are no fetal risks known to be associated with PEP. Topical or systemic steroids, hydroxyzine, and diphenhydramine may be helpful. Severe, intractable pruritis may warrant induction when fetal lung maturity is ensured. PEP improves rapidly following delivery, usually resolving in 1-2 weeks. It rarely onsets in the postpartum period, and generally does not recur with subsequent pregnancies.[v]

Pemphigoid Gestationis

Pemphigoid gestationis is a rare, pruritic, autoimmune, bullous skin disease which is antigenically and clinically similar to bullous pemphigoid. It was previously known as herpes gestationis, but this name was dropped because HSV is not involved in this disease process. Pemphigoid gestationis occurs in 1 per 1700-50,000 pregnancies. It usually develops in the second or third trimester, with a mean onset at 21 weeks gestation. Most patients will experience recurrences throughout their pregnancy, and in subsequent pregnancies. Twenty percent of patients experience their first lesions early in the postpartum period.[v]

Pemphigoid gestationis begins with severely pruritic erythematous, urticarial papules and plaques around the umbilicus (Figure 6). Within days to weeks, the rash spreads to the trunk, back, buttocks, forearms, palms, and soles. The face, scalp, and mucosae are usually spared. Two to four weeks after onset, vesicles and bullae develop either at the margins of the plaques, or on clinically uninvolved skin. The pathogenesis is somewhat unknown, but there may be a hormonal influence suggested by the occasional recurrence with menstruation or oral contraceptive use outside of pregnancy. Genetic predisposition may also be a factor. The diagnosis of pemphigoid gestationis is confirmed by skin biopsy for direct immunoflorescence.[v]

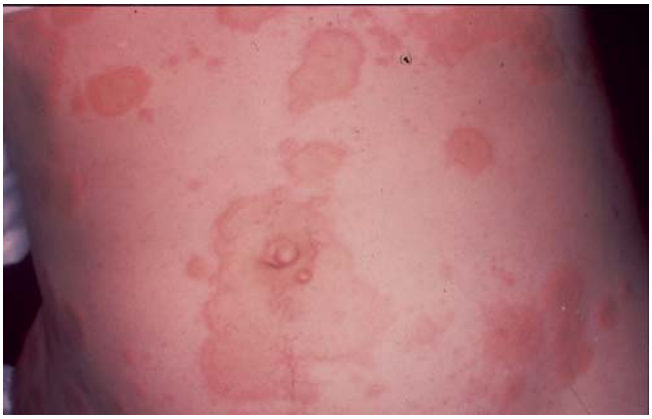


Figure 6**:** Pemphigoid gestationis. Photo courtesy of Dr. Lyn Guenther, MD

There is no increased risk of maternal mortality with pemphigoid gestationis, but there may be an increased risk of preterm birth[xv]. There is insufficient evidence to determine whether treatment decreases the risk of preterm birth. Treatment is aimed at controlling pruritis, suppressing formation of new lesions, and preventing secondary infection. Topical steroids and antihistamines may be effective in mild cases, but most patients will require systemic corticosteroids. Azathioprine, dapsone, and plasmapheresis may be useful in intractable cases. In about 5% of cases, transient newborn skin lesions may develop due to autoantibodies crossing the placenta and depositing into fetal skin[xvi].

Prurigo Gestationis

Prurigo gestationis presents as 1-2 mm pruritic excoriated papules which are usually limited to the extensor surfaces of the extremities. It occurs in 1 in 50-200 pregnancies, in the second half of gestation. There is no severe impact on maternal or fetal health. Topical steroids and oral antipruritics are usually sufficient to control symptoms, but systemic corticosteroids may occasionally be necessary. Symptoms resolve following delivery. A more severe, widespread form of prurigo gestationis may be known as papular dermatitis.[v]

Pruritic Folliculitis of Pregnancy

Pruritic folliculitis of pregnancy occurs in 1 in 3000 pregnancies, with onset in the 3rd trimester[xvii]. It is an erythematous, hair-follicle centred rash which clinically resembles acne. Follicular papules or pustules develop on the shoulders, upper back, arms, chest, and abdomen. The lesions disappear 2-3 weeks after delivery, but treatment with 10% benzoyl peroxide and oral antihistamines may be helpful during pregnancy for symptomatic relief.[v]

Impetigo Herpetiformis

Impetigo herpetiformis is a very rare skin disorder in pregnancy. It is clinically and histologically similar to pustular psoriasis, but occurs in women without personal or family history of psoriasis. It presents in the second half of gestation with groups of painful sterile pustules on erythematous bases on the inner thighs and groin (Figure 7). The pustules coalesce and spread to the trunk and extremities. The distinguishing feature of impetigo herpetiformis is the absence of pruritis. Lesions may become secondarily infected and sepsis may develop. Affected patients may have systemic symptoms of fever, chills, arthralgia, vomiting, diarrhea, and lymphadenopathy.[v]

