NEONATAL SCREENING TESTS IN PREMATURE NEWBORNS IN SOUTHERN BRASIL
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Methods
A cross-sectional study with prospective data collection was carried out in 11 hospitals from March to December 2015. The results were compared with the results of the screening tests performed on the term newborns. For premature infants, the first collection is recommended at the time of hospital discharge, after 48h of life and a second collection after 15 days of life. For CAH screening, cut-off values based on birth weight are used.

Results
- A total of 1,753 preterm newborns and 18,028 term newborns were included.
- Only 486 (28%) of the preterm newborns performed the second dried blood spot, according to guidelines.
- Prevalence of false-positive in preterm newborns was for: PKU 1:150; CH 1:133; biotinidase deficiency 1:447 and for CAH 1:5.6. Classification of screening tests for PKU and CH are shown in figure 1 and 2 respectively.
- Early dried blood spots (collected before 48 hours) showed a higher risk of false-positive results for CH and CAH (26.8 and 16.4 fold, respectively).
- Early sample collection did not influence the results of the screening tests for PKU and biotinidase deficiency.
- Figure 3 shows median 17-hydroxprogesterone (17-OHP) values in relation to gestational age.
- Only one patient had delayed TSH rise (figure 4).
- There were no reports of false-negative results during the study period.

Conclusions
- Prematurity and early collection are risk factors for higher frequency of false-positive in CAH and CH neonatal screening tests.
- A second dried blood spot for screening test is recommended to diagnose cases of delayed TSH rise.
- Efforts should be made to improve the appropriate collection of tests in preterm infants to avoid false-negative results.

References