The Rourke Baby Record - An Overview

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Introduction:

Hi, my name is Katherine Goren, and I am a 3rd year medical student at the Schulich School of Medicine. This podcast on the Rourke Baby Record (RBR) has been developed in collaboration with family physician and RBR creator, Dr. Leslie Rourke.

This podcast will provide an overview of the RBR and how to use it in clinical practice through a case example. The podcast will be delivered in both interview and lecture format, include questions and answers, and a clinical case to make it more interactive and engaging.

Objectives

After listening to this podcast, the learner should be able to:

1. Understand the importance of a standardized format for well-baby visits such as the RBR.
2. Describe the key components of the RBR.
3. Identify changes in the 2020 edition of the RBR.
4. Begin to apply the RBR in clinical practice.

Let's start with a case:

You are a medical student on your first day of your family medicine rotation and your preceptor asks you to perform a well-baby visit on your first patient, an 18-month-old male. Where do you begin?

OBJECTIVE 1 – What is the RBR and why it is important?

The RBR is an evidence-based tool used by healthcare professionals in conducting well-baby visits in children from 1 week to 5 years of age.[1] The RBR includes five guides for conducting well-baby visits - children 0 to 1 month, 2 to 6 months, 9 to 15 months, 18 months to 5 years, and an immunization record – followed by 4 resources pages with a current evidence summary for the items on the RBR Guides.[1] The RBR forms should be accompanied by age-appropriate World Health Organization (WHO) Canadian growth charts.[1]

Interview question:

Katherine: Dr. Rourke can you tell me the story behind the RBR and why well-baby care is important?

Dr. Rourke: When Dr. James Rourke and I began medical practise as young rural family doctors in Goderich, Ontario in 1979, well-baby visits consisted mainly of physical examination, immunization, and sometimes growth measurement.

We had the sense that the most benefit of a well-baby visit lay in addressing issues beyond those. The most value, especially in healthy infants and young children, may actually be in things that are hard to research with randomized control trials – such as providing developmental surveillance, forming a trusting relationship with parents, answering their questions, and providing guidance for common health topics such as nutrition, injury prevention, and behaviour and parenting issues. With this in mind, we drew up the first Rourke Baby Record, also known as the RBR or "the Rourke", for use in our family medical practice.

We now know that early childhood has a huge influence on one's physical, cognitive, social, and emotional health throughout life, and even into the next generation.
Early brain development is sequential; it has sensitive periods; and it is affected by experiences. Research has shown that brain development in early childhood is an interaction between genes and the environment, known as epigenetics. The model of 'nature vs. nurture' has now shifted to one of 'nature and nurture'. The experiences and environments of infants and young children affect how genes are activated and expressed throughout life and how they are passed down to the next generation.

Given this window of opportunity, preventive care for families of young children is increasingly important. It is especially relevant when it is based on current best evidence.
Much like children do, the RBR has gone through different developmental stages over the last 40+ years. It now has a core team of family physicians and paediatricians, a clinical advisory group of users, and a skilled research team. It has undergone validation testing. Its distribution has changed from a mailed out and photocopied paper form, to downloading and printing off its website, to incorporation in electronic medical records and apps. It is included in the 2020 LearnFM Canadian Clinical Cards distributed to all Canadian medical schools.

The Rourke Baby Record is affiliated with the Canadian Paediatric Society, and is officially endorsed by them, and by the College of Family Physicians of Canada, and Dietitians of Canada.

Because evidence is constantly evolving, the RBR has been revised every 3 - 4 years to keep it current.

Our goal has always been to freely provide evidence-informed current knowledge to healthcare providers and families. This enables preventive healthcare of infants and young children that is family-centred, up-to-date, efficient, and effective.
Besides, providing well-baby care is a very enjoyable and gratifying part of practice. I hope you have fun with this PedsCase.

Thanks to Katy for putting it all together, and good luck to all of you in your future careers.

Website overview:
It may be helpful to pause the podcast here and go to the RBR website to find available resources and follow along for the rest of the podcast with the RBR guides.