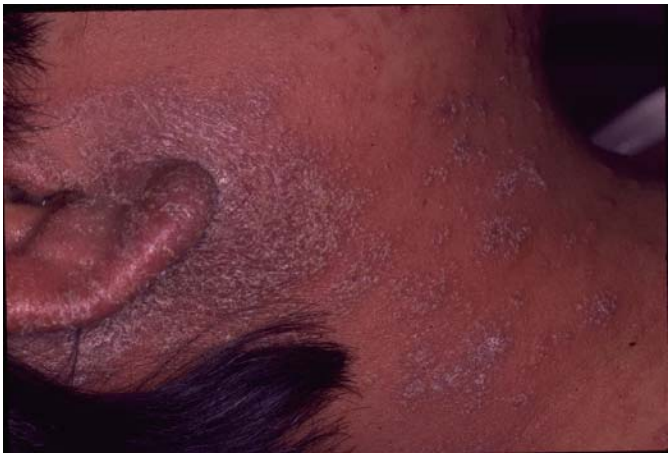
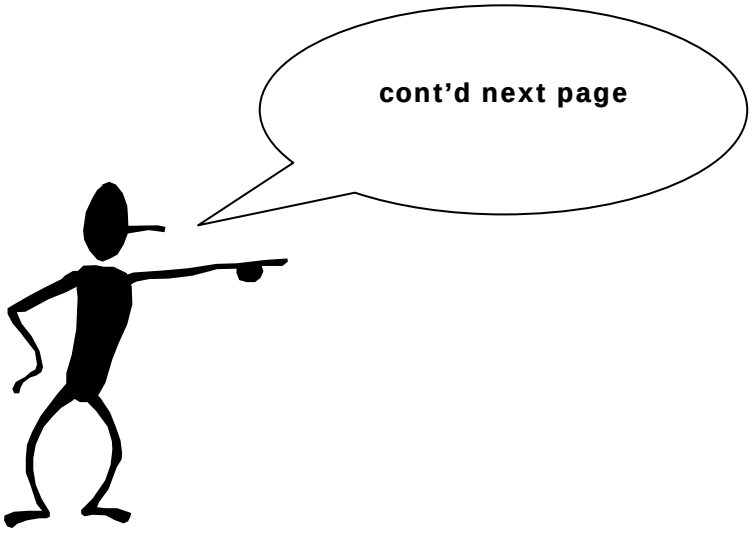


Figure 7: Impetigo herpetiformis at 20 weeks gestation. Photo courtesy of Dr. Lyn Guenther, MD

Systemic corticosteroids are usually indicated, as well as antibiotics when secondary infection occurs. Impetigo herpetiformis resolves following delivery, but can recur in subsequent pregnancies. It is unknown whether there is risk of fetal complications, so close fetal surveillance is recommended, and elective delivery may be considered when fetal lung maturity is ensured[xviii].



Disorder	Time of Onset	Pruritis	Lesion Type	Distribution	Fetal Risk
ICP	3rd trimester	Moderate-severe	*NONE*	Generalized	PTB, fetal distress, death
PEP	3rd trimester	*SEVERE*	Red, urticarial papules and plaques	Abdomen (except umbilicus), thighs, buttocks	None
Pemphigoid Gestationis	1st trimester-postpartum	Moderate-severe	Red papules, vesicles, *BULLAE*	Abdomen, extremities, generalized	PTB
Prurigo Gestationis	2nd-3rd trimester	Moderate	Excoriated papules	Extensor surfaces of extremities, generalized	None
Pruritic Folliculis of Pregnancy	3rd trimester	Moderate	*ACNE*-like	Shoulders, back, arms, chest, abdomen	None
Impetigo Herpetiformis	1st-3rd trimester	*NONE*	Pustules	Genitalia, medial thighs	Unknown

Table 1: Summary of specific dermatoses of pregnancy. Distinguishing features of each disease are italicized and capitalized. Modified from Gabbe, *et al.* 2002
ICP=intrahepatic cholestasis of pregnancy, PTB=preterm birth, PEP=polymorphic eruption of pregnancy

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The Community Health Care Providers Role in Neonatal Follow Up

