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Well Baby Visits: Screening and Health Promotion

SUMMARY

Traditional child care consists of periodic health examinations and treatment for episodic illness. It is important to ensure that prevention, detection and early treatment of developmental problems are always done, especially in children with frequent illnesses. Educational and psychosocial factors, nutrition and physical assessment must also be stressed to promote child and family health. The authors have developed flow sheets for screening visits at age two weeks to two years, to check growth, nutrition, education, parenting, behavior, development, symptoms, examination procedures, and assessment. The sheets are a memory and charting aid in a busy office, allow other office staff to participate, and can be modified to suit the practice and the patient. (Can Fam Physician 1985; 31:997-1002)

SOMMAIRE

Traditionnellement, les soins aux bébés en bonne santé sont constitués d'une série d'examens fréquents et routiniers, ne consacrant que peu de temps aux thèmes de comportement, de développement et d'éducation. Il faut mettre l'emphase sur les facteurs éducationnels, psychosociaux et de développement, la nutrition et l'évaluation physique si l'on veut promouvoir la santé de l'enfant et de la famille. Les auteurs ont mis au point des feuilles de relance pour les visites de dépistage entre l'âge de deux semaines et de deux ans pour vérifier la croissance, la nutrition, l'édùcation, l'efficacité des parents, le comportement, le développement, les symptômes, les procédures au cours de l'examen et l'évaluation. Dans un bureau achalandé, ces feuilles sont un aide-mémoire et permettent la participation du personnel. On peut les modifier pour les adapter au type de pratique et de patients.

Key words: Well baby care, screening, health promotion

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WELL BABY care is an important part of child health care, yet considerable controversy still exists about the content, frequency, and effectiveness of these visits.

The traditional approach to well baby care has been a series of frequent, repetitive, routine examinations. Very little time may be spent on behavioral, developmental, or educational topics; 1-4 in some studies this is less than two minutes. 1, 2

The well baby visit offers a tremendous opportunity to go beyond the traditional approach to influence health behavior. 4-7 Educational, psycho-

social, and developmental factors as well as nutrition and physical assessment must be stressed to promote child and family health. McCracken et al. 8, 9 give an excellent review of these topics.

Education

This should include anticipatory guidance. ^{2, 4, 5, 7, 10-12} Child safety is one important example. Accidents continue to be the leading cause of pediatric mortality. ² Child car restraint laws and educational handouts by groups such as the Ontario Medical Association ¹³ have proved worthwhile.

Attention to psychosocial factors may improve mother/child interaction. 2, 4, 6 For example, encouraging parents to increase vocal and pleasur-

able physical contact with their infants may lead to earlier speech development and better parent/child interaction. 14

Development

The Denver Developmental Screening Test is reliable and valid^{10-12, 15, 16} for marking developmental milestones, but too involved for routine office practice. The Denver Prescreening Development Questionnaire, ¹⁷ the KIDS chart¹⁸ and other modifications^{19, 20} may be useful in some settings.

Nutrition

Nutritional advice and infant feeding customs have varied widely over the past century. Controversial issues have included breast-feeding, iron

supplementation, use of formula, and introduction of solids. The consensus now favors breast-feeding, if possible, for three to six months or longer. 9, 21 Iron stores in the full-term, healthy infant may be sufficient to meet its needs for the first four to six months of life. 9, 22, 23 While breast milk has a low iron content, it is well absorbed.^{23, 24} To avoid depletion of iron stores, some breast-fed infants require an outside iron source, such as cereals or supplemental iron, by six months of age. 23, 24, 25 Formula, if used, should be iron fortified. 21, 23, 24, 26 Despite common belief to the contrary, iron fortification does not produce an increased incidence of gastrointestinal symptoms or signs. 21, 27 Introduction of cow's milk before age six months can contribute to iron deficiency anemia, due to enteric blood loss and to decreased iron intake.28

Iron fortified infant cereals provide the major source of iron for the first two years of life, ²⁴, ²⁵, ²⁶ and thus may best be introduced at age four to six months. Other solids are best delayed until the baby is at least four months or preferably six months old. Diversity in early diet and parental atopy both contribute to childhood eczema. ²⁹ Particularly for children of atopic parents, breast-feeding and late introduction of solids (after four to six months) may be advisable.

