Appendix A: Preconception Checklist

Issues to Consider in Preconception Include:

Nutrition

- ❑ Calcium and Vitamin D
- ❑ Folic Acid
- ❑ Iron
- ❑ Zinc
- ❑ Vitamin A
- ❑ Poverty
- ❑ Body weight
- ❑ Caffeine
- ❑ Vegetarian Considerations
- ❑ Herbal Products

Substance Use

- ❑ Paternal and/or Maternal Tobacco Use
- ❑ Alcohol Use
- ❑ Drug Dependency

Medications

- ❑ Accutane
- ❑ ACE Inhibitors
- ❑ Aminopterin, methotrexate
- ❑ Carbamazepine
- ❑ Coumadin, Warfarin
- ❑ Daunorubicin
- ❑ Lithium
- ❑ Metformin
- ❑ Phenytoin
- ❑ Propylthiouracil, methimazole
- ❑ Quinolones
- ❑ Retinoic Acid
- ❑ Tetracycline
- ❑ Trimethadione
- ❑ Valporic Acid

Infections

- ❑ CMV
- ❑ Human parvovirus B 19
- ❑ Rubella
- ❑ Toxoplasmosis
- ❑ Varicella (HSV-1)

Sexually Transmitted Diseases

- ❑ Chlamydia
- ❑ Genital Human Papillomavirus
- ❑ Gonorrhea
- ❑ Hepatitis B
- ❑ Herpes (HSV-2)
- ❑ HIV/AIDS
- ❑ Syphilis

Chronic Illness

- ❑ Cancer
- ❑ Cardiovascular Disease
- ❑ Diabetes
- ❑ Epilepsy
- ❑ Lupus
- ❑ Maternal PKU
- ❑ Psychiatric Illness
- ❑ Thyroid Problems

Other Issues

- ❑ Abuse
- ❑ Genetics
- ❑ Home and Leisure Activities
- ❑ Hot Tubs and Saunas
- ❑ Infertility
- ❑ Previous Outcomes
- ❑ Social Support
- ❑ Workplace Concerns

For more information on preconception issues, see the "Preconception and Health: Research and Strategies Manual" at www.beststart.org/resources

Appendix B:
Antenatal Psychosocial Health Assessment

Antenatal Psychosocial Health Assessment (ALPHA)

Antenatal psychosocial health assessment is a vital component of prenatal care. A long process has led to the development of unique assessment forms: the provider-completed and self-report ALPHA forms. These structured antenatal assessment forms are being used on P.E.I. and are recommended by Health Canada in its Family-Centred Maternity Care Guidelines. Ontario has included the ALPHA headings in its 2000 Ontario Antenatal Record, thereby giving official recognition to these important topics. The ALPHA Form has been endorsed by the following groups: the Canadian Pediatric Association, the Canadian Psychiatric Association, the College of Family Physicians of Canada, the Ontario Association of Midwives, the Ontario Medical Association, the Royal College of Physicians and Surgeons of Canada, the Society of Obstetricians and Gynecologists of Canada.

The original provider-completed ALPHA was developed so that obstetrical providers could ask and document the responses of pregnant women to 32 questions relating to maternal, family, substance use and family violence issues. The form guides providers in their assessment of antenatal factors associated with the following poor postpartum outcomes: child abuse, woman abuse, postpartum depression and couple dysfunction and physical illness

The ALPHA self-report, developed through a consensus process of the research team, reflected feedback from women in the original ALPHA pilot who indicated they wanted a written form to complete. Some providers also preferred a self-report for time efficiency. The self-report mirrors the provider form and consists of a 33 questions, either open-ended or with a five-point rating scale. If the woman reports psychosocial issues, the woman and her provider can discuss them during a prenatal visit.

Content validity of the forms was established through an extensive evidenced-based literature review and pilot testing. Further validity and reliability testing in Ontario indicates that the ALPHA does pick up more psychosocial issues. The self-report and the provider ALPHA were trialed on P.E.I. by public health nurses and family physicians and found to yield comparable amount of psychosocial data. The ALPHA Provider's Guide provides information on interventions should antenatal factors be disclosed. An ALPHA provider training video is also available. See http://dfcm19.med.utoronto.ca/research/alpha/

Tips on using the ALPHA Forms

- Introduce the form as part of standard prenatal care given to all women
- Complete or have the woman complete after 20 weeks gestation
- Complete the provider ALPHA in one longer visit (20 minutes) or over several prenatal visits
- Bill for counselling/psychotherapy when appropriate
- Be sensitive to different cultural norms if issues are disclosed
- Remember that associations do not imply causality
- Ask the woman to complete the self-report alone, without her partner present
- Maintain confidentiality and discuss with the woman before sharing information

Self-report published in: Midmer D, Carroll J, Bryanton J, Stewart D. From research to application: The development of an antenatal psychosocial health assessment tool. CJPH 2002; 93(4):291-6.

Provider version published in: Reid A, Biringer A, Carroll J, Midmer D, Wilson L, Chalmers B, Stewart D. Using the ALPHA Form in practice to assess antenatal psychosocial health. CMAJ, 1998; 159(6): 677-684.

Carroll J, et al, Effectiveness of the Antenatal Psychosocial Health Assessment (ALPHA)Form in detecting psychosocial health concerns: a randomized controlled trial. CMAJ 2005;173(3):253 -9

Antenatal Psychosocial Health Assessment (ALPHA)

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 some concerns 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.*

ANTENATAL FACTORS	CONCERN	COMMENTS / PLAN
FAMILY FACTORS		
Social support (*CA, WA,* PD) How does your partner/family feel about your pregnancy? Who will be helping you when you go home with your baby?	☐ Low ☐ Some ☐ High	
Recent stressful life events (*CA, WA, PD,* PI) What life changes have you experienced this year? What changes are you planning during this pregnancy?	☐ Low ☐ Some ☐ High	
Couple's relationship (*CD, PD,* WA, CA) How would you describe your relationship with your partner? What do you think your relationship will be like after the birth?	☐ Low ☐ Some ☐ High	
MATERNAL FACTORS		
Prenatal care (late onset) (*WA*) First prenatal visit in third trimester? (check records)	☐ Low ☐ Some ☐ High	
Prenatal education (refusal or quit) (*CA*) What are your plans for prenatal classes?	☐ Low ☐ Some ☐ High	
Feelings toward pregnancy after 20 weeks (*CA, WA*) How did you feel when you just found out you were pregnant? How do you feel about it now?	☐ Low ☐ Some ☐ High	
Relationship with parents in childhood (*CA*) How did you get along with your parents? Did you feel loved by your parents?	☐ Low ☐ Some ☐ High	
Self esteem (*CA,* WA) What concerns do you have about becoming/being a mother?	☐ Low ☐ Some ☐ High	
History of psychiatric/emotional problems (*CA, WA,* PD) Have you ever had emotional problems? Have you ever seen a psychiatrist or therapist?	☐ Low ☐ Some ☐ High	
Depression in this pregnancy (*PD*) How has your mood been during this pregnancy?	☐ Low ☐ Some ☐ High	

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 – Women Abuse

ANTENATAL FACTORS	CONCERN	COMMENTS / PLAN
SUBSTANCE USE		
Alcohol/drug abuse (*WA*, CA) (1 drink=1½ oz liquor, 12 oz beer, 5 oz wine) How many drinks of alcohol do you have per week? Are there times when you drink more than that? Do you or your partner use recreational drugs? Do you or your partner have a problem with alcohol or drugs? Consider CAGE (Cut down, Annoyed, Guilty, Eye opener)	☐ Low ☐ Some ☐ High	
FAMILY VIOLENCE		
Woman or partner experienced or witnessed abuse (physical, emotional, sexual) (*CA*, WA) What was your parents' relationship like? Did your father ever scare or hurt your mother? Did your parents ever scare or hurt you? Were you ever sexually abused as a child?	☐ Low ☐ Some ☐ High	
Current or past woman abuse (*WA*, CA, PD) How do you and your partner solve arguments? Do you ever feel frightened by what your partner says or does? Have you ever been hit/pushed/slapped by a partner? Has your partner ever humiliated you or psychologically abused you in other ways? Have you ever been forced to have sex against your will?	☐ Low ☐ Some ☐ High	
Previous child abuse by woman or partner (*CA*) Do you/your partner have children not living with you? If so, why? Have you ever had involvement with a child protection agency (ie. Children's Aid Society)?	☐ Low ☐ Some ☐ High	
Child discipline (*CA*) How were you disciplined as a child? How do you think you will discipline your child? How do you deal with your kids at home when they misbehave?	☐ Low ☐ Some ☐ High	

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 / counseling
- ❑ Legal advice
- ❑ Children's Aid Society
- ❑ Other: _____
- ❑ Other: _____
- ❑ Other: _____
- ❑ Other: _____

COMMENTS:

_____

_____

_____

_____ _____

Date Completed Signature

THE ALPHA SELF-REPORT QUESTIONNAIRE FOR WOMEN

Name _____ Date _____ Months Pregnant _____

Having a baby usually means changes in your family life. You may wish to discuss some of these topics with your healthcare provider. She/he may help you with these changes. Please answer the questions the best way you can. Your answers are confidential and will be kept private.

Please answer the questions by circling a number on the scale, writing an answer in the space, or marking "yes" or "no". If some of the questions do not apply to you, please circle N/A (not applicable).

YOUR FAMILY LIFE Please answer the following questions about your family life.

Family Factors

1. About this pregnancy, my partner feels	very happy	1	2	3	4	5	very unhappy
2. About this pregnancy, my family feels	very happy	1	2	3	4	5	very unhappy
3. I feel supported in this pregnancy	very much	1	2	3	4	5	not at all
4. My partner will be involved with the baby	a great deal	1	2	3	4	5	not at all

5. When I am home with the baby I will have help from (state relationship) _____

Comments: _____

Recent Life Stresses (moving, job change or loss, family illness or death, money troubles, and so on)

6. Over the past year, my life has been	very relaxed	1	2	3	4	5	very stressful

7. I am making life changes during this pregnancy ❑ No ❑ Yes If yes, describe _____

Comments: _____

Relationship With Partner (if this applies)

8. My relationship with my partner is usually	very happy	1	2	3	4	5	very unhappy
9. After the baby, I expect my partner and I will get along	very well	1	2	3	4	5	not at all

Comments: _____

YOUR OWN LIFE Please answer the following questions about your own life and feelings.

10. In this pregnancy, I first came for care when I was ___ months pregnant. This is my ___ 1st ___ 2nd ___ 3rd ___ (indicate number) child.

11. I am planning to take prenatal classes ❑ Yes ❑ No Reasons, if no, _____

Comments: _____

Feelings About Being Pregnant

12. My feelings about this pregnancy at first	very happy	1	2	3	4	5	very unhappy
13. My feelings about this pregnancy now	very happy	1	2	3	4	5	very unhappy

Comments: _____

Relationship With Parents

14. When I was a child, I got along with my parent(s)	very much	1	2	3	4	5	not at all	
15. As a young child I felt loved by my mother	very much	1	2	3	4	5	not at all	N/A
16. As a young child I felt loved by my father	very much	1	2	3	4	5	not at all	N/A

Comments: _____

Feelings About Becoming/Being a Mother

17. I have concerns about becoming/being a mother	none at all	1	2	3	4	5	very many

Comments: _____

Emotional Health

18. I have had some emotional problems ❑ No ❑ Yes

19. I have seen a psychiatrist/therapist ❑ No ❑ Yes

20. In this pregnancy, my mood has been usually	happy/up	1	2	3	4	5	sad/down

Comments: _____

CONCERNS IN YOUR LIFE Please answer the following questions about stress in your life.

Alcohol and Drug Use During Pregnancy

21. Each week I drink _____ drinks. (1 drink = 1½ oz liquor, 12 oz beer, 5 oz wine)
22. There are times when I drink more during the week ❑ No ❑ Yes If yes, describe _____
23. Sometimes I've felt: *A need to cut-down my drinking* ❑ No ❑ Yes *Annoyed by people criticizing my drinking* ❑ No ❑ Yes
Guilty about my drinking ❑ No ❑ Yes *A need for a drink first thing in the morning* ❑ No ❑ Yes
24. I use recreational drugs, e.g., marihuana never 1 2 3 4 5 very often
25. I have some drug problems ❑ No ❑ Yes If yes, describe _____
26. My partner uses recreational drugs, e.g., marihuana never 1 2 3 4 5 very often
27. My partner has some drug problems ❑ No ❑ Yes If yes, describe _____
Comments: _____

Parent's Relationship (when you were a young child)

28. My parents usually got along very well 1 2 3 4 5 not at all N/A
29. My father sometimes scared or hurt my mother never 1 2 3 4 5 very often N/A
30. My parents sometimes scared or hurt me never 1 2 3 4 5 very often N/A
31. As a child I was sexually abused ❑ No ❑ Yes
Comments: _____

Relationship With Partner (if this applies)

32. My relationship with my partner usually has no tension 1 2 3 4 5 a lot of tension N/A
33. We work out arguments with no difficulty 1 2 3 4 5 great difficulty N/A
34. I've sometimes felt scared by what my partner says or does never 1 2 3 4 5 very often N/A
35. I've been hit/pushed/slapped by a partner never 1 2 3 4 5 very often
36. I've sometimes been put down or humiliated by my partner never 1 2 3 4 5 very often N/A
37. I've been forced to have sex against my will ❑ No ❑ Yes
Comments: _____

Raising Children

38. I have children not living with me ❑ No ❑ Yes
39. My partner has children not living with him ❑ No ❑ Yes
40. As a child, I was involved with Children's Protective Services (Children's Aid) ❑ No ❑ Yes
41. Children in my care have been involved with Children's Protective Services ❑ No ❑ Yes
Comments: _____

42. As a child, I was harshly disciplined by parents/family never 1 2 3 4 5 very often
43. I think spanking is necessary never 1 2 3 4 5 very often
Comments: _____

44. Overall, how concerned are you about your emotional and family life?

not at all concerned 1 2 3 4 5 6 7 extremely concerned

45. What issues in your life are most concerning to you?

_____

_____

46. What help, if any, would you like?

_____

Appendix C: Ontario Antenatal Record

OMA Ontario Medical Association — in conjunction with the — Ontario Ministry of Health and Long-Term Care

Antenatal Record 1

Patient's Last Name		Patient's First Name	
Address – number, street name			Apt/Suite/Unit
City/Town		Province	Postal Code
Telephone - Home	Telephone - Work	Language	
Date of birth (YYYY/MM/DD)	Age	Occupation	Educational level
OHIP No.	Patient File No.	Marital status	

Partner's Last Name	Partner's First Name	
Partner's Occupation	Partner's Educational level	Age
Ethnic or Racial backgrounds Mother / Father		
Birth attendant	Newborn care	Family Physician

Allergies or Sensitivities (describe reaction details)

Medications/Herbals

Pregnancy Summary

LMP (YYYY/MM/DD) | Certain Yes ☐ No ☐ | EDB (by dates)

Cycle q ____ | Regular Yes ☐ No ☐

Contraceptive type | Last used (YYYY/MM/DD)

Gravida	Term	Premature	Abortuses	Living

Final EDB

Dating Method
- ☐ Dates
- ☐ T_1 US
- ☐ T_2 US
- ☐ ART (e.g. IVF)

Obstetrical History

No.	Year	Sex M/F	Gest. age (weeks)	Birth weight	Length of labour	Place of birth	Type of delivery	Comments regarding pregnancy and birth

Medical History and Physical Exam (provide details in comments)

Current Pregnancy
1. Bleeding Y / N
2. Nausea, vomiting Y / N
3. Smoking ___ cig/day Y / N
4. Alcohol, street drugs Y / N
5. Occup/Environ. risks Y / N
6. Dietary restrictions Y / N
7. Calcium adequate Y / N
8. Preconceptual folate Y / N

Medical History
9. Hypertension Y / N
10. Endocrine Y / N
11. Urinary tract Y / N
12. Cardiac/Pulmonary Y / N
13. Liver, hepatitis, GI Y / N
14. Gynaecology/ Breast Y / N
15. Hem./Immunology Y / N
16. Surgery Y / N
17. Blood transfusion Y / N
18. Anaesthetic compl. Y / N
19. Psychiatric Y / N
20. Epilepsy/ Neurological Y / N
21. Other Y / N

Genetic History
22. At risk population Y / N (e.g. Ashkenazi, consanguinity, CF, sickle cell, Tay-Sachs, thalassemia)

Family history of:
23. Developmental delay Y / N
24. Congenital anomalies Y / N
25. Chromosomal disorders Y / N
26. Genetic disorders Y / N

Infectious Disease
27. Varicella susceptible Y / N
28. STDs / HSV / BV Y / N
29. Tuberculosis risk Y / N
30. Other Y / N

Psychosocial
31. Poor social support Y / N
32. Relationship problems Y / N
33. Emotional/Depression Y / N
34. Substance abuse Y / N
35. Family violence Y / N
36. Parenting concerns Y / N
37. Relig. / Cultural issues Y / N

Family History
38. At risk population Y / N (e.g. DM, DVT/PE, MH/HT, postpartum depression, thyroid)

Physical Examination

Ht ______ Wt ______

BMI ______ BP ______

39. Thyroid N / Abn
40. Chest N / Abn
41. Breasts N / Abn
42. Cardiovascular N / Abn
43. Abdomen N / Abn
44. Varicosities / Extrem. N / Abn
45. External genitals N / Abn
46. Cervix, vagina N / Abn
47. Uterus N / Abn
48. Size ______ weeks
49. Adnexa N / Abn
50. Other N / Abn

Initial Laboratory Investigations

Test	Result	Test	Result
Hb		HIV	
MCV		☐ Counseled and test declined	
ABO		Last Pap (YYYY/MM/DD)	
Rh			
Antibody Screen		GC/Chlamydia	
Rubella immune		Urine C&S	
HBsAg			
VDRL			
Sickle Cell			

Prenatal Genetic Investigations	Result
a) All ages MSS, IPS, FTS	
b) Age ≥ 35 at EDB-CVS/amnio	
c) If a or b declined, or twins, then MSAFP	
d) Counseled and test declined, or too late	☐

Comments

Signature	Date	Signature	Date

4281-45 (11/03) Canary – Mother's chart – forward to hospital; Pink – Attendant's copy; White – infant's chart 7530-4657

A Guide to Pregnancy Assessment

In the event of maternal transfer, please photocopy the front sheet and send to referral hospital.

This assessment system is intended as a basis for planning the on-going management of the pregnancy and should reflect local resources. The risk factors or problems listed below are intended as examples only.

Healthy Pregnancy, no predictable risk:

- ❑ No pregnancy complications now or in the past
- ❑ No significant maternal medical disease
- ❑ No prior perinatal morbidity or mortality
- ❑ Fetal growth adequate

Pregnancy at risk:

The fetus/mother may be at risk. Closer observation of the pregnancy may be necessary. In addition, consultation with an appropriate specialist (obstetrician, internist, pediatrician, *etc.*) may also be necessary. These patients may be managed by continuing collaborative care and birth in an obstetrical unit with intermediate level nursing facilities OR they may be returned to the care of the referring provider with a suggested plan of management for the remainder of the pregnancy.

Maternal factors:

- ❑ Diabetes: White Classes B, C, or D
- ❑ Chronic hypertension
- ❑ Other significant medical illness
- ❑ Obesity (BMI ≥ 35)
- ❑ Significant tobacco, alcohol, drug use
- ❑ Severe psychosocial issues
- ❑ Family history genetic disease or congenital anomalies
- ❑ Other significant family history, esp. DVT/PE and recurrent pregnancy losses

Prior pregnancy history of:

- ❑ Preterm labour < 36 weeks
- ❑ Stillbirth or neonatal death
- ❑ Intrauterine growth restriction
- ❑ Previous uterine surgery including lower segment Cesarean section
- ❑ Cervical incompetence

Current pregnancy complicated by:

- ❑ Gestational hypertension
- ❑ Placenta previa (with or without bleeding)
- ❑ Other significant antepartum hemorrhage
- ❑ Twin pregnancy
- ❑ Gestational diabetes (White Class A)
- ❑ Abnormal fetal growth (suspected intrauterine growth restriction or large for dates)
- ❑ PROM 32-36 weeks
- ❑ Preterm labour 32-36 weeks
- ❑ Rh or atypical blood group sensitization
- ❑ Hydramnios or oligohydramnios
- ❑ Fetal malposition (breech, transverse) at 36 weeks
- ❑ Postdates ≥ 41 weeks
- ❑ Anemia not responding to Fe (Hb <100 g/l)
- ❑ _____

Pregnancy at high risk:

Pregnancies which are so complicated that the fetus and/or mother are obviously in danger. If at all possible, these patients should be transferred to a regional perinatal centre (level III) for intensive care and birth. Clearly, there are patients who deserve to be placed in this risk category (with problems such as excessive antepartum bleeding, cord prolapse, or advanced uncontrolled premature labour) who cannot be transferred safely or in time to benefit the fetus or mother.

- ❑ High order multiple gestation (triplets or greater)
- ❑ Fetal congenital anomaly
- ❑ Diabetes beyond Class D (end-organ involvement)
- ❑ Renal disease with hypertension ± ↓ function
- ❑ Heart disease, especially with failure
- ❑ Other significant severe medical illness
- ❑ _____

Pregnancy < 32 weeks with:

- ❑ Preterm labour and/or premature rupture
- ❑ Gestational hypertension with adverse conditions
- ❑ Antepartum hemorrhage ongoing
- ❑ Oligohydramnios
- ❑ IUGR, ≤10th %, reverse flow Doppler

Two or more risk problems can combine to produce a high pregnancy risk. Such a patient may need to be placed in a higher risk category

Ontario Medical Association

In conjunction with the

Ontario
Ministry of Health and Long-Term Care

Antenatal Record 2

Patient's Last Name	Patient's First Name		
Birth attendant	Newborn care		
Family Physician	**Final EDB**	**Allergies or Sensitivities**	**Medications / Herbals**
G **T** **P** **A** **L**			

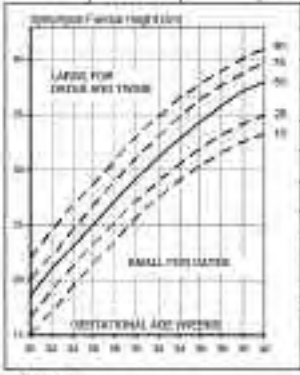
Identified Risk Factors	Plan of Management

Recommended Immunoprophylaxis

Rh neg. ☐ **Rh IG Given:** (??/??/????) **Rubella booster postpartum** ☐ **Newborn needs: Hep B IG** ☐ **Hep B vaccine** ☐

Subsequent Visits

Date	GA (weeks)	Weight	B.P.	Urine Prot.	SFH	Pres. Posn.	FHR/ RM	Comments
								IPS, FTS, NT best done between 11w0d and 13w6d
								MSS best done between 15w0d and 17w6d
								Ultrasound for fetal anatomy best done between 18 and 20 weeks
								Antenatal 1 to LAO when final EDB known and initial Laboratory investigations complete
								Arrange for Prenatal Education Classes
								24-28 week blood work with 1 hr. GCT
								Rh immunoprophylaxis at 28 weeks
								Group B Strep. screening best done between 35 and 37 weeks
								Antenatal 3 to be sent to Labour and Delivery
								Review Labour and Delivery plans:
								pain management in labour
								-admission and discharge timing
								postpartum contraception



Ultrasound

Date	GA	Result
		Dating scan (if done)
		18-20 weeks for morphology

Additional Lab Investigations

Test	Result
Hb	
ABO/Rh	
Repeat ABS	
1 hr. GCT	
2 hr. GTT	
GBS	

Discussion Topics

☐ Exercise	☐ Preterm labour	☐ Breastfeeding
☐ Work plan	☐ PROM	☐ Circumcision
☐ Intercourse	☐ APH	☐ Discharge planning
☐ Travel	☐ Fetal movement	☐ Car seat safety
☐ Prenatal classes	☐ Admission timing	☐ Depression
☐ Birth plans	☐ Pain management	☐ Contraception
☐ On call providers	☐ Labour support	☐ Postpartum care

Signature	Date	Signature	Date

4094-84 (05/03) Canary – Mother's chart – forward to hospital Pink – Attendant's copy White – infant's chart 1930-9503

Postnatal Visit

No of weeks postpartum	Date (YYYY/MM/DD)

History

Review of birth
☐ Vaginal ☐ Operative ☐ Cesarean

Baby's Health / Concerns	Baby's Name

Breastfeeding ☐ Yes ☐ No	Breastfeeding concerns
Bladder function	Lochia / Menses
Bowel function	Perineal discomfort
Rubella immune ☐ Yes ☐ No ☐ Vaccinated	Smoking history

Pap smear status

Physical Examination

Weight lb / kg	B.P. mm Hg
Affect	Thyroid

Breast exam

Abdomen

Perineum

Pelvic exam

Discussion Topics

Emotional problems / depression

Preconceptual folate to begin prior to next pregnancy

Contraception

Sexual / Relationship concerns

Social support

Family violence

Follow-up and advice re: future pregnancies and risks

Signature of physician or midwife

Postnatal Visit — Canary – Mother's chart – forward to hospital — Pink – Attendant's copy — White – Infant's chart — 7530-4658

Appendix D: Larson Prenatal Screening Tool

Larson Prenatal Screening Tool – 3 Questions Used by Healthy Babies Healthy Children

Question	Response	Score
1. Mother's education	0 – 7 years	19
	8 – less than h.s. degree	13
	high school degree	9
	college – no degree	6
	college – degree or more	0
2. Has mother ever attended a prenatal course (3 or more attendances)?	No	6
	Yes	0
3. Mother's present smoking habit (cigarettes/day)	20	7
	16 – 20 years	6
	11 – 15 years	4
	6 – 10 years	3
	1 – 5 years	1
	0	0

NOTE: if a mother scores 13 or more she would receive a more detailed assessment. (Larson, et.al, 1987)

Appendix E: Parkyn Postpartum Screening Tool

Postpartum Tool, Healthy Babies Healthy Children (Parkyn Screen)

Mother's Name:..... Fathers Name:.....

A. Children with Congenital or acquired Health Challenge:

1.	Major (probability of permanent disability) e.g.: down's syndrome, cerebral palsy	9
2.	Moderate (correction may be possible) e.g.: cleft palate, loss of limb	6

B. Development Factors:

3.	Low birthweight:	a) 0-1499 gm	9
		b) 1500-1999 gm	8
		c) 2000-2499 gm	6
4.	Complications of pregnancy:		
	a) Infections that can be transmitted in utero and may damage the fetus (e.g.: AIDS, rubella)		9
	b) Drugs (e.g.: alcohol or drug abuse diagnosed in mother)		9
5.	Complications of labour and delivery:		
	a) Labour requiring mid forceps including breech delivery or emergency caesarean		4
	b) Infant trauma or illness (e.g.: convulsions, respiratory distress syndrome)		6
	c) If Apgar less than 7 at 5 min., deduct score from 10		__
6.	Family history of a genetic health challenge (e.g.: deafness, mentally challenged)		4

C. Family Interaction Factors

7.	Age of mother	a) 15 and under	9
		b) 16 or 17	8
		c) 18 or 19	5
8.	Social situation:		
	a) One parent family with adequate support		2
	b) One parent family - no support		7
	c) Two parent family - no social support and/or severe isolation related to culture, language or geography		4
9.	Financial difficulties		3
10.	No prenatal care before sixth month		4
11.	Mental illness/mental challenge in mother and/or father: Double score if both parents positive in a) or c)		
	a) Schizophrenia or bipolar affective disorder		7
	b) Postpartum depression or psychosis		9
	c) Mentally challenged parent		6
12.	Prolonged postpartum maternal separation (5 days or more):		
	a) With frequent infant contacts (visits or phone as feasible)		2
	b) Little or no contact		6
13.	Assessed lack of bonding (e.g.: minimal eye contact or touching)		6
14.	> 3 hospitalizations in 1 year in absence of known chronic illness or condition		6
15.	Other e.g.: marital distress, low education status, failure to thrive, parenting difficulties, family violence, prenatal class attendance, maternal smoking during pregnancy (Score 0 to 9).....		