The RBR website www.rourkebabyrecord.ca includes a wealth of information for healthcare professionals as well as for parents, caregivers, and families.[1]

At the top of the RBR website there are seven tabs – including **Home**, **Downloads** where the RBR National and Ontario versions can be downloaded, **Interactive RBR** including all five RBR guides for different ages in an interactive format, **Evidence Summary** containing recommendations from the four RBR resources pages, **Parent Resources** that assists parents in finding reliable answers to common questions about their child's health, **Literature Review** of current evidence, and **Other Initiatives** containing the Greig Health Record and official RBR modifications by locales.[1] If you scroll to the bottom of the website, you will see a tab called **RBR Editions/Revisions** which contains the updated 2020 RBR with changes implemented since 2017 shown in teal print.[1] Lists of all content changes in each RBR edition after 2006 are available.[1] If you are interested, we recommend that you explore the content contained in each of the tabs.

OBJECTIVE 2 – What are the key components of the RBR?

The RBR contains eight categories that are filled out at each well baby visit from 1 week to 5 years of age.[1] The categories include:

1. **Growth parameters**, including weight, length/height, and head circumference. This data should be plotted in the WHO Canadian growth charts as growth trajectories are essential.[1]
2. **Parent/caregiver concerns,** it is important to discuss and address parental concerns at each visit.[1]
3. **Nutrition,** which includes items such as breastfeeding, solid food intake, stool pattern, and urine output.[1]
4. **Education and advice,** including injury prevention, behavioral and family issues, environmental health, and oral health.[1]
5. **Development**, developmental milestones should be observed and asked about.[1] The milestone tasks in the RBR are set after the time of typical acquisition.[1] Absence of any item suggests that further assessment of development should be considered.[1]
6. **Physical examination**, an age-appropriate physical examination is recommended at each well baby visit.[1]
7. **Problems and plans/current and new referrals**, this can include referrals such as to physical therapy and social determinant of health resources.[1]
8. **Investigations/screening and immunization,** the benefits to childhood immunization should be discussed with caregivers as well as immunization pain reduction strategies.[1]

Going over these categories and mapping a child's progress over time provides an overview of the child's health and well-being.[1] Given the evolving nature of evidence and recommendations, the RBR is meant to be used as a guide only.[1]

The 3 print types used on the RBR correspond to the item's strength of recommendation based on current literature:

- **Good evidence (bold type),**
- *Fair evidence (italics type),*
- Inconclusive evidence/consensus (plain type).[1]

Not every item on the RBR must be asked at each visit.[1] Some items you may have sufficient information from previous well-baby visits.[1] In contrast, for other items you may perceive need or increased risk.[1]

Question 1:
QUESTION: What is the difference between developmental surveillance, developmental screening, and a case finding?
ANSWER:
Developmental surveillance is the ongoing monitoring of development, identification of risk factors and elicitation of parental and caregiver concerns.[2-4] Developmental surveillance should be performed during every well-baby visit.[3,4] The RBR, for example, is a structured evidence-informed tool which can be used for the purpose of developmental surveillance.[1]
Developmental screening is the use of a standardized tool to search for developmental delay in asymptomatic populations.[2-4] An example is the Modified Checklist for Autism in Toddlers (M-CHAT).[3] This screening tool is for use in low-risk toddlers between 16 and 30 months of age.[3]
Case finding is the identification of developmental delay in populations that are at increased risk of developmental delays.[4]

OBJECTIVE 3 and 4: What are changes in the 2020 edition of the RBR and how do you use the RBR?

Clinical case:
Let's get back to our clinical case. Your patient today is James, an 18-month-old male born at 41 weeks gestation. To make this an active learning experience we recommend that you download RBR Guide IV, for ages 18 months to 5 years off the RBR website and fill it out as we go through the case. Items highlighted in teal text on the podcast transcript represent new editions to the 2020 version of the RBR. As mentioned previously, updated and new items in the 2020 RBR are shown in teal print and the 2020 version can be downloaded and printed in colour.

The 18-month-old visit is particularly important as it is an optimal time to assess development, and it has the last scheduled immunization (other than yearly flu shots) prior to school age. In some provinces an enhanced 18-month well-child visit has a higher fee remuneration.[5,6] For example, the enhanced 18-month visit in Ontario https://www.ontario.ca/page/enhanced-18-month-well-baby-visit requires completion of both a comprehensive well-baby form such as the RBR and a parent/caregiver tool such as the Looksee Checklist by NDDS© to determine if there are any concerns in the child's development that need to be addressed.[5-7]

You read James's chart and see that he was born at a weight of 3.5 kg, length of 54 cm, and head circumference of 34 cm all which are in normal range. He has no past problems or risk factors listed and no pertinent family history. You look over his immunization record and note that all immunizations are up to date. After reviewing James's chart in full and going over the 18-month RBR guide you enter the clinical examination room.