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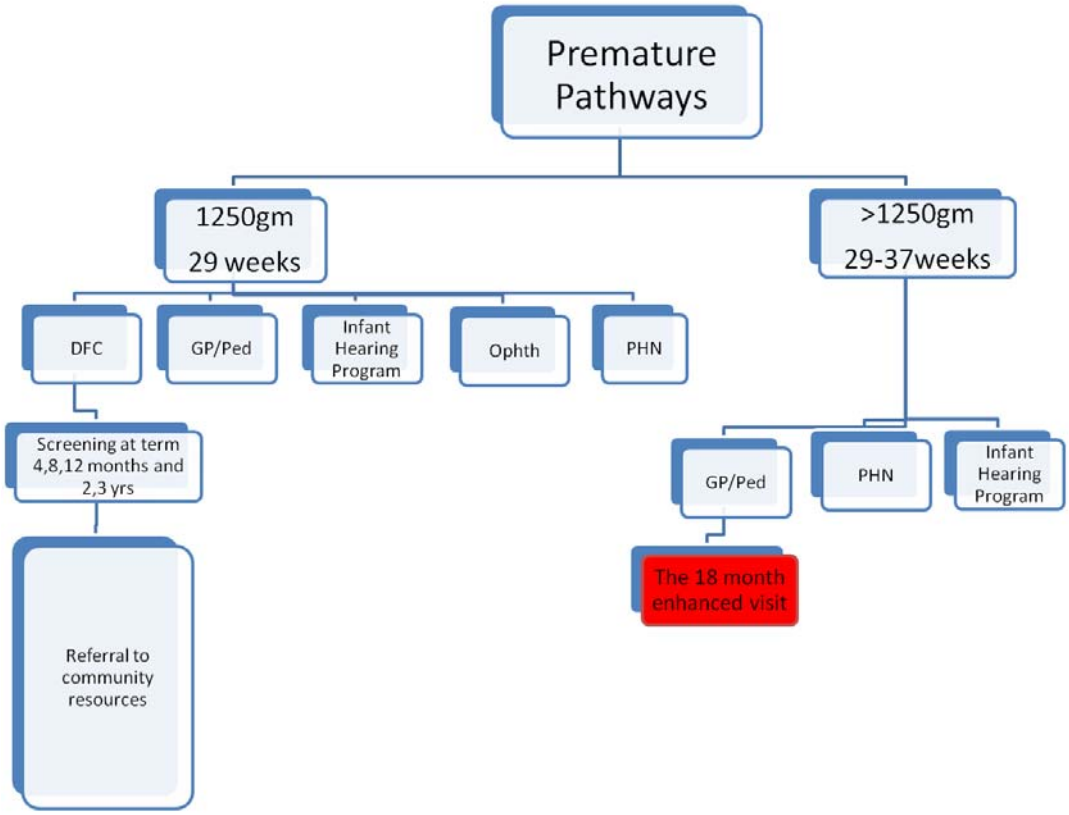
Infants discharged from a Neonatal Intensive Care Unit can have risk factors that put them at risk for medical and developmental sequelae. These sequelae may be evident at the time of discharge (e.g., bronchopulmonary dysplasia) or may be identifiable later in infancy (e.g. Cerebral palsy) or in childhood, (learning or behavior disabilities). Early identification of infants at risk for developmental delay is important in order to initiate appropriate intervention.

It is important for community health care workers to be aware of the general guidelines for standardized developmental and medical follow up for several categories of high risk infants. Protocols for follow up have been described in a recent consensus statement.[1] There can be regional differences in guidelines regarding which high risk infants should receive specialized neonatal follow up. There is an agreement that extremely premature infants, especially those with chronic lung disease, severe intrauterine growth restriction and those with neurological injuries will require anticipatory developmental screening.[1]

The following will outline the follow up recommendations for the high risk population in the Southwestern Ontario Region.

PREMATURE PATHWAYS DIAGRAM (TABLE 1)



SITE CRITERIA (TABLE 2)

1. Birthweight 1250 grams or less
2. Under 29 weeks regardless of weight
3. Neonatal complications related to prematurity
   - Bronchopulmonary dysplasia
   - Grade III or IV IVH
4. Neurological complications: e.g. Meningitis, seizures, Hypoxic Ischemic Encephalopathy, etc
5. Apnea beyond 37 weeks
6. Significant hearing or visual impairments
7. Specific research
8. Others as deemed necessary by the neonatologist. These may include IUGR, bigger twin if the other fits the weight criteria, post surgical necrotizing enterocolitis, hyperbilirubinemia

For those children who do not meet the SJHC Developmental Follow Up criteria it is important for community health care workers to be aware of the general guidelines for interval developmental assessments (1) and to be alert to medical risk factors for high risk populations. After the initial assessment by their Family Physician/Peadiatrician following discharge from the NICU this group of infants should have a review of their growth, feeding and developmental status (including vision and hearing) at four to six months, a review of neuromotor and language development at 12 to 18 months and a basic evaluation of their language, fine motor and cognitive skills in the preschool and early school years. The following checklist (Table 3) is a guideline that can be used by community health providers in screening high risk neonates.[2]

GUIDELINES FOR COMMUNITY PHYSICIANS (TABLE 3)

First nine months (age corrected for gestational age at birth)