Specify reason:.....

Priority score: 9 and over = high, 6 to 8 = moderate, 3 to 5 = low, 0 to 2 = minimal **TOTAL SCORE**.....

.....

Signature **Date**

ADAPTED FROM PARKYN'S PRIORITY ASSESSMENT (Parkyn, 1985)

Appendix F: Metabolic Screening of the Newborn

Information on the Ontario Newborn Screening Program
November 27, 2006

Important changes are occurring to the Ontario Newborn Screening Program. Beginning April 2006, new tests are being added to the newborn screening program. The first change to occur was the screening for an additional disorder called medium chain acyl-CoA dehydrogenase (MCAD) deficiency, as well as the usual screening for congenital hypothyroidism, phenylketonuria (PKU), and deafness that is offered to all newborns in Ontario. The immediate change is that a superior technology, tandem mass spectrometry, will be substituted for the outdated Guthrie test for PKU. This technology has increased sensitivity and specificity and will allow testing for multiple conditions concurrently. You should already have received the *Information for Health Care Providers* booklet and patient pamphlet from the Ontario Ministry of Health and Long Term Care.

What is new?
By the end of 2006, it is anticipated that newborn screening (NBS) will be expanded to include 27 disorders. These will include 20 inborn errors of metabolism (9 organic acid disorders, 5 fatty acid oxidation disorders, 6 amino acid disorders), 3 hemoglobinopathies (sickle cell anemia and related disorders), 2 endocrine disorders (congenital hypothyroidism and congenital adrenal hyperplasia), biotinidase deficiency and galactosemia. These are listed in Table 1. Screening for cystic fibrosis will begin in late 2007, increasing the total number of tests to 28. Screening will pick up an additional approximately 20 disorders as secondary targets.

What is the same?
Samples are collected through heel prick between 24 hours and 7 days after birth. The best time for sample collection is between 48-72 hours after birth. If a baby is tested before 24 hours of age, the sample should be repeated within 5 days. This has not changed from the previous newborn screening program.

Special Considerations:
- Prematurity or illness
  - If <37 weeks or ill, collect the specimen at 5-7 days old and indicate this on the NBS card
- Total parenteral nutrition and antibiotics – indicate on NBS card
- Transfusion – ideally complete NBS before transfusion

How likely is a positive test?
The disorders being screened for are very rare. The overall prevalence of a metabolic disorder is about 1/2400. The overall specificity of NBS is about 99.7% and overall sensitivity is close to 100% for classic forms of these disorders and about 92.6% for variants. The false positive rate is about 0.33%. It is estimated that about 1/4100 newborns will benefit from screening and treatment.

(Reference: Schulze A, Lindner M, Kohlmuller D, Olgemoller K, Mayatepek E, Hoffmann GF. Expanded newborn screening for inborn errors of metabolism by electrospray ionization-tandem mass spectrometry: results outcome and implications. Pediatrics 2003, 111:1399-1406.)

What are these disorders and what value is screening?
Babies born with these disorders may appear healthy at birth. The benefit of screening is that early identification may allow early treatment, decreasing or preventing consequences such as recurrent illness and/or developmental disability and/or death. Parents can be informed of the diagnosis and be counselled about the risk for future children. In the case of the inborn errors of metabolism, treatment may include special formulas and diets, vitamin supplements, and avoiding fasting.

The benefit of early identification of sickle cell disease is that prophylactic penicillin and vaccination have been shown to be effective in reducing infections and reducing morbidity.

The risks of newborn screening include parental anxiety, especially in the case of false positive tests, and potentially in those healthy individuals identified as carriers or diagnosed with benign conditions. There is also the risk of unanticipated outcomes such as misattributed paternity.

What is the responsibility of primary care providers?

It is your responsibility to discuss newborn screening with expectant parents.
- Offer newborn screening
- Discuss the benefits of screening
- Discuss how testing is done
- Discuss timing of testing
- Discuss the need for a repeat sample in some situations
- Discuss difference between a screening test and diagnostic test
    - A screening test determines if there is a high or low risk that the infant has the condition. A further diagnostic test is needed to determine with certainty if the infant has the condition
- Discuss possible results of screening
    - Screen negative: A report will be issued by mail to the health care provider/referring hospital. More than 99% will be negative.
    - Screen positive for a disorder: This does not necessarily mean the infant has the disorder. Further investigation is needed. The Newborn Screening Laboratory will contact your regional treatment centre, which will notify the baby's health care provider and/or parents about the result and arrange for confirmatory testing. If the diagnosis is confirmed, the treatment centre will provide management and follow up.
- Answer questions and give parents the newborn screening brochure.

Where can you get additional information?

- Ontario Ministry of Health web site: www.health.gov.on.ca/newbornscreening
  - For parents: handouts in multiple languages, video
  - For health care providers: 1-page fact sheets on each disorder
- To order free educational materials: www.health.gov.on.ca or call 1-877-844-1944
- Educational web sites:
  - AAFP site: http://www.aafp.org/x4295.xml
  - March of Dimes: www.marchofdimes.com
  - Genetests: www.genetests.org
  - National Newborn Screening & Genetics Resource Center: genes-r-us.uthscsa.edu

Respectfully submitted,

June C Carroll MD CCFP FCFP
Principal Investigator, The Genetics Education Project
Member of the Ontario Advisory Committee on Newborn and Childhood Screening

Table 1: Disorders Screened by the Expanded Ontario Newborn Screening Program (by end of 2007)

Category	Disorders
Organic Acid Disorders	isovaleric acidemia (IVA), glutaric acidemia type 1 (GA1), HMG-CoA lyase deficiency (HMG), multiple carboxylase deficiency (MCD), methylmalonic acidemia (MUT, Clb A,B), 3-methylcrotonyl-CoA carboxylase (3MCC) deficiency, propionic acidemia (PROP), β-ketothiolase (BKT) deficiency
Fatty Acid Oxidation Disorders	medium chain acyl-CoA dehydrogenase (MCAD) deficiency, very long chain acyl-CoA dehydrogenase (VLCAD) deficiency, long chain 3-Hydroxyacyl-CoA dehydrogenase (LCHAD) deficiency, trifunctional protein (TFP) deficiency, carnitine uptake defect (CUD)
Amino Acid Disorders	phenylketonuria (PKU), tyrosinemia (TYR), homocystinuria (HCY), citrullinemia (CIT), argininosuccinic acidemia (ASA), maple syrup urine disease (MSUD)
Blood Disorders	Sickle Cell Disease and variants Other Hemoglobinopathies
Endocrine Disorders	Congenital hypothyroidism (CH) Congenital Adrenal Hyperplasia (CAH)
Other Disorders	Biotinidase deficiency (BIOT) Galactosemia (GALT) Cystic fibrosis (CF)

Appendix G: Neurological Examination of the Newborn

Neurological Signs	Description	Significance	Developmental change
Posture	All limbs flexed	Asymmetry or extension -hypotonia suspected	Hyperflexion past 2 months suspect spasticity
Motor Activity	Vigorous, constant motor activity alternating limb flexion and extension	Asymmetry or minimal-CNS or PNS problem	
Passive Tone *	Resistance to passive stretch	Best indicator of CNS maturation Earliest sign of neurologic dysfunction	
	Upper limb: Extend both upper limbs by pressing on forearms. Hold – release a brisk symmetrical flexion not forceful nor clonus	Absent or poor: Hypotonia or muscle weakness Exaggerated: spasticity	
	Lower limb: Hold feet and flex over abdomen then pull to extension. Hold then release. A symmetrical flexion should occur	As for upper limbs	
	Scarf sign: Hold baby's hand and bring to opposite shoulder: elbow should be in line with sternum	Wraps around neck may be hypotonia Resists before midline -may be spasticity	
	Adductor's angle – Hold knee in extension and abduct until resistance -note asymmetry – measure angle with pubis and midline 40-80 degrees	A wider angle – hypotonia. Less-spasticity	Gradually increases to 100-140 degrees by 6-9 months
	Popliteal Angle – Flexing of the thighs over abdomen, then gently extending the leg until resistance – measure angle between the thigh and leg and compare sides – 80-100 degrees	Early sign of spasticity -hemiplegia or diplegia	By six months – 120-140 degrees -baby can put feet in his mouth
	Active neck muscle tone – 1. Hold baby in sitting position allow head to extend backwards by moving his trunk back. Infant should move head to vertical axis and hold briefly. 2. Ventral extension: hold baby in prone position hold under trunk and abd. – should straighten back and redress head. Limbs in flexion	1. Headlag may indicate CNS depression or hypotonia 2. In hypotonia the infant hangs limp exaggerated spinal curve-limbs more extended, no extensor neck activity. Spacticity may show exaggerated response	***Landau response:*** By 3 months more sustained straightening of head and trunk. Increasing from head downwards -response complete by 4-6 months. Now forced flexion of the head causes flexion of all the limbs. By 12 months the infant can inhibit the Landau response.

	Deep tendon reflexes: Biceps, knee and ankle jerks present in newborn. Up to **two months** knee jerk causes crossed adduction response and the ankle jerk has a few clonic beats	Responses should be brisk and symmetrical to be normal	Triceps; present after a few weeks
Developmental Primitive Reflexes		The response to a single reflex not very significant but a poor response to 2 or 3 may be important neurologically. Absence of habituation is also important.	The persistence beyond appropriate time may signify pathology They should be checked until one year
	Moro Reflex: Lift baby by hands to raise shoulders off the bed about 3 cm – release-extension and abduction of arms with opening of hands then smooth adduction and flexion and a cry	An asymmetrical response possible focal defect eg brachial plexus palsy. Prolongation of phases – may indicate brain damage	After three months a positive Moro response is abnormal
	Palmar Grasp: Slight stimulation to palm leads to strong grasp		Between three and four months, this response lessens. After this period a positive response is abnormal.
	Foot Grasp: Light pressure on sole of foot -flexion and grasp response in the toes		This reflex disappears after 9 months
	Rooting Reflex: Light stroke on corner of mouth – leads to rotation of head in the direction plus sucking movements		Response disappears after 3-4 months when awake and 7-8 months when drowsy.
	Sucking Reflex: Placing a finger in infant's mouth produces sustained sucking. Weaker if fed.	Absence or weak response in presence of feeding problem – may mean brain involvement	Same as rooting *Poor sucking and latch can be associated with future speech and language problems
	Crossed Extension Reflex: Stroke the sole of infants foot – flexion and abduction then extension and adduction and other leg crossing over the extended one.	Full response in full term infant – a test of maturity of the nervous system	Disappears after 1st month
	Tonic Neck Reflex: Lying on back rotate baby's head to one side – arm on same side extends and other arm flexes- rotate the other opposite way to obtain similar response.	This reflex appears at 1-2 months – important if sustained	Disappears by 7-8 months
	Placing reaction: Hold baby by trunk in upright – one leg touching table. Baby steps on the table then takes step with other		Response should disappear by 5-6 weeks

From: Larbrisseau, A. Neurologic Examination of the newborn,. Diagnosis, June: 69 – 79, 1986

Appendix H: Rourke Record

Drs. Leslie Rourke, Denis Leduc and James Rourke
Revised May 2006
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Canadian Paediatric Society / Société canadienne de pédiatrie
The College of Family Physicians of Canada / Le Collège des médecins de famille du Canada

Risk Factors/Apgar	Risk factors/Family History

Rourke Baby Record: EVIDENCE-BASED INFANT/CHILD HEALTH MAINTENANCE GUIDE I

NAME: ______________________ Birth Date (d/m/yr): ________ M [ ] F [ ]

Birth Length: ______ cm Head Circ: ______ cm Birth Wt.: ________ g Discharge Wt.: ________ g

DATE OF VISIT	**within 1 week**			**2 weeks (optional)**			**1 month (optional)**		
GROWTH * Correct age until 24 months if < 36 weeks gestation	*Height*	*Weight*	*Head circ. av. 35 cm*	*Height*	*Weight*	*Head circ.*	*Height*	*Weight*	*Head circ.*
PARENTAL CONCERNS									
NUTRITION*	☐ **Breastfeeding (exclusive)*** **Vitamin D 10 μg = 400 IU/day*** ☐ *Formula Feeding* (iron-fortified) [150 mL = 5 oz/kg/day] ☐ Stool pattern and urine output			☐ **Breastfeeding (exclusive)*** **Vitamin D 10 μg = 400 IU/day*** ☐ *Formula Feeding* (iron-fortified) [150 mL = 5 oz/kg/day] ☐ Stool pattern and urine output			☐ **Breastfeeding (exclusive)*** **Vitamin D 10 μg = 400 IU/day*** ☐ *Formula Feeding* (iron-fortified) ☐ Stool pattern and urine output		
EDUCATION AND ADVICE ✓ discussed and no concerns X if concerns	Injury Prevention: ☐ **Car seat (infant)*** ☐ **Sleep position/bed sharing/co-sleeping*** ☐ **Crib safety*** ☐ **Firearm safety/removal*** ☐ Carbon monoxide/Smoke detectors* ☐ *Hot water < 49°C** ☐ Choking/safe toys* Behaviour and Family Issues: ☐ Sleeping/crying** ☐ Soothability/responsiveness ☐ **Assess home visit need**** ☐ Parenting/bonding ☐ Parental fatigue/postpartum depression** ☐ Family conflict/stress ☐ Siblings Other Issues: ☐ **Second-hand smoke*** ☐ *Inquiry on complementary/alternative medicine** ☐ *Counsel on pacifier use** ☐ Fever advice/thermometers* ☐ *Temperature control and overdressing** ☐ Sun exposure/sunscreens/insect repellent*								
DEVELOPMENT** (Inquiry and observation of milestones) Tasks are set **after** the time of normal milestone acquisition. **Absence of any item suggests the need for further assessment of development.** NB–Correct for age if < 36 weeks gestation ✓ if attained X if not attained							☐ Focuses gaze ☐ Startles to loud or sudden noise ☐ Sucks well on nipple ☐ No parent concerns		
PHYSICAL EXAMINATION Evidence-based screening for specific conditions is highlighted, but an appropriate age-specific focused physical examination is recommended at each visit.	☐ *Skin (jaundice, dry)* ☐ Fontanelles ☐ *Eyes (red reflex)** ☐ *Ears (TMs) Hearing inquiry/screening** ☐ Heart/Lungs ☐ Umbilicus ☐ Femoral pulses ☐ *Hips* ☐ Muscle tone* ☐ Testicles ☐ Male urinary stream/foreskin care			☐ *Skin (jaundice, dry)* ☐ Fontanelles ☐ *Eyes (red reflex)** ☐ *Ears (TMs) Hearing inquiry/screening** ☐ Heart/Lungs ☐ Umbilicus ☐ Femoral pulses ☐ *Hips* ☐ Muscle tone* ☐ Testicles ☐ Male urinary stream/foreskin care			☐ Fontanelles ☐ *Eyes (red reflex)** ☐ *Corneal light reflex** ☐ *Hearing inquiry/screening** ☐ Heart ☐ *Hips* ☐ Muscle tone*		
PROBLEMS AND PLANS	☐ **PKU, Thyroid** ☐ **Hemoglobinopathy screen (if at risk)***								
IMMUNIZATION Provincial guidelines vary **Signature**	**Record on Guide V: Immunization Record** If HBsAg-positive parent or sibling: ☐ **Hepatitis B vaccine**			**Record on Guide V: Immunization Record**			**Record on Guide V: Immunization Record** If HBsAg-positive parent or sibling: ☐ **Hepatitis B vaccine**		

Grades of evidence: (A) **Bold type – Good evidence** (B) *Italic – Fair evidence* (C) Plain – Consensus with no definitive evidence
(*) see Infant/Child Health Maintenance: Selected Guidelines on reverse of Guide I (**) see Healthy Child Development Selected Guidelines on reverse of Guide IV

Disclaimer: Given the constantly evolving nature of evidence and changing recommendations, the Rourke Baby Record: EB is meant to be used as a guide only.

Financial support for this revision is from the Strategic Initiatives Division of the Ontario Ministry of Children and Youth Services, with funds administered by the Ontario College of Family Physicians.

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ROURKE BABY RECORD-INFANT/CHILD HEALTH MAINTENANCE SELECTED GUIDELINES/RESOURCES - May 2006

GROWTH

Measuring growth - Serial measurements of length (birth to age 2) or height (> age 2), weight, and head circumference (birth to age 2) should be part of scheduled well-baby and well-child health visits in order to identify infants and children with dysfunctions in rates of weight gain or physical growth. Until internationally diverse growth charts are available and have been reviewed for use in Canada, the growth charts from the American Centers for Disease Control and Prevention (CDC) are recommended (at 2 yrs & 3rd, 50th and 97th percentiles).

Important: Correct age if < 36 weeks gestation

- www.cdc.gov/nchs/about/major/nhanes/growthcharts/clinical_charts.htm#CDC02
- Use of growth charts - www.cps.ca/english/statements/N/pdf-4.01.htm
- Guide to growth charts - www.cps.ca/english/statements/N/Nutrition/BreastGrowth.htm

NUTRITION

- Pediatric nutrient guidelines - Nutrition for Healthy Term Infants
  - www.hc-sc.gc.ca/fn-an/pubs/infant-nourisson/hni_infant_nourrisson_term_e.html
- **Breastfeeding:** Exclusive breastfeeding is recommended for the first six months of life for healthy term infants. Breast milk is the optimal food for infants, and breastfeeding (with complementary foods) may continue for up to two years and beyond as is mutually desired. Breastfeeding reduces gastrointestinal and respiratory infections. Maternal support (both antepartum and postpartum) increases breastfeeding and prolongs its duration. Early and frequent mother-infant contact, rooming in, and learning hunger cues of the infant promote breastfeeding rates.
- Routine **Vitamin D supplementation** of 10 µg = 400 IU/day (20 µg = 800 IU/day in northern communities) is recommended for all breastfed full-term infants until the diet provides a sufficient source of Vitamin D (about 1 year of age).
  Breastfeeding - www.cps.ca/english/statements/N/breastfeeding/bfact0.htm
  Weaning - www.cps.ca/english/statements/CP/cp04-01.htm
  Vitamin D - www.cps.ca/english/statements/N/vitamind01.htm
  Colic - www.cps.ca/english/statements/N/#section%20cfm3cp02.htm
  Anticholinergic and breastfeeding - www.cps.ca/english/statements/CP/cp02-02.htm
  Maternal medication during breastfeeding - Medications and Mothers' Milk by T. Hale (2003).
  Motherisk - www.motherisk.org
- Transition to cow's milk: A gradual transition (age 6 to 9 months) to whole cow's milk (not skim) (more than 30% fat) 100% saturated fat) begins after age 2 years.
  - www.cps.ca/english/statements/N/nut04-01.htm
- Encourage a healthy diet as per Canada's Food Guide
  - www.hc-sc.gc.ca/fn-an/food-guide-aliment/index_e.html

INJURY PREVENTION

In Canada, unintentional injuries are the leading cause of death in children and youth. Most of these preventable injuries are caused by motor vehicle collisions, drowning, burns, choking, and falls.

Motor vehicle collisions

- Transport Canada 2002 recommendations for **Car seats:**
  Children < 13 years should sit in the rear seat. Keep kids in car seats for as long as they fit properly in the seat.
  Use rear-facing infant seat until 10 kg (22 lb) – birth to at least 1 year old.
  Use forward-facing child seat from 10 kg (22 lb) to 18-22 kg (40-48 lb)
  – about 1-4½ years old – as per specific car seat model.
  Use booster seat from 18-22 kg (40-48 lb) to 27 kg (60 lb) – about 4½ - 8 years old.
  Use lap and shoulder belt in the rear seat for older children.
  - www.tc.gc.ca/roadsafety/tp/tp8886/menu.htm, www.canadasafetycouncil.org/cscma/3d015/0/77169
- **Bicycle** seat/**bike helmets**

Drowning

- *Bath safety:* Never leave a young child alone in the bath. Do not use infant bath rings or bath seats.
- *Water safety:* Encourage swimming lessons (after age 4 years). Encourage pool fencing and boating safety to reduce the risk of drowning.
  - www.cps.ca/english/statements/INJPREV/01.htm

Burns – *Install smoke detectors in the home on every level.*
Keep hot water at a temperature < 49°C

Choking: Use safe toys and safe food (avoid hard, small and round, smooth and sticky solid foods until age 3 years).

Falls: Assess home for hazards, e.g. never leave baby alone on change table or other high surfaces, do not use baby walkers, use window guards and stair gates.

Poisons: Keep medicines and cleaners locked up and out of child's reach.

Poison Poison Control Centre number here). *Use of Ipecac is controversial and not recommended in children.*

Safe sleeping environment: www.cps.ca/english/statements/CP/cp04-02.htm

- **Sleep position and SIDS/Positional plagiocephaly:** Healthy infants should be positioned on their backs for sleep. Their heads should be placed in different positions on alternate sleeps. While awake, infants should have supervised tummy time. Counsel parents on the dangers of other contributory causes of SIDS such as overheating, maternal smoking or second-hand smoke.
- Positional plagiocephaly – www.cps.ca/english/statements/FP/fp060-02.htm
- **Bed sharing:** Advise against bed sharing.
- **Co-sleeping:** Encourage parents to be in a good-quality, approved crib in parents' room for the first 6 months of life. Room sharing is protective against SIDS.

Firearm safety/removal: There is evidence-based association between a firearm in the home and increased risk of unintentional firearm injury, suicide, or homicide.

For more safety information: www.safekidscanada.ca
www.cps.ca/english/publications/injury/Prevention.htm

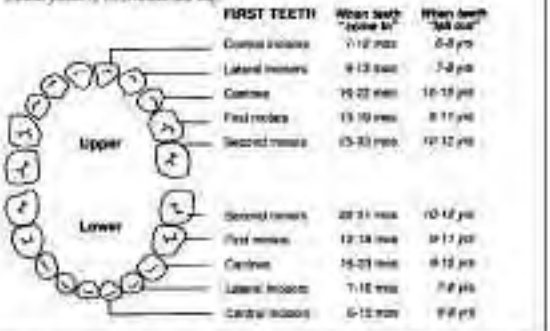
PROBLEMS AND PLANS (SCREENING)

Hemoglobin screening: All infants from high-risk groups for iron deficiency anemia require. High risk groups include infants between 6 and 12 months of age, e.g. Inuit or SE/E Asians, First Nations children, low-birth-weight infants, and infants fed whole cow's milk during their first year of life.

Hemoglobinopathy screening: Screen all neonates from high-risk groups, e.g. Asian, African, and Mediterranean.

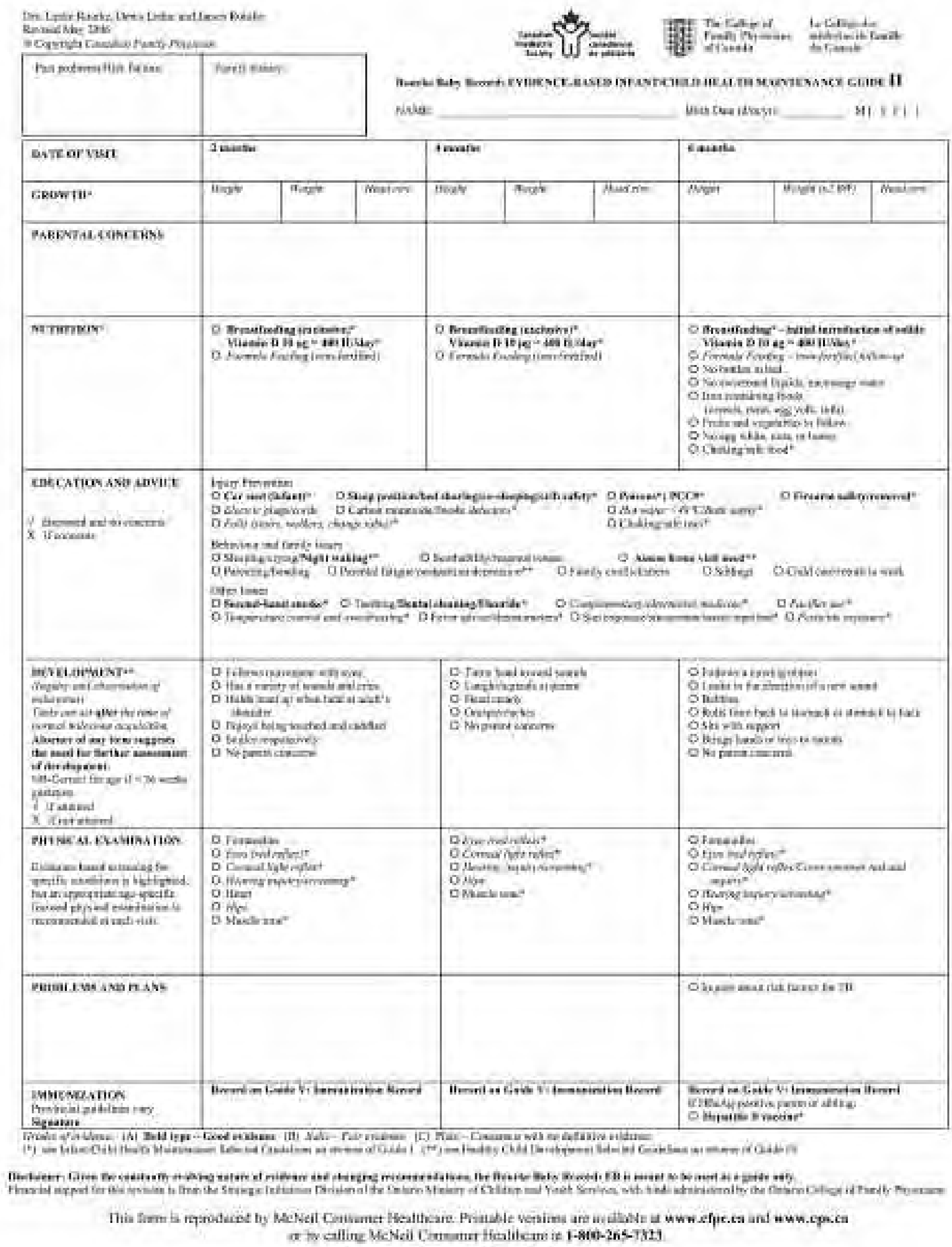
OTHER

- **Second-hand smoke exposure** contributes to childhood illnesses such as OM, URTI, middle ear effusion, persistent cough, pneumonia, asthma, and SIDS.
- *Complementary and alternative medicine (CAM). Questions should be raised* regarding the use of homeopathy and other complementary and alternative medicine therapy or products, especially for children with chronic conditions.
  - www.cps.ca/english/statements/CP/cp03-01.htm
  - Homeopathy – www.cps.ca/english/statements/CP/cp95-01.htm
- *Pacifier* use is a parental choice. Pacifier use may decrease risk of SIDS, but may lead to breastfeeding difficulties, and should be restricted to children with chronic and recurrent otitis media. - www.cps.ca/english/statements/CP/cp03-01.htm
- Fever advice/Antipyretic use: Rectal temperature is the method of choice in those < 5 years old and temperatures (bymouth or from ≥ 36°C in an infant < 3 months needs urgent evaluation. Acetaminophen remains the first choice for antipyretic. Ibuprofen is off-label therapy for children < 2 years.
  - Temperature measurement – www.cps.ca/english/statements/CP/cp98-01.htm
- Footwear: Shoes are for protection, not correction. Walking barefoot develops good toe gripping and muscular strength – www.cps.ca/english/statements/CP/cp95-02.htm
- Healthy Active Living: Encourage increased physical activity and decreased sedentary pastimes with parents as role models.
  - www.cps.ca/english/statements/HAL/HAL02-01.htm
  - Media use – www.cps.ca/english/statements/FP/fp05-01.htm
- Insect protection/mosquito repellents: Minimize use exposure. Wear protective clothing, hats, properly applied sunscreen with SPF > 30 for those > 6 months of age. Use DEET in < 6 months; 6-12 months 10% apply sparingly once daily.
- *Pesticides. Avoid pesticide exposure.* Encourage pesticide-free foods.
  - Pesticides/herbicides – www.actionpesticides.ca/english/activities/communications/publications/index.asp?sec=1&cs=home&id=home
- *Lead Screening* is recommended for children who:
  - in the last 6 months lived in a house or apartment built before 1950;
  - live in a house with current or ongoing renovations or peeling or chipping paint;
  - have a sibling, live-in-mate, or playmate with a prior history of lead poisoning;
  - have been seen eating paint chips.
- Worrisome about environmental issues:
  - Canadian Partnership for Children's Health & Environment (CPCHE) - www.healthyenvironmentforkids.ca/
  - Health and housing - www.cmhc-schl.gc.ca/
  - Environmental health portion of CDC - www.cdc.gov/node.do/id/0900f3ec8000e84c
  - Commission for Environmental Cooperation - www.cec.org/children.
- **Dental Care:**
  - **Dental cleaning:** After the eruption of the first tooth, clean with a soft, water using a water-fluoride or soft brush until age 2 years, thereafter using only a pea-sized amount of fluoridated dentifrice. Independent brushing should occur under parental supervision.
  - **Fluoride** supplements are recommended where ingestion from all sources is low. Sources include fluoridated dentifrice and all home and child-care water sources. Fluoride is to be started only after the eruption of the first primary tooth. Dose for those at high risk for dental caries with water < 0.3 ppm fluoride is 0.22 mg/day for children 6 months to 3 years, 0.50 mg/day for age 3 to 6 years, and 1 mg/day for children >6 years.
  - *To prevent dental caries:* avoid sweetened liquids and constant sipping of milk or juices; avoid juices by bottle/sippy cup.



