Post-discharge referrals of newborns in inland Rio Grande do Norte

Encaminhamentos pós-alta de recém-nascidos no interior do Rio Grande do Norte

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Abstract

Introduction: In Brazil, there are no well-established pathways for the identification and follow-up of children at high risk for neurodevelopmental disorders, which hinders early diagnosis and timely intervention. **Objective:** To outline the profile of newborns (NBs) referred at hospital discharge in a public hospital located in the interior of Rio Grande do Norte, Brazil. **Methods:** A retrospective cross-sectional study was conducted using data extracted from medical records through a structured questionnaire. All NBs admitted to the study hospital between October 2023 and March 2024 were included, except those transferred to another unit or who died during hospitalization. Data were analyzed using SPSS version 22.0. Descriptive statistics (frequencies and percentages), normality tests, the Mann–Whitney U test, and the chi-square test were applied. **Results:** A total of 253 NBs were included, of whom 79 (31.2%) were referred at hospital discharge. Among these, 60 were born at term and 63 were classified as appropriate for gestational age. Regarding risk factors for neurodevelopmental disorders, eight (10.1%) required positive pressure ventilation in the first minutes of life, and had Apgar scores of 1 and 4 at the 1st and 5th minutes, respectively. Among the variables analyzed, only neonatal jaundice was significantly associated with referrals ($p = 0.036$). **Conclusion:** Children with risk factors for neurodevelopmental disorders were identified but not referred to specialists or rehabilitation services, highlighting the lack of standardized care pathways.

Keywords: Risk factors. Referral and consultation. Public health surveillance.

Resumo

Introdução: *No Brasil não há fluxos bem estabelecidos para identificação e acompanhamento de crianças com alto risco para alterações neurodesenvolvimentais, dificultando o diagnóstico e a intervenção precoce.* ***Objetivo:*** *Traçar o perfil de recém-nascidos (RNs) encaminhados durante a alta hospitalar no interior do Rio Grande do Norte.* ***Métodos:*** *Trata-se de um estudo transversal retrospectivo, com coleta de dados em prontuários por meio do preenchimento de um questionário. Foram incluídos todos os RNs nascidos no hospital do estudo, de outubro de 2023 a março de 2024, e foram excluídos os RNs transferidos para outra unidade hospitalar ou que faleceram durante a hospitalização. A análise dos dados foi realizada pelo software SPSS 22.0, utilizando frequências e porcentagens, testes de normalidade, Mann-Whitney e qui-quadrado.* ***Resultados:*** *A amostra total incluiu 253 RNs, dos quais 79 foram encaminhados durante a alta hospitalar. Destes, 60 nasceram a termo e 63 foram classificados como adequados para a idade gestacional. Ao considerar fatores de risco para alterações neurodesenvolvimentais, oito (10,1%) dos neonatos necessitaram de ventilação com pressão positiva nos primeiros minutos de vida e apresentaram medianas de escores de APGAR 1 e 4 no 1° e 5° minutos, respectivamente. Ao analisar quais fatores estavam associados aos encaminhamentos, apenas a icterícia neonatal obteve resultado significativo (p = 0,036).* ***Conclusão:*** *Foram encontradas crianças com fatores de risco para alterações neurodesenvolvimentais mas que não foram encaminhadas para especialistas ou para reabilitação, sugerindo uma falta de padronização na assistência.*

Palavras-chave: *Fatores de risco. Encaminhamento e consulta. Vigilância em Saúde Pública.*

Introduction

Advances in neonatal care, driven by the development of new health technologies, are evident in current hospital practices. As a result, the increased survival rate of newborns (NBs), along with the reduction in maternal mortality, underscores the relevance of these innovations.[1] However, higher neonatal survival is also associated with increased morbidities, such as prematurity and low birth weight.[2] In this context, prolonged stays in intentensive care units, exposure to noise, painful procedures, light stimuli, tactile and proprioceptive interventions, as well as the risk of infection, are associated with alterations in neurodevelopment.[3,4]

Early identification of developmental disorders requires the recognition of factors directly associated with adverse neurological outcomes. Among them, gestational hypertension, maternal smoking, and infections during pregnancy stand out, complications that may contribute to intrauterine growth restriction, preterm birth, and exposure of the newborn to infections, factors that can directly or indirectly negatively impact neonatal prognosis.[5]

