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ORIGINAL ARTICLE

**Quality indicators in a newborn hearing screening service** ☆,☆☆



**Gabriela Cintra Januário<sup>a,\*</sup>, Stela Maris Aguiar Lemos<sup>b</sup>,  
Amélia Augusta de Lima Friche<sup>b</sup>, Claudia Regina Lindgren Alves<sup>c</sup>**

<sup>a</sup> *Secretaria de Estado de Saúde de Minas Gerais, Belo Horizonte, MG, Brazil*

<sup>b</sup> *Department of Phonoaudiology, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, MG, Brazil*

<sup>c</sup> *Department of Pediatrics, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, MG, Brazil*

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**KEYWORDS**

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**Abstract**

*Introduction:* Newborn hearing screening (NHS) programs are implemented across the globe to detect early hearing impairment. In order to meet this objective, the quality of these programs should be monitored using internationally recognized indicators.

*Objective:* To evaluate a newborn hearing screening service (NHSS) using international quality indicators.

*Methods:* A retrospective cohort study on the NHSS of Minas Gerais was conducted, analyzing the services performed between 2010 and 2011. Results were analyzed according to criteria from the American Academy of Pediatrics and the Joint Committee on Infant Hearing.

*Results:* This study assessed 6987 children. The proportions of cases that were referred for a retest, that followed through with retest, and that were referred for diagnosis were 8.0%, 71.9%, and 2.1%, respectively. The proportion of assessed newborn children in the first 30 days of life in this study was 65%. The median age of those children who failed both the NHS and the retest was significantly higher than the other children. The chance of a child with a hearing impairment risk indicator to fail the NHS was 2.4 times higher than of those without a risk indicator.

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☆☆ Institution: Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, MG, Brazil.

\* Corresponding author.

E-mail: [gbcintra@gmail.com](mailto:gbcintra@gmail.com) (G.C. Januário).

**PALAVRAS-CHAVE**

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programas e projetos  
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*Conclusion:* NHSS achieved three of four evaluated indicators. Despite this, it is still necessary to perform NHS earlier and to ensure that the subsequent steps are followed.

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**Indicadores de qualidade em um serviço de triagem auditiva neonatal****Resumo**

*Introdução:* Programas de Triagem Auditiva Neonatal (TAN) são implantados em todo mundo objetivando a detecção precoce da deficiência auditiva. A qualidade destes programas deve ser monitorada utilizando indicadores reconhecidos internacionalmente, para que este objetivo seja alcançado.

*Objetivo:* Avaliar um Serviço de Triagem Auditiva Neonatal (STAN) com base nos indicadores internacionais de qualidade.

*Método:* Coorte retrospectiva com análise dos atendimentos realizados por um STAN de Minas Gerais entre 2010 a 2011. Os resultados foram analisados segundo critérios da *American Academy of Pediatrics* e do *Joint Committee on Infant Hearing*.

*Resultados:* Foram avaliadas 6.987 crianças. As proporções de encaminhamento para reteste, adesão ao reteste e encaminhamento para diagnóstico foram 8,0%, 71,9% e 2,1%, respectivamente. A proporção de crianças avaliadas nos primeiros 30 dias de vida foi 65,0%. A mediana de idade das crianças que falharam na TAN e no reteste foi significativamente maior do que para as demais. O risco de uma criança com indicador de risco para deficiência auditiva (IRDA) falhar na TAN foi 2,4 vezes maior do que para as demais.

*Conclusão:* O STAN alcançou 3 dos 4 indicadores avaliados. No entanto, ainda são necessários esforços para captação precoce de neonatos para a triagem auditiva e adesão às etapas subsequentes.

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**Introduction**

Hearing is the sense that connects the individual with the world of sound. Hearing loss in newborns, if not detected and treated early, compromises not only the language development of the child, but also emotional and social development.<sup>1</sup>

Programs for early identification of hearing loss in the neonatal period are being implemented around the world, with the aim to promote an early intervention and, hence, the development of language by children with hearing impairment.<sup>2,3</sup>

The evaluation of health services and programs is required as part of routine healthcare, to enable the identification of deficiencies and to visualize hearing improvement opportunities. The planning of health actions and the targeting of financial resources should preferably be based on the evidence found in evaluation studies.<sup>4</sup>

According to the National Health Services Assessment Program, the evaluations can address four aspects: structure, working process, outcomes, and patients' and professionals' satisfaction.<sup>5</sup> Most studies targeted to the evaluation of neonatal hearing screening programs (NHSP) focus primarily on the areas of working process and outcomes, because it is possible to verify the quality of

care and the change of health status of the patient, respectively.<sup>6,7</sup>

In Minas Gerais, Brazil, the State Department of Health (SES-MG) implanted the Newborn Hearing Screening State Program (NHSSP) using an outpatient model in October 2007.<sup>8</sup> Currently, the Program is being implemented with the accreditation of maternity units as newborn hearing screening reference services (NHSRS).

The Municipality of Belo Horizonte has six accredited NHSRSs. These services are network-based, according to the flow of references and counter-references established by the Health Department of that city, and are accredited by the NHSSP, established by Resolution No. 1321 SES of 2007, thus following its guidelines, assessment protocols, health-care flow, and nomenclature.

On discharge from the maternity ward, newborns are referred for a serological screening test (neonatal heel prick) and other neonatal procedures at the basic health unit (BHU). At the BHU, a newborn hearing screening (NHS) test is scheduled by a health care professional, targeting one of the six NHSRSs of the municipality. Therefore, although the NHS test is performed on the maternity premises, the municipality program follows the outpatient model for neonates without hearing impairment risk indicator (HIRI) and the hospital model for evaluation of newborns with HIRI.

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