PHYSICAL EXAMINATION

- *Eyes – Corneal light reflex? Cover-uncover test and hospitality for strabismus*
  With the child fixating on a light source, the light reflex on the cornea should be symmetrical. Each eye is then covered in turn, for 2-3 seconds, and then quickly uncovered. The test is abnormal if the uncovered eye "wanders" and when uncovered moves inward or outward to fixate on "the" light source.
- *Vision screening* – Children should be screened in their preschool years for *amblyopia* or its risk factors, as well as for serious ocular diseases, such as retinoblastoma and cataracts.
  - www.cps.ca/english/statements/CP/cp96-01.htm
- *Hearing screening/acuity* – Questions on hearing acuity are recommended for all infants and children. In the absence of universal newborn screening, formal audiology testing should be performed in all high-risk infants. Older children should be screened if clinically indicated.
  - http://aappolicy.aappublications.org/cgi/content/full/pediatrics;111/2/436
- Strabismus – Evaluation for squint/eye, rigidity, and hypotonia should occur.
- Adenotonsillar hypertrophy and presence of sleep-disordered breathing warrants assessment as obstructive sleep apnea.
  - http://aappolicy.aappublications.org/cgi/content/abstract/109/4/704.pdf



Drs. Leslie Rourke, Denis Leduc and James Rourke
Revised May 2006
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Rourke Baby Record: EVIDENCE-BASED INFANT/CHILD HEALTH MAINTENANCE GUIDE II

NAME: ______ Birth Date (d/m/yr): ______ M [ ] F [ ]

Past problems/Risk factors:	Family history:

DATE OF VISIT	2 months			4 months			6 months		
GROWTH*	Height	Weight	Head circ	Height	Weight	Head circ	Height	Weight (x2 BW)	Head circ
PARENTAL CONCERNS									
NUTRITION*	○ Breastfeeding (exclusive)* Vitamin D 10 µg = 400 IU/day* ○ Formula Feeding (iron-fortified)			○ Breastfeeding (exclusive)* Vitamin D 10 µg = 400 IU/day* ○ Formula Feeding (iron-fortified)			○ Breastfeeding* – initial introduction of solids Vitamin D 10 µg = 400 IU/day* ○ Formula Feeding – iron-fortified [illegible] ○ No bottles in bed ○ No sweetened liquids, [illegible] ○ Iron containing foods (cereals, meat, egg yolk, tofu) ○ Fruits and vegetables to follow ○ No egg white, nuts, or honey ○ Choking/safe food*		
EDUCATION AND ADVICE √ Discussed and no concerns X If concerns	Injury Prevention: ○ Car seat (infant)* ○ Sleep position/bed sharing/co-sleeping/crib safety* ○ Poisons*; PCC#* ○ Firearm safety/removal* ○ Electric plugs/cords ○ Carbon monoxide/Smoke detectors* ○ Hot water < 49°C/bath safety* ○ Falls (stairs, walkers, change table)* ○ Choking/safe toys* Behaviour and family issues: ○ Sleeping/crying/Night waking** ○ [illegible] ○ Alone from child [illegible]** ○ Parenting/bonding ○ Parental fatigue/postpartum depression** ○ Family conflict/stress ○ Siblings ○ Child care/return to work Other Issues: ○ Second-hand smoke* ○ Teething/Dental cleaning/Fluoride* ○ Complementary/alternative medicine* ○ Pacifier use* ○ Temperature control and overdressing* ○ Fever [illegible]* ○ Sun exposure/[illegible]* ○ Pesticide exposure*								
DEVELOPMENT** (Inquiry and observation of milestones) Tasks are set after the time of normal milestone acquisition. Absence of any item suggests the need for further assessment of development. NB–Correct for age if < 36 weeks gestation √ If attained X If not attained	○ Follows movement with eyes ○ Has a variety of sounds and cries ○ Holds head up when held at adult's shoulder ○ Enjoys being touched and cuddled ○ Smiles responsively ○ No parent concerns			○ Turns head toward sounds ○ Laughs/squeals at parent ○ Head steady ○ Grasps/reaches ○ No parent concerns			○ Follows a moving object ○ Looks in the direction of a new sound ○ Babbles ○ Rolls from back to stomach or stomach to back ○ Sits with support ○ Brings hands or toys to mouth ○ No parent concerns		
PHYSICAL EXAMINATION Evidence based screening for specific conditions is highlighted, but an appropriate age-specific focused physical examination is recommended at each visit.	○ Fontanelles ○ Eyes (red reflex)* ○ Corneal light reflex* ○ Hearing inquiry/screening* ○ Heart ○ Hips ○ Muscle tone*			○ Eyes (red reflex)* ○ Corneal light reflex* ○ Hearing inquiry/screening* ○ Hips ○ Muscle tone*			○ Fontanelles ○ Eyes (red reflex)* ○ Corneal light reflex/Cover–uncover test and inquiry* ○ Hearing inquiry/screening* ○ Hips ○ Muscle tone*		
PROBLEMS AND PLANS							○ Inquire about risk factors for TB		
IMMUNIZATION Provincial guidelines vary Signature	Record on Guide V: Immunization Record			Record on Guide V: Immunization Record			Record on Guide V: Immunization Record If HBsAg-positive parent or sibling: ○ Hepatitis B vaccine*		

Grades of evidence: (A) Bold type – Good evidence (B) Italic – Fair evidence (C) Plain – Consensus with no definitive evidence
(*) see Infant/Child Health Maintenance: Selected Guidelines on reverse of Guide I (**) see Healthy Child Development Selected Guidelines on reverse of Guide IV

Disclaimer: Given the constantly evolving nature of evidence and changing recommendations, the Rourke Baby Record: EB is meant to be used as a guide only.
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Drs. Leslie Rourke, Denis Leduc and James Rourke
Revised May 2006

Past problems/Risk factors:	Family history:

Canadian Paediatric Society / Société canadienne de pédiatrie — The College of Family Physicians of Canada / Le Collège des médecins de famille du Canada

Rourke Baby Record: EVIDENCE-BASED INFANT/CHILD HEALTH MAINTENANCE GUIDE III

NAME: ______________________ Birth Date (d/m/yr): ________ M [ ] F [ ]

DATE OF VISIT	9 months (optional)	12-13 months	15 months (optional)
GROWTH*	Height / Weight / Head circ.	Height / Weight (x3 BW) / Head circ. (av. 47cm)	Height / Weight / Head Circ.
PARENTAL CONCERNS			
NUTRITION*	☐ **Breastfeeding*/ Vitamin D 10 µg = 400 IU/day*** ☐ *Formula Feeding – iron-fortified follow-up* ☐ No bottles in bed ☐ No sweetened liquids, encourage water ☐ Cereal, meat/alternatives, fruits, vegetables ☐ 1st introduction cow's milk products ☐ No egg white, nuts, or honey ☐ *Choking/safe foods**	☐ **Breastfeeding*** ☐ Homogenized milk ☐ Encourage cup instead of bottle ☐ Appetite reduced ☐ Choking/safe foods*	☐ **Breastfeeding*** ☐ Homogenized milk ☐ Choking/safe foods* ☐ Encourage cup instead of bottle
EDUCATION AND ADVICE √ discussed and no concerns X if concerns	Injury Prevention ☐ **Car seat (infant/child)*** ☐ **Poisons*; PCC#*** ☐ **Firearm safety/removal*** ☐ Carbon monoxide/Smoke detectors* ☐ *Hot water < 49°C /Bath safety** ☐ Childproofing, including: ☐ *Electric plugs/cords* ☐ *Falls/stairs/walkers** ☐ Choking/safe toys* Behaviour and family issues ☐ Sleeping/crying/**Night waking**** ☐ Soothability/responsiveness ☐ **Assess home visit need**** ☐ Parenting ☐ Parental fatigue/depression** ☐ Family conflict/stress ☐ Siblings ☐ Child care/return to work Other Issues ☐ **Second-hand smoke*** ☐ Teething/**Dental cleaning/Fluoride/Dentist*** ☐ *Complementary/alternative medicine** ☐ *Pacifier use** ☐ *Fever advice/thermometers** ☐ *Active healthy living/media use** ☐ Encourage reading** ☐ Footwear Environmental health including: ☐ Sun exposure/sunscreens/insect repellent* ☐ *Check serum lead if at risk** ☐ *Pesticide exposure**		
DEVELOPMENT** *(Inquiry and observation of milestones)* Tasks are set **after** the time of normal milestone acquisition. **Absence of any item suggests the need for further assessment of development.** NB–Correct for age if < 36 weeks gestation √ if attained X if not attained	☐ Looks for hidden toy ☐ Babbles different sounds ☐ Makes sounds to get attention ☐ Sits without support ☐ Stands with support ☐ Opposes thumb and index finger ☐ Reaches to be picked up and held ☐ No parent concerns	☐ Responds to own name ☐ Understands simple requests, e.g. find your shoes ☐ Chatters using 3 different sounds ☐ Crawls or 'bum' shuffles ☐ Pulls to stand/walks holding on ☐ Shows many emotions ☐ No parent concerns	☐ Attempts to say 3 or more words (words do not have to be clear) ☐ Tries to get something by making sounds, while reaching or pointing ☐ Picks up and eats finger foods ☐ Crawls up few stairs/steps ☐ Tries to squat to pick up toys from the floor ☐ Removes socks and tries to untie shoes ☐ Stacks 2 blocks ☐ Looks at you to see how to react (when falls or with strangers) ☐ No parent concerns
PHYSICAL EXAMINATION Evidence-based screening for specific conditions is highlighted, but an appropriate age-specific focused physical examination is recommended at each visit.	☐ *Eyes (red reflex)** ☐ *Corneal light reflex/Cover-uncover test and inquiry** ☐ *Hearing inquiry/screening** ☐ *Hips*	☐ *Eyes (red reflex)** ☐ *Corneal light reflex/Cover-uncover test and inquiry** ☐ *Hearing inquiry/screening** ☐ Tonsil size/Teeth* ☐ Hips	☐ *Eyes (red reflex)** ☐ *Corneal light reflex/Cover-uncover test and inquiry** ☐ *Hearing inquiry/screening** ☐ Tonsil size/Teeth* ☐ *Hips*
PROBLEMS AND PLANS	☐ **Anti-HBs and HBsAG*** (if HBsAg positive mother) ☐ *Hemoglobin (if at risk)**	☐ *Hemoglobin (if at risk)**	
IMMUNIZATION Provincial guidelines vary **Signature**	**Record on Guide V: Immunization Record**	**Record on Guide V: Immunization Record**	**Record on Guide V: Immunization Record**

Grades of evidence: (A) **Bold type – Good evidence** (B) *Italic – Fair evidence* (C) Plain – Consensus with no definitive evidence
(*) see Infant/Child Health Maintenance: Selected Guidelines on reverse of Guide I (**) see Healthy Child Development Selected Guidelines on reverse of Guide IV

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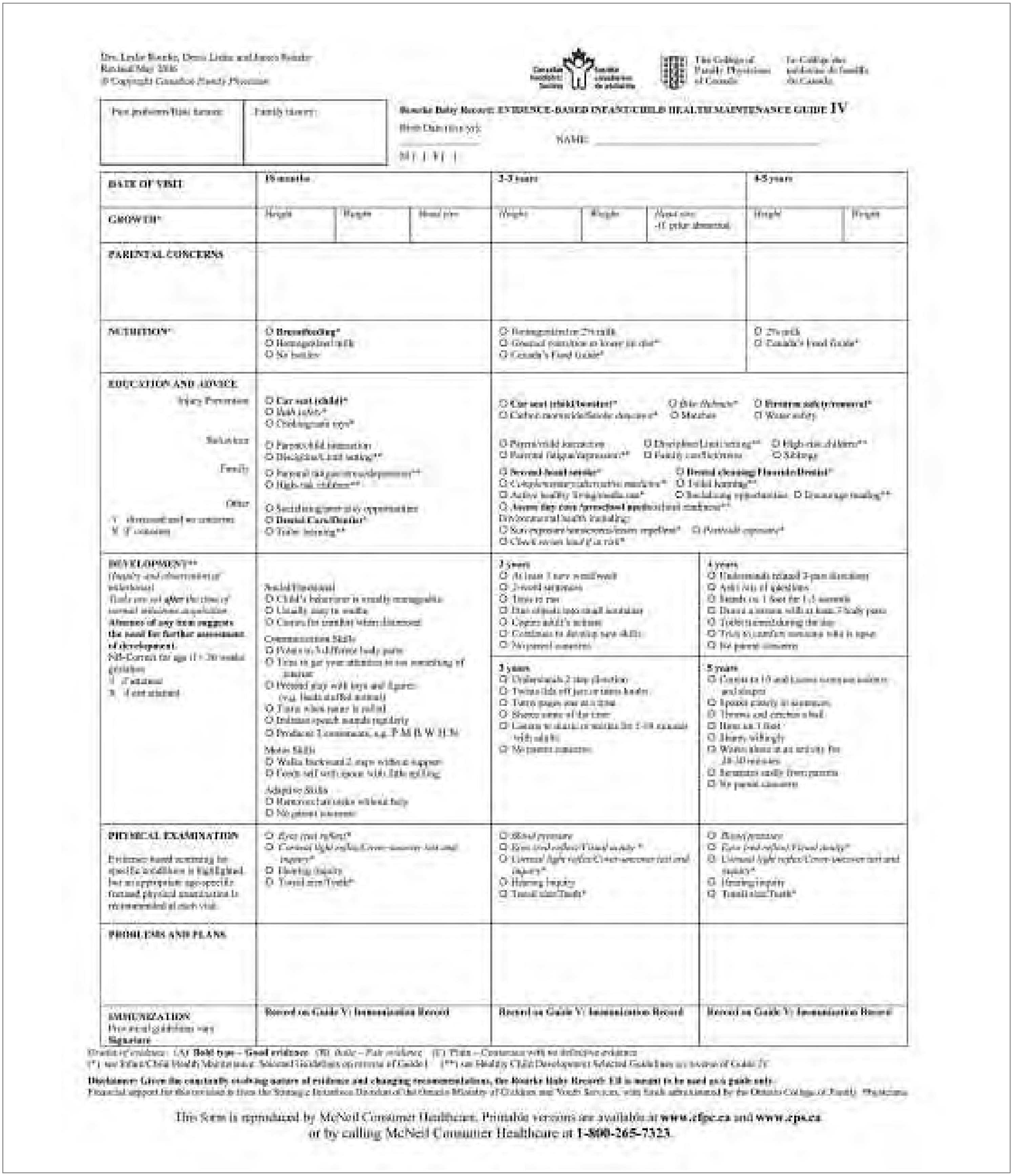

Rourke Baby Record: EVIDENCE-BASED INFANT/CHILD HEALTH MAINTENANCE GUIDE IV

NAME:

DATE OF VISIT	18 months	2-3 years	4-5 years
GROWTH*	Height / Weight / Head circ.	Height / Weight / Head circ. -If prior abnormal	Height / Weight
PARENTAL CONCERNS			
NUTRITION*	○ Breastfeeding* ○ Homogenized milk ○ No bottles	○ Homogenized or 2% milk ○ Gradual transition to lower fat diet* ○ Canada's Food Guide*	○ 2% milk ○ Canada's Food Guide*
EDUCATION AND ADVICE	[illegible]	[illegible]	
DEVELOPMENT**	[illegible]	2 years / 3 years: [illegible]	4 years / 5 years: [illegible]
PHYSICAL EXAMINATION	[illegible]	[illegible]	[illegible]
PROBLEMS AND PLANS			
IMMUNIZATION Signature	Record on Guide V: Immunization Record	Record on Guide V: Immunization Record	Record on Guide V: Immunization Record

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ROURKE BABY RECORD HEALTHY CHILD DEVELOPMENT SELECTED GUIDELINES/RESOURCES - May 2006

DEVELOPMENT

Milestones are based on the Nipissing District Developmental Screen (www.ndds.ca) and other developmental literature. They are not a developmental screen, but rather an aid to developmental surveillance. They are set **after** the time of normal milestone acquisition. Thus, absence of any one or more items is considered a high-risk marker and indicates the need for further developmental assessment, as does parental concern about development at any stage.

- "Best Start" website contains resources for maternal, newborn, and early child development - www.beststart.org/
- OCFP Healthy Child Development: Improving the Odds publication is a toolkit for primary healthcare providers - www.beststart.org/resources/hlthy_chld_dev/pdf/[illegible].pdf

BEHAVIOUR

Night waking/crying:

Night waking/crying occurs in 20% of infants and toddlers who do not require night feeding. Controlling several positive bedtime routines (including training the child to fall asleep alone), removing night-time positive reinforcers, keeping crawling/awakening time consistent, and rewarding good sleep behaviours has been shown to reduce the prevalence of night waking/crying, especially when this counselling begins in the first 3 months of life.

- www.[illegible]

PARENTING/**DISCIPLINE**

Promote effective discipline through evaluation, anticipatory guidance and counselling using the following principles: respect for parents, cultural sensitivity, improving social supports, increasing parental confidence, increasing parental pleasure in children, and supporting and improving parenting skills.

- www.cps.ca/english/statements/PP/pp04-01.htm
- OCFP Healthy Child Development www.beststart.org/resources/hlthy_chld_dev/pdf/HCD_complete.pdf (section [illegible])

TOILET LEARNING

The process of toilet learning has changed significantly over the years and within different cultures. In Western culture, a child-centred approach, where the timing and methodology of toilet learning is individualized as much as possible, is recommended.

- www.cps.ca/english/statements/CP/cp00-02.htm

LITERACY

Physicians can promote literacy and early childhood reading by facilitating reading in the office. Encourage parents to watch less television and read more to their children.

- www.cps.ca/english/statements/PP/pp02-01.htm

AUTISM SPECTRUM DISORDER

When developmental delay is suspected in an 18 month child, screen for autism spectrum disorder using the Checklist for Autism in Toddlers (CHAT) – Journal of Autism and Developmental Disorders 2001;31(2).

- www.beststart.org/resources/hlthy_chld_dev/pdf/HCD_complete.pdf (appendix L)

PARENTAL/FAMILY ISSUES AFFECTING DEVELOPMENT

- Maternal depression - Physicians should have a high awareness of maternal depression, which is a risk factor for the socioemotional and cognitive development of children. Although less studied, paternal factors may compound the maternal-related issues.
  - www.cps.ca/english/statements/PP/pp04-03.htm
- Shaken baby syndrome – A high index of suspicion is suggested.
  - www.cps.ca/english/statements/PP/pp01-01.htm
- Fetal alcohol syndrome/effects (FAS/FAE) - Canadian Guidelines published in CMAJ supplement Mar. 2005 - www.cmaj.ca/cgi/content/full/172/5_suppl/S1

High risk infants/children

Day Care:

Specialized day care or preschool is beneficial for children living in poverty (family income at or below Statistics Canada low-income cut-off). These disadvantaged children are at an increased risk of mortality and morbidity, including physical, emotional, social and education deficits.

Home Visits:

There is good evidence for home visiting by nurses during the perinatal period through infancy for first-time mothers of low socioeconomic status, single parents or teenaged parents to prevent physical abuse and/or neglect. Canadian Task Force on Preventive Health Care.

- www.cmaj.ca/cgi/content/full/[illegible]

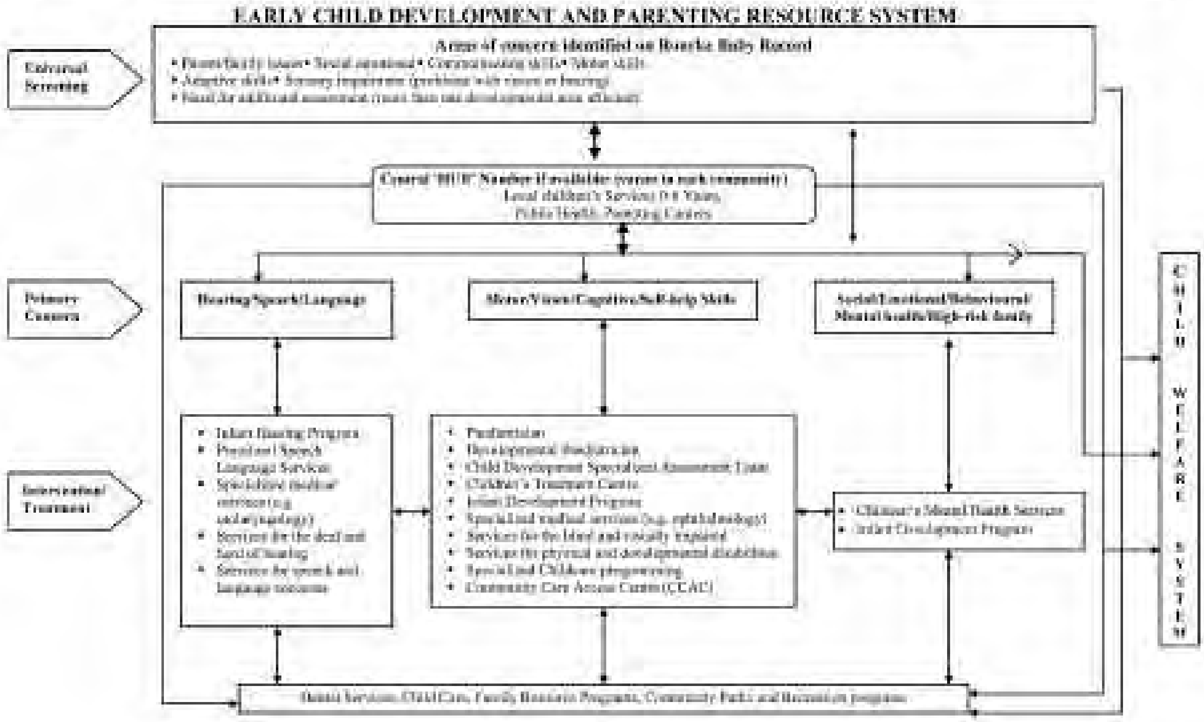
Risk factors for physical abuse:

- low SES
- young (maternal age < 18 years)
- single parent family
- parental experiences of emotional/physical abuse in childhood
- spousal violence
- lack of social support
- unplanned pregnancy or negative parental attitude towards pregnancy

Risk factors for sexual abuse:

- living in a family without a natural parent
- growing up in a family with poor marital relations between parents
- presence of a stepfather
- poor child-parent relationships
- unhappy family life

EARLY CHILD DEVELOPMENT AND PARENTING RESOURCE SYSTEM



Drs. Leslie Rourke, Doris Rourke and James Rourke
Revised May 2006

The College of Family Physicians of Canada | Le Collège des médecins de famille du Canada

Rourke Baby Record: EVIDENCE-BASED INFANT/CHILD HEALTH MAINTENANCE GUIDE V

NAME: _____ Birth Date (dd/mm/yr): _____ M [ ] F [ ]

Childhood Immunization Record as per NACI Recommendations (as of March 2006)

For additional information, refer to the National Advisory Committee on Immunization website: www.phac-aspc.gc.ca/naci-ccni/

Provincial guidelines are available online: www.phac-aspc.gc.ca/im/ptimprog-progimpt/table-1_e.html

Date given	NACI recommendations	Injection site	Lot number	Expiry date	Initials	Comments
DTaP/IPV/ Hib	4 doses (2, 4, 6, 18 months) dose #1 (2 months)					
	dose #2 (4 months)					
	dose #3 (6 months)					
	dose #4 (18 months)					
Pneu-Conj	4 doses (2, 4, 6, 12-15 months) dose #1 (2 months)					
	dose #2 (4 months)					
	dose #3 (6 months)					
	dose #4 (12-15 months)					
Men-Conj	3 doses (2, 4, 6 months) OR 1 dose (12 months OR 14-16 years)					
Hepatitis B	3 doses in infancy OR 2-3 doses preteen/teen dose #1					
	dose #2					
	± dose #3					
MMR	2 doses (12 months, 18 months OR 4 years) dose #1 (12 months)					
	dose #2 (18 months OR 4 years)					
Varicella	1 dose (12 months - 12 years) OR 2 doses ≥ 13 years dose #1					
	± dose #2					
DTaP/IPV	1 dose (4-6 years)					
dTap	1 dose (14-16 years)					
Influenza	1 dose annually (6-23 months and high risk > 2 years) First year only for < 9 years - give 2 doses one month apart					
Other						

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ROURKE BABY RECORD INFECTIOUS DISEASES AND IMMUNIZATION SELECTED GUIDELINES/RESOURCES - May 2006

ROUTINE IMMUNIZATION

National Advisory Committee on Immunization (NACI) recommended immunization schedules for infants, children and youth can be found at the following website: www.phac-aspc.gc.ca/naci-ccni/.

Provincial/territorial immunization schedules may differ based on funding differences. For provincial/territorial immunization schedules, see Canadian Nursing Coalition on Immunization chart on the website of the Public Health Agency of Canada: www.phac-aspc.gc.ca/im/nursing-resources/table-1_e.html.

For review, see "Immunization update 2005: Stepping forward" available on-line at www.cps.ca/english/statements/ID/PHP/immunization2005.htm

Vaccine Notes (Adapted from NACI):

Diphtheria, Tetanus, acellular Pertussis and inactivated Polio virus vaccine (DTaP-IPV): DTaP-IPV vaccine is the preferred vaccine for all doses in the vaccination series including completion of the series in children 4-7 years who have received ≥ 1 dose of DPT (whole cell) vaccine (e.g., recent immigrants).

Haemophilus influenzae type b conjugate vaccine (Hib): Hib (which is shown to be the Haemophilus b capsular polysaccharide – PRP conjugated to tetanus toxoid (Act-HIB™) or the Haemophilus b oligosaccharide conjugate – HbOC (HIBTITER™) vaccine. This vaccine may be combined with DTaP in a single injection.

Measles, Mumps and Rubella vaccine (MMR): A second dose of MMR is recommended, at least 1 month after the first dose for the purpose of better vaccine protection. For convenience, options include giving it with the next scheduled vaccination at 18 months of age or at school entry (4-6 years) (depending on the provincial/territorial policy), or at any intervening age that is practical. The need for a second dose of measles and rubella vaccine is not established but may benefit (given for convenience as MMR). The second dose of MMR should be given at the same visit as DTaP-IPV (or Hib) to ensure high uptake rates. MMR and varicella vaccines should be administered concurrently (at different sites) or separated by at least 4 weeks.

Varicella vaccine: Children aged 12 months to 12 years who have not had varicella should receive one dose of varicella vaccine. Unvaccinated individuals ≥ 13 years who have not had varicella should receive two doses at least 28 days apart. Varicella and MMR vaccines should be administered concurrently (at different sites) or separated by at least 4 weeks.