- Plot growth curves and developmental milestones according the corrected age (i.e., chronological age minus number of weeks of prematurity)
- Immunize according to chronological, not corrected age (3)
- Screen for feeding and growth problems (especially in those with severe intrauterine growth retardation, bronchopulmonary dysplasia or anemia
- Assess for tone abnormalities, motor delays, sleep disturbances and irritability
- Verify hearing status and ensure that follow-up is arranged if the neonatal screen is abnormal (Ontario Infant Hearing Screening Program)
- Be alert for inguinal hernias, late onset sequelae of prolonged intubation (subglottic stenosis), necrotizing entercolitis (intestinal stenosis), persistent patent ductus arteriosus, late onset hydrocephalus (following intraventricular hemorrhage) or bronchiolitis
- Be alert for family stress

Toddler (nine to eighteen months corrected age)

- Plot growth curves and developmental milestones according to corrected age
- Screen for motor delays and tone abnormalities suggestive of cerebral palsy
- Reassess hearing status, especially for conductive hearing loss; re-refer to audiology if there are concerns
- Screen for early language milestones and behavioral concerns, self- regulation and socialization
- Ensure that an opthalmological assessment for refractive errors is scheduled, especially with a history of retinopathy of prematurity

Preschool (age three to five years)

- Plot growth curves and developmental milestones according to chronological age
- Assess for language, cognitive and fine motor concerns
- Watch for problems with attention or hyperactivity
- Ensure that school planning is appropriate for children with delays or handicaps
- Be alert for ongoing stress

School Age

- As above
- Assess school performance (parents' and teachers' reports) for dyslexias or perceptuomotor difficulties
- Screen for socialization problems at school
- Be alert for newly rekindled family stress

Children identified with a suspected developmental delay in any of the above stages should be referred for a diagnostic work up and treatment plan if they are not already in a formal Neonatal Follow Up Program.[2]

Resources that can be accessed in your local community are as follows:

Infant Development Programs
Treatment Centers
Infant Hearing Program
Public Health Units
Preschool Speech and Language Services
Blind Low Vision Program
Mental Health Services

The Developmental Follow Up Clinic at St. Joseph's Health Care is available as a resource if you have questions or concerns about the follow up of high risk neonates. The clinic can be reached at 519-646-6120.

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DID YOU KNOW . . .

There is a new organization called Canadian Association of Nurses for Women and Newborns (CANWN). Visit their website at
http://www.canwn-aicfnn.ca/

or

You can join by sending an email to mquance@mtroyal.ca for an application form.
Cost: $50 plus $2.50 GST
First Annual General Meeting in the fall of 2009. Location to be announced.

PLEASE WELCOME . . .

FELIX HARMOS

Regional Leader for the newly established Southwest Maternal-Newborn Child and Youth Network*
effective August 4, 2009.

A Registered Massage Therapist, and Master of Health Science (Health Administration), Felix most recently worked as Coordinator of the Canadian Task Force on Preventive Health Care (CTFPHC). In collaboration with the Public Health Agency of Canada, he has assisted with the re-establishment of CTFPHC as part of the Agency's mandate for disease prevention and health promotion. This included the development of a new governance structure and secretariat model to support the work of the revitalized CTFPHC.

Felix has also managed the Professional Practice e-Learning and Assessment Tool (PPeAT) at the Canadian Health Information Management Association. The PPeAT is a web-based instrument that provides targeted education and assessment of coding skills and knowledge to hospital information professionals who submit data to the Canadian Institute for Health Information (CIHI). He has also held the position of Program Evaluator at VideoCare (now the Ontario Telemedicine Network) focusing primarily on the activity of the Ophthalmic Digital Imaging Network. In this role he also collaborated with cardiologists in the development of an evaluation protocol for a digital stethoscope.

Felix's clinical background and his experience with system design, program evaluation, distributed education and extensive collaboration are key attributes he brings to the new Network.

Please join with us in welcoming Felix to his new role.

*This is a working title for the new network to be finalized by the Regional Steering Committee. The Network brings together the Southwest Regional Paediatric Network (RPN), the SouthWest Ontario Perinatal Partnership (SWOPP), and the Regional Perinatal Outreach Program of Southwestern Ontario.