Alterations in child development, such as cerebral palsy (CP) and autism spectrum disorder (ASD), can directly affect the motor, cognitive, physical, and social interaction development of children.[6] Thus, early identification of these alterations enables the inclusion of children in specialized follow-ups for early diagnosis and intervention.[7] Understanding these predisposing variables is essential for implementing strategies for health promotion, risk factor control, and the development of screening and prevention actions.[8] One of the strategies employed is health surveillance, which involves monitoring development through follow-up assessments using validated scales, allowing early detection, referral to rehabilitation networks, and inclusion in early stimulation programs.[9]

A challenge observed in hospital care is the absence of systematized processes for screening and identifying neurodevelopmental characteristics. Most hospitals do not have well-defined and consolidated protocols, which hinders diagnosis or even delays timely interventions and the inclusion of these children in the public health system.[10] In this context, the present study aimed to describe the profile of NBs referred at hospital discharge in a hospital located in the interior of Rio Grande do Norte, Brazil.

Methods

This was a retrospective cross-sectional study conducted at the Ana Bezerra University Hospital (HUAB), which evaluated the number and characteristics of all babies born at HUAB between October 2023 and March 2024. This study followed the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) guidelines to ensure transparency and quality in the presentation of methods and results.

The research was submitted to and approved by the Research Ethics Committee of the Federal University of Rio Grande do Norte (UFRN)/Faculty of Health Sciences of Trairi (FACISA) under opinion 6.821.399

Eligibility criteria

All NBs born at HUAB between October 2023 and March 2024 were eligible, with no restrictions regarding gestational age or diagnosis. Exclusion criteria were transfer to another hospital unit or death during hospitalization.

Instruments

For data collection, a questionnaire was developed and, during the first ten applications, served to standardize the collection process. During this period, the researchers conducted an analysis and added new items deemed necessary. It should be noted, however, that no formal pilot test was conducted, as recommended in the literature. The questionnaire included sociodemographic variables (age, sex), maternal and gestational history (number of prenatal visits, maternal comorbidities), delivery-related information (mode of delivery, gestational age), and neonatal outcomes (Apgar score, need for resuscitation, diagnoses). Referral data were also collected, including rehabilitation services (physical therapy, speech therapy, pediatric dentistry), specialized care (cardiology, infectious diseases, pulmonology, dermatology, gastroenterology, internal medicine, neurology), and primary health care.

For data analysis, maternal comorbidities were categorized into groups: one, two, three or more complications, and absence of complications. To identify NBs at high risk for neurodevelopmental disorders, prenatal, perinatal, and postnatal risk factors described in the literature were considered. Among them, the following stand out: gestational hypertension as a risk indicator;[5,11] fewer than six prenatal visits;[12] extreme prematurity, defined as birth before 29 weeks or birth weight below 1000 g; Apgar scores of 5 or lower at the 5th minute; and diagnoses such as neonatal jaundice.[13-15]

Statistical analysis

A spreadsheet was developed in Microsot Excel for data tabulation, and the data were subsequently transferred to IBM SPSS Statistics version 22, where the statistical tests were performed. Data from both referred and non-referred children were analyzed to assess the standardization of referral practices. This analysis also allowed for the identification of risk factors associated with referral through comparisons and associations.

Categorical variables were expressed as absolute and relative frequencies. The chi-square test (χ^2) was used to analyze the association between risk factors and the individual characteristics of the referred and non-referred groups. Numerical variables were expressed as median and interquartile range, according to the Kolmogorov-Smirnov test. The Mann-Whitney U test was used to compare the risk factors to which the neonates were exposed between the referred and non-referred groups.

Missing data were assessed using a correction test in order to identify the influence of missing values. The proportion of missing data was less than 10%, ensuring that there was no interference in the correlation tests or in the total values.

Results

The initial sample comprised 259 medical records, of which five NBs were excluded due to transfer and one due to death, resulting in a final sample of 253 records. Among these, 79 NBs were referred to specialized services. Within the referred group, 49 (63.6%) had mothers with comorbidity during pregnancy, 7 (8.9%) were classified as small for gestational age, 21 (26.5%) were preterm, 8 (11.2%) required positive pressure ventilation (PPV), 19 (24%) received ventilatory support (invasive or noninvasive), and 35 (44.3%) were diagnosed with jaundice (Table 1).