Growth
You start the visit by assessing James's growth. At his 15-month visit he was just above the 50th percentile for weight, length, and head circumference. Today he weighs 12 kg, has a length of 85 cm, and a head circumference of 48cm.
Based on these measurements you determine that his growth is trending normally. You would be concerned if he was below the 3rd percentile or had crossed 2 percentile lines on the WHO Canadian Growth Charts throughout his visits.[8]

Question 2:
QUESTION: How long should corrected age be used for premature infants born at <37 weeks gestation?
ANSWER: Corrected age should be used until 24 to 36 months of age.[1]

Parent concerns
You ask James's parents if they have any concerns. They mention that their 6-year-old daughter has a peanut allergy and are concerned that James will develop one as well. You advise the parents that since they introduced James to allergenic foods at 4 to 5 months of age, including peanuts and eggs, and have continued to regularly feed James those foods with no issues, his risk of developing a peanut allergy is very low.[1]

Nutrition
- You ask if James is still **breastfeeding**. The parents answer that he stopped breastfeeding after the 15-month-visit without problems. Breastfeeding may continue up to 2 years and beyond unless it is contraindicated and if it is supplemented with solid foods when the infant shows signs of readiness for solids, after 4 months of age and usually a few weeks before to around 6 months of age.[1] Iron containing foods should also be introduced at this time.[1]
- His parents say that James drinks about 500 mls of homogenized milk per day and eats all table foods.
- You ask about James's **juice consumption**. His parents note that James drinks a cup of orange juice everyday with breakfast. You counsel the parents that fruit juices should be limited to a max of ½ a cup per day to limit sugar consumption.[1]
- Because James is now walking, you remind his parents that to **avoid choking** he should be seated while eating and drinking and should avoid hard, small and round, smooth, and sticky foods until he is 4 years old.[1]

At previous visits the clinician confirmed that James was able to feed independently, was not using a bottle, and that his parents were not considering feeding him a vegetarian diet, so you do not repeat these questions.

Education and Advice
Injury prevention
- You inquire about **car safety** and remind James's parents to never leave James unattended in a vehicle, and you ask about his car seat. His parents say that the recommendations for his specific car seat are that with his size, James will likely remain in his current backwards facing car seat until 2 years of age, and then it can be turned to be forward-facing. Children should stay in each stage as long as possible according to the manufacturer instructions; and need to be at least 1 year of age and weigh at least 10 kg to use a forward-facing seat with a harness.[1]
- You ask if **medications, toxins, and cleaners** are locked up and out of James reach in the home. His parents confirm that all dangerous substances are not accessible to James.
- You remind his parents to pay close attention to any hot liquids on countertops to avoid any **accidental burns**.[9,10]

Behaviour
- You ask about James's **sleep**. His parents share that he sleeps 12 hours per night, which is within the recommended guideline of 11-14 hours for 18-month-old children.[1]

- To note, **safe sleep** should be assessed in children from 1 week to 9 months focusing on sleep position, avoiding bed sharing, and promoting crib safety.[9,10] Additionally, swaddling should not be used once a child is showing signs of attempting to roll[9,10].
- The clinician has discussed **supportive positive parenting** at a past visit with no concerns, so you do not inquire about parenting or discipline strategies.

Family

- You ask if James has any **screen time**. His parents mention that he watches shows on the iPad sometimes when they are making dinner for 20 minutes at a time. You discuss that screen time is not recommended for children under 2 years of age apart from video chatting and if possible, it would be best to reduce James's screen time.[1]
- You ask if there are any new **food insecurity** concerns. His parents share that they are not concerned about their financial situation and have no difficulty providing food for James.

Environmental health

- At previous visits the parents mentioned that no one smokes in the home or uses e-cigarettes or cannabis, and that James is not at risk of exposure to secondhand smoke, so you do not inquire further. If there are cigarettes, e-cigarettes, or cannabis in the home ensuring safe storage of these products out of reach of children is important.[9,10]
- You have discussed sunscreens in the past, but today discuss preventing mosquito and tick bites.[1,11]

Other

- You ask if James has seen a **dentist**. His parents mention that due to the COVID-19 pandemic, this has not happened. However, they do brush his teeth and gums two times per day and plan to take James to the dentist in the next few weeks.

