Access to neonatal screening test as monitoring the care of newborn

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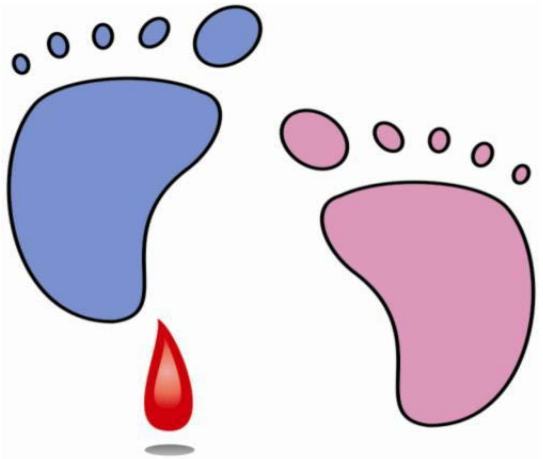
PURPOSE

- ✓ To investigate the performance of the biological neonatal screening test, based on the management of the neonatal screening program, considering as "access" those tests performed until the seventh day of life.



(NEONATAL SCREENING)

METHODS

Type of study: quantitative study that verified the access of newborns to the biological neonatal screening test in Ribeirão Preto, São Paulo, Brazil, in 2016.

All infants who underwent the test between January 1st and December 31st, 2016

- Health units,
- Hospitals or
- Privates laboratories

Ribeirão Preto

700.00 inhabitants.
About 8.000 births per year; 60% users of Unified Health System (public health system)

Municipal child health program

Flower a Life
Since 1995

This program **performs the scheduling** of medical and nursing **consultations** for the newborn, who is a user of the Unified Health System, after discharge from the hospital.

Basic health units

1st week of life

- Nursing consultation
- BCG vaccine
- Biological neonatal screening test

METHODS

Data collection: **worksheets** of the Municipal Neonatal Screening Program (MNSP).

- ✓ **place of the exam collection** (health units/hospital/private laboratories)
- ✓ **date of exam collection**
- ✓ **type of health user** (public health system or private health system)

Data analysis: Program Statistical Package for the Social Science (SPSS) version 22.0.

- ✓ Identified **access** to the biological neonatal screening test in the **first week of life**.
- ✓ Verified possible association:

  - age of the child in the exam collection (dependent variable)

  - place of the exam collection and **type of health user** (independent variables)

METHODS

Ethical Aspects: The Research Ethics Committee of University of São Paulo at Ribeirão Preto College of Nursing approved the research.

RESULTS

- ✓ 7,955 children were born in Ribeirão Preto, São Paulo, Brazil in 2016.
- ✓ 7,640 (96.0%) of them were screened for biological neonatal screening test

- 5,089 (66.6%) occurred in health units and
- 2,551 (33.4%) in hospitals and private laboratories

RESULTS

- ✓ **Health units** collected tests:
  - users of the National Health System (NHS) - **Brazilian public health system** - and
  - non-NHS users.

- 3,720 (73%) were NHS users
- 1,369 (27%) non-NHS users

- ✓ There was a **greater demand** for collection for the **NHS user.**
- ✓ The average collection of **health units** was higher in the period of **three to five days** of the child's life.
- ✓ There was a **decrease in the average** number of exams performed, considering the period **over one week of life**.

RESULTS

- ✓ **Hospitals and private laboratories** performed 2,551 exams in 2016.
    - the majority (2,236; 83,7%) of them from **three to five days** of life.

- ✓ There was also a **decrease in the frequency** of collections, considering the ages **above one week of life**.

Table 1. Collection of Neonatal Screening Test in Health Units, according age and type of user in the year 2016.

Variables	N	Min-Max	Median	Media (SD)
Age at collection (days of life)				
Users of NHS*				
3 a 5	2418	1 - 248	50,00	52,57 (44,56)
6 a 7	1033	0 - 98	15,00	22,46 (22,53)
8 a 10	195	0 - 26	2,50	4,24 (4,91)
> 11	74	0 - 15	1,00	1,61 (2,72)
No users of NHS				
3 a 5	1032	0 - 133	15,00	22,43 (24,99)
6 a 7	247	0 - 26	3,00	5,37 (5,71)
8 a 10	66	0 - 8	1,00	1,43 (2,01)
> 11	24	0 - 6	0,00	0,52 (1,07)

Table 2. Distribution of Neonatal Screening Test collection in hospitals and private laboratories, in the year 2016.

Month	3 a 5 days		6 a 7 days		8 a 10 days		> 11 days		Total	
	n	%	n	%	n	%	n	%	n	%
January	152	74,5	38	18,6	7	3,4	7	3,4	204	100
February	152	71,7	45	21,2	11	5,2	4	1,9	212	100
March	184	75,4	47	19,3	11	4,5	2	0,8	244	100
April	184	83,6	26	11,8	6	2,7	4	1,8	220	100
May	211	86,8	22	9,0	7	2,8	3	1,2	243	100
June	217	86,1	26	10,3	4	1,6	5	2,0	252	100
July	186	85,7	22	10,1	6	2,8	3	1,4	217	100
August	177	88,9	15	7,5	6	3,0	1	0,5	199	100
September	171	87,2	18	9,2	5	2,5	2	1,0	196	100
October	153	91,0	9	5,3	4	2,4	2	1,2	168	100
November	174	89,2	17	8,7	2	1,0	2	1,0	195	100
December	175	87,1	16	8,0	5	2,5	5	2,5	201	100

The chi-square test, processed in the R i386 version 3.4.0 (2017) program, **showed an association** between the **age of the child** and the **local of exam collection** and **type of health user**.

Table 3. Univariate analysis of the age of the child according to local of exam collection.

Variable	Child age (days)										
	3 a 5		6 a 7		8 a 10		≥ 11		Total		p value
	n	%	n	%	n	%	n	%	n	%	
Local of exam collection											<0,001
Hospital/Laboratory	2136	83,7	301	11,8	74	2,9	40	1,6	2551	100	
Health Units	3450	67,8	1280	25,2	261	5,1	98	1,9	5089	100	
Total	5586	73,1	1581	20,7	335	4,4	138	1,8	7640	100	

Table 4. Univariate analysis of the age of the child according to the type of health user.

Variable	**Child age (days)**										
	3 a 5		6 a 7		8 a 10		≥ 11		Total		p value
	n	%	n	%	n	%	n	%	n	%	
Type of health user											<0,001
NHS user	2418	65,0	1033	27,8	195	5,2	74	2,0	3720	100	
No NHS user	1032	75,4	247	18,0	66	4,8	24	1,8	1369	100	
Total	3450	67,8	1280	25,1	261	5,1	98	1,9	5089	100	

CONCLUSIONS

- ✓ The study contributes to the management of the Municipal Neonatal Screening Program by reaffirming the **occurrence of early access** to the biological neonatal screening test, as a guarantee of **timely identification of diseases** screened by this examination.

- ✓ For the **exams** that were collected **after the recommended period**, we indicate the need for a **detailed evaluation** by considering the **reasons** for the collection after the recommended one.

CONCLUSIONS

- ✓ From this, it will be possible **to point out specific intervention for each identified case**, in order to **provide constant improvement in access** to this type of care action for the newborn's health.

- ✓ Therefore, it will **meet the recommendations of the national health care policies** to Brazilian population.

Thank you!!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