Hepatitis B vaccine (Hep B): Hepatitis B vaccine can be routinely given to infants or preadolescents, depending on the provincial/territorial policy. For infants born to chronic carrier mothers, the first dose should be given at birth (with Hepatitis B immune globulin), otherwise the first dose can be given at 2 months of age to be given concurrently with other routine infant immunization visits. The second dose should be administered at least 1 month after the first dose and the third at least 2 months after the second dose, but again may be given concurrently with the 4- and 6-month immunization visits. A two-dose schedule for adolescents is an option (See also SELECTED INFECTIOUS DISEASES RECOMMENDATIONS below).

Pneumococcal conjugate vaccine - 7-valent (Pneu-Conj): Recommended schedule, number of doses and subsequent use of 23 valent polysaccharide pneumococcal vaccine depend on the age of the child, if at high risk for pneumococcal disease, and when vaccination is begun.

Meningococcal C conjugate vaccine (Men-Conj): Recommended schedule and number of doses of meningococcal vaccine depend on the age of the child. If the provincial/territorial policy is to give Men-Conj after 12 months of age, 1 dose is sufficient.

Diphtheria, Tetanus, acellular Pertussis vaccine - adult/adolescent formulation (dTap): a combined adult-type "adult type" preparation for use in people ≥ 7 years of age, contains less diphtheria toxoid and pertussis antigens than preparations given to younger children and is less likely to cause reactions in older people. This vaccine should be used in individuals ≥ 7 years receiving their primary series of vaccines.

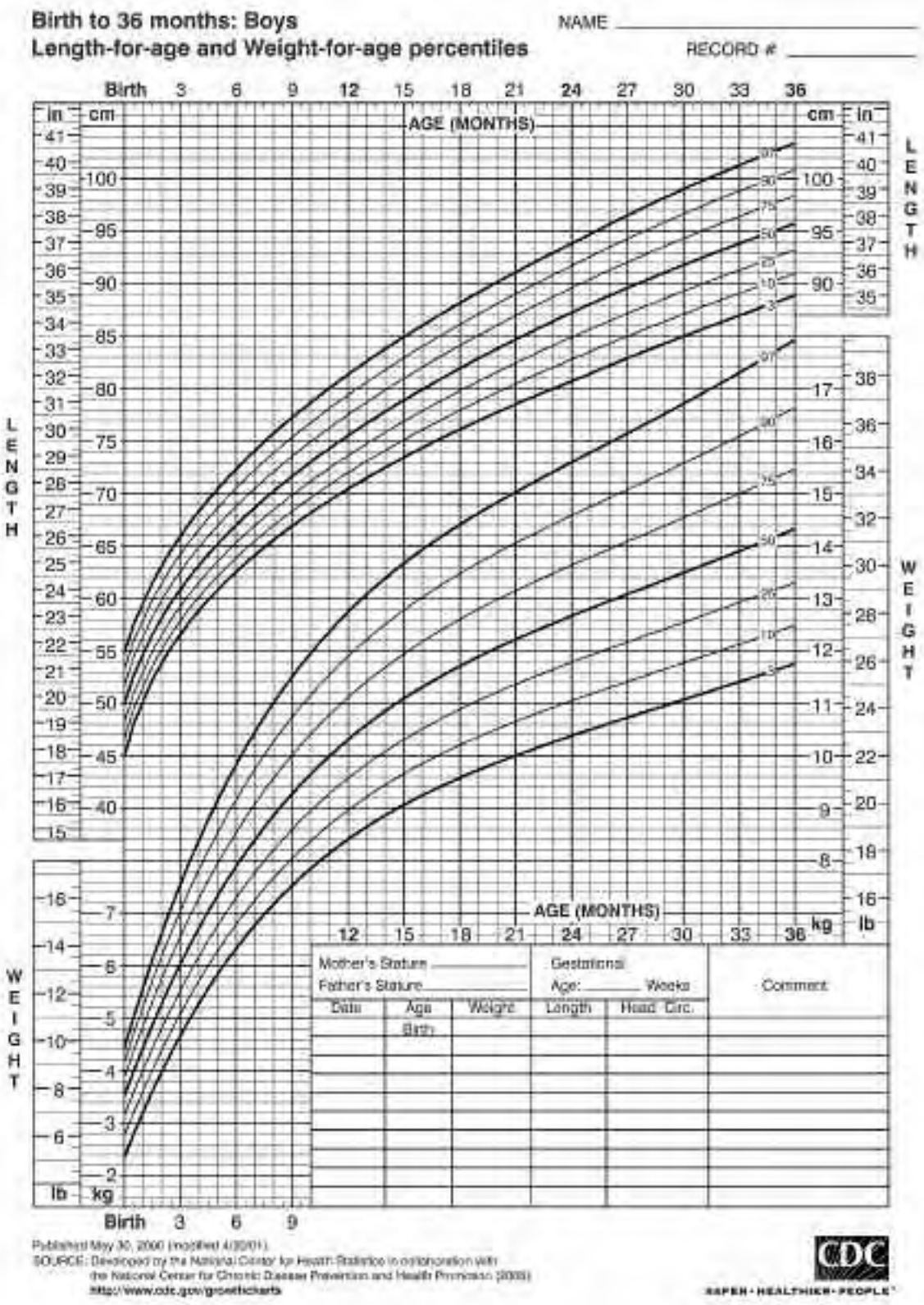
Influenza vaccine (Flu): Recommended for all children between 6 and 23 months of age, and for older high-risk children. Previously unvaccinated children up to 9 years of age require 2 doses with an interval of at least 4 weeks. The second dose is not required if the child has received one or more doses of influenza vaccine during the previous season (or both seasons).

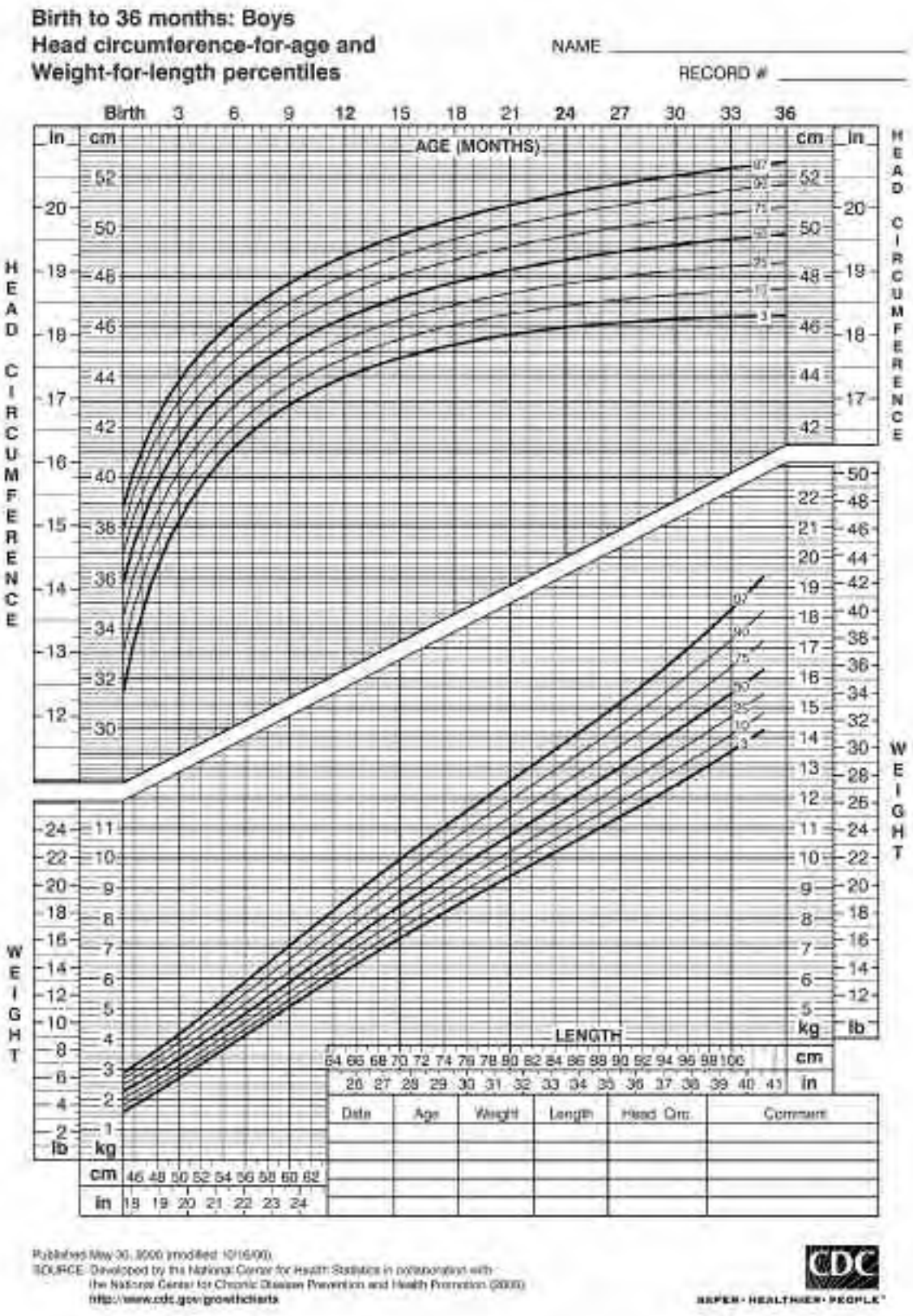
SELECTED INFECTIOUS DISEASES RECOMMENDATIONS

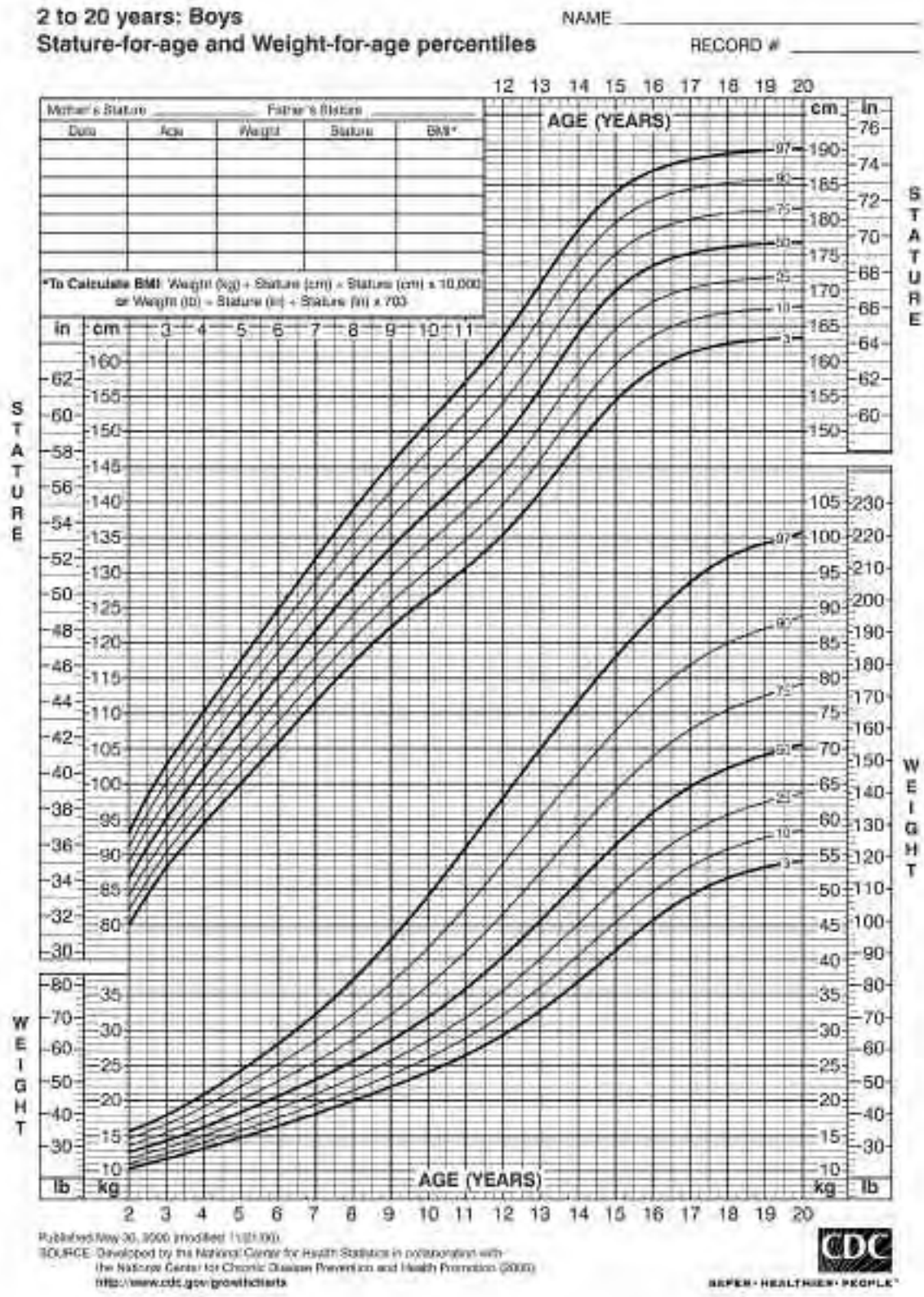
See CPS position statements of the Infectious Diseases and Immunization Committee: www.cps.ca/english/publications/InfectiousDiseases.htm

- **Hepatitis B immune globulin and immunization:**
  Infants with HBsAg-positive parents or siblings require Hepatitis B vaccine at birth, at 1 month, and 6 months of age.
  Infants of HBsAg-positive mothers also require Hepatitis B immune globulin at birth.

  Hepatitis B vaccine should also be given to all infants from high-risk groups, such as:
  - Infants where at least one parent has emigrated from a country where Hepatitis B is endemic;
  - Infants of mothers positive for Hepatitis C virus;
  - Infants of substance-abusing mothers.
- **Human Immunodeficiency Virus type 1 (HIV-1) maternal infection:**
  Breastfeeding is contraindicated for an HIV-1 infected mother even if she is receiving antiretroviral therapy.
- **Hepatitis A or A/B combined (when Hepatitis B vaccine has not been previously given):**
  These vaccines should be considered when travelling to countries where Hepatitis A or B are endemic.
- **Tuberculosis - TB skin testing:**
  TB skin testing should be done if the infant is living with anyone being investigated or treated for TB. TB skin testing should also be considered in high-risk groups, including Aboriginal people, immigrants and long-term travellers from areas with a high prevalence of TB.


Birth to 36 months: Boys
Length-for-age and Weight-for-age percentiles
NAME
RECORD #
AGE (MONTHS)
LENGTH
WEIGHT
Mother's Stature
Father's Stature
Gestational Age: Weeks
Comment
Date
Age
Birth
Weight
Length
Head Circ.
Published May 30, 2000 (modified 4/20/01)
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000)
http://www.cdc.gov/growthcharts
CDC
HEALTHY PEOPLE


Birth to 36 months: Boys
Head circumference-for-age and
Weight-for-length percentiles
NAME
RECORD #
Birth 3 6 9 12 15 18 21 24 27 30 33 36
AGE (MONTHS)
HEAD CIRCUMFERENCE
WEIGHT
LENGTH
Date
Age
Weight
Length
Head Circ
Comment
Published May 30, 2000 (modified 10/16/00)
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000)
http://www.cdc.gov/growthcharts
CDC
HEALTHY PEOPLE


2 to 20 years: Boys
Stature-for-age and Weight-for-age percentiles
NAME
RECORD #
Mother's Stature
Father's Stature
Date
Age
Weight
Stature
BMI*
*To Calculate BMI: Weight (kg) ÷ Stature (cm) ÷ Stature (cm) x 10,000
or Weight (lb) ÷ Stature (in) ÷ Stature (in) x 703
AGE (YEARS)
STATURE
WEIGHT
cm
in
kg
lb
97
90
75
50
25
10
3
Published May 30, 2000 (modified 11/21/00)
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts
CDC
HEALTHY PEOPLE

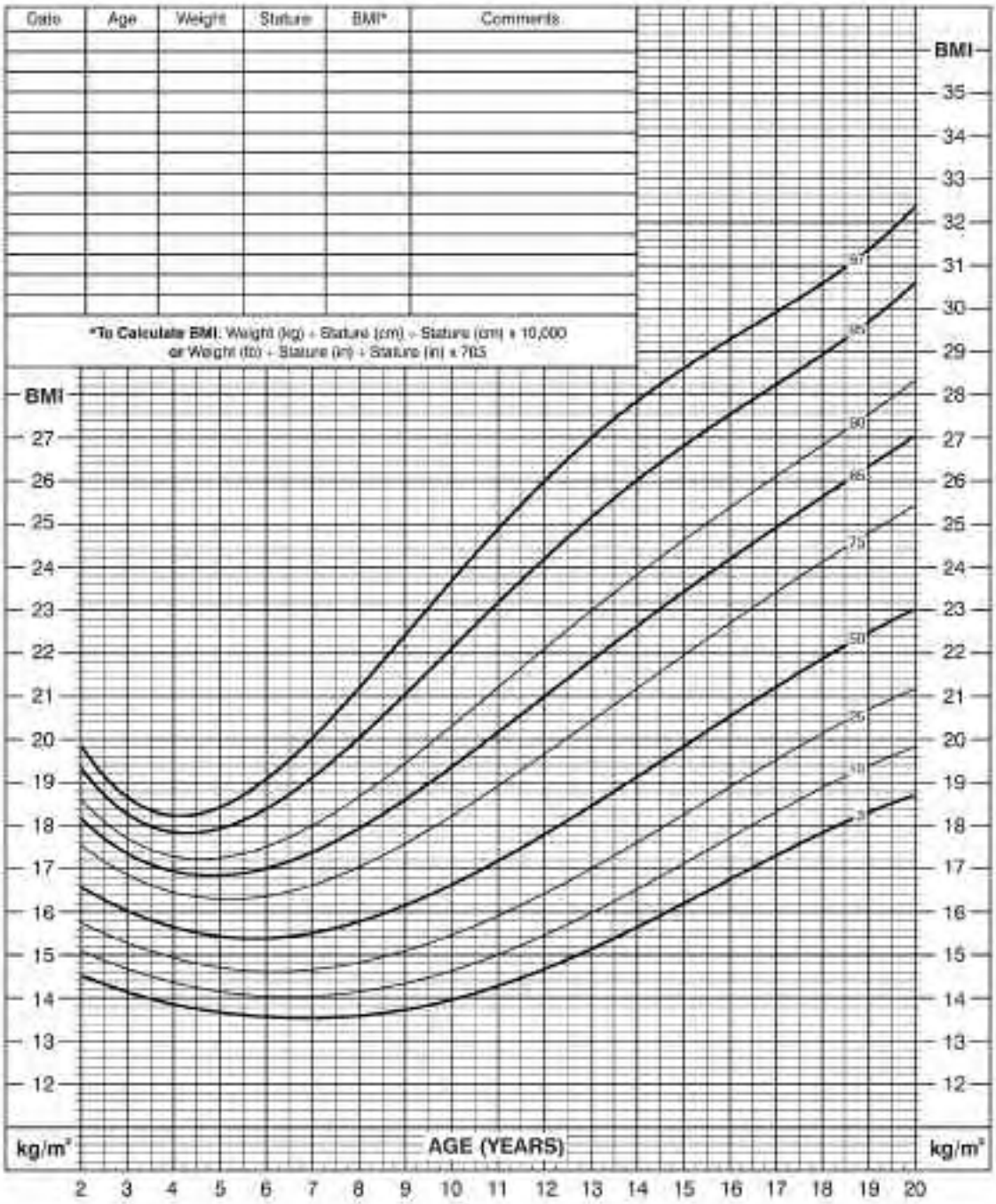
2 to 20 years: Boys
Body mass index-for-age percentiles

NAME _____

RECORD # _____

Date	Age	Weight	Stature	BMI*	Comments

*To Calculate BMI: Weight (kg) ÷ Stature (cm) ÷ Stature (cm) x 10,000
or Weight (lb) ÷ Stature (in) ÷ Stature (in) x 703



Published May 30, 2000 (modified 10/16/00).
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts

CDC
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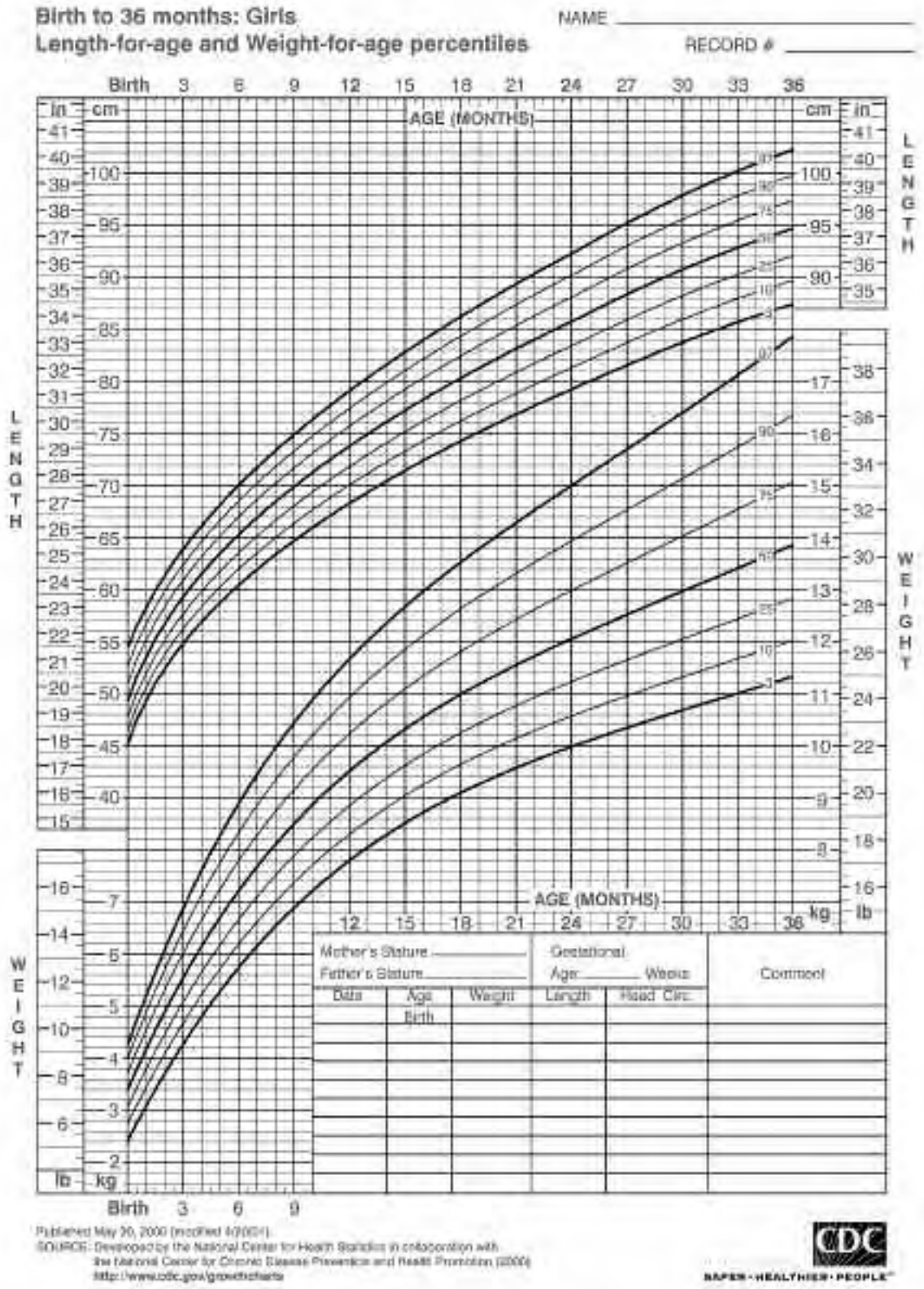
Birth to 36 months: Girls
Length-for-age and Weight-for-age percentiles
NAME
RECORD #
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Father's Stature
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CDC
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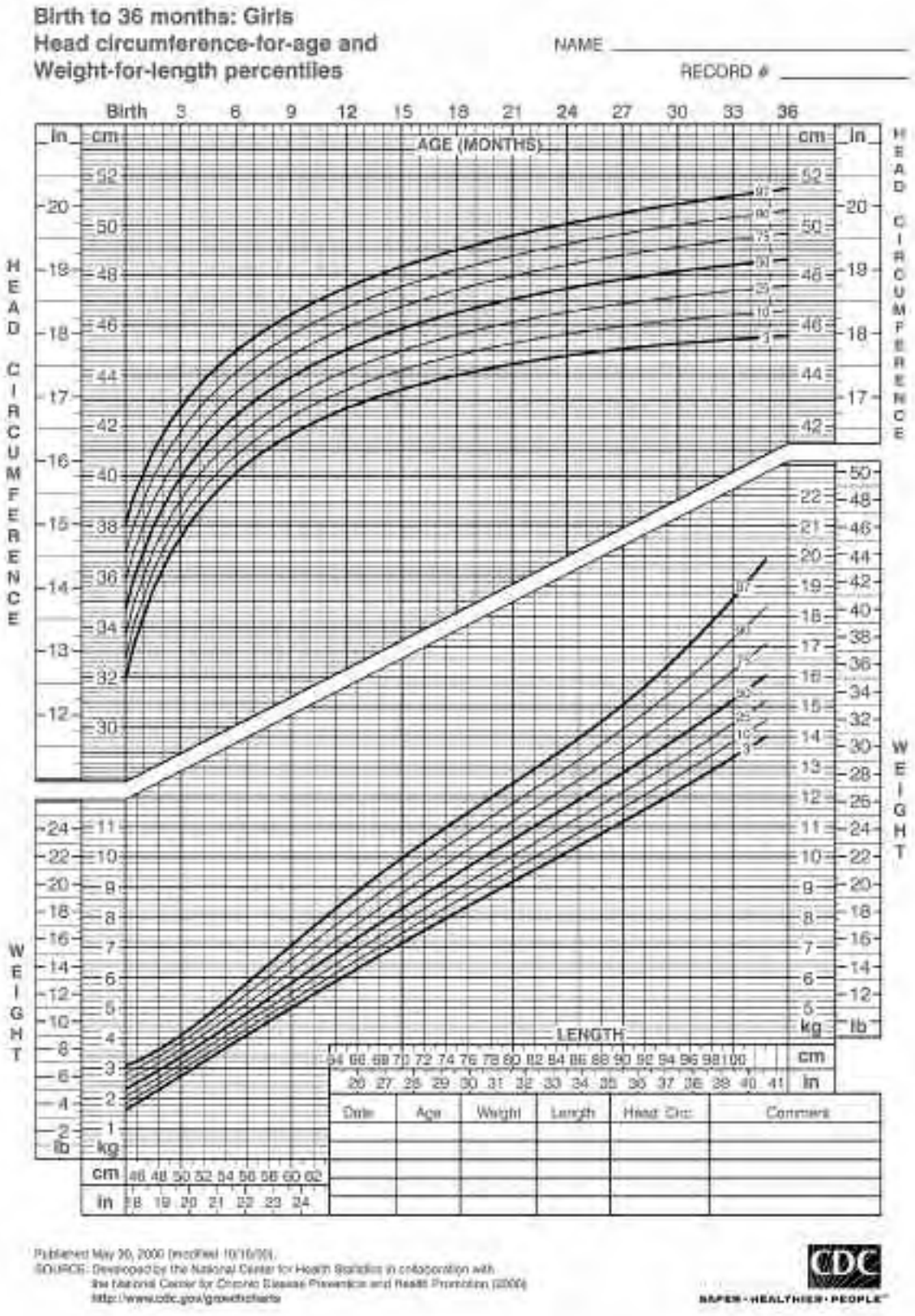
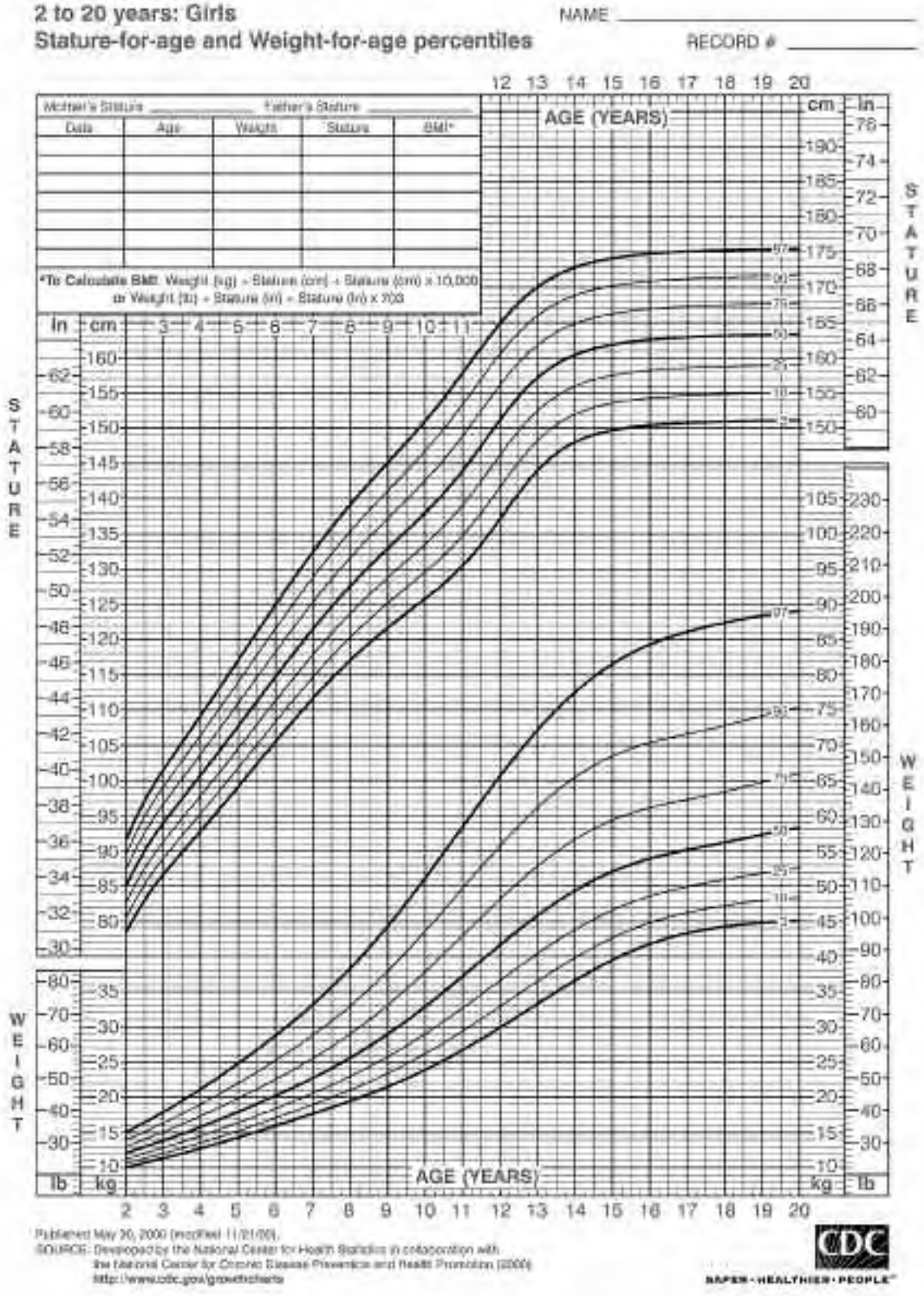
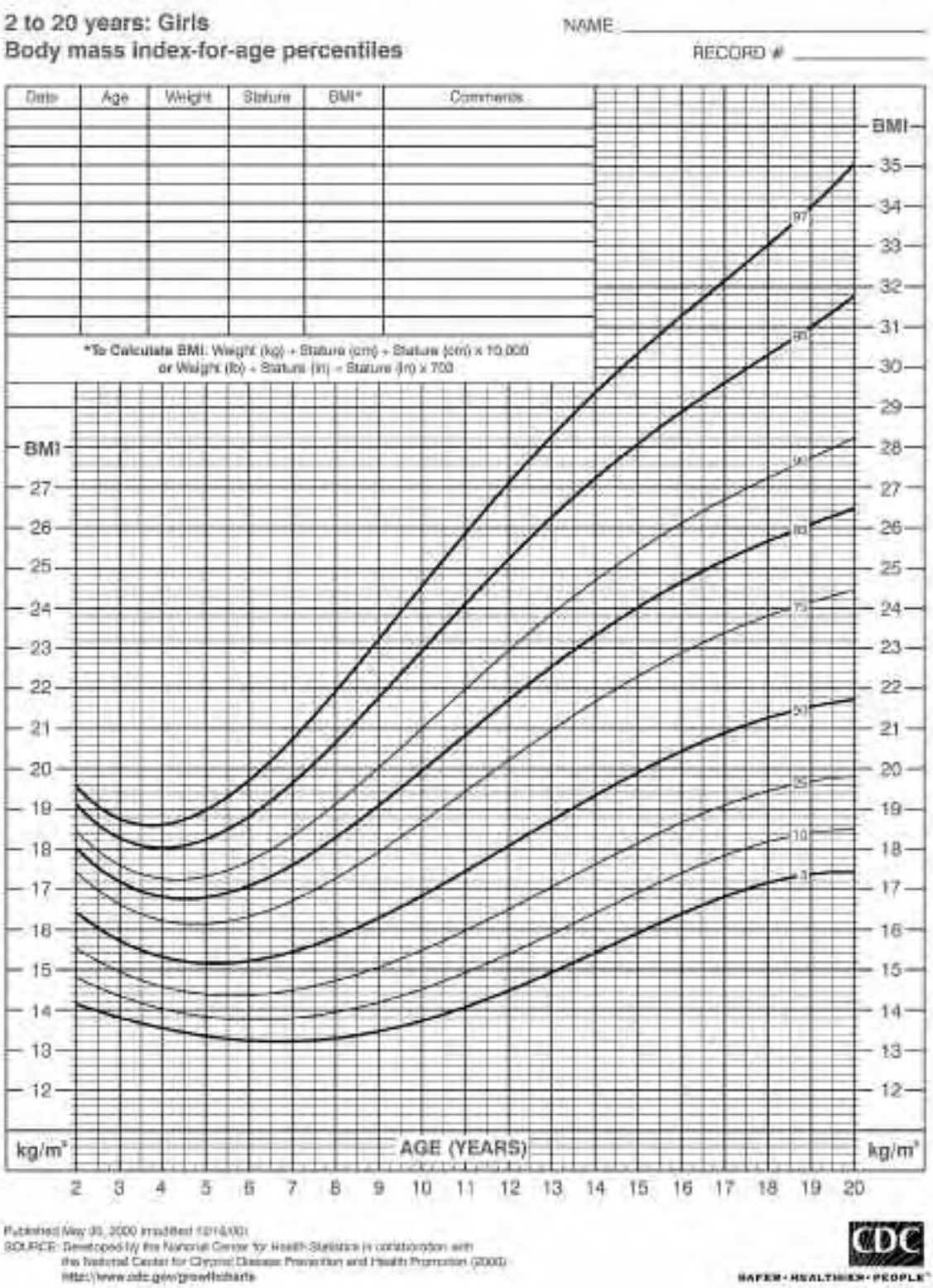

