

This is a text version of a podcast from PedsCases.com on “**Paediatric Health Supervision.**” These podcasts are designed to give medical students an overview of key topics in pediatrics. The audio versions are accessible on iTunes or at www.pedcases.com/podcasts.

Paediatric Health Supervision – General Approach to Newborns

Developed by Kevin Lee and Dr. Melanie Lewis for PedsCases.com.
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Introduction:

My name is Kevin Lee and I am a 4th year medical student at the University of Alberta. This podcast on pediatric health supervision of newborns has been developed in collaboration with pediatric doctors, Melanie Lewis and Chris Novak, of Stollery Children’s Hospital in Edmonton.

You are a medical student on your first day of community paediatrics and you’re excited (and possibly petrified) to see your first patient. Your preceptor asks you to see a new referral for Newborn Health Supervision. Where do you start?

Due to the nature of the topic, this podcast can seem like a long list of things to ask, do, and advise. We will include questions and answers throughout the podcast in hopes of making it more interactive and less daunting.

Also, this podcast will not discuss physical exam in detail. Please refer to the “Newborn Physical Exam Video” by Cary Ma for details.

Objectives

After this podcast, you should be able to:

1. Discuss the importance of newborn health supervision
2. List the key components of newborn health supervision, including:
 - a. History Taking
 - b. Physical Exam
 - c. Investigations
 - d. Safety & Education
 - e. Follow-Up
3. Address common parental concerns.

References

Toronto Notes and The Rourke Baby Record 2017 Edition have been used for this podcast.

The Rourke Baby Record is an evidence-based, age-specific, health supervision guide that reviews nutrition, immunizations, safety & education, and physical exams including growth & development.

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OBJECTIVE 1 - What is Newborn Supervision and why Is it Important?

NEWBORN HEALTH SUPERVISION is an age-specific visit aimed at promoting health, safety, and proper growth of the child. This happens in the community at 7-10 days of age and is not the same as the newborn assessment received at the hospital within first 24 hours of birth.

QUESTION: In addition to the above, what is one other important aspect of newborn health supervision? Hint, think how this visit relates to subsequent visits.

ANSWER: It aims to establish a good family-to-physician relationship for the many years of the child's development to come.

OBJECTIVE 2 & 3 - Key components & Parental Questions

HISTORY TAKING

At the University of Alberta, the mnemonic "I Can Help My Patients Find Some Relief" and "BIND" is often used to recall the aspects of paediatric history taking, which are respectively, "Identification, Chief Complaint, History of Presenting Illness, Meds & Allergies, Past Medical/Surgical History, Family History, Social History, and Review", and "Birth, Immunizations, Nutrition, and Development".

QUESTION: What health record can augment this process?

ANSWER: Prenatal Records & Birth Records

1. ID and CC

As with all encounters, begin by introducing yourself and asking the parents for their names. This can also be a good time to congratulate them of their new baby. Please refer to parents by their names and not "Mom" and "Dad".

Then, clarify the purpose of the visit & give a brief outline of what to expect from this encounter to ensure everyone is on the same page. This can be a good time to ask parents if they have any specific questions to help gauge what is important for them. This is especially important for first-time parents as this is likely their first paediatrician visit and it demonstrates to them you are there for them.

2. HPI - BIND

Focus the history of presenting illness to BIND (Birth, Immunization, Nutrition, Development).

Birth

The birth history includes what happened before, during, and after pregnancy. Ask for the parents age at conception, the mother's gravidity and parity, and if the pregnancy was planned or a surprise and whether she had routine prenatal care.

Then, review her medication and/or substance use, and for any concerns that arose during pregnancy including: gestational hypertension, gestational diabetes, bleeding and infections.

Finally, check the gestational age, the delivery method with or without instrumentations, birth parameters, and complications at birth.

QUESTION: What are some ways to tell from history if there were birth complications?

ANSWER: APGAR score less than 7 at five minutes, extended hospital stay (greater than 1-2 days for vaginal birth, greater than 3-5 days for C-section), or NICU/resuscitation required.

QUESTION: What 3 measurements constitute the birth parameters?

ANSWER: Weight, Length, Head Circumference

Immunization

All babies begin their first vaccination series at 2 months of age unless they have parents or siblings with Hepatitis B. In such babies, their first Hepatitis B vaccine is given at birth.

QUESTION: Which 2 vaccines might the mother need if her titres were inadequate during prenatal checkup?

ANSWER: Varicella & Rubella, because both are live vaccines contraindicated in pregnancy. She can receive these boosters at the same time as the baby's vaccination.