In the total sample, 23 (10%) required PPV in the first minutes of life. The median Apgar score was 8 (interquartile range - IQR:1–10) at the 1st minute and 9 (IQR: 4–10) at the 5th minute. The most prevalent diagnoses associated with hospitalization were neonatal hyperbilirubinemia, with 123 cases (48.6%), and hypoglycemia, with 63 cases (25.2%) (Table 1).

Two types of referrals were analyzed: referrals to primary care combined with referrals to medical specialties (such as pediatric infectious diseases, pediatric cardiology, pediatric dermatology, pediatric dentistry, general pediatrics, and internal medicine), and multidisciplinary rehabilitation.

Referrals to primary care and medical specialties accounted for 69 cases (27.3%). Overall, 79 neonates (31.1%) were referred for rehabilitation. Among the multidisciplinary specialties, 10 (4.0%) were referred to physical therapy, 14 (5.5%) to general pediatrics or internal medicine, and 12 (4.7%) to pediatric cardiology or pediatric infectious diseases (Table 2).

Considering the risk factors widely described in the literature, the frequency and percentage were analyzed, using the total sample as a reference to determine the number of infants exposed to specific risk factors. These factors included maternal diagnoses, fewer than six prenatal visits, Apgar score at the 5th minute, prematurity, and neonatal jaundice (Table 3).

Table 1 - Description of the characterization of the newborns

Variables	Non-referred newborns	Referred newborns
Sex		
Female	84 (48.6)	28 (35.5)
Male	89 (51.5)	51 (64.6)
Gestational age classification at birth		
Term	142 (81.6)	58 (73.4)
Preterm	32 (18.4)	21 (26.6)
Weight classification for gestational age		
Appropriate	143 (83.1)	63 (80.7)
Small	21 (19.2)	8 (10.2)
Large	8 (4.7)	7 (8.9)
Number of prenatal consultations	9 (IQR = 2/16)	10 (IQR = 3/19)
Gestational age	38 (IQR = 29/42)	38 (IQR = 30/42)
APGAR Score		
1st Minute	8 (IQR = 2/10)	8 (IQR = 1/9)
5th Minute	9 (IQR = 5/10)	9 (IQR = 4/10)
Positive pressure ventilation		
Yes	15 (8.6)	8 (10.1)
No	159 (91.4)	71 (89.9)
Diagnoses		
Jaundice	88 (50.5)	35 (44.3)
Hypoglycemia	41 (23.6)	28 (36.6)
Respiratory distress syndrome	42 (24.1)	19 (24.0)
Low weight gain	14 (8.0)	1(1.2)
Ventilation history		
Yes	19 (11.0)	19 (24.1)
No	155 (89.0)	60 (75.9)

Note: The table presents the number and percentage of parametric variables, as well as the median, minimum, and maximum values for non-parametric variables. IQR = interquartile range.

To identify risk factors associated with referrals, the Mann-Whitney U test and the chi-square test were applied. No statistically significant differences were observed between referred and non-referred groups for most variables ($p > 0.05$) (Table 4).

However, when analyzing associations between categorical variables, only neonatal jaundice was statistically significant ($p = 0.036$), indicating that NBs with this diagnosis had a higher likelihood of being referred, as shown in Table 5.

Table 2 - Referrals, and healthcare professionals

Variables	n (%)
Rehabilitation	
Yes	10 (4.0)
No	243 (96.0)
Primary care and specialty referrals	
Yes	69 (27.3)
No	183 (72.3)
Healthcare professionals	
Physical therapist	10 (4.0)
Physician/Pediatrician	14 (5.5)
Pediatric cardiologist/Infectologist	12 (4.7)
Others*	4 (1.6)
None	213 (84.2)
Total referred patients	
Yes	79 (31.1)
No	174 (68.7)

Note: Pediatric neurologist, pediatric dentist, and pediatric dermatologist.