Birth to 36 months: Girls
Head circumference-for-age and
Weight-for-length percentiles
NAME
RECORD #
AGE (MONTHS)
HEAD CIRCUMFERENCE
WEIGHT
LENGTH
Date
Age
Weight
Length
Head Circ
Comment
Published May 30, 2000 (modified 10/16/00).
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts
CDC
HEALTHY PEOPLE


2 to 20 years: Girls
Stature-for-age and Weight-for-age percentiles
NAME
RECORD #
Mother's Stature
Father's Stature
Date
Age
Weight
Stature
BMI*
*To Calculate BMI: Weight (kg) ÷ Stature (cm) ÷ Stature (cm) x 10,000
or Weight (lb) ÷ Stature (in) ÷ Stature (in) x 703
AGE (YEARS)
STATURE
WEIGHT
cm
in
kg
lb
97
90
75
50
25
10
3
Published May 30, 2000 (modified 11/21/00).
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts
CDC
SAFER·HEALTHIER·PEOPLE™


2 to 20 years: Girls
Body mass index-for-age percentiles
NAME
RECORD #
Date
Age
Weight
Stature
BMI*
Comments
*To Calculate BMI: Weight (kg) ÷ Stature (cm) ÷ Stature (cm) x 10,000
or Weight (lb) ÷ Stature (in) ÷ Stature (in) x 703
BMI
kg/m²
AGE (YEARS)
97
90
75
50
25
10
3
Published May 30, 2000 (modified 10/16/00)
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000)
http://www.cdc.gov/growthcharts
CDC
SAFER·HEALTHIER·PEOPLE™

Appendix I:
Nipissing District Developmental Screen™

NIPISSING DISTRICT DEVELOPMENTAL SCREEN ORDER FORM™

Name

Organization

Address

City | Province / State

Country | Postal Code / Zip

Telephone | E-mail

Please MAIL this form along with cheque or money order made payable to:

Nipissing District Developmental Screen Inc.
P.O. Box 1403, North Bay, ON Canada P1B 8K6
Phone (705) 752-5081 • 1-888-582-0044
Fax: (705) 753-4247

Visit us on the web: www.ndds.ca

SCREEN SETS

A complete set of Screens consists of 13 pads of 50 sheets with detachable activity sheets.

English .... Set Price $[illegible]
French .... Set Price $[illegible]
Spanish .... Set Price $[illegible]
Chinese .... Set Price $[illegible]

SPECIFIC SCREENS

A Specific Screen consists of one pad of 50 sheets with detachable activity sheets for one of the following ages:

1 & 2 Months, 4 Months, 6 Months, 9 Months, 12 Months, 15 Months, 18 Months, 2 Years, 30 Months, 3 Years, 4 Years, 5 Years and 6 Years.

English .... Unit Price $7
French .... Unit Price $7
Spanish .... Unit Price $7
Chinese .... Unit Price $7

Special orders of screens without activities available upon request. Call for a quotation.

Product Description	Age (Specific Screens Only)	Quantity	Set / Unit Price	Total (Quantity X Price)

SEE LIMITATION OF LIABILITY AND INSTRUCTIONS ON REVERSE.

Nipissing District Developmental Screen Inc. Product License

[illegible]

Nipissing District Developmental Screen Inc. Order Form Copyright Notice

[illegible]

Screens Total	
Shipping*	
Subtotal	
GST**	
PST***	
TOTAL	

[illegible]

Prices subject to change.

Instructions for the Nipissing District Developmental Screen™

The Nipissing District Developmental Screen™ (NDDS) is a tool designed to provide an easy-to-use method of recording the development and progress of infants and children. The areas of development covered by the Screen Forms include vision, hearing, communication (note: the language items refer to the child's ability in his/her first language), gross and fine motor, cognitive, social/emotional, and self-help. The Screens coincide with immunization schedules as well as key developmental stages up to age six. The ages are noted at the top of each Screen. The child's chronological age will determine which Screen to use. If the child falls between two ages, use the earlier Screen (e.g. for a 4 1/2 year old use the Screen for a 4 year old).

The skills in each Screen are expected to be mastered by most children by the age shown. **If two or more "No" responses are marked a referral to a health care and/or child care professional is recommended.** While the NDDS was designed to be completed by a parent or caregiver, the Screen Forms are not meant to be a substitute for professional advice, assessment and/or treatment from a health care and/or child care professional.

Parents should always talk to their health care and/or child care professional if they have questions or concerns about their child's development or well being.

Additional information is available on our website. Visit us at www.ndds.ca.

Activities for Your Baby/Child

The "Activities for Your Baby/Child" section of the Screen Forms is intended to provide parents and other caregivers with some information and activities to enhance their infant's/child's development. Each activity is coded with an icon to represent a primary area of development. **If parents have questions or concerns about the appropriateness of any activity for their infant/child they should contact a health care or child care professional.**

Emotional · Fine Muscle · Large Muscle · Learning/Thinking · Self-Help · Social · Speech/Language

Limitation of Liability

Nipissing District Developmental Screen Inc. (NDDS Inc.) has created and provides the Screen Forms to assist parents, health care and child care professionals (users) with a convenient and easy to use method of recording the development and progress of infants and children within certain age groupings. The Screen Forms are not meant to be a substitute for the advice and/or treatment of health care and child care professionals trained to properly and professionally assess the development and progress of infants and children. As such, the Screen Forms are not intended or designed to be "do it yourself" substitutes for proper and professional advice and/or treatment.

Although the Screen forms may help users to determine when they need to seek out the advice and/or treatment of health care and child care professionals, it must be clearly understood by users that the Screen Forms can not substitute for the advice and/or treatment of health care and child care professionals.

Users of the screen forms should consult with competent health care and child care professionals for advice and/or treatment respecting specific children and their particular needs.

Users should bear in mind the following when using the Screen Forms:

(i) The needs of each infant/child are unique. Each infant/child will develop differently and as such, any perceived limitations in development must be reviewed by a health care and/or child care professional to be properly assessed;

(ii) While every effort has been made to make the Screen Forms as culturally, economically and geographically neutral as possible, it must be understood by users that they may still reflect some cultural, economic or geographic prejudices. As such, these prejudices may affect a specific infant's/child's results in a Screen Form without actually reflecting a developmental limitation. Again, users should contact a health care and/or child care professional to review the needs of an individual infant/child;

(iii) The Screen Forms cannot contain every possible indicator of developmental limitations or goals to be met. As such, the Screen Forms are not designed for and should not be used to diagnose or treat perceived developmental limitations or other health needs.

Every effort has been made to ensure that the Screen Forms have been formulated with a reasonable standard of care. Except for this representation, and as otherwise specifically provided in the Screen Forms, NDDS Inc. make no representation or warranties, express or implied. This includes, but is not limited to, any implied warranty or merchantability of fitness for a particular use or purpose, and specifically disclaims any such warranties and representations. NDDS Inc. expressly disclaims any liability for loss, injury or damages incurred or occasioned as a consequence, directly or indirectly, of the use of the Screen Form.

The Screen Forms are sold with the understanding that NDDS Inc. is not engaged in rendering medical or child care advice or other professional services.

Nipissing District
Developmental Screen™

Child's Name _____

Child's Date _____ Today's Date _____

The Nipissing District Developmental Screen™ is a checklist designed to help monitor your child's development.

✔ Yes	✔ No	*By **Eighteen Months** of age, does your child...*
☐	☐	1. Identify pictures in a book (e.g. "Show me the baby")?
☐	☐	2. Use familiar gestures (e.g. waving, pushing away)?
☐	☐	3. Follow directions when given without gestures (e.g. "Throw me the ball", "Bring me your shoes")?
☐	☐	4. Use common expressions (e.g. "all gone" or "oh-oh")?
☐	☐	5. Point to at least three different body parts when asked (e.g. "Where is your nose?")?
☐	☐	6. Say five or more words? (Words do not have to be clear.)
☐	☐	7. Hold a cup to drink?*
☐	☐	8. Pick up and eat finger food?
☐	☐	9. Help with dressing by putting out arms and legs?*
☐	☐	10. Crawl or walk up stairs/steps?
☐	☐	11. Walk alone?
☐	☐	12. Squat to pick up a toy without falling?
☐	☐	13. Push and pull toys or other objects while walking? (Picture A)
☐	☐	14. Stack three or more blocks?
☐	☐	15. Show affection towards people, pets or toys?
☐	☐	16. Point to show you something?
☐	☐	17. Look at you when you are talking or playing together?

A

* Item may not be common to all cultures

18 MONTHS

Always talk to your health care or child care professional if you have any questions about your child's development or well being. See reverse side for instructions, limitation of liability, and product license.

ACTIVITIES FOR YOUR CHILD...

Emotional | Fine Muscle | Large Muscle | Learning/Thinking | Self-Help | Social | Speech/Language

Nipissing District
Developmental Screen™

The following activities will help you play your part in your child's development.

- Help me to notice familiar sounds, such as birds chirping, car or truck motors, airplanes, dogs barking, sirens, or splashing water. Imitate the noise you hear and see if I will imitate you. Encourage me by smiling and clapping.
- I am learning new words every day. Play games to help me learn the names of things. Put pictures of familiar things such as toy animals, people or objects in a bag and say "One, two, three, what do we see?" and pull a picture from the bag.
- Pretend to talk to me on the phone or encourage me to call someone.
- Don't be afraid to let me see what I can do with my body. I need to practise climbing, swinging, jumping, running, going up and down stairs, and going down slides. Stay close to me so I don't get hurt.
- Play some of my favorite music. Encourage me to move to the music by swaying my arms, moving slowly, marching to the music, hopping, clapping my hands, tapping my legs, etc. Let's have fun doing actions while listening to the music.
- Let me play with balls of different sizes. Take some of the air out of a beach ball. Watch me kick, throw, and try to catch it.
- I like toys that I can pull apart and put back together: large "LEGO", containers with lids, or plastic links. Talk to me about what I am doing using words like "push" and "pull".
- I'm not too little to play with large crayons. Let's scribble and talk about our art work.
- I like simple puzzles with two to four pieces and shape-sorters with simple shapes. Encourage me to match the pieces by taking turns with me.
- I want to do things just like you. Let me have toys so I can pretend to dress up, have tea parties, and play mommy or daddy.
- I feel safe and secure when I know what is expected of me. You can help me with this by following routines and setting limits. Praise my good behaviour.
- I like new toys so find the local toy lending library or play groups in our community.

I enjoy exploring the world but I need to know that you are close by. I may cry when you leave me with others, so give me a hug and tell me you will be back.

18 MONTHS

Always talk to your health care or child care professional if you have any questions about your child's development or well being. See reverse side for instructions, limitation of liability, and product license.

INSTRUCTIONS FOR THE NIPISSING DISTRICT DEVELOPMENTAL SCREEN™

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Parents should always talk to their health care and/or child care professional if they have questions or concerns about their child's development or well being.

Additional information is available on our website. Visit us at www.ndds.ca.

ACTIVITIES FOR YOUR BABY/CHILD

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Appendix J: Developmental Monitoring in Primary Care – Journal Article

Developmental monitoring in primary care

CYNTHIA E. GOLDFARB, MD, FRCPC
WENDY ROBERTS, MD, FRCPC

SUMMARY

Monitoring child development is an essential part of primary health care. Successful surveillance depends on physicians' thorough knowledge of normal progress along the four developmental streams: motor, language, cognitive, and social and emotional. Being alert to "red flags" that suggest problems is important. Effective interventions can minimize developmental problems.

RÉSUMÉ

La surveillance du développement de l'enfant est une composante essentielle des soins de première ligne. La réussite de cette surveillance dépend du niveau de connaissances que possèdent les médecins de la croissance normale en fonction des quatre axes de développement : motricité, langage, cognition, et développement social et émotionnel. Il est important d'être vigilant pour bien identifier les « drapeaux rouges » indiquant la présence de problèmes. Les interventions efficaces peuvent minimiser les problèmes de développement.

Can Fam Physician 1998;42:1527-1536

EARLY DETECTION OF DEVELOPMENTAL problems is increasingly being identified as one of the important tasks of physicians providing primary care to children. Emerging evidence supports the efficacy of early intervention. Recent statements by the American Academy of Pediatrics[1] and the British Joint Working Party of Child Health Supervision[2] recommend that developmental monitoring be an integral part of child health supervision. Both organizations suggest that monitoring be done by the process of "developmental surveillance."

Developmental surveillance is a flexible, continuous process in which knowledgeable professionals observe children during all health care encounters.[3] It encompasses both identification and anticipatory guidance and can be accomplished by monitoring developmental milestone attainment, eliciting parental concerns, informally observing age-appropriate tasks, and sometimes using screening tests. Effective surveillance requires physicians to have thorough knowledge of normal child development, to understand factors that might interfere with it, and to be actively monitoring for symptoms that should elicit concern.

This article focuses on the background knowledge essential for developmental surveillance. Some general guidelines for dealing with detected delays are outlined.

Dr Goldfarb *is a Fellow in Child Development at the Hospital for Sick Children in Toronto, Ont.* **Dr Roberts,** *a Developmental Pediatrician, is Education Program Director in Developmental Pediatrics and an Associate Professor in Pediatrics at the University of Toronto.*

Getting started

The process of development can be conceptualized as the result of interaction between a child and his or her environment, each profoundly influencing the other. Development proceeds along four basic streams: motor, language, cognitive, and social and emotional development. While these are clearly interdependent, they should be assessed individually in each child. The skills we use when we listen to heart sounds or examine cranial nerves (focusing attention on a series of objective findings) can be applied to developmental assessment.

Equally important to the process of surveillance are the skills of good listening and sensitive questioning. These lead to trusting relationships with parents that facilitate sharing concerns. This atmosphere is conducive to early discovery of developmental problems and to a more thorough understanding of the environmental factors (eg, psychosocial, health, economic) that affect child development.

Although most physicians find assessing child development enjoyable and often enriching, many

Table 1. **"Red flags" indicating risk of developmental problems**

AREA and AGE	FINDINGS
MOTOR	
4½ mo	Does not pull up to sit
5 mo	Does not roll over
7-8 mo	Does not sit without support
9-10 mo	Does not stand while holding on
15 mo	Not walking
2 y	Not climbing up or down stairs
2½ y	Not jumping with both feet
3 y	Unable to stand on one foot momentarily
4 y	Not hopping
5 y	Unable to walk a straight line back and forth or balance on one foot for 5 to 10 seconds
FINE MOTOR	
3½ mo	Persistence of grasp reflex
4-5 mo	Unable to hold rattle
7 mo	Unable to hold an object in each hand
10-11 mo	Absence of pincer grasp
15 mo	Unable to put in or take out
20 mo	Unable to remove socks or gloves alone
2 y	Unable to stack five blocks, not scribbling
2½ y	Not turning a single page of a book
3 y	Unable to stack eight blocks or draw a straight line
4 y	Unable to stack 10 blocks or copy a circle
4½ y	Unable to copy a square
5 y	Unable to build a staircase of blocks or copy a cross
LANGUAGE	
5-6 mo	Not babbling
8-9 mo	Not saying "da" or "ba"
10-11 mo	Not saying "dada" or "baba"

AREA and AGE	FINDINGS
LANGUAGE (continued)	
18 mo	Has less than three words with meaning, unable to achieve shared attention
2 y	No two-word phrases or repetition of phrases
2½ y	Not using at least one personal pronoun
3½ y	Speech only half understandable
4 y	Does not understand prepositions
5 y	Not using proper syntax in short sentences
COGNITIVE	
2-3 mo	Not alert to mother with special interest
6-7 mo	Not searching for dropped object
8-9 mo	No interest in peek-a-boo
12 mo	Does not search for hidden object
15-18 mo	No interest in cause-and-effect games
2 y	Does not categorize similarities (eg, animals vs vehicles)
3 y	Does not know own full name
4 y	Cannot pick shorter or longer of two lines
4½ y	Cannot count sequentially
5 y	Does not know colours or any letters
5½ y	Does not know own birthday or address
PSYCHOSOCIAL	
3 mo	Not smiling socially
6-8 mo	Not laughing in playful situations
1 y	Hard to console, stiffens when approached
2 y	Kicks, bites, and screams easily and without provocation. Rocks back and forth in crib. No eye contact or engagement with other children or adults
3-5 y	In constant motion. Resists discipline. Does not play with other children

Adapted from First and Palfrey.[4]

dread detecting abnormalities because they are unsure how to intervene effectively in the face of diminishing community resources. This is particularly true for physicians in isolated or remote communities that lack medical specialists and ancillary services, such as speech pathologists, psychologists, physiotherapists, and occupational therapists. Finding whatever local resources are available, private and public, is the first step to being able to make recommendations that can be carried out.

Many areas in Canada now have, or will soon have, access to early interventionists, professionals from many backgrounds (such as speech therapy, nursing, and early childhood education) who are trained to work with parents and preschool staff to provide optimal developmental programming. Some local day-care centres and preschools have highly skilled professionals, and interested nurses can be trained to administer formal developmental assessment tools such as the DISC[4] (Diagnostic Inventory for Screening Children). Where no intervention services are readily available, family members can be taught how to stimulate a child's development. Physicians can advocate for their communities by lobbying for improved developmental intervention services.

A physician's role in dealing with developmental problems goes well beyond referral for assessment and therapy by other professionals. Having a child with a developmental problem can cause parents grief, a sense of loss, and feelings of helplessness. As the child develops, new issues and concerns are likely to arise. Appreciating this and providing ongoing support and guidance can improve the quality of life of the whole family.

Making objective observations, creating a setting in which parents are comfortable sharing concerns, finding the best available resources, and providing support are important aspects of surveillance, regardless of which stream of development is being examined. Each stream has unique features relevant to the surveillance process.

Motor development

When parents boast about a child's early ability to sit, crawl, or walk, or fearfully mention that a child seems behind in these skills, they convey the widely held belief that a close connection exists between motor development and intelligence. Of all the streams of development, however, gross motor development is the least predictive of cognitive potential.[5] Monitoring motor development is important primarily because of the many underlying medical conditions that can manifest as motor delays.

For genetic counseling or therapeutic intervention, such conditions should be identified as early as possible. A range of normal variation in the development of gross and fine motor skills makes it necessary for physicians to recognize "red flags" that suggest problems (*Table 1*[6]).

Physicians should be concerned if an infant is not sitting independently at 7 to 8 months, or is unable to hold an object in each hand at that age. A 15-month-old should be walking and well able to put objects in and out of large containers. Attention is warranted if a 2-year-old cannot climb up or down stairs or scribble or if a 3-year-old cannot stand briefly on one foot or draw a straight line. A 4-year-old should be able to hop and copy a circle, and a 5-year-old should be able to walk a straight line and copy a cross.

Even if normal milestones are being attained, more subtle clinical findings might suggest underlying motor problems: persistent fisting of the hands (more than 50% of the time) at 3 months is not normal and might be an early sign of cerebral palsy; development of hand dominance before 15 months is unusual, and might reflect neurologic impairment of the contralateral side; precocious ability to elevate the head and neck in ventral suspension (before 3 months) might suggest hypertonia.

What to do if motor delay is detected

Delays in motor development might indicate underlying disease. Problems of the central nervous system, such as cerebral palsy, or the peripheral nervous system, such as muscular dystrophy, must be considered. Metabolic conditions (eg, hypothyroidism) and genetic syndromes (eg, fragile X syndrome) might be responsible. Clues to underlying etiology should be sought through a thorough history and physical examination. Particular attention to birth history, family histo-

ry, and developmental history could yield valuable information.

Abnormal physical findings, such as dysmorphic features; persistent primitive reflexes; asymmetric deep tendon reflexes; or abnormal muscle bulk, tone, or strength, are all especially relevant. If an underlying neurologic or medical condition is suggested, referral to a pediatrician or neurologist for further evaluation might be warranted.

Whether or not disease is suspected, referral for early intervention is indicated. Local availability and local practice patterns will dictate whether this is to an occupational therapist, physical therapist, early intervention therapist, or other professional. Children with no specific etiology for delays should be monitored every 3 to 4 months to ensure continued progress and to detect the emergence of new factors. Because many families believe that motor delays imply diminished intelligence, educating them about the nature of a child's difficulties can often be highly reassuring. Families also often underestimate the important role they have in creating an environment conducive to optimal motor development. Being taught specific techniques for helping motor skills develop can be both empowering for parents and therapeutic for children.

Figure 1. Shared attention: *Children should be able to direct the attention of another person to share their interest in something they have noticed.*

Language development

The fascination of baby with parent and parent with baby ensures attachment in the baby's first social relationship and facilitates the natural emergence of language in normal babies. Within a few years, a child progresses from a few words to virtual mastery of language. This magical process follows a predictable pattern, but has considerable normal variation in the rate and quality of its unfolding.