Examination

A complete physical examination at every well baby visit is not cost effective.^{5, 30} The Task Force Report on Periodic Health Examination, ^{10, 11} the College of Family Physicians of Canada's Health Maintenance Guide¹² and other reports⁸ list various aspects of physical examination which are valuable for screening. Although more detailed, our approach incorporates this directed type of physical examination.

Immunization

Immunization schedules have been well thought out and standardized. 10-12 Our flow chart follows the Ontario guidelines. 31 Tuberculosis screening can be easily carried out in high risk population groups at 12 months of age.

Scheduling

The frequency and timing of well baby visits are controversial. The Task

Force on Periodic Health Examination^{10, 11} and the College of Family Physicians' Health Maintenance Guide¹² recommend visits at two to four weeks, two months, four months, six months, nine months, 12-15 months. 18 months and 24 months. The American Pediatric Association suggests ten visits in the first two years of life.32 Various other schedules are used in European countries. 32, 33 Hoekelman^{1, 34} and Gilbert^{32, 35} question these arbitrary guidelines and suggest fewer visits may be adequate for low risk infants, but did not define the content of these visits. Well baby visits emphasizing education, psychosocial, developmental, nutritional and physical assessment may have more impact. The schedule should be adapted to the needs of individual infants and parents.36

Flow Chart

The accompanying well baby flow chart reflects our attempt to integrate the important factors (see Figs. 1 and 2). The flow chart is augmented by standard growth charts and a problem oriented medical record folder and family filing system.

We initially developed the well baby flow chart in early 1979, and have modified it over five years in our private practices for more than 2.000 well baby visits. A flow chart provides an aide memoire for important items, especially in a busy office. It allows fast, efficient recording of many items, encouraging assessment of these factors at any visit-of particular importance for the frequently ill or high risk child. Nurses and other office personnel can also use the chart, which can be easily augmented for the high risk infant and modified to suit individual practice patterns.

How to Use The Flow Chart

The visits at age three, nine and 15 months are optional. Head circumstance, height and weight are recorded on a standardized growth chart. Temperature is usually measured at visits where immunization is planned.

Bracketed items under the nutrition heading are for discussion; non-bracketed items are for discussion and introduction. In the education, parenting and behavior category, books include publications such as Health and Welfare Canada's Canadian Mother and Child or Up the Years from One to Six. Infant or child car seats are discussed at two weeks, nine months and two years. We distribute Ontario Medical Association safety sheets and discuss home safety problems such as stairways, infant walkers on casters, electrical outlets and matches. Toilet training is discussed at 18 months, but not formally begun.

The milestone checklist in the development category is based primarily on the Denver Developmental Screening Test 75th percentile; the history is obtained from parents.

The symptoms and assessment subheadings mean the chart can be used for an ill child.

In the examination, note any abnormality to the right of each exam item.

We have found this coordinated approach helps us provide optimal well baby care.

Case 1: Jane S.

Jane is an 18-month-old child booked for her well child check-up. (See Fig. 1.) On arrival her mother states Jane is getting over a cold but has been cranky for the past two days, eating and sleeping poorly although drinking well. She has felt warm and has occasionally pulled at her ears this moming. Before this she was eating a well balanced diet of table food. Her developmental milestones are normal. Her mother wonders when she should start toilet training. It is discussed, noting that 18 months is generally too early to begin.

On examination, Jane's weight is 11.5 kg, height 83 cm, and head circumference 48 cm (all 75th percentile). Her temperature is minimally elevated at 38° rectally. Her nose is congested. Her left tympanic membrane is dull and red. The remainder of the physical examination is normal.

An incidental diagnosis of left otitis media in an otherwise healthy child is made. Her DPTP immunization is deferred, and she is given a prescription for an antibiotic. A follow-up visit to reassess her ears and consider her DPTP is made for 10 to 14 days, but her mother is instructed to return

sooner if her symptoms do not resolve.

Comment

The flow sheet adapts well for intercurrent illness, an all too common occurrence in young children. When the physician is busy treating a child's frequent illnesses, development, growth and education can get neglected; the flow chart helps prevent this.

The flow sheet streamlines the well baby visit in healthy low risk infants. It allows the physician or nurse to reassure parents of the child's development and educate on safety and other topics. The check-off format allows this to be done quickly. Several of Jane's earlier visits illustrate this.

Case 2: Jason M.