Table 3 - Frequency of risk factors in the non-referred and referred newborns

Risk factors	Non-referred newborns	Referred newborns
Maternal diagnoses*	76 (54.2)	49 (63.6)
Number of prenatal consultations	9 (IQR = 2/16)	10 (IQR = 3/19)
Neonatal jaundice	88 (50.5)	35 (44.3)
APGAR score - 5th minute**	9 (IQR = 5/10)	9 (IQR = 4/10)
Prematurity	72 (33.6)	21 (26.5)

Note: The table presents the number and percentage of parametric variables (maternal diagnoses, neonatal jaundice, prematurity) as well as the median, minimum, and maximum values for non-parametric variables (number of prenatal consultations, APGAR Score – 5th minute). IQR = interquartile range. *Maternal diagnosis corresponds to the percentage of mothers presenting any comorbidity, which could be one, two, three, or more of prenatally consulted. **APGAR score corresponds to the median values at the 5th minute.

Table 4 - Comparison tests between variables and results

Variables	Referred newborns	Non-referred newborns	p-value
Gestational age	38.3 (33.2/42.2)	38.5 (29.1/42.0)	0.555
Number of prenatal consultations	9 (2/19)	10 (2/17)	0.569
APGAR Score – 1st minute	9 (1/10)	8 (2/9)	0.438
APGAR Score – 5th minute	9 (4-10)	9 (5/10)	0.971

Note: Values from the Mann-Whitney U comparison test, showing that the distribution of variables is equal between both groups.

Table 5 - Association between variables and outcome

Variables	Referred newborns	Non-referred newborns	p-value
Maternal complications	82 (33.9)	160 (66.1)	0.075
Type of delivery	81 (32.8)	166 (67.2)	0.517
Sex	84 (33.5)	167 (66.5)	0.618
Positive pressure ventilation	85 (33.7)	167 (66.3)	0.566
Resuscitation	85 (33.9)	166 (66.1)	0.610
Birth length	83 (33.3)	166 (66.7)	0.096
Neonatal jaundice	85 (33.7)	167 (66.3)	0.036
Hypoglycemia	85 (34.1)	164 (65.9)	0.959
Respiratory distress syndrome	85 (33.7)	167 (66.3)	0.952
Low weight gain	85 (33.7)	167 (66.3)	0.246
Ventilation duration	85 (33.7)	167 (66.3)	0.156
Healthcare professionals	85 (33.7)	167 (66.3)	0.494

Note: Values from the chi-square association test, showing that the distribution of variables is equal between groups, except in the case of jaundice.

Discussion

In the analysis of NBs not referred at hospital discharge, clinically relevant conditions were identified that could have justified specialized follow-up. Within this group, 88 presented neonatal jaundice, 32 were preterm, 16 had an Apgar score ≤ 5 at the 5th minute, and 82 were exposed to maternal comorbidities, such as gestational hypertension.[8,14,16] Despite the presence of risk factors known to be associated with neurodevelopmental alterations, these NBs did not receive referrals to specialized services. These findings contrast with the general profile of the study population, which mostly presented favorable birth conditions, low need for emergency interventions, and initial clinical stability results similar to those reported in previous studies.[1,2] Nevertheless, the occurrence of non-referred cases with potential risk reinforces the need for greater standardization in referral criteria.

Neonatal jaundice was the only factor significantly associated with referrals. Evidence suggests that bilirubin can cross the blood-brain barrier, accumulate in the brain, and potentially cause cerebral palsy, hearing loss, and other deficits, thereby potentially compromising neonatal development. Although this topic is widely discussed, the exact bilirubin levels that become toxic and lead to such outcomes remain uncertain.[15,17]

Among maternal risk factors, gestational hypertension stood out. This condition is associated with hemodynamic and placental alterations that may compromise fetal cerebral oxygenation and perfusion, increasing the risk of hypoxic-ischemic events, especially in term NBs.[11] Studies in resource-limited settings, such as Milner et al.,[8] show that perinatal complications with the potential to reduce oxygen and nutrient supply to the central nervous system, including maternal hypertension, are associated with higher rates of developmental delay and permanent neurological damage. Given this risk, surveillance and immediate referral for multidisciplinary evaluation are recommended when high-risk obstetric factors are present.[8,17]

The Apgar index, with scores ≤ 5 at the 5th minute, is considered a critical factor and is strongly associated with the occurrence of cerebral palsy and other adverse neurological outcomes, such as epilepsy.[16] Even when there is modest improvement between the 5th and 10th minutes, the risk of neurological damage is not eliminated, reinforcing the need for surveillance and specialized follow-up.[14] In the present study, the median Apgar score was high, suggesting an overall good clinical status of the sample. However, NBs who presented Apgar score ≤ 5 at the 5th minute were not referred. The low frequency of critical scores may explain the lack of a statistically significant association between Apgar and referrals, but it does not diminish the importance of this index as a definitive alert for cerebral palsy risk.