Development

When assessing development, the recommendations for the early detection, diagnosis, and management of autism spectrum disorder should be followed.[9,10] You inquire about James's development including social/emotional, communication skills, motor skills, and adaptive skills. James's parents describe that he likes playing blocks with other children, can say more than 15 words and points at toys he wants to play with. He is also able to walk independently and remove his socks without assistance. The parents share no concerns regarding James's development. Reading and singing should be encouraged beginning with young infants.[9,10]

If you are in Ontario, you ask that James's parents complete the Looksee Checklist by NDDS© which contains 17 items regarding development that caregivers answer as "yes" or "no".[7] If caregivers answer "no" to any of the questions or have any concerns about their child's development, they are advised to follow-up with their healthcare provider.[7] James's parents complete the checklist and answer "yes" to all the questions.[7]

Physical examination

You conduct a comprehensive age-specific physical examination. Cardiac, respiratory, and abdominal examinations should be performed at every visit, as should measurement of growth parameters.[9,10] The exam items on the RBR Guides are generally listed from the head down. However, in real practice, the examination depends on enlisting the cooperation of the child and should start with the least invasive parts like auscultation first and end with more irritating exams like ears and throat. For an 18-month child, much of the exam can be completed while sitting on a parent's lap.

James appears quiet, so you observe him first. You notice that when you say his name, he looks at you. You also watch him walk. You ask his mom to hold James on her lap while you conduct the rest of your examination. You then auscultate James's lungs and heart with your stethoscope, which you first warm with your hand. You auscultate first on his back as it doesn't feel as cold as on the front. You then palpate his abdomen with him leaning against his mom, while playing a game of peek-a-boo. Playing peek-a-boo during the examination can be a helpful way to engage and distract the child. Next, you use your ophthalmoscope light to check for James's corneal light reflex, retinal red reflex, and cover-uncover test. With the otoscope you then check James's ears, mouth, and throat by positioning him sideways against his mom and asking her to hug James's head and arms and restrain his legs between her own. To distract James, you ask him if he can blow out the light on the otoscope like a birthday candle. You notice James can follow the instruction of blowing out the light. You examine James's tonsil size and ask if he snores.
All your physical exam findings are normal.

To note, on physical exam if there are breastfeeding problems reported, tongue mobility should be assessed. In children less than 1 year of age surveillance for cerebral palsy should be performed including observations for asymmetric hand use and abnormal tone.[9,10]

Problems/Plans/Current & New Referrals
At this time, you determine that no referrals are needed.

Investigations/Screening and Immunization
Anemia or blood lead screening is not required as James does not meet the at-risk criteria for either.[1]

You mention that James is due for his 4th DTAP/IPV/Hib vaccine and will receive it during this visit. Vaccination schedules and universal coverage varies between provinces and territories, so it is important to note that this can be challenging for children moving between provinces/territories.[12]

It is important to discuss immunization benefits with all caregivers and proper immunization pain reduction strategies.[9,10] While receiving a vaccination, breastfeeding, the use of sweet-tasting solutions, topical anesthetics, and giving the most painful vaccine last are evidence-based pain reduction strategies.[1] Acetaminophen or ibuprofen can be used following vaccination, as needed.[1]

You thank the parents for providing you with all of James's information and let them know that you will bring the information that you collected to your supervising physician, and you will both come back and discuss James's case together shortly. You also ask if they have any questions or concerns.

Congratulations you have completed your first 18-month-old well baby visit!

<u>Take home points</u>

1. Primary prevention in primary care helps to prevent avoidable morbidity and mortality in childhood and assists parents in optimizing their children's healthy growth and development.

2. The RBR is an evidence-informed tool that can be used to guide preventive healthcare in children aged 0 to 5 years.
3. Developmental surveillance should be performed at each well-baby visit and if a concern is identified, further developmental assessment should be undertaken.

Conclusion

Thank you for listening to this podcast. This podcast has reviewed the history of the RBR, its components, the updates in the 2020 edition, and how to use the RBR in clinical practice.

Please visit the PedsCases website for a written version of this podcast.

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