

# **A National Job Analysis Study of Respiratory Therapists Who Specialize in Neonatal / Pediatric Care**

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**Conducted for the**



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## Executive Summary

The National Board for Respiratory Care (NBRC) conducted this study to identify critical tasks performed by respiratory therapists who specialize in neonatal / pediatric critical care. Study results will influence examination content for the ongoing Neonatal / Pediatric Specialist (NPS) credentialing program NBRC. The job analysis study was conducted in 2016 and was the fifth such study done for this program.

Members of the job analysis committee supervised the study and made the decisions affecting data gathering and results evaluation. Committee members represented various regions and practice settings across the United States.

The survey study was conducted in phases including development, distribution, response evaluations, and decision-making about examination content. The Committee developed task statements representing potential examination content plus items to collect background information about respondents. The Committee developed sampling plans for survey distribution after consulting with NBRC psychometric staff. After survey response analyses were completed, the Committee created exclusion rules by which tasks were classified as critical or not critical. The Committee specified item distributions by content domains, cognitive levels, content involving clinical ethics, and patients' conditions within test specifications tables. The intent will be to follow these specifications when assembling forms of the examination starting in June of 2018.

An invitation asking potential respondents to participate in the online survey was electronically mailed to 11,164 credentialed neonatal / pediatric specialists. A total of 133 hospital members of the Children's Hospital Association (CHA) received the invitation with instruction to give to staff in charge of respiratory care for the facility. Additionally, 1,722 members of the Neonatal-Pediatrics specialty and 1,450 members of the Management specialty sections of the American Association of Respiratory Care (AARC) received the e-mail invitation. The final page of the survey permitted respondents to refer other therapists. Hence, the response rate among those who were solicited only could be estimated. A volunteer sample of 1,419 chose to provide usable responses in time for the analysis. The approximate response rate among registrants was 11.5%.

The electronic survey was set up to require a response to each task on a page before progressing to the next page of tasks. After respondents had rated each task, 98.6% indicated that the list of tasks had adequately covered the scope of their job activities. The lowest intraclass correlation value among the domains under which tasks were organized was .998. Therefore, the same results were highly probable among other potential samples from the population. The lowest coefficient alpha value among the content areas was .942 indicating the Committee could depend on the task ratings.

The Committee assessed the degree to which the study sample had represented subgroups (for example, by region, by institutional setting) within the population of specialists. Committee members detected no disproportionate representation. Still, the Committee decided to use a task exclusion method that would give sample subgroups opportunities to exclude tasks in case representation bias was present, but undetected by the Committee.

After examining task-rating results, the Committee established exclusion rules designed to narrow the full list of 104 tasks to a subset of those tasks that were critical to competence. The concept of criticality subsumed two attributes, the extent of practice among the respondents and the importance to practice. A rule was created for extent and importance based on responses from

the whole sample. Additional rules were based on importance among subgroups of the sample for a total of 14 rules. Tasks that were labeled as critical had to survive each rule. Applying the exclusion rules retained 103 tasks across 2 content areas. Subsumed under these major content areas were 21 sub-domains for which examination items were specified.

Committee members assigned cognitive complexity designations by consensus to each critical task according to their perceptions of the mental process by which practitioners behaved competently. Hence, items linked to these tasks will be expected to closely align with the complexities of critical competencies. The Committee was confident that candidates' scores should reflect critical job content associated with the demands of the job when an examination comprised of multiple-choice items are developed to the new specifications.