It is important to emphasize that in some developed countries, structured developmental surveillance systems are already in place, offering specificity and clear criteria to determine which children should receive follow-up. This facilitates the early navigation of at-risk NBs through diagnostic and early intervention networks, as well as providing support to parents to understand the diagnoses and promote engagement in therapies and other necessary interventions.[18,19]

In Brazil, although the Child Health Handbook is the main tool for monitoring development, its use is still limited, with low rates of record-keeping, which compromises systematic child health surveillance.[20-22] This underscores the importance of strategies that promote the training of professionals and the engagement of families in the follow-up process.

One limitation identified was the short evaluation period of only six months; this brief interval may not adequately reflect the seasonal and epidemiological variability of neonatal conditions. Furthermore, the questionnaire used for data collection was developed by the researchers themselves based on the study objectives and was not subjected to a pre-test. This may represent a limitation regarding the reliability of the information collected. Additionally, the study used data extracted from medical records, which may have introduced selection bias due to possible incompleteness or absence of entries in some documents.

Conclusion

This study identified NBs with risk factors such as prematurity, low Apgar scores, and neonatal jaundice who were not referred for follow-up – whether to specialists, primary care, or rehabilitation – thereby limiting their access to early interventions. These findings indicate that, despite awareness of risk factors, gaps remain in the standardization of referral criteria, which may compromise effective monitoring of child development.

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Authors' contributions

MG, EL and GF were responsible for the study design. MG, IL, ES, AT and AF contributed to the data collection, while MG and GF, to the data analysis. MG was responsible for the manuscript writing, and MG, KS and GF, for the manuscript revision and study supervision. All authors approved the final version of the manuscript.

Data availability statement

The data that support the findings of this study are available upon reasonable request.

References

1. Stoll BJ, Hansen NI, Bell EF, Walsh MC, Carlo WA, Shankaran S, et al. Trends in care practices, morbidity, and mortality of extremely preterm neonates, 1993-2012. JAMA. 2015;314(10):1039–51. https://doi.org/10.1001/jama.2015.10244

2. Sant N, Hotwani R, Palaskar P, Naqvi WM, Arora SP. Effectiveness of early physiotherapy in an infant with a high risk of developmental delay. Cureus. 2021;13(7):e16581. https://doi.org/10.7759/cureus.16581

3. van Dokkum NH, de Kroon MLA, Reijneveld SA, Bos AF. Neonatal stress, health, and development in preterms: A systematic review. Pediatrics. 2021;148(4):e2021050414. https://doi.org/10.1542/peds.2021-050414

4. Aranha VP, Chahal A, Bhardwaj AK. A randomized controlled trial protocol in modifying neuromotor behavior of hospitalized preterm neonates using multimodal stimulations: MMS trial. J Pediatr Rehabil Med. 2022;15(3):459-68. https://doi.org/10.3233/prm-200752

5. Chen D, Huang M, Yin Y, Gui D, Gu Y, Zhuang T, et al. Risk factors of cerebral palsy in children: a systematic review and meta-analysis. Transl Pediatr. 2022;11(4):556-64. https://doi.org/10.21037/tp-22-78

6. Hack M, Costello DW. Trends in the rates of cerebral palsy associated with neonatal intensive care of preterm children. Clin Obstet Gynecol. 2008;51(4):763-74. https://doi.org/10.1097/grf.0b013e3181870922

7. Wallis KE, Guthrie W, Bennett AE, Gerdes M, Levy SE, Mandell DS, et al. Adherence to screening and referral guidelines for autism spectrum disorder in toddlers in pediatric primary care. PLoS One. 2020;15(5):e0232335. https://doi.org/10.1371/journal.pone.0232335

8. Milner KM, Duke T, Steer AC, Kado JH, Koyamaibole L, Kaarira R, et al. Neurodevelopmental outcomes for high-risk neonates in a low-resource setting. Arch Dis Child. 2017;102(11):1063–9. https://doi.org/10.1136/archdischild-2017-312770

