Conversion to Masimo Set Pulse Oximetry- Analysis of Staff Satisfaction and Patient Safety Following Conversion.

Lekites K., Jackvony R. *Respir Care*. 2002;47(9):1088.

Introduction

Conversion to new monitoring technology is not without potential risk, to the patient if the monitors do not perform as expected and to the institution if the staff is unsatisfied with the new equipment. Our institution, a 60 bed Level III NICU and 16 bed Level II Nursery, made a conversion of pulse oximetry technology from Ohmeda and Nellcor technology to Masimo SET technology, which claims greater accuracy and fidelity in difficult monitoring conditions including motion and low perfusion. 12 months following conversion we set out to evaluate the staff perceptions of the new monitoring technology. Previous studies, in adults, have clearly demonstrated changes in clinician practice patterns following the implementation of improved pulse oximetry from Masimo SET technology [1,2]. We also evaluated our staff perceptions about changes that may have occurred in their own clinical practice patterns, caring for infants, following this conversion.

Methods

We converted all oximetry technology in our Level III and Level II units to Masimo SET oximetry. 12months following this conversion, a survey (containing 17 different questions) was developed to assess factors related to staff satisfaction, clinical practice patterns and patient safety. This survey was then administered to the RNs and RRTs in our NICU, 46 clinicians responded. Questions were designed for clinicians to respond to each with either agree, clinically no difference or disagree with the statement. Examples of the questions asked follow: (1) Ease of application of sensor, (10) The combination of decreased false alarms and increased confidence in oximetry values has resulted in less distractions while caring for other infants, (11) Changing to Masimo oximetry has resulted in less handling of infants to ?fix or adjust? sensors in order to obtain reliable saturation values, (12) I have a greater sense of patient safety since changing to Masimo oximetry, (13) Titration of delivered oxygen concentration to the patient is easier since changing to Masimo SET, (14) I have a greater sense of monitoring reliability since changing to Masimo oximetry, (16) Since changing to Masimo oximetry there has been less parental anxiety concerning the frequency of false alarms and the reliability of the monitor and (17) If I were to transfer to another nursing unit, I would encourage that unit to use Masimo oximetry. Chi-square analysis was used to test the distribution of results, $p < 0.05$ was considered significant.

Results

46 RNs and RRTs responded. The results of this survey are tabulated at left. These results were significantly different from a random distribution, $p < 0.01$.

Conclusions

After having used Masimo SET pulse oximetry in our NICU, our staff reports significant staff satisfaction and improved patient safety. They also perceive changes in their practice using this new technology, specifically in ease of management/titration of FiO_2 levels (Questions 13 and 15). A significantly greater number of staff members agreed that they would recommend Masimo oximetry if they were transferred to another unit (Question 17).

1. Durbin CG, Rostow SK. Respiratory Care 2000;45(8):985. 2. Rostow SK, Durbin CG. Respiratory Care 2001;46(10):1104.