Fetal Fibronectin (fFN) Testing for Preterm Labour: Ontario's Implementation Strategy

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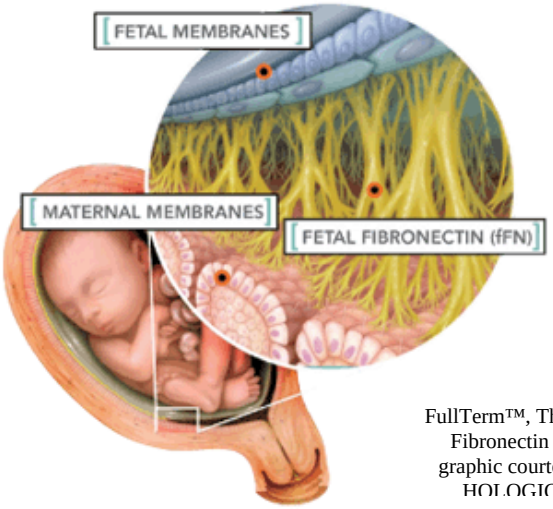
It has long been recognized that preterm birth, defined as birth prior to 37 completed weeks, is a major cause of neonatal morbidity and mortality. According to the Ontario Perinatal Surveillance System Report 2008, preterm birth is one of the most serious perinatal health issues occurring in Ontario. Infants that are born preterm face a myriad of serious potential health risks including long term disability and death. The preterm birth rate in Ontario has increased over the past three decades from 7 percent in 1972 *(CPS and SOGC, Regional Services in Reproductive Medicine, 1972)* to 8.5 percent reported by the Niday Perinatal Database from April 2006 – March 2007. Provincial 2006-07 statistics indicate that 7.2 percent of these preterm births occurred between 32 and 36 weeks and 1.3 percent occurred before 32 weeks. *(OPSS Report 2008).*

In 2006, Ontario experienced an increase in maternal antenatal transfers out of region/province and sometimes out of the country. Many of the women transferred did not give birth and were sent back undelivered. Many preterm infants were born outside of tertiary care centres due to the lack of capacity at these centres to accept maternal antenatal transfers. Consequently, the Ministry of Health and Long Term Care (MoHLTC) commissioned a study of this issue through the Provincial Council for Children's Health (PCCH). An expert Panel was formed to assist with the study and, from this, recommendations were made to promote fetal fibronectin testing in all hospitals with birth services.

WHAT IS FETAL FIBRONECTIN?

Fetal Fibronectin (fFN) is a glycoprotein produced by the chorion that binds the chorion to the underlying maternal decidua. It is released into the cervical/vaginal fluid in response to inflammation or separation of amniotic membranes from the decidua. It is normally found in cervico-vaginal secretions until 22 weeks gestation and again near the time of labour. It is not normally detected in cervico-vaginal fluid between 24 – 34 weeks gestation unless the cervix has undergone premature effacement and dilatation which usually occurs with symptomatic uterine contractions.



FullTerm™, The Fetal Fibronectin Test graphic courtesy of HOLOGIC™

Research has indicated that a negative fFN result has a 95 percent accuracy in identifying those women that will not go into preterm labour for the next 7 – 14 days. Consequently, fFN has been determined to be a valuable adjunct in the diagnosis of preterm labour.

To facilitate the roll out of fFN province-wide, five regional coordinators have been recruited to assist hospitals across the 14 Local Health Integration Networks (LHINs) with implementation. The Ministry has agreed to provide seed funding for those hospitals already using the test and start up money for new users. The goals of this strategy are to:

- to reduce unnecessary maternal transfers and admissions for suspected preterm labour
- to better determine and improve utilization of tertiary antenatal beds
- to reduce psychosocial and financial burdens for families
- to reduce out of region transfers through better utilization of beds and …
- to improve identification of women needing treatment for threatened preterm labour.

As part of the provincial implementation strategy, provincial guidelines for the use of fetal fibronectin are being distributed to hospitals and a web-based learning package is also currently being developed. A fFN utilization tool will also be made available to hospitals to assist them in tracking fFN use and compliance with the guidelines. A formal evaluation of the implementation strategy will be conducted in the future.

The Perinatal Outreach Program of Southwestern Ontario has been asked to assist with the implementation of fFN in the Erie St. Clair and Southwest LHINs (LHINs 1 and 2). For further information please contact:
Gwen Peterek, BScN, PNCC
Regional Coordinator
Email: gwen.peterek@sjhc.london.on.ca

MIDWIFERY SERVICES
LISTOWEL & WINGHAM HOSPITALS ALLIANCE

Margret Comack, Chief Executive Officer, Listowel and Wingham Hospitals Alliance, recently announced to the community that midwifery privileges have been granted to Countryside Midwifery Services, at the Listowel Memorial Hospital Site.

NEW

DID YOU KNOW . . .

Baby Talk: Lessons from the NICU

Lunch & Learn series

Webcast Option

For your convenience, we have added the option of viewing each presentation as an archived webcast from your computer.

The webcasts will be recorded and accessible from the public archives of the Ontario Telemedicine Network website at http://webcast.otn.ca/archives.html about one week following the presentation.

Once you access the website, use the search function to locate the presentation you wish to view.

ARCHIVED EVENTS TO DATE

January 20, 2009

Acute Care of at-Risk Newborns: An overview

February 17, 2009

Neonatal Nutrition in the Special Care Nursery

April 21, 2009

Neonatal Developmental Follow up

May 19, 2009

Neonatal Hyperbilirubinemia

June 23, 2009

Neonatal Transport

For Your Information . . .