9. Lipkin PH, Macias MM. Promoting optimal development: Identifying infants and young children with developmental disorders through developmental surveillance and screening. Pediatrics. 2020;145(1):e20193449. https://doi.org/10.1542/peds.2019-3449

10. Alves e Silva ACM, Villar MAM, Wuillaume SM, Cardoso MHCA. Perspectivas de médicos do Programa Saúde da Família acerca das linhas de cuidado propostas pela Agenda de Compromissos para a Saúde Integral da Criança e Redução da Mortalidade Infantil. Cad Saude Publica. 2009;25(2):349-58. https://doi.org/10.1590/S0102-311X2009000200013

11. Gurbuz A, Karateke A, Yilmaz U, Kabaca C. The role of perinatal and intrapartum risk factors in the etiology of cerebral palsy in term deliveries in a Turkish population. J Matern Fetal Neonatal Med. 2006;19(3):147-55. https://doi.org/10.1080/14767050500476212

12. Lima PPH, Lima LPH, Luz CVR, Delgado FAA, Oliveira KTM, Rezende RCO, et al. Prematuridade e assistência pré-natal na Atenção Primária à Saúde (APS): Uma revisão de literatura. Res Soc Dev. 2024;13(10):e91131047166. http://dx.doi.org/10.33448/rsd-v13i10.47166

13. Paul S, Nahar A, Bhagawati M, Kunwar AJ. A review on recent advances of cerebral palsy. Oxid Med Cell Longev. 2022;2022:2622310. https://doi.org/10.1155/2022/2622310

14. Persson M, Razaz N, Tedroff K, Joseph KS, Cnattingius S. Five and 10 minute Apgar scores and risks of cerebral palsy and epilepsy: population based cohort study in Sweden. BMJ. 2018; 360:k207. https://doi.org/10.1136/bmj.k207

15. Merino-Andrés J, Pérez-Nombela S, Álvarez-Bueno C, Hidalgo-Robles Á, Ruiz-Becerro I, Fernández-Rego FJ. Neonatal hyperbilirubinemia and repercussions on neurodevelopment: A systematic review. Child Care Health Dev. 2024;50(1):e13183. https://doi.org/10.1111/cch.13183

16. Ehrhardt H, Behboodi S, Maier RF, Aubert AM, Åden U, Draper ES, et al. Five-minute Apgar scores and its prognostic value for mortality and severe morbidity in very preterm infants: a multinational cohort study. BJOG. 2025 Jul 15. https://doi.org/10.1111/1471-0528.18291

17. Morgan C, Fetters L, Adde L, Badawi N, Bancale A, Boyd RN, et al. Early intervention for children aged 0 to 2 years with or at high risk of cerebral palsy: international clinical practice guideline based on systematic reviews. JAMA Pediatr. 2021;175(8): 846-58. https://doi.org/10.1001/jamapediatrics.2021.0878

18. National Guideline Alliance (UK). Developmental follow-up of children and young people born preterm. London: NICE; 2017. https://www.ncbi.nlm.nih.gov/books/NBK447731

19. Novak I, Morgan C, Adde L, Blackman J, Boyd RN, Brunstrom-Hernandez J, et al. Early, accurate diagnosis and early intervention in cerebral palsy: Advances in diagnosis and treatment. JAMA Pediatr. 2017;171(9):897-907. https://doi.org/10.1001/jamapediatrics.2017.1689

20. Rodrigues RP, Carmo WLN, Canto CIB, Santos ESS, Vasconcelos LA. Descriptor flowchart of the work process: tool to strengthen Primary Health Care. Saude Debate. 2019;43(Spe6): 109-16. https://doi.org/10.1590/0103-11042019S610

21. Goldsmith S, MacIntyre S, Smithers-Sheedy H, Blair E, Cans C, Watson L, et al. An international survey of cerebral palsy registers and surveillance systems. Dev Med Child Neurol. 2016; 58(S2):11-7. https://doi.org/10.1111/dmcn.12999

22. Almeida AC, Mendes LC, Sad IR, Ramos EG, Fonseca VM, Peixoto MVM. Uso de instrumento de acompanhamento do crescimento e desenvolvimento da criança no Brasil – Revisão sistemática de literatura. Rev Paul Pediatr. 2016;34(1):122-31. http://doi.org/10.1016/j.rpped.2015.06.012