Measuring Resident Performance in the NICU:
How Much Experience is Required to Interpret the Bedside Flowsheet?

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Abstract

Preliminary studies of physicians' information-seeking behaviors in a neonatal intensive care unit (NICU) indicate that physicians use the bedside flowsheet to gather much of their information about an infant's clinical condition. The flowsheet is a grid onto which different types of patient data such as vital signs and laboratory results are recorded over a 24-hour period. Despite widespread use of the flowsheet to access patient data, the flowsheet has not been studied systematically. As a result, we know little about how residents learn to translate the flowsheet data into clinically meaningful information. Residents presumably become more competent with this skill as they gain more experience in the NICU, but it is not clear how much exposure they need to achieve a minimum competency in this domain. The reduction in residents' work hours in the NICU in recent years makes it important to understand the relationship between experience and performance with this skill. Over the past year, we developed a novel instrument to assess residents' ability to interpret data from the flowsheet. The assessment tool was pilot-tested on 26 Pediatric residents at the University of Virginia. The results indicate a positive trend between the residents' NICU experience and their ability to interpret data from the NICU flowsheet. This proposal seeks funding to 1) establish the validity of this instrument and 2) explore the apparent relationship between performance and NICU experience through a multi-center trial that includes other pediatric training facilities in Virginia. It is hoped that the information gained from this study will provide more information about how much experience residents need in the NICU in order to become competent with this particular skill. Over the long term, this knowledge will be helpful in developing a standardized competency assessment tool as well as the development of educational modules to explicitly teach residents the skills necessary to interpret flowsheet data in the NICU and other ICU environments.