Cost Savings Through Re-Engineering Respiratory Care Medication Management Processes Using the Isothermal Medipac Device.

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Introduction: Current 2011 Joint Commission standards require that Respiratory Care departments have implemented a written policy to address how medications are managed after retrieval from a storage machine to patient treatment at the bedside. Further, the Joint Commission requires that departments provide data to show that medications are maintained within manufacturer recommendations for medication storage. How will busy Respiratory Care Department managers comply with these requirements? The purpose of this paper is to describe how an RC Department may comply with the new standards for Medication Management and achieve cost reductions by re-engineering the process using the Isothermal Medipac device.

Background: In previous years, the Joint Commission has cited Respiratory Therapists for carrying medications in pockets or fanny packs. The rationale for the citation was that medications carried in pockets were heated and resulted in chemical breakdown of the drug; and that medications in pockets were not secure. In order to comply with these new requirements, Respiratory Therapists were required to obtain one medication at a time from a storage machine, and both delays and additional travel time made the process much less efficient. Compounding the problem was that medication administration typically comprised the highest volume procedure for most Respiratory Care Departments.

Inefficiencies with Current Process: An unintended consequence of changing the process away from transporting multiple medications was to adopt a much less efficient process; retrieving medications one at a time from a storage machine. This change in process resulted in multiple issues. Frequently, Therapists had to wait in line behind others who were retrieving medications from storage. Delays in obtaining medications and adding additional travel time
created inefficiency. As no surprise to Respiratory Care Managers, these inefficiencies were added to other new requirements such as computerized charting and bar-code scanning medications which also demanded additional time for completion.

**Re-engineering Process Can Save Time and Steps:** In order to comply with the new TJC standards for Medication Management, a breakthrough was needed to allow multiple medications to be transported in a secure and temperature-controlled manner. The Isothermal Medipac device provides a solution to medication transport in a portable, secure, and temperature-controlled environment, while allowing multiple medications to be transported at one time.

**Methods to Document Improved Efficiency and Time Reduction:** We used actual time-motion studies in a busy Medical Intensive Care Unit in a 600 bed hospital to determine time required to go back and forth to a medication dispensing machine that was centrally located in the intensive care unit. More specifically, the medication storage machine was within approximately 100 feet from the most distant ICU room. We found that on average, a trip to the storage machine, logging into the machine, and travel time back to the next room in the ICU required a minimum of 3 minutes per procedure. Because the medication storage machine was centrally located in the ICU, it is reasonable to assume that greater time savings may be achieved on floors where the storage machine is situated in a more distant location. However, for time and cost-saving calculations, we used the more conservative estimate of 3 minutes saved per procedure by changing the process to allow multiple medications to be obtained and transported at one time.

**Methods to Convert Time Savings into Cost Reduction:** Well known authors such as Kester, Ford, and Tiesort have documented cost savings related to protocols in published Respiratory Care management articles by multiplying the annual procedure volume times the average therapist salary. In our study of potential cost savings by transporting multiple medications, we used a similar calculation. We used average therapist salary (converted to minutes) times 3 minutes per procedure and multiplied by the annual volume of handheld nebulizer treatments as the estimated time savings. In a 600 bed hospital, the salary cost saving approximated $155,000 year. We surveyed 20 other hospitals and obtained data for their annual volume with their estimated number of
minutes saved by transporting multiple medications. The collected estimated cost savings by reengineering their medication management process was 1.6 million dollars annually for the 20 hospitals surveyed.

**Re-engineering Opportunities with the Isothermal Medipac Device:**
The reality of managing Respiratory Care Departments is that there are fixed numbers of staff allocated to provide services. How managers may choose to utilize improved efficiency by reengineering their process for the highest volume procedure in their department is up to the individual manager. A number of opportunities exist for ways to utilize increased efficiency. First, “soft dollars” achieved by cost savings realized by using the Isothermal Medipac may be converted to “hard dollars” by increasing revenue and using increased efficiency to capture previously missed treatments. Second, increasing efficiency allows time for other activities such as bar-code scanning medications, computer documentation, and rounding at the bedside with the physician. Third, increased efficiency allows staff to perform other procedures without adding additional personnel. Fourth, from 15 years of experience as a Respiratory Care Director, reengineering a process to save staff steps and improve efficiency always contributes to positive staff satisfaction. In summary, how time and cost savings are used from reengineering processes with the Isothermal Medipac device are up to the individual hospital manager.