Nutrition

In addition to their oral intake, also consider their outs (urination and bowel movements). At this age, breastfeeding should be encouraged until approximately 6 months of age. This is because breast milk composition is species- and age-specific, is easily digested, promotes bonding, protects against infections, and reduces risk of sudden infant death syndrome (SIDS). It is also more convenient and economical than formula. Additional info about breastfeeding can be found on the Caring For Kids CPS website (<http://caringforkids.cps.ca/handouts/breastfeeding>).

QUESTION: Which babies should not receive breast milk?

ANSWER: Mothers who use recreational substances, take milk-transferrable medications such as chemo- or radiotherapy, or infected with transmissible infections such as HIV, active TB, and active herpes. These babies should be formula fed. However, latest Rourke Baby Record discourages the use of homemade infant formulas.

In regards to supplements, all babies born in hospitals received Vitamin K at birth to prevent hemorrhage. All babies should also receive 400-800 IU/day of vitamin D as long as they are breastfed.

In regards to their outs, healthy 1-week old babies will have at least 6 wet diapers per day. In this period, a tinge of blood may be found with the stool in baby girls due to withdrawal from maternal estrogen. This is normal and will resolve.

Other FAQ's regarding feeding and outs will be discussed later in this podcast.

Development & Growth

Given that the baby is only a week old, little is expected. For now, know that a healthy baby will be (1) eating (that is, sucking well on nipple), (2) sleeping, (3) peeing & pooping, and (4) gaining weight. Much of the growth & development assessment occurs in the physical section discussed later in the podcast.

3. MEDS, ALLERGIES, PMHx, PSHx

This section is similar to taking a history for any other conditions and will not be belaboured upon. However, it is an important section to discuss as it may affect the growth and development trajectory of the baby.

4. FAMILY HISTORY

First, find out who lives in the family and their ages. Another important aspect to consider are previous marriages and step-siblings. Then ask if any family members have congenital anomalies (open neural tube defects, heart deformities, cleft palate), common paediatric illnesses (asthma, eczema, allergy), genetic conditions (Trisomy 21, Cystic Fibrosis, Sickle cell), and psychiatric conditions (depression, anxiety, psychosis, ADHD). It helps to record this information as a pedigree.

QUESTION: How do you represent a male and a female on a pedigree?

ANSWER: Square and a Circle, respectively.

5. SOCIAL HISTORY

Pertinent aspects include home environment, socioeconomic factors, and substance-use in the family. Inquire about the careers of the parents, and the duration of time expected for maternity or paternity leave.

PHYSICAL EXAM

As the physical exam for newborn is quite extensive, a separate podcast has been published by Cary Ma. However, it cannot be said enough that you need to be flexible and opportunistic! That is, if the baby is quiet during history taking, auscultate first!

Also, take time to review with the parents the baby's weight, recumbent length, and head circumference. Plots these on the WHO Growth Charts. Remember to correct the baby's age until 2 or 3 years if the baby was born before 37 weeks gestational age.

QUESTION: How much weight should a newborn gain?

ANSWER: "An ounce a day except on Sundays". This works out to be 20-30 grams/day.

QUESTION: Should parents be worried if their baby weighs less than the birth weight at the newborn visit (day 7 of life)?

ANSWER: If weight loss is no more than 10% of the birth weight, no. However, inform the parents that they should regain their birth weight by day 14 of life.

Remember to involve the parents during the physical exam. For example, talking through the exam can help parents understand their baby better. Pointing out normal reflexes, the fontanelles, benign birth marks, and your pertinent negative and positive findings are very informative and reassuring.

QUESTION: When do the anterior and posterior fontanelles close?

ANSWER: 18 months and 2-4 months, respectively.

INVESTIGATIONS

After the physical exam, take a moment to review the newborn metabolic screening results. These tests are specific to each province. Additional screening may be required based on their ethnicity. For instance, hemoglobinopathy screen may be considered for babies of Asian, African, or Mediterranean descent.

In addition, discuss hearing screen. Ideally hearing screening is carried out by 1 month of age as earlier treatment has better prognosis for speech-language development and learning. Unfortunately, this is currently is not universally available across Canada.

SAFETY AND EDUCATION

Like the physical exam, feel free to be opportunistic with education during the visit. In fact, parents will be more engaged if the information is directly relevant to them. For instance, providing answers to their questions immediately is likely more helpful than waiting till the end of the visit. Understand that parents, and especially first-time parents, may have lots of questions.