Significant deviations from normal development can be identified early if doctors are familiar with prelinguistic and linguistic milestones. Some physicians keep a checklist of milestones nearby; others use formal instruments, such as the Early Language Milestone Scale.[7] This tool has been shown to have relatively good sensitivity and specificity for children younger than 3 years.[8,9]

Red flags that signal a need for further evaluation include not beginning to babble by 8 months and having fewer than three meaningful words at 18 months. By 1 ½ years, a child should be able to achieve shared attention (*Figure 1*). A 2-year-old should be putting two words together, and a 3 ½-year-old's speech should be almost fully understandable. We should be concerned if a 4-year-old cannot use prepositions or if a 5-year-old is not speaking in grammatically correct, albeit short, sentences.

Physicians should remember some other important points.

- Recurrent otitis media rarely produces long-term language delays.[10,11]
- Congenitally deaf children typically have normal motor, cognitive, and psychological development in the first year of life and reach essentially normal language milestones in the first 6 to 8 months of life.[5] Examiners must assess auditory responses in young infants very carefully. Up to two thirds of congenitally deaf children can be

identified if all infants on the High Risk Registry (*Table 2*[15]) are screened early.[13]

- Deterioration or plateauing of language skills at 18 to 24 months is cause for serious concern.[14] In the past, parents reporting this were often ignored. However, it is now well recognized that, when combined with flat affect, social withdrawal, or poor engagement, this pattern can signify the onset of pervasive developmental disorder (PDD).

What to do if language delay is detected

Language is a complex skill; its development can have aberrations ranging from dysfluencies and articulation deficits to pure expressive or receptive delays to aberrant nonfunctional use of language, as in PDD. Possible causes include structural or functional abnormalities of the oromotor apparatus, hearing impairment, global developmental delay, pure language disorders, and PDD. History or physical examination sometimes suggest that referral to speech pathologists, audiologists, psychologists, neurologists, or psychiatrists could help.

Whether or not a child has a specific, intrinsic abnormality, the environment strongly influences development of language skills. Assessing such influence can help identify avenues for intervention, or, less commonly, actually determine the cause of language delay. Factors that can render a parent ineffective at teaching language include poverty, substance abuse, depression, and cognitive impairment.[15]

Reliable audiology is indicated for all children with language delay, as is referral to local early intervention services. In areas where speech and language evaluation is accessible, refer early. Putting a child into nursery school can usually be achieved fairly quickly and some children benefit greatly. Some communities have the Hanen program, a course of short workshops designed to teach parents how best to foster language development in their children.

Physicians can make practical suggestions for promoting language skills and enhancing cognitive and social skills that parents can implement immediately.

- When you have a young infant's gaze or obvious attention, make noises and sounds or sing softly.
- Repeat sounds or words the child utters.
- Repeat simple nursery rhymes in a predictable way.
- Ask questions or make comments that naturally lead to response.
- Label concrete objects in a child's environment.
- Emphasize action words in conversation with the child.
- Read to the child, and let the child see you reading for pleasure.
- Use simple language delivered slowly.

Table 2. **High Risk Registry of risk factors for sensorineural hearing loss**

Family history of hearing loss
Congenital infection
Craniofacial anomalies
Birth weight less than 1500 g
Hyperbilirubinemia at level exceeding indication for transfusion
Ototoxic medications used for more than 5 days
Bacterial meningitis
Asphyxia or low Apgar score at birth
Prolonged mechanical ventilation
Findings associated with a syndrome known to include sensorineural hearing loss (eg, Waardenburg or Usher's syndrome)

Adapted from American Speech-Language-Hearing Association.[15]

Cognitive development

Most parents delight in watching their children learn to understand the world and marvel as they acquire basic intellectual skills. One of the greatest fears parents have is that a child might be cognitively impaired. The tremendous emotional overlay associated with cognitive deficits might lead to confusion regarding terminology. The term "mental retardation" has much more serious social and prognostic implications than the term "developmental delay." The latter term

implies that a child will continue to make cognitive gains throughout development. This is often reassuring to parents, but they must understand that with time the gap between global delay and the norm typically widens.

Detecting cognitive impairment in children can be difficult. While profound mental retardation is hard to miss, milder forms can be subtly manifested in young children. Most globally delayed children achieve gross motor milestones at approximately normal times. Red flags for cognitive impairment include not alerting to mother by 3 months or not looking for dropped objects by 7 months. By 1 year babies should be searching for hidden objects, revealing a well established concept of object permanence. Two-year-olds should be able to categorize similarities (eg, big, red), and 3-year-olds should be able to say their full names when asked. By 4 ½ years a child should be able to count, and by 5 years should know several colours and some letters. Psychological testing can usually be attempted by 3 years, but might not be predictive of later outcome until a child is older than 5 years.

What to do if cognitive delay is detected

Differential diagnosis of global developmental delay is vast and is well documented elsewhere.[16] A detailed history and physical examination are essential for finding causative factors. History should particularly include prenatal factors, such as exposure to toxins or infection, and perinatal factors, such as complicated deliveries. Although birth events are generally poor predictors of developmental problems,[17] reviewing birth records can help parents who have unresolved concerns about that period. Family history should be probed for similarly affected relatives, possibly suggesting inherited conditions (eg, neurofibromatosis or fragile X syndrome). History can also clarify the adequacy of a child's environment and identify factors that might prevent a child from reaching maximum potential.

Physical examination must likewise be thorough. Focus should be on head growth, neurologic findings, and associated dysmorphic or neurocutaneous features. While investigations will be guided by historical and physical findings, hearing and vision should also be assessed. If the child is not microcephalic, DNA might be analyzed for the fragile X syndrome mutation.[18] Doing karyotype, lead level, metabolic screen,[5] or thyroid-stimulating hormone tests should be based on findings. Computed tomography is rarely clinically useful; magnetic resonance imaging sometimes aids diagnosis.

Cognitive impairment in a child is usually devastating for parents. Physicians can help immeasurably in an advocacy role. Helping families find appropriate preschools and ensuring that the child is properly identified by the school is helpful. If the community has an Association for Community Living, a family might benefit from contact with it. Parents sometimes feel deceived if a referral is made without fully explaining the child's diagnosis to them first.

Primary care physicians can help families access support groups, ministry-funded social workers, respite care, and government benefits and tax credits. Although no clear evidence indicates that globally delayed children's intelligence quotients can be improved by early intervention, children can be helped to function better and avoid secondary behavioural problems, and parents could experience less stress.[19]

Most families require emotional support and ongoing guidance as they come to terms with having a cognitively impaired child, work out plans for the future, and deal with the still-present social stigma.

Social and emotional development

The relationship between parent and child that develops in the first years of life is the springboard for the child's future interactions with other people, the template of how he or she views himself or herself, and the raw material for functioning in society, achieving happiness, and being emotionally intact.

Sadly, disruptions to this process are all too common. Countless examples of undesirable

social conduct and people with emotional disability are easily found. Primary prevention and pre-empting development of these problems has profound ramifications for both individuals and society. Understanding a child's biological endowment (ie, temperament) and knowing a child's psychosocial environment are key to successfully monitoring social and emotional development.

Since the landmark work of Chess and Thomas,[20] we have recognized that an infant's mind, far from being a tabula rasa, has a complex, unique pattern of responsiveness innate to his or her personality. Differences between infants are termed temperament and include a baby's activity level, rhythmicity, mood, and intensity and threshold of responding. Infants typically have been classified as "easy," "difficult," or "slow to warm up."

A child's temperament influences the parents' attitude and behaviour toward him or her; a child's temperament, and the degree to which it matches the parents' temperament, mediates a child's response to parental practices. Helping parents understand the role that temperament plays in a child's behaviour can be very useful. For example, if the parents of a "slow to warm up" child, who is reluctant to start a new preschool, view the behaviour as part of the child's normal style, they will allow him or her time to adapt positively and will not be concerned. If they do not appreciate this, they might view the child as timid or anxious and, instead of being patient, pressure the child to join the group, resulting in an even more difficult situation.

Among the myriad environmental variables that affect social and emotional development are family, health, economics, and culture. Children born into poverty, for example, experience not only economic deprivation but different psychological and social experiences from their better off peers.[21] Families under stress from marital conflict, parental depression, extended family problems, and so on often have difficulty nurturing their children's psychological development.

At the heart of social and emotional development lies the foundation upon which all future interactions with the social world rest: attachment of child to primary caregiver. This should be well established and evident by 12 to 14 months and is characterized by proximity-seeking behaviour, separation anxiety, and fear of strangers. Office visits are often ideal for witnessing these phenomena. Ample evidence now supports a link between secure attachment and later social development.[22]

Problems in social and emotional development are shown through a child's temperament, environmental factors, and attachment experience. Red flags include not developing a social smile by 3 months or not laughing in playful situations by 8 months. Poor eye contact or inability to be comforted by a parent is worrying at any age, as are excessive aggression, repetitive movements, and lack of interest in people.

Pervasive developmental disorders, characterized by impaired social interaction and communication and restricted, repetitive, and stereotypical patterns of behaviour, are being shown increasingly to respond to intervention, which should be sought early.[18] These conditions are biologically based, and are not the result of suboptimal social circumstances.

What to do if social and emotional problems are detected

Early intervention is essential. If a child's environment is highly disturbed, abusive, or neglectful, physicians must advocate for the child and might need to enlist child protection services.

In less severe social situations, physicians could support and guide families to remove obstacles preventing children from reaching maximum potential. Pointing out the child's temperament, and providing basic information on common behavioural challenges at different stages could help parents give better care.

Many children with social or emotional problems, even those with PDDs, appear to benefit from increased contact with other children, perhaps through play groups or library programs. Extended family members playing and reading with a child can provide the extra attention that parents sometimes cannot give.

Finally, children with social or emotional problems should be referred to early intervention therapists, if available. Some communities have more

specific supportive or therapeutic programs that might be appropriate, such as groups for depressed parents and their children or nursery programs for autistic children.

Conclusion

Watching over children as they grow and develop is one of the most rewarding, enjoyable, and challenging aspects of medical practice. Having a solid knowledge of the four streams of development enables physicians to take on the task with confidence and pleasure. Knowing the spectrum of normal and the indicators of serious delays is an ongoing learning process and is key to managing developmental surveillance effectively. Because developmental disabilities are so common (up to 10% prevalence[22]), physicians who look for them are likely to find them. Putting needed services into place in a timely fashion can be frustrating and time-consuming, particularly for those in rural areas. Once you are familiar with the services in your area, advocating for improved services might be necessary.

Despite the frustrations, watching the process of development, establishing supportive and trusting relationships with parents, and being able to make early developmental diagnoses that result in effective interventions are uniquely satisfying and enjoyable aspects of primary care medicine. ■

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Assessment of Developmental Delay

Developmental Area	Significant Red Flags	Intervention
Growth Growth charts are designed for typically developing children in North America. They may be misleading for children from other countries or children with a specific concern such as Down syndrome or premature delivery.	-Weight and height below 3rd percentile -Growth velocity less than expected -crosses 2 percentile lines -Weight less than 80% expected for age and height -Weight below 5th percentile on weight for height chart	-Examine re intake, output -Physical examination and tests to rule out syndromes, chronic disease -Psychosocial – eating and sleeping behaviour -Referral: pediatric, public health -Growth charts are available for children with Down syndrome
Motor Motor delay is not a reliable predictor of cognitive development	-41/2 mo not pulling to sit -5 mo not rolling over -7-8 mo not sitting unsupported -9-10 mo not standing holding on -15 mo not walking	-Look for neurological signs -Clues from birth history, family history -Abnormal physical findings? -Referral: pediatric or neurological, early infant development, physiotherapy -No specific cause – monitor and educate family, encourage motor development
Cognitive	-2-3 mo not alert to mother -6-7 mo not searching for dropped object -8-9 mo no interest in peek a boo -12 mo doesn't search for hidden object	-Detailed history and physical – prenatal, review birth records (not usually significant), family history -Child's environment -Support for parents re diagnosis -Advocate for support for parents and family -Look to avoid secondary problems
Language and Communication	-5-6 mo not babbling -8-9 mo not saying da or ba -10-11 mo not saying dada or baba -12 mo not gesturing – pointing or waving -24 mo no 2 word phrases -Loss of language at any age	-Audiology testing -Environment strongly influences language skills. Assess these influences – parental time, substance abuse, depression etc -Referral: speech and language evaluation, psychology, neurology, psychiatry -Possible problems: hearing problem, global delay, pure language disorders, autism spectrum disorder -Practical suggestions -Nursery school, Hanen programs etc
Social and Emotional	-3 mo not smiling socially -6-8 mo not laughing in playful situations -1 year hard to console, stiffens -2 years bites, kicks, screams easily, poor eye contact or engagement	-Early intervention needed – is child's environment abusive, neglectful, disturbed – child protection issue? -Parent training – re difficult behaviour -Increase contact with other children, extended family, extra attention -Referral: early intervention therapist – public health, developmental pediatrics etc

The Key to Developmental Surveillance is the knowledge of the spectrum of normal and the indicators of serious delays – this is an ongoing learning process. Developmental delays are common and occur in up to 10% of children.

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Appendix K: Speech, Language and Hearing

Facts about Speech, Language and Hearing

What is Communication?

Communication is the sending and receiving of information. There are four main aspects to communication:

1. Hearing is essential for the acquisition of oral communication, speech and language.
2. Language is the coded system which enables understanding, organization and expression of meaning, thoughts and ideas. It takes the form of words and patterns of words in grammatical structures. Language can be conveyed in an oral, written or gestural/sign form. It can be further subdivided into expressive language (how we express ourselves using words, gestures, etc.) and receptive language (how we understand words, gestures, etc.).
3. Speech is the production of sounds and sequences of sounds. This can be further subdivided into voice quality, fluency and articulation that all contribute to the intelligibility of what is said.
4. Pragmatics is the social aspect of turn-taking and joint attention that facilitates communication.

Causes of Speech and Language Problems

Historically causes of most communication disorders have not been known. Genetic research in the past decade has linked the most common disorder, specific language impairment, to inherited cerebral structure and function. Other speech, language and hearing disorders have been attributed to a variety of factors including maternal infection, genetics, traumatic brain injury, maxillo-facial anomolies such as cleft lip/palate, birth trauma, or syndromes (e.g. Autism Spectrum Disorder, Down Syndrome).

The home environment is also a factor to consider. Limited stimulation and family stressors can cause delay in speech/language development, but do not cause disorders. Delays due to environmental factors can be reversed with good language stimulation.

When a family member has a speech/language/hearing disorder, the children are at higher risk for communication difficulties. Pay special attention if there is a positive family history for: learning disabilities, permanent early childhood hearing loss, congenital syndromes, or if the parent indicates concern.

Key Warning Signs

Emotion and Use of Eye Gaze

–Limited ability to share attention and/or emotions with eye gaze and facial expressions
–Limited use of eye gaze shifts between people and objects
–Delayed ability to understand and follow others' eye gaze and finger pointing

Use of Communication

–Limited use of gestures and/or vocalizations to communicate
–Low rate of communication using gestures and/or vocalization
–Limited number of reasons for communication (e.g., child only communicates to protest and request food, but not to greet, label objects, etc.)
–Limited use of communication to share interest/attention with another

Use of Gestures

–Limited number of gestures (e.g., giving, showing, reaching, pointing)
–Limited use of symbolic gestures (e.g., waving, nodding head, gesture for talking on phone)
–Reliance on gestures and a limited use of vocalizations to communicate

Use of Sound

–Limited number of consonants
–Immature syllable structure (e.g., uses only consonant plus vowel combinations to represent words of varying lengths, such as na/banana or wa/water)

Understanding and Use of Words

–Delayed in understanding language and using language

Use of Objects

–Limited use of symbolic play (e.g., use of toy object to represent real object - phone, feed baby)
–Delayed spontaneous use of actions on objects in symbolic play
–Limited ability to imitate actions on objects

Other

–Positive family history
–Heightened parental concern

When to Refer

Refer all children to the Preschool Speech and Language System when the parent expresses concern or the child presents with high risk indicators or does not meet developmental milestones on the Rourke Record or Nipissing District Developmental Screen™.

Developmental Milestones The skills listed below mark children's progress as they learn to communicate and gain speech and language abilities. If your child is not meeting one or more of these milestones or if you have concerns about your child's hearing, please contact your local Preschool Speech and Language Program, listed on the back of this brochure	*By 6 months* Orients to sounds Startles in response to loud noises Makes different cries for different needs (i.e. hungry, tired) Watches your face as you talk Smiles/laughs in response to your smiles and laughs Imitates coughs or other sounds (e.g. "ah", "eh", buh")
By 9 months Responds to his/her name Responds to the telephone ringing or a knock at the door Understands being told "no" Gets what s/he wants through gestures (e.g. reaching to be picked up) Plays social games with you (e.g. "Peek-A-Boo") Enjoys being around people Babbles and repeats sounds such as "bababuba" or "duhduhduh	*By 12 months* Follows simple one-step directions (e.g. "sit down") Looks across the room to a toy when adult points at it Consistently uses 3 to 5 words Uses gestures to communicate (e.g. waves hi/bye, shakes head "no") Gets your attention using sounds, gestures and pointing while looking at your eyes Brings you toys to show you "Performs" for social attention and praise Combines lots of sounds together as though talking (e.g. "abada baduh abee") Shows an interest in simple picture books
By 18 months Understands the concepts of "in & out", "off & on" Points to several body parts when asked Uses at least 20 words consistently Responds with words or gestures to simple questions (e.g. "Where's teddy?", "What's that?") Demonstrates some pretend play with toys (e.g. gives teddy a drink, pretends a bowl is a hat) Makes at least 4 different consonant sounds (e.g. p, b, m, n, d, g, w, h) Enjoys being read to and sharing simple books with you Points to pictures using one finger	*By 24 months* Follows two-step directions (e.g. "Go find your teddy bear and show it to Grandma") Uses 100-150 words Uses at least two pronouns (e.g. "you", "me", "mine") Consistently combines 2 to 4 words in short phrases (e.g. "Daddy hat", "truck go down") Enjoys being around other children Begins to offer toys to peers and imitate other children's actions and words Words are understood by others 50% to 60% of the time Forms words/sounds easily and effortlessly Holds books the right way up and turns pages "Reads" to stuffed animals or toys Scribbles with crayons

By 30 months Understands the concepts of size (big/little) and quantity (a little/a lot, more) Uses some adult grammar (e.g. "two cookie*s*", "bird fly*ing*", "I jump*ed*") Uses over 350 words Uses action words (e.g. run, spill, fall) Begins taking short turns with peers, using both words and toys Demonstrates concern when another child is hurt/sad Combines several actions in play (e.g. feeds doll and then puts her to sleep, puts blocks in train then drives train, drops blocks off) Puts sounds at the start of most words Produces words with two or more syllables or beats (e.g. "ba-na-na", "com-pu-ter", "a-pple") Recognizes familiar logos and signs involving print (e.g. golden arches of McDonalds, "Stop" sign) Remembers and understands familiar stories	*By 36 months* Understands "who", "what", "where" and "why" questions Creates long sentences (e.g. using 5 to 8 words) Talks about past events (e.g. trip to Grandparents' house, day at childcare) Tells simple stories Shows affection for favourite playmates Engages in multi-step pretend play (e.g. pretending to cook a meal, repair a car, etc.) Understood by most people outside of the family most of the time Aware of the function of print (e.g. in menus, lists, signs) Beginning interest in, and awareness of, rhyming
By 48 months Follows directions involving 3 or more steps (e.g. "First get some paper, then draw a picture, last give it to Mom") Uses adult-type grammar Tells stories with a clear beginning, middle and end Talks to try to solve problems with adults and other children Demonstrates increasingly complex imaginative play Understood by strangers almost all of the time Able to generate simple rhymes (e.g. "cat-hat") Matches some letters with their sounds (e.g. "letter T says 'tuh'")	*By 60 months* Follows group directions (e.g. "*All the boys* get a toy") Understands directions involving "if…then" (e.g. "*If* you're wearing runners, *then* line up for gym") Describes past, present and future events in detail Seeks to please his/her friends Shows increasing independence in friendships (e.g. may visit neighbour by him/herself) Uses almost all of the sounds of their language with few to no errors Knows all the letters of the alphabet Identifies the sounds at the beginning of some words (e.g. "Pop starts with the 'puh' sound")

Appendix L: Autism Spectrum Disorder

Developmental Surveillance: Focus on 18–36 Months: Approach to Children with Identified Developmental Difficulty
By Wendy Roberts and Anita Jethwa

When a child has specific delays in communication and is not using verbal or nonverbal means to share interest with other people by 12 months of age there is cause for concern, and a careful diagnostic appraisal needs to be done from a developmental point of view. Similarly, any child who loses the use of language or social skills, particularly between the age of 9 and 24 months, needs to be looked at very carefully. When the absolute indicators for immediate evaluation are met, consideration must be given as to whether the child could have an Autism Spectrum Disorder (ASD).

The term Autism Spectrum Disorder is now replacing the term Pervasive Developmental Disorder (PDD) since Pervasive Developmental Disorder has become a confusing term for parents. Some parents have been given the diagnosis of PDD, and are then shocked a couple of years later to find out that, in fact, their child has autism. The use of the term Autism Spectrum Disorder allows the idea of progress and skill development during the initial labelling process, shifting the child in a positive direction along the spectrum. Parents may be less likely to feel that the autistic label is a permanent life sentence. Research has shown that even experienced professionals are not reliably able to differentiate between the various types of Pervasive Developmental Disorder particularly in the preschool years. The term "high functioning" has become confusing becasue it may be used to describe a child who is either intellectually high functioning or who has less autistic symptoms.

Early identification of an Autism Spectrum Disorder is critical since outcome has been shown to be quite different if children have intensive input in the preschool years. Many high functioning children have been missed in the past because, particularly with parent's scaffolding and support, observed interactions between the child and parent during a short visit to the clinic have failed to show any outstanding abnormality. A prolonged period of observation (e.g., 5–10 minutes) of the child in a play situation is needed.

Glascoe has shown that parent's concerns are in fact very accurate and need to be paid attention to. The current 1 to 3 -year lag, documented between the time when parents are first worried and when a physician first gives a diagnosis, must be reduced.

Early Parental Concerns in Autism

- -Extremes in temperament (passive to irritable)
- -Poor eye contact
- -Lack of or inconsistent response to name
- -Difficult to engage in social play

Early Identified Behavioural Manifestations of Autism (Zwaigenbaum et al, 2005)

- -Atypical early temperament (passive to extreme reactions)
- -Atypical eye contact
- -Atypical orientation to name
- -Atypical social interest and affect
- -Poor imitation skills

Some of the more classical features of autism and those seen in older children may be missing in the early years. There is not the same degree of stereotypic and compulsive behaviours. There is not the same insistence on routines and rituals. Many children are quite affectionate both in accepting and in looking for affection, and many will have eye contact particularly to get their needs met, although not sustaining eye contact for social interaction. The absence of the more typical signs has led in many cases to people making incorrect definitive statements such as, "this is definitely not autism."

When autism is suspected the best current measure is still the Checklist for Autism in Toddlers (CHAT) developed by Simon Baron-Cohen. This checklist documents parent reports of social interest, social play, pretend play, pointing to show, and bringing an object to share interest. The CHAT is the best tool that we have for specifically looking at autism at a screening level so far, although there are some limitations in its use. The CHAT has been shown to have high specificity, in that children who failed three key items on the CHAT at 18 months were shown to maintain their diagnosis of autism after 3 years. However, 50 percent of children diagnosed with autism at 3 years were not detected by the CHAT at 18 months when it was carried out in a larger population study. So the sensitivity is not nearly as good as the specificity possibly because certain features may emerge over time. As a result, if autism is suspected, further diagnosis and repetition of the CHAT must be done on a regular basis during subsequent visits.

When a child is referred on for a diagnostic assessment usually by a Developmental Paediatrician or a Psychiatrist, the clinician must be experienced and up-to-date in the assessment of autism. A diagnostic interview and observation scale must be used, in addition to either questionnaires or observing videotapes from home and a community setting. The specific use of DSM-IV criteria in children under 3 is not a reliable way to make a diagnosis. Using the DSM-IV criteria as a checklist is particularly unreliable in younger children; clinicians need to be able to interpret DSM-IV criteria and apply them in an informed age-specific manner during the history-taking process.

A unique difference in younger children with ASD is unusual sensory interests. This can include seeking of tactile input such as rubbing surfaces, squeezing balls that have different textures; dropping objects and watching them fall, or listening to them fall; watching unusual light patterns; flicking light switches on and off; and looking through their fingers at a light in the background. Sensory peculiarity may greatly limit food intake and some children will only eat very crisp food or very cold food. Many will not accept any mixtures at all. Sensory limitations from diet can lead to quite significant iron deficiency, particularly after the 18-month period.

Younger children have less of the typical autistic repetitive behaviours such as jumping, spinning, or running around in circles. Many will have subtle hand flapping or flicking and hyperextension of fingers.

Medical investigations should always include an audiological assessment with ABR's if there is any doubt about hearing. Most chromosome assessments will not reveal particular abnormalities unless there are significant dysmorphic features. The research is focusing particularly on chromosome 7 and 15, but there is no diagnostic test yet. Children will usually be screened through DNA analysis for Fragile X syndrome. If there is a history of pica, a lead level is suggested; if there is dietary restriction, look for decreased ferritin. If there is any history suggestive of a metabolic disorder then a metabolic screen should be done. Many children, especially those with disturbed sleep and those with significant regression, will have abnormalities on an overnight EEG. An awake EEG is not helpful, and most sleep deprived EEG's are difficult to interpret.

When autism is suspected, intervention must be urgent and intrusive. It involves the working together of a team that must include parents. If a child is under 2 years, a referral to the Infant Development Program so that work can start in home in terms of teaching skills to parents and working with the child to develop social reciprocity and communication. The Preschool Speech and Language Initiative needs to be involved with the speech pathologist being a key member of the team. The Hanen Parent Program "More Than Words" has been very helpful to give parents intensive education and modeling of intrusive interaction leading to the understanding of communication starting in the child. The Regional Autism Services Program and the Preschool Behavioural Autism Program should be contacted so that the child can be assessed for eligibility. Parent support and education programs run through the Geneva Centre in Toronto, which is a Children's Mental Health Centre for children with autism, as well as local autism services, such as Autism Ontario can be helpful.

During the last few years we have learned more about autism and have seen the results of early intervention. It is clear that children can do better when they are detected at an earlier age, when families are able to access more support and more financial aid for both their child's education and respite care when it is needed. In the long term, society will pay less as children do better and families cope better.

Appendix M: Checklist for Autism in Toddlers (CHAT)

The Checklist for Autism in Toddlers (CHAT)

How to Use the CHAT

1) Ask parents the 9 questions in Section A (Box 1). **2)** Complete the 5 questions in Section B by direct observation (Box 1) **3)** The 5 key items in Sections A and B (box 2) are concerned with joint attention and pretend play. The key items in Section B validate (by cross-checking) the parent's answers to the key items in Section A. The remaining non-key items (Box 2) assist in distinguishing autism from other global developmental delays, and provide an opportunity for all parents to answer "yes" to some questions. The degree of risk for autism depends on which items a child fails. See Box 3 for risk assessment.