KEEPING VIGILANT
H1N1 FLU UPDATE

It is anticipated that the spread of H1N1 flu might increase dramatically during the Fall season. Pregnancy increases the risks of suffering severe complications from the flu and pregnant women are more often hospitalized for flu complications than non pregnant women of childbearing age. Therefore, it is important for all perinatal health care providers to ensure that they are well informed about the appropriate prevention and treatment strategies for pregnant women, new mothers and infants. The Ontario Provincial Plan for Flu Pandemic includes a Chapter on newborn, paediatric and maternal planning in Chapter 18. It can be accessed on the internet at http://www.health.gov.on.ca/english/providers/program/emu/pan_flu/ohpip2/ch_18a.pdf

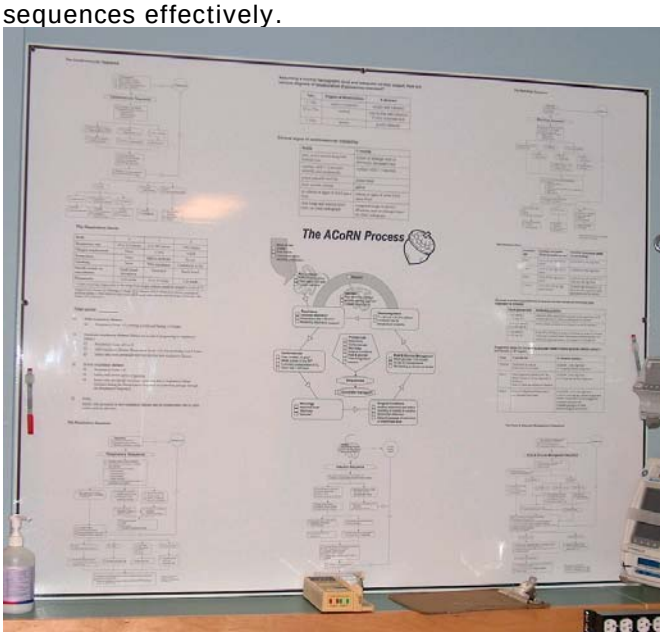
In addition, the following links also provide useful information for both health care providers and patients:

Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN)
http://www.healthywomen.org/healthcenters/pregnancyandparenting/flufreeandamomtobe

Centres for Disease Control and Prevention:
http://www.cdc.gov/swineflu/clinician_pregnant.htm

ACoRN INGENUITY

This past June the Perinatal Outreach Program offered a 3 day work workshop on Acute Care of At-Risk Newborns (ACoRN). We are pleased that over the years so many health care professionals from both our region and beyond have participated in this nationally acclaimed program. While the program offers a set of laminated sequences for staff to use as they work through the ACoRN primary survey, the staff at Chatham Kent Health Alliance have developed another way of using the sequences effectively.



The ACoRN primary survey, together with each of the sequences and corresponding evaluation tools, has been printed on a large white board in the resuscitation area. This allows all staff involved in caring for the infant to see how assessments and decisions are being made and to work on the sequences together more easily. Thank you to Jill Cousins, RN for submitting this picture.

If any of our other readers have innovative programs or tips that they would like to share in our newsletter please contact:

Kelly Barzsa-Jenkins, Perinatal Nurse Consultant
Email: Kelly.barzsajenkins@sjhc.london.on.ca
Phone: (519) 646-6100 ext. 65900

For your information:

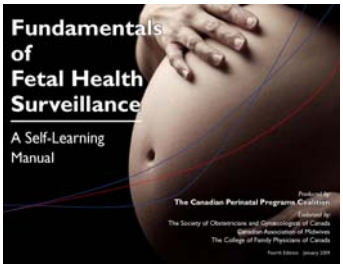
Fetal Health Surveillance in Labour An Update

Since the release of the SOGC Fetal Surveillance Guidelines in Fall 2007, educational materials for teaching fetal surveillance in Canada have been revised.

Here is an update on the status of the educational materials:

1. **The Fetal Health Surveillance in Labour *Self-Learning Manual*:**

NEW EDITION NOW AVAILABLE!



ORDERS CAN NOW BE PLACED WITH
***THE BRITISH COLUMBIA PERINATAL HEALTH PROGRAM* (BCPHP)**

The order form and instructions can be found at:
http://www.bcphp.ca/Fetal%20Health%20Surveillance.htm

- This manual is used to prepare participants with the fundamental knowledge about intermittent auscultation (IA), and electronic fetal monitoring (EFM), usually as a self-learning activity in preparation for a course.
- Nine authors from the disciplines of nursing, medicine and midwifery have contributed to the revision of this manual. There was also an extensive peer review process. All the authors and reviewers are acknowledged in the book.
- The chapters have been updated to reflect the new SOGC terminology and guidelines and a new chapter on non-stress test (NST) has been added. Additionally, tracings at 1, 2 and 3 cm/min have been introduced to meet everyone's learning needs.
- The group that published the document is currently seeking funds for French translation.