The following mnemonic, "SAFETY", is to help recall topics of discussion. However don't feel that you must address all of them at the first visit; rather, tailor them to the perceived need or risk. You may choose to discuss these topics over multiple visits, or even provide a handout to take home.

S - Sudden Infant Death Syndrome (SIDS)

QUESTION: What can be done to reduce the risk of SIDS?

ANSWER: Follow the "front to play, back to sleep" motto. Share a room, but not the bed, with the baby. Use a pacifier if breastfeeding well and no history of recurrent otitis media. Avoid smoke exposure and overheating. Remember, "there is no safe level of exposure" of second-hand smoke.

A - Areas around the House

QUESTION: What can be done to the house to make it safe for the baby?

ANSWER: Install and maintain smoke and carbon monoxide detectors as smoke exposure increases risk of lung and ear pathology. Also, remove or lock up firearms and limit hot water boilers to 49 degrees Celsius to decrease accidents and burns.

QUESTION: Any recommendations for bathing?

ANSWER: According to the Rourke Baby Record, never leave them alone and do not use infant bath rings or seats.

F - Feeding & Output

QUESTION: How frequent and how much should my baby feed?

ANSWER: Healthy babies will "ask" for food every 2-3 hours. This is known as "demand feeding". Initially, they suck for 20-25 minutes, but with age and efficiency, the duration will decrease. If they are bottle-fed, give 120-150mL/kg/day of iron-fortified formula. Overall, healthy babies should gain "an ounce a day except on Sundays", or an average of 20-30 grams/day.

QUESTION: What foods should I avoid giving my child?

ANSWER: For now, and until 6 months of age, exclusive breast-feeding is recommended! The only food that is not allowed until one year of age is honey due to botulism risk! Otherwise, introduction of solids begins no later than 6 months of age and early introduction of allergenic foods such as peanuts, nuts, and eggs, is now recommended

QUESTION: What is a normal bowel movement and urine output pattern for my baby?

ANSWER: Normal bowel movement colour will vary widely but as long as it is not bloody or has no color (acholic) it's normal! Breastfed stools are usually described as "seedy yellow". As for urination, at least 5-6 wet diapers in 24 hours is normal.

QUESTION: My baby had non-projectile, milk-coloured vomit after eating. Is this normal?

ANSWER: The features of the vomit are reassuring. Due to small stomachs and weak sphincters, this is a common issue. Concerning features of emesis include: projectile, green (bilious), or bloody vomit.

E - Exposure to the environment & Travel

QUESTION: When can I use sunscreen & DEET on my child?

ANSWER: Avoid those products until at least 6 months of age. Instead, use physical barriers such as long clothes or shades.

QUESTION: When traveling in a car, how should I configure the car seat?

ANSWER: Car seats should be rear-facing and away from air bags. For details on installation, follow the model recommendations as they differ.

T - Temperature & Illness

QUESTION: My baby has a temperature of 38.5 degrees Celsius. What do I do?

ANSWER: All young infants (less than 6 weeks of age) with a fever should be evaluated promptly by a health care professional as they are at higher risk of serious infection.

QUESTION: Can I use cough medications when my baby is sick with the cold?

ANSWER: The CPS recommendation is that over-the-counter cough and cold medications should not be used because they have been shown to be ineffective and have significant side effects.

Y - Your (parent's) own health

QUESTION: What personal and social aspects should be considered?

ANSWER: Counsel parents of post-partum blues and depression, fatigue, and the need for self-care. In addition, screen for possible family/household violence. Discussion regarding social determinants of health may also be beneficial in preventing child maltreatment.

QUESTION: How can the above influence the baby?

ANSWER: Above factors can increase risk of Shaken Baby Syndrome, neglect or child abuse in general.

FOLLOW-UP

That was a lot of information but you're almost done! Before saying good bye, schedule a follow-up with either yourself or another paediatrician. For a health visit, the next recommended appointment is at week 4-6 weeks of life. An optional visit can be arranged at week 2, especially for first-time parents, complex patients, or infants with inadequate weight gain.

Remember to follow-up for any current or new referrals to specialists such as dietician, speech, audiology, etc. as needed.

Finally, parenthood is a stressful work. Your encouragement of the parents on their parenting skill can go a long way so don't spare those compliments and encouragements!

Conclusion

Thank you for listening to this podcast. This podcast has reviewed the importance and various components of Newborn Health Supervision. Also, common FAQ's from parents were discussed. Visit the PedsCases website for a written version of this podcast.

References

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