Box 1: The CHAT – Section A: Ask Parent

1.	Does your child enjoy being swung, bounced on your knee, etc.?	Yes	No
2.	Does your child take an interest in other children?	Yes	No
3.	Does your child like climbing on things, such as up stairs?	Yes	No
4.	Does your child enjoy playing peek-a-boo/hide-and-seek?	Yes	No
5.	Does your child ever PRETEND, for example, to make a cup of tea using a toy cup and teapot, or pretend other things?	Yes	No
6.	Does your child ever use his/her index finger to point, to ASK for something?	Yes	No
7.	Does your child ever use his/her index finger to point, to indicate INTEREST in something?	Yes	No
8.	Can your child play properly with small toys (e.g. cars or bricks) without just mouthing fiddling or dropping them?	Yes	No
9.	Does your child ever bring objects over to you (parent) to SHOW you something?	Yes	No

Section B: General Practitioner or health visitor observation

I.	During the appointment, has the child made eye contact with you?	Yes	No
II.	Get child's attention, then point across the room at an interesting object and say 'Oh look! There's a (name of toy)!' Watch child's face. Does the child look across to see what you are pointing at?*	Yes	No*
III.	Get the child's attention, then give child a miniature toy cup and teapot and say 'Can you make a cup of tea?' Does the child pretend to pour out tea, drink it, etc.?**	Yes	No**
IV.	Say to the child 'Where's the light?', or 'Show me the light'. Does the child POINT with his/her index finger at the light?***	Yes	No***
V.	Can the child build a tower of bricks? (If so how many?) (Number of bricks:.....)	Yes	No

***** To record YES on this item, ensure the child has not simply looked at your hand, but has actually looked at the object you are pointing at. ****** If you can elicit an example of pretending in some other game, score a YES on this item. ******* Repeat this with 'Where's the teddy?' or some other unreachable object, if child does not understand the word 'light.' To record YES on this item, the child must have looked up at your face around the time of pointing.

Box 2: Key and non-key items

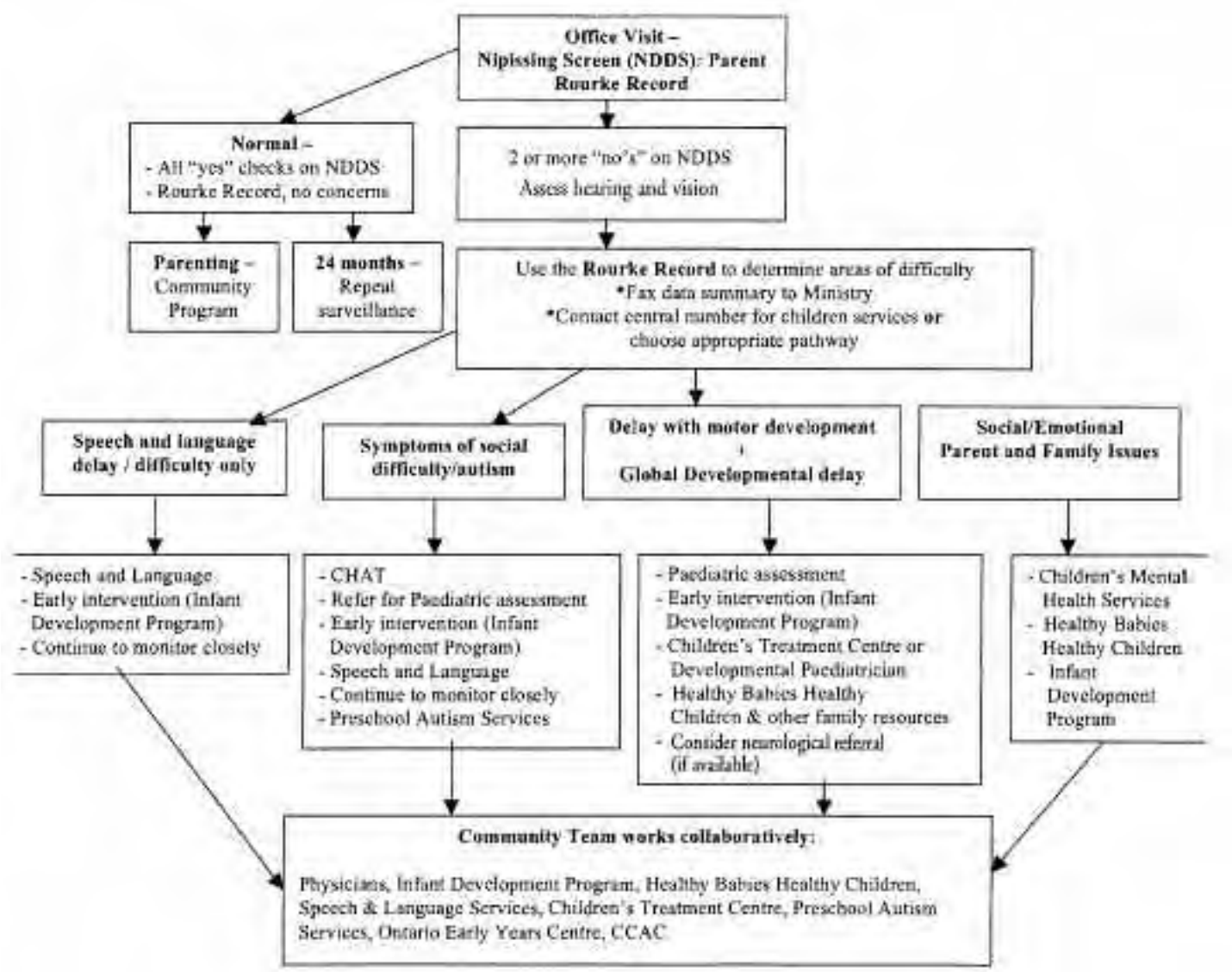
CHAT key items	CHAT non-key items	CHAT key items	CHAT non-key items
Section A		**Section B**	
A5: Pretend Play	**A1:** Rough and tumble play	**BII:** Follow a point	**BI:** Eye Contact
A7: Protodeclarative pointing	**A2:** Social interest	**BIII:** Pretending	**BV:** Tower of bricks
	A3: Motor development	**BIV:** Producing a point	
	A4: Social play		
	A6: Protoimperative pointing		
	A8: Functional play		
	A9: Showing		

Box 3: Risk Assessment

High risk for autism group	Fail A5, A7, BII, BIII, BIV
Medium risk for autism group	Fail A7, BIV (but not in maximum risk group)
Low risk for autism group	Not in other 2 risk groups

Source: Baron-Cohen, S, Wheelwright, S, Cox, A et al. Early identification of autism by the Checklist for Autism in Toddlers (CHAT). J of Roy. Soc. Of Med., Vol. 93, Oct. 521-525, 2000.

Appendix N: 18 Month Visit Flowchart



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Adapted from: Getting it Right at 18 Months... Making it Right for a Lifetime. Report of the Expert Panel on the 18 Month Well Baby Visit. Ontario Children's Health Network, Ontario College of Family Physicians. September 2005.

Appendix O: Developmental Issues in an Older Child

TEACHING CASE REPORT

Why every office needs a tennis ball:

a new approach to assessing the clumsy child

The Case: A 7-year-old boy is brought to your office by his mother at the urging of his school. Although he reads extremely well and seems to understand material that is taught, he has great difficulty producing written work, initiating and finishing tasks and participating in gym class. He has trouble sitting still, often bumps into things and other people, and his behaviour is interfering with his academic progress. Socially he is isolated, especially on the school playground, where he avoids physical activity. After educational testing, the learning resource teacher concludes that there is no evidence of a learning disability. The patient appears to be a healthy, communicative boy who slouches noticeably in his chair. His mother is teary and anxious when describing his continuing difficulties.

What is your differential diagnosis? How would you assess this child?

Motor coordination problems in otherwise healthy children of normal intelligence are common. Such children are often noted by parents, caregivers and teachers to have problems with daily tasks such as dressing themselves, to trip when they run, to spill things frequently and to have messy handwriting and drawing. They may be labelled as "clumsy," "awkward" and "lazy." Research has shown that children with these motor coordination problems often end up with serious academic and social impairments and problems with self-esteem. Developmental coordination disorder (DCD) is the term used when a child's delayed motor skill development affects his or her ability to perform age-appropriate daily activities (Box 1).

A total of 5%–6% of children meet the criteria for DCD.[1] This means that, on average, at least 1 child in every primary school classroom is affected. Children with DCD are more likely than their peers to experience learning, emotional and behavioural problems (including learning disabilities, anxiety and attention-deficit hyperactivity disorder). Further, the deficits of DCD usually persist through adolescence and into adulthood. Early recognition of the condition by primary care providers may reduce its ultimate academic, emotional and behavioural impact.

Epidemiology and natural history

DCD is commonly diagnosed after age 5, when minor motor problems (often noted when the child was young) are highlighted by the structured demands of a school environment.[1] The ratio of boys to girls varies from 2:1 to 5:1, depending on the group studied. The cause of DCD is poorly understood, since the results of genetic studies, imaging tests and other laboratory investigations are all inconclusive.

Children with DCD may appear to be inattentive because they have difficulty stabilizing their bodies and joints, so they look restless. They may also actively avoid tasks that require motor skills and become anxious in social situations. DCD and attention-deficit hyperactivity disorder frequently occur together, but the contribution of the motor difficulties to children's academic and social problems is often overlooked.

Although the pathophysiology is unknown, affected children appear to have underlying difficulties in *motor planning* (planning movements such as sitting down on a chair or figuring out how to jump), the *timing and amount of force* needed during movement (e.g., using too much or too little force to pick things up, being late reaching to catch a ball), and the *integration of information* from sensory and motor systems (e.g., relying heavily on visual information to climb stairs or fasten buttons).[2] Children may also show poor balance, slow reaction and movement times, and difficulty executing fine motor skills needed for performing self-care activities, handwriting and drawing.[2]

The natural history of DCD is of con-

Box 1: Diagnostic criteria for developmental coordination disorder[1]

A. Performance in daily activities that require motor coordination is substantially below that expected, given the person's chronological age and measured intelligence. This may be manifested by:
   - Marked delays in achieving motor milestones (e.g., walking, crawling, sitting)
   - Dropping things
   - Clumsiness
   - Poor performance in sports
   - Poor handwriting

B. The disturbance in criterion A significantly interferes with academic achievement or activities of daily living

C. The disturbance is not due to a general medical condition (e.g., cerebral palsy, hemiplegia or muscular dystrophy) and does not meet criteria for a pervasive developmental disorder

D. If mental retardation is present, the motor difficulties are in excess of those usually associated with it

Note: For a comprehensive review of the examination of clumsiness in children, please refer to the article by Hamilton.[3]

cern, not because of the motor coordination problem itself but because of its impact on everyday activities and participation. Parents express concern about coordination difficulties when the child is young, but by early school age, these concerns are more evident as problems with self-care and academic activities. By the end of elementary school, social isolation, poor self-image and victimization are evident. Physical health concerns (childhood obesity and reduced physical fitness) and mental health problems (anxiety and depression) are commonly noted by early adolescence (Fig. 1).

Screening

Annual health examinations are ideal times to screen for DCD. Parents can be asked to complete a self-administered questionnaire (see example in Appendix 1, available at www.cmaj.ca/cgi/content/full/175/5/471/DC1), or the physician can conduct a structured interview, listening for difficulties commonly associated with DCD. In addition, the physician can assess the child using simple screening activities administered in his or her office (see Appendix 2, available at www.cmaj.ca/cgi/content/full/175/5/471/DC1). Children with symptoms or signs of a motor coordination disorder require further evaluation.

An assessment that takes into account the differential diagnosis of DCD (Box 2) is necessary, since DCD is a diagnosis of exclusion. Elements of the child's history, physical examination and laboratory test profile that would make alternate diagnoses more likely are indicated.

Referral and treatment

Early referral to an occupational therapist or pediatric multidisciplinary team can help confirm the diagnosis and rule out comorbid conditions such as speech or language difficulties, attentional problems, learning difficulties and mental health problems. This type of team can also help devise early management plans that may improve the child's developmental outcomes. Successful treatment approaches involve various allied health professionals, and the child's parents, physician and teachers.[1,3]

Armed with a diagnosis of DCD, parents are in a position to advocate for their child and to adapt their child's environment to encourage independence and self-esteem. Children with DCD lack confidence in situations where motor

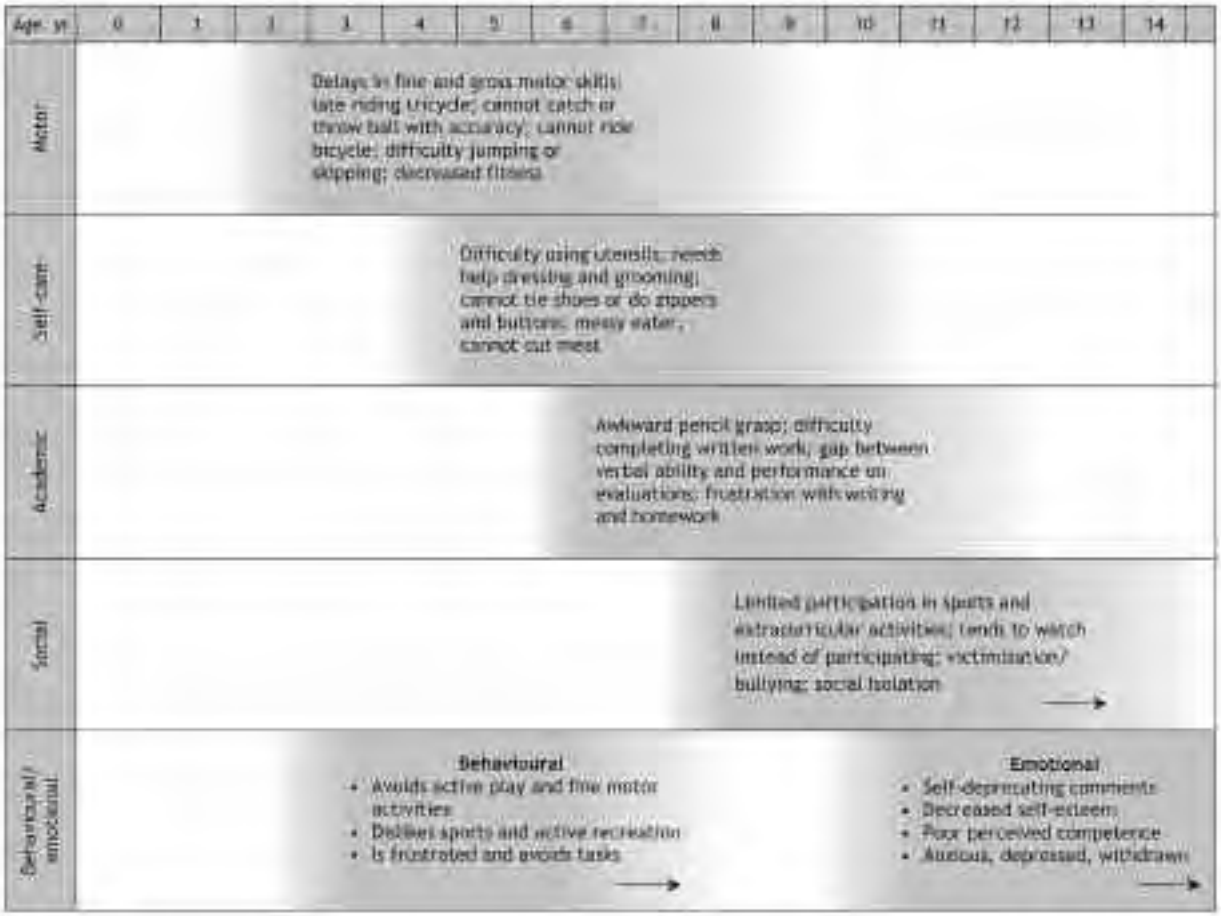

Fig. 1: Concerns typically noted by parents of children with developmental coordination disorder at different ages.

skills are required. Simple changes such as Velcro fasteners instead of buttons and laces can speed up dressing. Physical activities that naturally incorporate repetition and a constant environment, such as swimming, can be encouraged rather than team games. Teachers can reduce a child's stress and encourage academic progress by "matching" the child's abilities to the task. For example, reducing writing requirements, giving more time to complete tasks and encouraging different roles in physical education class can be helpful.[4] Resources containing teaching tips and strategies for parents and educators can be found at the *CanChild* Centre for Childhood Disability Research (www.canchild.ca).

The case revisited

Physical examination reveals that the patient has normal hearing and vision, is slightly overweight and has low muscle tone (slouches and has unstable posture in sitting and standing positions). Administration of the screening activities shows that the boy's one-legged balance is poor. His pencil grasp is awkward, he uses excessive pressure, and his printing is slow. His sitting posture at the desk is "floppy" and he props his head upright by leaning on his other hand. The patient is unable to bounce and catch a tennis ball (see video clip, available at www.cmaj.ca/cgi/content/full/175/5/471/DC2).

In the parent questionnaire, the mother indicates that her son has great difficulty with many motor-based activities, is slow to learn new motor skills and becomes easily frustrated. Further questions about his disruptive behaviour in the classroom reveal that he misbehaves only when written work is required; he is not otherwise inattentive.

DCD is diagnosed. The physician provides the boy's parents with a variety of educational materials and suggests a referral to an occupational therapist and a review in 3 months.

Box 2: Differential diagnosis of developmental coordination disorder (DCD)

The physician should systematically establish the presence or absence of other disorders that can be associated with motor incoordination, including:

- Genetic disorder (e.g., Down syndrome)
- Neurologic disorder (e.g., cerebral palsy)
- Degenerative condition (e.g., Duchenne's muscular dystrophy, brain tumour)
- Musculoskeletal disorder (e.g., Legg Perthes disease)
- Physical impairment (e.g., impaired visual acuity)
- Cognitive impairment (e.g., developmental delay)
- Pervasive developmental disorder (e.g., autism)
- Injury (e.g., traumatic brain injury)
- Environmental contaminant (e.g., lead, pesticides)

If any of the following are present, the coordination difficulties are probably not DCD:

- History of recent head injury or trauma
- History of deterioration (child has "lost" motor skills that he or she used to have)
- History of headaches, eye pain, blurred vision
- History of global developmental delays
- Increased muscle tone, fluctuating tone or significant hypotonia
- Asymmetry of tone or strength
- Musculoskeletal abnormality
- Neurocutaneous lesion
- Avoidance of eye contact, unwilling to engage socially
- Gowers' sign (difficulty rising to a standing position)
- Ataxia, dysarthria
- Absence of deep tendon reflexes
- Dysmorphic features
- Visual impairment (untreated)

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This article has been peer reviewed.

Competing interests: None declared.

Acknowledgement: *Many of the materials presented in this report were developed for physician education as part of a Primary Health Care Transition Fund grant provided by the Ontario Ministry of Health and Long-term Care.*

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ADDITIONAL RESOURCES

- CanCHILD Centre for Childhood Disability Research (www.canchild.ca): educational material for parents, teachers, service providers and members of the community available free
- DCD PACK — Physician Allied Health Collaborative Kit (www.dcdpack.ca [enter "dcdpack" as username and "dcd2006" as password]): educational material for primary care physicians

Appendix P: Pediatric Nutrition Guidelines for Primary Health Care Providers

When a child presents with several red flags, it is recommended to refer the caregiver to a registered dietitian (RD) for a nutritional assessment.

Age	Developmental Milestones and Feeding Skills	Guideline	Red Flag
Birth to 6 months	• Sucks well on nipple (1) • Finishes each feeding within 45 minutes by 4 months (1) • Signs of hunger in newborns are increased alertness or activity, mouthing or rooting. Crying is a late indictor of hunger (2)	• Exclusive breastfeeding is recommended for the first 6 months for healthy term infants (3,4) • Encourage parents to feed whenever baby show signs of hunger (2) • Encourage parents to hold their baby during feedings and make eye contact (5) • Breastfed or partially breastfed infants drinking less than 1 L (32 oz) formula should receive a daily vitamin D supplement of 400 IU (10 µg) (3, 6) • Dark-skinned infants and infants whose mothers enter pregnancy and lactation with low vitamin D status are particularly at risk for developing vitamin D deficiency rickets, 6 therefore it is important to promote the recommendation for adequate vitamin D to these parents • If an infant is not breastfed or is partially breastfed, cow's milk-based iron-fortified infant formulas are the most acceptable alternative (3,7) • Hypoallergenic formula should be given if allergy to milkbased formula is suspected (8) • Soy-based formula should be given to infants who cannot take dairy-based products for health, cultural, religious or personal reasons, such as vegan lifestyle or galactosemia (3) • Research has shown that here is no link between ironfortified infant formula and constipation (8,9) • Breastfed infants tend to become leaner than formula-fed infants after 3-4 months This should be anticipated when assessing growth to avoid unnecessary supplementation with formula or early introduction of solids (7,11) • Fruit juice, water or any beverages other than breastmilk or formula should not be given (3,4,7) • To prevent infant botulism, honey should not be given under 1 year (3) • For the prevention of allergy, the avoidance of solid food for a least 4 months and preferably 6 months is recommended (10)	• Serial growth measurements have unexpectedly crossed 2 or more centiles downwards (failure to thrive)(11) • Newborn not being fed whenever they show signs of hunger (2) • Healthy, full term breastfed infant: – Loses more than 7% of birth weight – Does not regain birth weight by 10 days – Does not have at least 3 bowel movements each day after day 1 – Does not have at least 6 wet diapers each day by day 4 with urine that is clear or pale yellow (12) • During the first 4 months, infant not being fed frequently (3) • Exclusively breastfed infant is not receiving a vitamin D supplement, particularly those at risk (3,6) • Infant formula is not iron-fortified (3) • Liquids (including water) or solids other than breastmilk or iron-fortified formula are given before 4 months (6 months is recommended) (3,10) • Infant is fed using a propped bottle (3,6) • Infant cereal is given in a bottle (3,7) • Private well water used for infant feeding is not being regularly tested (3) • For the first 4 months, water for infant formula is not brought to a rolling boil for 2 minutes (3) • Infant formula is not being mixed correctly (i.e., correct dilution)

Age	Developmental Milestones and Feeding Skills	Guideline	Red Flag
6-9 months	• At 6 months, babies are physiologically and developmentally ready for ready for solid foods (3) • Sits independently for a short time1 (3) • Drinks from a cup held by an adult (7) • Eats soft food from a spoon or adult's fingers (1) • Uses both hands to hold a bottle (13) • Prefers parents to feed (13) • Plays with spoon (7) • Initial refusal of new flavours and textures is not uncommon. It may take 3-10 offerings before an infant accepts a new food (7) • Finger-feeding can be introduced (13) • By 9 months, picks up small items using thumb and first finger (e.g., oat ring cereal) (1) • Some infants have a more sensitive gag reflex and may not tolerate anything but pureed foods at first (8)	• Continued breastfeeding is recommended (3,4) • If infant is not breastfed or is partially breastfed, cow's milk-based iron-fortified infant formulas are the most acceptable alternative until 9-12 months (3,7) • For infants unable to take cow's milk products, give commercial soy formula until 2 years (3) • At 6 months, introduce iron-containing foods, such as iron-fortified cereals (3,4) (see "Dietary sources of iron" below). Introduce vegetables and fruit next. At about 9 months, introduce whole cow's milk and milk products (3,14) • Introduce one new food at a time with an interval of 2-7 days before introducing another to allow infant to acquire a taste for a new food and make it easier to identify the cause of an allergic reaction (7,14) • Start with small serving sizes (1-3 tsp) (7) • Complementary foods should initially be provided 2-3 times a day (14) • Infants will indicate hunger or satiety. Forced feeding may promote negative associations with eating (7) • Mealtime environment should be free of distractions such as television and activities (17) • Gradually offer food with more texture, progressing from purée to mashed and then to soft finger foods of about 1/4 inch pieces (8,14) • Offer some breastmilk or formula in a cup. Use a cup regularly with meals by 8 months (8) • Wait until 1 year to introduce egg white to minimize the risk of allergic reactions (3) • Honey should not be given under 1 year (3) • Coffee, tea, cola and hot chocolate should not be given (3)	• Serial growth measurements have unexpectedly crossed 2 or more centiles downwards (11) • Breastfed or partially breastfed infant drinking less than 32 oz (1 L) formula not receiving a vitamin D supplement, particularly those at risk (3,6) • Infant formula is not being mixed correctly (i.e., correct dilution) (7) • Cow's milk is given instead of breastmilk or infant formula (3) • Iron-containing foods have not been introduced by 7 months (3,15) • Infant is not eating willingly or parents imply that they force-feed (7) • Infant is drinking more than 4 oz (125 mL) of fruit juice per day (14,16) • Fruit drinks, pop, coffee, tea, cola, hot chocolate, soy beverage, other vegetarian beverages, herbal tea or herbal products, egg white or honey is given (3) • Infant cereal is given in a bottle (3,7) • Infant is fed using a propped bottle (3,7)

Age	Developmental Milestones and Feeding Skills	Guideline	Red Flag
9-12 months	• Begins to take an active independent role in feeding (8) • Assists with spoon; some become independent (13) • Refining pincer grasp (13) • Can hold cup and suck or sip contents, but may spill (8, 7, 13) • More willing to accept lumpy textures, especially when self-feeding (8) • Initial refusal of new flavours and textures is common. It may take up to 10 offerings before infant accepts a new food (8) • Licks food from lower lip (7)	• Continued breastfeeding is recommended (3,4) • Breastfed babies should receive a daily vitamin D supplement until the infant's diet includes at least 400 IU (10 µg)/ day from other dietary sources (see "Dietary sources of vitamin D" below) or until 1 year (3,6) • Between 9-11 months, increase the number of times infants are fed complementary foods to 3-4 times a day (14) • Parents/caregivers should encourage self-feeding by offering more textured finger/table foods (7,14) • Include baby at the table for family mealtimes (17) • Mealtime environment should be free of distractions like television and activities (17) • Whole (3.25%) cow's milk can complement or replace breastmilk or replace formula between 9-12 months. (3,14) 1% or 2% milk is not recommended until age two. (3) Skim milk is inappropriate before age two (3) • Limit deli and luncheon meats such as hot dogs, bacon and smoked meat (18) • Fruit juice offers no nutritional benefits over whole fruit (16) • Offer a cup with breastmilk, formula, cow's milk, 100% juice or water during meals so that a natural transition from bottle to cup will take place (8,7)	• Serial growth measurements have unexpectedly crossed 2 or more centiles downwards (11) • Breastfed or partially breastfed infant drinking less than 1 L (32 oz) formula not receiving a vitamin D supplement, particularly those at risk (3,6) • At 10 months, consistently refuses lumpy or textured foods (15) • Infant is not supervised during feeding (3) • Drinks juice in a bottle or a transportable covered cup that allows the baby to consume juice • Fruit drinks, pop, coffee, tea, cola, hot chocolate, soy beverage, other vegetarian beverages, herbal tea or herbal products, egg white or honey is given (3)
12-18 months	• Picks up and eats finger foods (1) • Grasps spoon with whole hand (13) • Holds cup with 2 hands (13) • Holds and tips bottle (13) • Compared with the first year of life, a decreased or sporadic appetite is common (7) • Unfamiliar foods are often rejected the first time (7)	• Whole (3.25%) cow's milk can complement or replace breastmilk or replace formula.3 1% or 2% milk is not recommended until age two. (3) Skim milk is inappropriate before age two (3) • If soy formula is given to babies who cannot take dairybased products, continue until 2 years. (3) Soy beverage, rice milk or other vegetarian beverages are not recommended under 2 years due to low fat content (3) • At 12 months, babies should have a daily intake of 5 µg (200 IU) of vitamin D 3 which they can get with 2 cups (500 mL) of milk (see "Dietary sources of vitamin D" below). A supplement may need to be recommended (3, 6)	• Serial growth measurements have unexpectedly crossed 2 or more centiles downwards (11) • Breastfed child not receiving a vitamin D supplement (3,6) • Skim milk is regularly given (3) • Drinking liquids primarily from a baby bottle (15) • Not eating a variety of table foods (3) • Consistently refuses lumpy or textured foods (15) • At 15 months, does not finger/ self feed (3,15,17) • Parents not recognizing and responding to the child's verbal and non-verbal hunger cues (3) • Child is not supervised during feeding (3,17)