2. **Formalization of a Fetal Health Surveillance Committee**

- In 2008 the SOGC formed a national Fetal Health Surveillance Group. This multidisciplinary team will be responsible for developing educational curriculum for the Fundamentals of Fetal Health Surveillance. The group is currently writing a funding proposal for a web-based application that would help to standardize education and practice across the country.

3. **Fetal Health Surveillance in Labour**

The following PPPESO FHSL resources are available for FHSL instructors to purchase

i. **FHSL Fundamentals (2008)**. Includes updated electronic copies of the PowerPoint presentation, the participant handouts and all documents needed to run the workshop.

ii. **EFM Cases in Challenging Clinical Situations* (2007).** Includes an electronic copy of 4 PowerPoint EFM Case Studies on: Labour induction, PROM, VBAC and Multiple Gestation**.**

Please note this program has not been updated to incorporate the new 2007 classification.

More information and order forms can be found at:
http://www.pppeso.on.ca/site/pppeso/Manuals_amp_Resources_p548.html

For your information:

Canadian Maternity Experiences Survey Now Available

The Canadian Maternity Experiences Survey is now available. This is a national survey of Canadian women's experiences, perception, knowledge and practices before conception and during pregnancy, birth and the early months of parenthood.
http://www.phac-aspc.gc.ca/rhs-ssg/survey-eng.php .
If you have any questions please feel free to contact Kelly Barzsa-Jenkins @ kelly.barzsajenkins@sjhc.london.on.ca

Revised Regional Chart Forms Now Available

The Perinatal Outreach Program has recently revised three regional chart forms that are now available for purchase through Data Group. These include the regional Ill Newborn Record, the regional Neonatal Resuscitation Record and the regional Maternal Newborn Record.

- The Neonatal Resuscitation Record. Form # 68447
- The regional Maternal Transfer Record. Form # 60215
- The Ill Newborn Record is available in two formats:
  - **a.** The Ill Newborn Extended Record, which is a four-panel fold-out form including a flow sheet, lab values, fluid balance record and clinical progress record. Form # 200277
  - **b.** The Ill Newborn Record, which is a double-sided form with flow sheet on one side and lab values on the reverse. Form # 72333
  - **c.** The Neonatal Fluid Balance Record can be purchased individually as a single-sided form. Form #200276

Once an account has been established with Hospitals Materials Management Services (London) (HMMS) these forms may be ordered online at www.datagroup.ca/ddm7

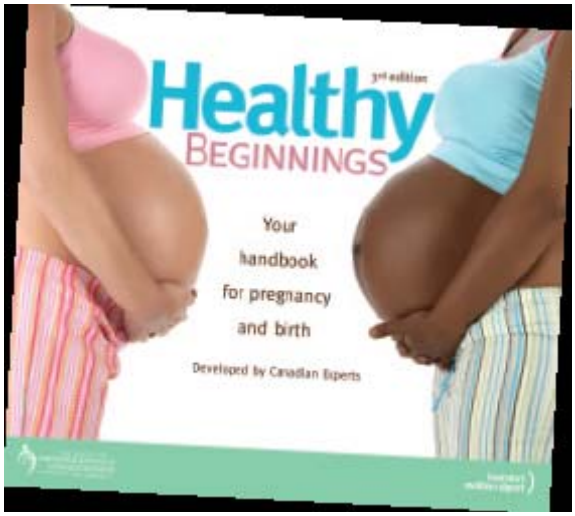
For further information, contact:
Gwen Peterek, Perinatal Nurse Consultant
Ph: 519-646-6100 x 65901
E-Mail: Gwen.peterek@sjhc.london.on.ca

Healthy Beginnings, 4th ed. New Release

Best Start / SOGC release Healthy Beginnings, 4th Ed.

Order form available at:
http://www.beststart.org/resourses/rephealth/index.html

This publication contains updated content, stronger breastfeeding content and meets Baby Friendly Initiative Criteria.



You asked us: . . .

Since the new Neonatal Resuscitation guidelines came out in 2006, the new recommendations for the therapeutic use of oxygen during and after resuscitation were that positive-pressure ventilation should be initiated with air (21% oxygen), if the baby is < 90 seconds of age. As well, it is recommended that blended oxygen be available in the birthing room and during transport to the NICU to reduce excessive tissue oxygenation in a baby of less than 33 weeks gestation.

Q: How do we comply with the revised NRP recommendations if we don't have an oxygen blender?