Jason is the only child of a young single mother living on mother's allowance. (See Fig. 2.) His mother brings him to the office for his two month check-up. Other than some fussy periods, his mother says he is well. He is nursing every three to four hours during the day and night. He has started to smile, and when put on his stomach can raise his head 45°. His weight is 4300 g, length 56 cm, and head circumference 38 cm. These are plotted at the 15th-25th percentile on the percentile growth graph in his chart; however, his birth weight-3300 g—is close to the 50th percentile. The remainder of his examination is normal. His mother interacts well with the doctor and nurse, but has little direct eye and voice contact with Jason.

Jason is assessed as a well child with several risk factors. His socio-economic status may be poor. He is gaining weight slowly. The observed maternal-child interaction suggests the need for more parenting education. Use of other support people, such as extended family, friends, etc., is suggested, and public health nurse visits are arranged to supplement the parenting education.

He is given his first DPTP immunization (which is initialled by the nurse, W.M.) and his mother is given an Ontario immunization card. She is instructed on possible adverse reactions to the immunization, and on the use of acetaminophen if needed.

Because of the risk factors, his mother is asked to bring Jason back for the optional three month visit.

Comment

We have included percentiles on the flow sheet in this case, but in our office we plot measurements on growth graphs.

The flow sheet is very helpful for high risk infants where it is important to assess and follow all factors. At the first visit, high risk factors can be identified under "Remarks" at the top of each sheet.

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Fig. 1.
Well Baby Assessment Flow Chart:
Two Weeks to Two Years

Birth Wt. 3400 g Remarks Vag. delivery Name: Jane S.
Apgars: 8-1-10 60 1,5,10 min Stable family Date of Birth: Sept. 25/83

, pg			Stable famil	y	Date of Birt	11. Tebr. 82/82
Age	2 wks	1 mo	2 mo	(Optional) 3 mo	4 mo	6 mo
Date	oct 9/83	Oct 27/83	Mou 26/83		Jan 26/84	Mar 29/84
Wt	3800 9	42009	62009		6.8 Kg	2BW 7.8 Kg
Ht	52 cm	55 cm	57cm		63 EM	68 cm
HC	35 cm 35 cm	36 cm	38.5 cm		41 cm	43 cm
Temp			37.2 pr		37.1 pr	37.2 pr
Nutrition	Breast / Formula (Trivisol±fluor) / (100C=150ml= 5oz/kg)	44 h	q4h (day)	(Cereal) If formula, Fe fortified	Cereal discussed (Veg/fruit) (Juice-no citrus)	•
Education Parenting Behavior	Books Car seat Safety sheets		Acetaminophen		D/C sterilizing	Home safety-stairs -walkers -elec. plugs
Development			Smiles / Stomach-raises head 45°	Laughs / Squeals / Startles to loud noises / Stomach-raises head 90°	Grasps rattle / Rolls over / Head steady / Reaches /	Supports self on hands — Almost sits alone — Babbles — Stops moving when called — Sits alone
Symptoms	up × 2. HS	Male urinary upx1 stream HS mild nasal mession Y3 d	Content, sleeps through night ays		tappy baby	Prooling
Examination		Eyes / Chest / HS / Abd / Pulses / Hips / IMs D Phar D Min . Clear hasal discharge	Font. / Eyes / Red reflex / TMs / Bell / Phar / Chest / HS / Abd. / Hips /	No head lag Eyes-follows 180° Chest HS Abd.	Eyes / Red reflex / TMs / Bell / Phar / Chest / HS / Abd. / GU / Hips /	Font. Eyes Red reflex TMs Bell Phar Chest HS Abd. GU Hips Lower central incisors erupting
Lab.						•
lmmun			DPTP / DM		DPTP 60M	DPTP NIL
Assessment	Well	mild uri	well		well	Well-tectuing
Meds	Rx Tri-vi-sul	Symptomatic breatment:				Symptomatic for teething pra
Other	RTD for I mu visit	RTD for 2 mo visit, sarlier orn	RTD for 4 mg		RTO for 6 me. visit	RTD for 1 yr. visit