Age	Developmental Milestones and Feeding Skills	Guideline	Red Flag
12-18 months		• Drinking too much milk can lead to iron deficiency. Babies 12 months or older should drink 16-24 oz (500-750 mL) milk /day (19) • Parents should encourage child to feed themselves at the beginning of a meal when they are hungry, but help if they tire later in the meal (3) • The child should be included at family mealtimes (17) • Continue to provide 3-4 meals a day. Additional nutritious snacks may be offered 1-2 times a day (14) • By 12 months, babies should be eating a variety of foods from each of the four food groups of Canada's Food Guide (3,7) • If a child is eating according to the Food Guide, is growing well and is healthy, vitamin/mineral supplements are rarely necessary. The nutrient of greatest concern during this period is iron (20) • The development of healthy eating skills is a shared responsibility: parents and caregivers should provide a selection of nutritious, age-appropriate foods, and decide when and where food is eaten; babies and children should decide how much they want to eat. Pressuring a child to eat may lead to overeating or the development of aversions to certain foods (3,7,17) • Fruit juice offers no nutritional benefits over whole fruit (16) • Excessive fruit juice consumption may be associated with diarrhea, flatulence, abdominal distension, tooth decay and poor weight gain (8,17) • Fruit drinks and pop are not recommended as they displace nutrient-dense foods and beverages. Encourage parents to offer water (17)	• Excessive fluid consumption, e.g., milk (more than 24 oz a day19), juice (more than 4-6 oz a day16), pop and fruit drinks (3,7)
18-24 months	• Chews broad range of food (13) • Self-feeding predominates (13) • Displays curiosity and desire to be independent (7) • Decreased or sporadic appetite is common (7) • Food neophobia (fear of the new) increases through early childhood and then declines. (21) Unfamiliar foods are often rejected the first time (7)	• Small, nutritious, frequent and energy-dense feedings are important to meet nutrient and energy needs (3) • Avoid foods with the potential to cause choking (see "Choking and aspiration" below) (3, 7,17) • Limit deli and luncheon meats such as hot dogs, bacon and smoked meat (18) • Parents should role model healthy eating and introduce age-appropriate table manners (8)	• Serial growth measurements have unexpectedly crossed 2 or more centiles downwards (11) • Not eating a variety of table foods (3) • Skim milk is given regularly (3) • Soy beverage, rice milk, other vegetarian beverages or herbal teas are given (3) • Child is not supervised when eating (3,17) • Child does not finger/self feed (3,15,17)

Age	Developmental Milestones and Feeding Skills	Guideline	Red Flag
18-24 months	• Food likes and dislikes become prominent (7) • Tend to go on food jags (refusal of all but 4 or 5 favourite foods over an extended period) (17) • In non-controlling, non-coercive conditions, healthy children have the ability to self-regulate the amount of food and energy consumed (22)	• Let the child assume responsibility for how much to eat. Forcing a child to clean their plate may lead to overeating or the development of aversions to certain foods (7,17) • 15-20 minutes is an appropriate length of time to stay at the table (17) • If a child is eating according to the Food Guide, is growing well and is healthy, vitamin/mineral supplements are rarely necessary. The nutrient of greatest concern during this period is iron (20) • Limit fluids such as juice and milk between meals (7) • Fruit drinks and pop are not recommended as they displace nutrient-dense foods and beverages. Encourage parents to offer water (17)	• Drinking liquids primarily from a baby bottle (15) • Parents pressure or reward child to eat (17) • Child "grazes" on food all day (17) • Excessive fluid consumption, e.g., milk (more than 24 oz a day (19)), juice (more than 4-6 oz a day (16)), pop and fruit drinks (3,7)
2-3 years	• By 2 years, eats most foods without coughing and choking (1) • By 2 years, eats with a utensil with little spilling (1) • By 30 months, lifts and drinks from a cup and replaces it on the table (1) • May be resistant to new foods (17) • Food preferences increase with frequency of exposure. It may take 5-15 exposures to a new food before a child learns to like it (21,23) • It is normal for children to lose interest in mealtimes. When hungry, they will focus on eating. When satisfied, their attention turns elsewhere (7,18)	• Children aged 2 and older can get the nutrients and calories they need for healthy growth and development by following Canada's Food Guide (18) • Canada's Food Guide recommends that children aged 2-3 eat 2 cups (500 mL) of vegetables and fruit each day (18) (see "Pesticides on vegetables and fruit" below for ways to minimize pesticide residues) • Offer 2 cups (500 mL) of milk or fortified soy beverage a day to help meet the vitamin D requirement (18) • Offer a variety of nutritious foods, including some choices that contain fat such as milk and peanut butter (18) • Serve small, nutritious meals and snacks and allow the child to ask for seconds (8,18) • Structure and routine for eating is important for young children. Grazing between meals and snacks should be limited (17) • The amount of food eaten will vary day to day depending on the child's appetite, activity level and whether they are experiencing a growth spurt, or if they are excited or overly tired (18) • Let the child assume responsibility for how much to eat. Forcing a child to clean their plate may lead to overeating or the development of aversions to certain foods (7,17,18)	• Serial growth measurements have unexpectedly crossed 2 or more centiles downwards (11) • BMI-for-age ≥ 95th centile (11) • Drinking liquids primarily from a baby bottle 15,17 • Excessive fluid consumption, e.g., milk (more than 24 oz a day19), juice (more than 4-6 oz a day16), pop and fruit drinks (3,7) • Child does not self feed (3,15,17) • Parent not allowing the child to decide how much to eat (7,17,18) • Parents are using a highly restrictive approach to feeding (17) • "Grazes" on food or beverages throughout the day (17 • More than 2 hours of TV watching a day (24)

Age	Developmental Milestones and Feeding Skills	Guideline	Red Flag
2-3 years		• Encourage parents to be patient. If an unfamiliar food is rejected the first time, it can be offered again later (18) • Food should not be used as a reward (7,17,22) • Encourage parents to sit down and eat with the child, provide a pleasant setting and leave the TV off during meal times (8,18) • A multivitamin is rarely needed for a healthy child who is growing well and following Canada's Food Guide (18) • Fruit drinks and pop are not recommended as they displace nutrient-dense foods and beverages. Encourage parents to offer water (17)	
3-6 years	• By age 4, looks for adult approval (1) • Food preferences increase with frequency of exposure. It may take 5-15 exposures to a new food before a child learns to like it (21, 23) • It is normal for children to lose interest in mealtimes. When hungry, they will focus on eating. When satisfied, their attention turns elsewhere (18)	• Serve small, nutritious meals and snacks and allow the child to ask for seconds (8,18) • The amount of food eaten will vary day to day depending on the child's appetite, activity level and whether they are experiencing a growth spurt or if they are excited or overly tired (18) • Encourage parents to sit down and eat with the child, provide a pleasant setting and leave the TV off during meal times (8,18) • The use of external cues related to feeding such as prompts or rewards is likely to build resistance, food dislikes, and lack of self-regulation (7,17,22) • Encourage parents to be patient. If an unfamiliar food is rejected the first time, it can be offered again later (18) • Let the child assume responsibility for how much to eat. Forcing a child to clean their plate may lead to overeating or the development of aversions to certain foods (7,17,18) • Encourage parents to involve their child in simple foodrelated tasks (e.g., making muffins together) to encourage them to try these foods (18) • Fruit drinks and pop are not recommended as they displace nutrient-dense foods and beverages. Encourage parents to offer water (17) • Limit TV watching to 1-2 hours or less per day (24)	• Serial growth measurements have unexpectedly crossed 2 or more centiles (11) • BMI-for-age ≥ 95th centile (11) • NutriSTEP (parent administered nutrition screen for 3-5 year olds) score of 26 or greater (i.e., high nutrition risk) (25) • Parents are using a highly restrictive approach to feeding (17) • Does not self feed (3,15,17) • Not eating a variety of table foods from the four food groups in Canada's Food Guide (18) • Does not eat at regular times throughout the day (breakfast, lunch, and supper and 2-3 snacks) (17) • Drinking liquids primarily from a baby bottle (15,17) • Excessive fluid consumption, e.g., milk (more than 24 oz a day19), juice (more than 4-6 oz a day16), pop and fruit drinks (3,7) • More than 2 hours of TV watching a day (24)

General risk factors that indicate the intervention of a registered dietitian (RD) or other primary health care providers

- Family is experiencing problems around feeding – mealtimes are unpleasant; infant/child refuses many foods, or drinks excessive fluids throughout the day so is not hungry at mealtimes. Parents are possibly force feeding or offering inappropriate amounts of food.
- Parents have distorted issues with their own eating and/or body image.
- Infant/child has medical problems that make eating or drinking a problem such as swallowing issues, gagging or choking, etc.
- Infant/child has other health problems that may be related to diet such as iron deficiency anemia, constipation, obesity, or body image issues.
- Family has different beliefs related to foods (e.g., the use of herbal products, exclusion of food groups such as meat and meat alternatives, use of unsafe products such as unpasteurized milk).
- Family is low income. In order for families to access foods that will nourish them they need to have enough money.
- Family has problems with adequate food storage, cooking facilities or provision of adequate amounts of food because of lack of information.

Dietary sources of important nutrients

Dietary sources of iron: iron-fortified infant cereal, egg yolk, beef, chicken, turkey, lamb, fish, pork, legumes (beans, lentils, chick peas) and tofu. Iron from meat sources is better absorbed than iron from non-meat sources. However, as a first food, some children may not like the taste or texture of meat and refuse to eat this food. Infant cereal may have a more palatable taste and parents may be more successful starting with this type of food as a first food.

Dietary sources of vitamin D: fortified cow's milk (88 IU in 250 mL); fortified infant formula (100 IU in 250 mL); fortified plant based beverage (80 IU in 250 mL); fortified margarine (25 IU in 5 mL); salmon-cooked (103 IU in 1 oz); and egg yolk (25 IU in one). (6)

Choking and aspiration

Hard, small and round, smooth and sticky solid foods can block a young child's airway. The following foods are not safe for infants and children under 4 years of age: popcorn, hard candies, gum, cough drops, raisins, peanuts or other nuts, sunflower seeds, fish with bones, and snacks using toothpicks or skewers. The following foods are safer for infants and young children when they are prepared as described: wieners diced or cut lengthwise, grated raw vegetables or fruit, fruit with pits removed, chopped grapes, and peanut butter spread thinly on crackers or bread. Peanut butter served alone or on a spoon is potentially unsafe because it can stick in the palate or posterior pharynx leading to asphyxia. (3)

Bisphenol A

Bisphenol A (BPA) is an industrial chemical used to make a hard, clear plastic known as polycarbonate which is used in many consumer products including some baby bottles and reusable water bottles. BPA is also found in epoxy resins, which act as a protective lining on the inside of metal-based food and beverage cans. The main source of exposure for infants is from BPA migrating from the lining of cans into liquid infant formula and migrating from the polycarbonate baby bottles into the liquid inside following the addition of boiling water. Exposure levels are close to the levels where potential health effects could occur, therefore, Health Canada is working with infant formula manufacturers to reduce levels of BPA in the lining of infant formula cans and encouraging the development of alternatives. The following is the Government of Canada's advice for parents and caregivers:

- Breastmilk is the best food for optimal growth. Infant formula is still the best alternative as the nutritional benefits of infant formula far outweigh possible risk for BPA exposure.
- If using a polycarbonate bottle, water used for formula preparation should be boiled and allowed to cool to lukewarm in a non-polycarbonate container before transferring to baby bottles. This advice is consistent with proper instructions for the preparation of infant formula.
- Polycarbonate bottles can be sterilized according to instructions on infant formula labels and can be cleaned in the dishwasher. They should be left to cool to room temperature before adding the infant formula. (26)

Pesticides on vegetables and fruit

A healthy diet rich in vegetables and fruit may help reduce the risk of cardiovascular disease and some types of cancer. (18) To reduce or eliminate pesticide residues on fresh vegetables and fruit, follow these recommendations:

- Wash all fresh vegetables and fruit with running water.
- Use a small scrub brush to clean the outer skin of vegetables and fruit, if appropriate – for example, before eating apples, potatoes, cucumbers or other produce in which you eat the outer skin.
- Peel vegetables and fruit and trim the outer leaves of leafy vegetables, along with washing them thoroughly. (27)

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Ontario Society of Nutrition Professionals in Public Health

Produced by the Ontario Society of Nutrition Professionals in Public Health (OSNPPH) – Family Health Nutrition Advisory Group. Revised May 2008.

Appendix Q: Key Resources and Services in Ontario

This is a selection of key healthy child development resources and services that are available across Ontario to service providers and/or the general public. A range of supports is provided, including helpful websites, documents, programs and phone lines. The emphasis is on linking to critical supports, rather than providing an extensive list of all resources and services. Resources and services are organized by category, in alphabetical order.

Bereavement Services/Supports

Contact Information	Brief Description
Perinatal Bereavement Service Ontario Phone: 888-301-7276 Website: www.pbso.ca	Support services tailored specifically to meet the special needs of perinatally bereaved families.
Canadian Foundation for the Study of Infant Deaths Phone: 800-363-7437 Website:www.sidscanada.org	Education and support services for parents and families affected by Sudden Infant Death Syndrome (SIDS).

Breastfeeding

Contact Information	Brief Description
Breastfeeding Committee for Canada Website: www.breastfeedingcanada.ca	The national authority for the WHO/UNICEF Baby-Friendly™ Hospital Initiative in Canada.
Health Canada Website: www.phac-aspc.gc.ca/dca-ea/publications/pdf/bf_workbook_e.pdf	Resources and information about breastfeeding
La Leche League Canada Phone: 800-665-4324 Website: www.lalecheleaguecanada.ca	Assistance to breastfeeding women through support and education.
Ontario Hospital Association Phone: 416-205-1300 Website: www.oha.com	Contact information for hospital based breastfeeding clinics.

Child and Youth Mental Health

Contact Information	Brief Description
Children's Mental Health Ontario Website: www.kidsmentalhealth.ca	A provincial umbrella association representing over 80 children's mental health services.
Provincial Centre of Excellence for Child and Youth Mental Health, Children's Hospital of Eastern Ontario (CHEO) Website: www.onthepoint.ca	An organization dedicated to improving the child and youth mental health care system in Ontario through knowledge sharing and partnership building.

Child Health & Development – General

Contact Information	Brief Description
Canadian Association of Pediatric Health Centres Website: www.caphc.org	Information, knowledge & expertise, best practices, resources related to health and welfare of children, youth and their families.
Canadian Health Network – Children's Affiliate Website: www.canadian-health-network.ca/1children.html	Searchable database on child health and development, including information on play, learning, behaviour, parenting, nutrition, safety, immunization, illness and special needs.
Canadian Institute of Child Health Phone: 613-230-8838 Website: www.cich.ca	Publications and resources for parents.

Healthy Babies, Healthy Children Info line: 800-268-1154, TTY 800-387-5559 Website: www.health.gov.on.ca/english/public/pub/child/hbabies/hbabies.html	Prevention and early intervention for families with children from before birth up to six years of age, including support and services.
Infant Mental Health Promotion Program Phone: 416-813-6062 Website:www.sickkids.on.ca/imp	Education, information, networking, and advocacy to support best practices for enhancing infant mental health.
Nipissing District Developmental Screen Phone: 705-752-5081 or 888-582-0944 Website:www.ndds.ca	Screening method for identifying problem areas in child development.
Public Health Units Info line: 800-268-1154, TTY 800-387-5559 Website: www.health.gov.on.ca/english/public/contact/phu/phu_mn.html	Range of preconception, prenatal and child health services.
Rourke Baby Record Website: http://www.cfpc.ca/English/cfpc/programs/patient%20care/rourke%20baby/default.asp?s=1	System of care for well baby and child from birth to 5 years of age.

Dental Health

Contact Information	Brief Description
Ontario Government Website on Dental Health: www.health.gov.on.ca/english/hlinks/dental.html	Publications on oral health for pregnant women and children.

Fetal Alcohol Spectrum Disorder

Contact Information	Brief Description
FASD Information and Consultation Service Phone: (613) 235-4048 / 800-559-4514 Website: www.ccsa.ca/index.asp?ID=17	Information and resources about Fetal Alcohol Spectrum Disorder (FASD).
Health Canada Website: www.phac-aspc.gc.ca/fasd-etcaf/index.html	Resources and information about Fetal Alcohol Spectrum Disorder
Motherisk Alcohol and Substance Use in Pregnancy Helpline: 877-327-4636 Website: www.motherisk.org	Information and guidance to pregnant or lactating patients and health care providers regarding the fetal risks associated with alcohol and drug use during pregnancy.

Immunization

Contact Information	Brief Description
Canadian Coalition for Immunization Awareness and Promotion Website: www.immunize.cpha.ca	Information and resources for parents and health care providers about immunization.
Health Canada, Immunization Division Website: www.phac-aspc.gc.ca/irid-diir/index.html	Immunization schedules and answers to questions about immunization.
Ontario Government www.health.gov.on.ca/english/public/pub/immun/immunization.html	Information on immunization.

Multiple Births

Contact Information	Brief Description
Multiple Births Canada Phone: 705-429-0901, 866-228-8824 Website: www.multiplebirthscanada.org	Health information and support networks for multiple birth individuals and their families.
Society of Obstetricians and Gynaecologists of Canada's Multiple Births Website: http://sogc.medical.org/index_e.asp	Information and links related to multiple births.

Nutrition Resources

Contact Information	Brief Description
Canada Prenatal Nutrition Program Website: www.phac-aspc.gc.ca/dca-dea/programs-mes/cpnp_goals_e.html#what	Information and nutrition supplements during pregnancy and breast feeding.
Health Canada Infant Nutrition Information Website: www.phac-aspc.gc.ca/dca-dea/prenatal/nutrition_e.html	Information and links related to infant nutrition.
How to Feed your Growing Child Website: www.beststart.org/resources/nutrition/index.html	Resource on nutrition for 1-5 year old children.

Parenting

Contact Information	Brief Description
Canadian Child Care Federation Website: www.cccf-fcsge.ca/	Information and resources related to child care.
Caring for Kids, Canadian Paediatric Society Website: www.caringforkids.cps.ca	Information on caring for newborns, immunization, healthy eating, common childhood illnesses, behaviour and development, etc.
Child and Family Canada Website: www.cfc-efc.ca	Information and resources about children and families.
Community Action Programs for Children Website: www.phac-aspc.gc.ca/dca-dea/programs-mes/capc-strongfamilies1_e.html	Community based programs for families with young children.
Family Resource Programs Phone: 866-637-7226 Website: www.frp.ca	Drop-in programs, parenting groups, parent relief, toy libraries and information on caring for children, child development, health and safety, healthy eating, recreation and literacy.
Family Service Canada Phone: 800-668-7808 Website: www.familyservicecanada.org	Links to family service agencies across Canada that provide programs to help families in day-to-day living, in times of crisis, and in strengthening relationships.
Growing Healthy Canadians: A Guide to Positive Child Development Website: www.growinghealthykids.com	Information on healthy child development
Invest in Kids Phone: 877-583-5437/ 416-977-1222 Website: www.investinkids.ca	Resources and information for parents about healthy child development and parenting.
One Parent Families Association of Canada Phone: 877-773-7714 or 905-83 7098 Website: http://hometown.aol.com/opfa222/index.html	Social activities and emotional support for single parents and their children, including sports and other activities.
Ontario Early Years Centres Phone: 866-82 7770 Website: www.ontarioearlyyears.ca	Support and information for parents on learning, development, and health of children birth to six years old. Links parents to needed services.
Ontario Federation of Indian Friendship Centres Phone: 416-956-7575 Website: www.ofifc.org	Support and programs for Aboriginal people on health, justice, family, and employment and training.
Vanier Institute of the Family Website: www.vifamily.ca	Information and commentary about families.

Physical Activity

Contact Information	Brief Description
Canadian Society for Exercise Physiology Website: www.csep.ca/main.cfm?cid=574	Guidelines on physical activity in pregnancy
Canada's Physical Activity Guide Phone: 888-334-9769 Website: www.phac-aspc.gc.ca/pau-uap/paguide/index.html	Information about physical activity including its benefits, risks of being inactive and ideas about various ways to increase levels on a daily basis.
Mothers in Motion Website: www.caaws.ca/mothersinmotion/home_e.html	Information for mothers with young children on how lead an active lifestyle and how to encourage children to do the same.
Society of Obstetricians and Gynecologists of Canada Guidelines Website: www.csep.ca/pdfs/joint%20sogc_csep%20guidelines.pdf	Clinical Practice Guideline: Exercise in Pregnancy and the Postpartum Period.

Postpartum Depression and Mood Disorder Services

Contact Information	Brief Description
Canadian Mental Health Association Website: www.cmha.ca/bins/index.asp	Postpartum depression resource.
Our Sisters' Place Website: www.oursistersplace.ca	Support network for women, with a focus on mood disorders associated with hormonal changes throughout the lifespan.
Pregnancy and Depression Website: www.pregnancyanddepression.com	Website for professionals.

Preconception and Prenatal Services

Contact Information	Brief Description
Association of Ontario Midwives Phone: 416-425-9974 or 866-418-3773 Website: www.aom.on.ca	List of midwifery practices available in Ontario
Best Start Resource Centre Website: www.beststart.org	Range of resources on preconception and prenatal issues.
Doulas Website: www.canadiandoulas.com/ontario.htm	Contact information for Doulas, prenatal educators, breastfeeding support and midwives in Ontario.
Healthy Babies Healthy Children Info line: 800-268-1154, TTY 800-387-5559 Website: www.health.gov.on.ca/english/public/pub/ministry_reports/healthy_babies_report/hbabies_report.html	A prevention and early intervention initiative to provide support and services to families with children from before birth up to six years of age. Includes prenatal components.
Motherisk Phone: 416-813-6780 Alcohol and Substance Use in Pregnancy Helpline: 877-327-4636 Nausea and Vomiting in Pregnancy Helpline: 800-436-8477 HIV Treatment in Pregnancy: 888-246-5840 Website: www.motherisk.org	Information and guidance to pregnant or lactating patients and their health care providers regarding the fetal risks associated with drug, chemical, infection, disease and exposure(s) during pregnancy, as well as nausea and pregnancy.
Prenatal HIV Testing Website: www.health.gov.on.ca/english/providers/program/hivaids/prenatal/prenatal_mn.html	Ontario government discussion guide and checklist on prenatal HIV testing.
Society of Obstetricians and Gynaecologists of Canada Website: www.sogc.org	Information on care before, during and after pregnancy.
Women's Health Matters Pregnancy Resource Centre Website: www.womenshealthmatters.ca/centres/pregnancy/index.html	Information for expectant families about healthy pregnancy.

Pregnancy and Parental Leave

Contact Information	Brief Description
Human Resources Development Canada Website: hrdc-drhc.gc.ca/ae-ei/menu/faq/faq3_e.shtml	Information about pregnancy and parental benefits.
Ontario Government Website: Website: http://www.gov.on.ca/ont/portal/!ut/p/.cmd/cs/.ce/7_0_A/.s/7_0_252/_s.7_0_A/7_0_252/_l/en?docid=012214	Fact sheet on pregnancy and parental leave.
Ontario Human Rights Commission Phone: 800-387-9080 Website: www.ohrc.on.ca/english/index.shtml	Information about rights related to pregnancy and breastfeeding.

Safety & Protection

Contact Information	Brief Description
Lifesaving Society Phone: 416-490-8844 Website: www.lifesavingsociety.com	Information on how to prevent drowning and other water-related injuries as well as training in emergency rescue skills.
Ontario Association of Children's Aid Societies Phone: 416 987-7725 Website: www.oacas.org	Help, support and protection for children. Information on how to report child abuse.
Ontario Poison Centre Toll-free: 800-268-9017 or 416-813-5900 Website: www.sickkids.on.ca/Poison/default.asp	Hotline for parents' questions and concerns about a product their child may have eaten, drank or otherwise ingested. **24 hour service.**
Safe Kids Canada Phone: 888-723-3847 Website: www.safekidscanada.ca	Information about how to prevent injuries in children.

Smoking Cessation

Contact Information	Brief Description
PREGNETS Website: http://pregnets.org	Health care provider and patient resources about the negative consequences of smoking and environmental tobacco smoke on women, fetuses, and children.
Health Canada Smoking Information Website: www.hc-sc.gc.ca/hecs-sesc/tobacco/quitting/mothers.html	Fact sheets and resources on smoking cessation and pregnancy.
Canadian Cancer Society Smokers' Helpline Phone: 877-513-5333 Website: www.smokershelpline.ca	Phone line and website with smoking cessation advice.

Special Needs

Contact Information	Brief Description
Autism Society Ontario Website: www.autismontario.com/	Support and information for parents on learning, development, Information and referral sources on autism.
CanChild Centre for Childhood Disability Research Website: www.fhs.mcmaster.ca/canchild	Information and current research on children with disabilities and their families.
Hanen Centre Website: www.hanen.org	Helps young children to communicate to the best of their abilities through programs and resources for parents, educators etc.
Intensive Early Intervention Program for Children with Autism Website: www.children.gov.on.ca/CS/en/programs/SpecialNeeds/earlyInterventionAutism.htm	Information about assessment, training and intervention for autism.
Ontario Association of Children's Rehabilitation Services Website: www.oacrs.com	Services for children with multiple disabilities and their families, including assessment, diagnosis, treatment and community programs.

Ontario Ministry of Children's Services – Children with Special Needs Website: www.children.gov.on.ca/CS/en/programs/SpecialNeeds/default.htm	Information and services for children with special needs.

Speech, Language and Hearing

Contact Information	Brief Description
Infant Hearing Program Website: http://www.children.gov.on.ca/CS/en/programs/BestStart/InfantHearing/default.htm	Information and services for families of children with permanent hearing loss.
Ontario Association of Speech Language Pathologists and Audiologists Website: www.osla.on.ca	Links to service providers and groups working to address issues surrounding hearing loss and communications impairments
Preschool Speech and Language Program Website: http://www.children.gov.on.ca/CS/en/programs/BestStart/PreschoolSpeechLanguage/default.htm	Information and services related to preschool speech and language.

Woman Abuse

Contact Information	Brief Description
Assaulted Women's Helpline Phone: 866-863-0511 or 416-863-0511 866-863-7868 (TTY)	Crisis line for assaulted women across Ontario with simultaneous translation into 150 languages. 24 hour service.
Education Wife Assault Website:www.womanabuseprevention.com/	Information and education about physical, psychological, emotional and sexual violence against women.
National Clearinghouse on Family Violence Website: www.hc-sc.gc.ca/hppb/familyviolence/	Links to resources about violence within the family and how to address it.
Shelternet Website: www.shelternet.ca	Lists of shelters and helplines related to woman abuse.

Vision

Contact Information	Brief Description
Canadian Paediatric Society Website:www.cps.ca/english/statements/CP/cp98-01.htm	Vision screening information.

Appendix R: Resources and Referral Services Form

Your Guide to Local Services

Preconception and Prenatal Resources •Groups: •Information: •Programs for teens: •Programs for fathers:	**Contact:**
Parenting Resources •Groups: •Tapes: •Phone lines: •Counselling: •Programs for teens: •Programs for fathers:	**Contact:**
Early Education Experiences •Play groups: •Nursery school: •Library programs: •Toy lending services:	**Contact:**
Hearing Services •Infant Hearing Program – Birth to 2 years •Audiological Services	**Contact:**
Preschool Speech and Language Program – Birth to S.K. •Local contact number	**Contact:**
Autism •Autism Society •Preschool Autism Services	**Contact:**
Other Developmental Programs and Services •Developmental Pediatrician •Child and Family Assessment •Child Development Centre •Children's Services •Central Dispatch Number •Infant Development Program •Learning Disability Association	**Contact:**
Nutrition Services: •Canada Prenatal Nutrition Programs •Breastfeeding information and services •School Breakfast programs •Nutrition assessment and counselling •Food banks and other emergency food programs	**Contact:**
Other Local Services: •Bereavement Services •Postpartum Depression Support Services •Children in Need of Dental Treatment (CINOT)	**Contact:**

"Improving the Odds: Healthy Child Development" was developed as an interdisciplinary MAINPRO CME program by the Ontario College of Family Physicians in partnership with McMaster University Department of Family Medicine, Registered Nurses Association of Ontario, Public Health Units of Toronto and Niagara and the Government of Ontario. Funding for the training was provided to the Ontario College of Family Physicians by the Ministry of Children and Youth Services. This toolkit was realized with the support and assistance of Best Start: Ontario's Maternal, Newborn and Early Child Development Resource Centre with funding provided by the Ministry of Children and Youth Services.