A: While this may not be difficult for some sites, piped in air is not available at all institutions in the birthing rooms, making it difficult to supply the blended oxygen required for resuscitation. One of the hospitals in our region has developed and offered to share their set up to help facilitate the delivery of blended gases. Terry Hiddink, RRT Manager, CardioRespiratory Services at St Thomas Elgin General Hospital has come up with this ingenious set up to be able to provide blended air (21% oxygen) or room air for the initial stages of resuscitation.

You will need:

- Dual "E" size air cylinder cart
- Air regulator with yoke attachment for "E" size cylinder
- Oxygen regulator with yoke attachment for "E" size cylinder
- Air line to run from the flow meter to the blender
- Oxygen line to run from the flow meter to the blender
- The blender will need to be mounted to the oxygen cart
- A flow meter (0-15 lpm) will need to be mounted on the blender

Terry has recommended the use of the aluminum air cylinders instead of the usual heavy steel tanks because they are lighter and, therefore, offer ease of portability. If you have any questions you can contact Terry at THiddink@stegh.on.ca.

Upcoming events:

MARK YOUR CALENDARS . . .

- **MATERNAL NEWBORN NURSING COURSE**
  London:

  Fall 2009
  Mondays: Sept. 28 - Nov. 16, 2009

St. Joseph's Health Care, London
Offered in collaboration with Fanshawe College.
Continuing Education: NRSG-6027
Videoconferencing available outside of London

Contact:
Gwen Peterek
Perinatal Outreach Program
Phone: (519) 646-6100 ext 65901
Fax: (519) 646-6172
Gwen.peterek@sjhc.london.on.ca

check out our webpage to download a form:
www.sjhc.london.on.ca/sjh/profess/periout/education.htm

- **LUNCH & LEARN VIDEO CONFERENCE SERIES**
  "BABY TALK – LESSONS FROM THE NICU"

SEP. 15, 2009	Cardiology in the Newborn from Conception to Discharge
OCT. 20, 2009	Neonatal Abstinence
NOV. 17, 2009	Hearing Assessments: Differences Between Newborn/Preterm
DEC. 15, 2009	Fetal Alert Network (FAN)

Watch our webpage for further details:
www.sjhc.london.on.ca/sjh/profess/periout/education.htm

OTN webpage:
HTTP://TEST1.VIDEOCARE.CA/OTN/EVENTS_CALENDAR.PHP?MODE=VIEW

OTN Archived Webcast: http://webcast.otn.ca

- **20TH ANNUAL AWHONN CANADA CONFERENCE**
  "OPEN SKIES, OPEN MINDS, OPEN HEARTS"

October 15-17, 2009
Location: The Fairmont Winnipeg Hotel, Winnipeg, ON
Contact: AWHONN website for more details
http://www.awhonncanada.org/site/awhonn/Home_Page_p474.html

- **THE 19TH NATIONAL BREASTFEEDING CONFERENCE 2009 "BREASTMILK: A VALUABLE COMMODITY"**

October 22 – 23, 2009
Location: 89 Chestnut St., Conference Centre, University of Toronto, Toronto, ON
Contact: www.breastfeedingconference.com

- **PREGNANCY AND BIRTH CONFERENCE 2009**

Date: Friday, September 11, 2009
Location: Marriott Toronto Eaton Centre
525 Bay Street, Toronto ON
Contact: 416-323-6501 ext. 3781
cmicr@sunnybrook.ca

- **Annual Perinatal Conference (and Workshop)**

Sept. 17/09 Penny Simkin workshop
"Unsung Heroines: How Nurses, Midwives, Doulas & Childbirth Educators Improve Maternity Care Outcomes"
Sept. 18/09 21st Annual Perinatal Conference
Perinatal Care: What is "Normal"?

Location: Lamplighter Inn, London

Contact: Perinatal Outreach Office
(519) 646-6100, ext. 65859

- **HH Allen Day (CME Course)**
  Date: October 2, 2009
  Location: Best Western Lamplighter Inn,London
  Contact: Susanne Deakin
  Department of Obstetrics & Gynecology, UWO
  519-646-6171
  Susanne.deakin@lhsc.on.ca

- **Care of the Late Preterm Infant**
  Date: October 19, 2009 - London
  October 20, 2009 - Toronto
  Contact: 1-866-738-4823
  www.nursinglinks.ca

- **18th Annual Paediatrics for the Family Physician (CME Course)**
  Date: October 21, 2009
  Location: Arden Park Hotel, Stratford
  Contact: Susanne Deakin
  Department of Paediatrics, UWO
  519-272-8210 x 2549
  patricia.walsh@hpha.ca

This newsletter is a publication of the Perinatal Outreach Program.

Letters, queries and comments may be addressed to:

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Tel: (519) 646-6100, ext. 65900

To have your name included on our mailing list, please contact the above, or
E-mail: Kelly.barzsajenkins@sjhc.london.on.ca
www.sjhc.london.on.ca/sjh/profess/periout/periout.htm