(Optional) 9 mo	1 yr	(Optional) 15 mo	18 mo	2 yrs
	Oct 11/84		Apr. 9/86	
	3BW 10.4 Kg		11.5 Kg	4BW
	76 cm		83 cm	
	47cm 46.5 cm		48 cm	49cm
	37 pr		38 pr	
Cup-homo milk	Citrus start	2%	_	2% or skim
	Eggs start			
Medicine chest Poisons Car seat	Books / Safety sheets / Mom interacts well		Toilet training discussed	Matches Temper tantrums Auto safety
Oppose fingers Peek-a-boo Dada mama nonsp Stands holding Pulls to stand Gets to sitting	Dada mama specific Walks holding on Stands momentarily Walks alone	Walks well Plays ball 3 words Repeats sounds Recognizes phone, doorbell, etc.	Piles 2 blocks Scribbles Walks backwards Uses spoon well 4-6 words Points & asks	Walks up steps Kicks ball Throws ball ≥ 20 words Word groups Follows commands
			recent cold cranky K2 days palling at ears	
Eyes Chest HS Abd.	Font. Eyes / Eyes / Red reflex / Cover test / TMs / Bell / Phar / Chest / HS / Abd. / Pulses / GU—testicles Hips /	Eyes Chest HS Abd.	Ant. font. closed / Eyes / Cover test non-ap. TMs bred Mouth-teeth / Phar / Chest / HS / Abd. / GU	Eyes Red reflex Cover test TMs Hearing Mouth-teeth Chest HS Abd. GU
± Hb OR	± Hb(110-130) ± Urine			± Hb (115-145) ± Urine
	(12 mo-TB) N/ 12-15 mo. MMR WM		DPTP deferred	
	hovely healthy child		© otitis media	
	_		R. AmericIllin 125 mg 718 x7 day 2 Decongestants	
	RTO for 18 mo. visit		ATO 10-12 days earlier prints thecks ear, DPTP	

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Fig. 2. Well Baby Assessment Flow Chart: Two Weeks to Six Months

Birth Wt. 3300 g (50% ile) Apgars: 7-8-9@1,5,10 min

Remarks

Vag. delivery Young single mother Mother's allowance

Name: Jason M. Date of Birth: Kb 6/85

Monte allowance								
Age	2 wks	1 mo	2 mo	(Optional) 3 mo	4 mo	6 mo		
Date	Feb 20/85	Mar 4/85	Apr 9/86					
Wt	36509 (40%ik)	3900 (25%	43009 (15%			2BW		
Ht	52 cm	54 cm	56 cm (25%)					
HC	35 cm 35 cm	36 cm	38 cm (25%)					
Temp	3304		37 pr					
Nutrition	Breast / ¶, 3 h Formula (Trivisol±fluor) / (100C=150ml= 5oz/kg)	q , 3-4 h	9, 3-4 h (day+night)	(Cereal) If formula, Fe fortified	Cereal (Veg/fruit) (Juice-no citrus)	Cereal Veg/fruit (Meat—not pork, fish) No eggs, no citrus		
Education Parenting Behavior	Books Car seat Safety sheets	Mem coping OK	Acetaminophen Cocomoged Mom/babe internal		D/C sterilizing	Home safety-stairs -walkers -elec. plugs		
Developmen			Smiles Stomach-raises head 45°	Laughs Squeals Startles to loud noises Stomach-raises head 90°	Grasps rattle Rolls over Head steady Reaches	Supports self on hands Almost sits alone Babbles Stops moving when called		
Symptoms	ø	Male urinary / stream	fussy periods					
Examination	Fontanelles Eyes Red reflex TMs Phar Chest HS Abd. Umbilicus Pulses GU Hips Mild, non spec. diaper rash	Eyes/ Chest/ HS/ Abd/ Pulses/ Hips/ Diapar rash resdued	Font. Eyes / Red reflex / TMs / Bell / Phar / Chest / HS / Abd. / Hips	No head lag Eyes-follows 180° Chest HS Abd.	Eyes Red reflex TMs Bell Phar Chest HS Abd. GU Hips	Font. Eyes Red reflex TMs Bell Phar Chest HS Abd. GU Hips		
Lab.	_							
Immun	_		DPTP WM		DPTP	DPTP		
Assessment	well	Well	well, bilt watch 1. socioec. status 2. slow we gain					
Meds	R Zinofax R Tri-vi-sol		3. Mon-habe interaction					
Other	RTD for 1 mo. visit	RTO for 2mo.	PH nurse RTO for 3 mo visit					