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# Maximizing Acceptance of Your “Intelligent Pump” Intravenous Medication

*Safety System: The Importance of Effective Education and How to Train Your Nurses*

## SITE DESCRIPTION

Lakeland Regional Medical Center in Lakeland, FL is an 850-bed, not-for-profit hospital that has served the community for over 80 years. It is a level II Trauma Center and Comprehensive Community Cancer Center, providing cardiology, oncology, emergency medicine, trauma, mental health, pediatric, obstetric/gynecology, orthopedic, and surgical services.

## PRE-IMPLEMENTATION

In 2004, the current intravenous infusion pumps had been in use for approximately ten years. Not only had they aged, they also could not help the hospital to aggressively address medication errors with high alert medications, many of which are administered intravenously. A candidate intravenous infusion pump with medication safety system software was presented by the Director of Pharmacy to the hospital's Non-Labor Expense Reduction Team (NLERT) since this entity was the forum for new product review. In turn, the product was reviewed by the Hospital Expense Analysis Team (HEAT) for conduction of a cost-benefit analysis.

### A. Product Selection

The first major step in maximizing acceptance of an intravenous medication safety system is to have representation of and recommendations from all potential stakeholders prior to making a decision. Some of these stakeholders may not be those routinely considered. For example, at Lakeland, the Respiratory Therapy staff use infusion pumps as part of their workflow in the Pediatric ICU. It is extremely important for the end-users from a variety of patient care settings to contribute to the decision-making process after having the opportunity to get “hands-on” experience. This is particularly true with infusion pumps as they are used on a daily basis. In this hospital, a nursing team leader became the clinical lead coordinating the “hands-on” reviews. The product was reviewed, with an eye to defining the advantages and disadvantages. As with all new technology, the benefits and risks (the latter included the degree of change for the end-user and associated learning curve) of the product were weighed. Whether or not the product could be adapted to future needs and, if so, the processes for upgrading to more advanced technology, was also evaluated.

### B. Product Selected

The Plum A+® Infusion System with Hospira MedNet® Software was chosen. This product allowed for an upgrade of pump technology without changing vendors. The nursing staff was satisfied with the older pumps, but did welcome the improved technology. Also, being able to use the same IV tubing as with the old pumps would mean less staff disruption while training on the new equipment. In addition, the new pumps also weighed 4 pounds less than the old ones, a very welcome difference! More importantly, the medication safety software could be used and would allow gathering of quantitative data to pursue progress towards patient safety and performance improvement goals.

Once the decision was made on the actual product to be used, acceptance by the nurse managers and nursing staff was encouraged by requiring their involvement. The drug library/rule set files for each clinical care area were sent to the appropriate nurse managers numerous times. They were encouraged to review the drug libraries themselves and have their key staff members do so as well. We wanted reviewers to find inconsistencies with the drug libraries so that any errors or desired modifications could be addressed prior to the day of conversion.

### C. Training

The second major step in maximizing acceptance is comprehensive training on the new product prior to facility-wide conversion. The primary objective was to have all nurses feel confident in using the new pumps. Obviously, competence with any new product is critical for patient safety, staff satisfaction, and adherence to any new medication safety technology.

Early in the process, a multidisciplinary Project Implementation Team was established involving all the necessary stakeholders in the facility. The team included management and staff representatives from Nursing, Central Sterile Supply, Pharmacy, Education, Materials Management, Biomedical Engineering, and the Procedural areas (e.g., Radiology, Invasive Cardiology, etc.). One of the responsibilities of this team was to assist with the logistics of the Vendor Customer Education program.

Lakeland Regional routinely uses a “Train the Trainer” approach to training on new equipment so the

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concept of Resource Nurses as part of the education program worked exceptionally well. At least one Resource Nurse was available on every unit, every shift, including nights and weekends. Resource Nurses participated in an intensive 4-hour classroom session which included food, snacks, and beverages to encourage a comfortable training environment. One hundred and sixty one Resource Nurses were trained in the days immediately prior to general staff training. These Resource nurses then became the primary support individuals to a staff of 1300 nurses who were to attend classroom training on the new technology.

At every opportunity, the input of the nurse managers and the representatives of the multidisciplinary project team were requested in all aspects of the training (e.g., What times should training be offered? What incentives were reasonable for attendance at training sessions? What was/were going to be the greatest challenge(s)? and How could we help the nurse managers through the process?).

Classroom training was mandatory for all registered and licensed practical nursing staff. As per hospital policy, 6 weeks notice was given in advance of the training. Managers were asked to schedule staffing such that one or two staff nurses could be off the unit for approximately 90 minutes each to attend training. Training was scheduled during shifts to accommodate all schedules as attendance before or after a shift or on a day off interested almost no one.

To maximize attendance at in-services, complimentary snacks were available, as were raffle tickets for fun prizes. "Applause" certificates, thanking them for their commitment to excellent health care, were also distributed to all attendees, complete with facility coupons that could be redeemed in the hospital cafeteria or coffee shop. Having over 800 nurses trained in less than one week exceeded our expectations, and it was noted that the process itself went exceptionally smooth.

#### **D. Communication**

The third major step in maximizing acceptance is adequate communication at every step of the process. The Resource Nurses were more than just a "resource" to the other nurses. They constantly spread the word about the arrival of the new infusion pumps, describing their benefits as well as encouraging all staff nurses to attend the classroom training. Since those nurses not attending the classroom training would be trained on the unit by the Resource Nurse, there was an incentive for the Resource Nurses to "bang the drum" and strongly encourage attendance at the scheduled classroom training sessions. That way the Resource Nurses could actually be resources for reinforcement and troubleshooting and not spend all their time training.

In the 4-6 weeks prior to switchover, communications went out almost weekly with updates on the status of the project and reminders of the training and "go live" dates.

During the training sessions, a daily census was kept (by unit) of those employees completing the training. Those figures were forwarded to the nurse managers on a daily basis. For the few units with particularly low cumulative turnouts at the mid-point of the training, the unit managers were contacted so that they would be aware of their units' status. Many nurse managers expressed appreciation for the frequent communications so that they could still take corrective action

and schedule nurses to attend remaining available training. Today's nurse manager has many competing priorities. (S)he may need assistance in keeping focus on such a project as to keep it near the top of the priority list.

Communication must be frequent, repetitive, concise, and direct. A non-judgmental environment that would invite questions was encouraged. If there are no questions or concerns in response to communications, perhaps the message is not reaching the target audience. A major initiative like this one is sure to create anxiety and questions. If the latter are not forthcoming, there are likely points that are either not being addressed, or not clearly understood.

#### **IMPLEMENTATION**

The vendor worked with the facilities conversion team to plan the details of the "go-live" day. In a few key areas (e.g., the Emergency Department, Operating Room, Post-Anesthesia Care Unit, and Invasive Cardiology), a specific time for pump switchover was established ahead of time, and communicated to them a couple of weeks prior to the conversion. For the remainder of the patient care areas, the nurse managers, Resource Nurses, and/or charge nurses were informed that they would be contacted approximately 10 to 15 minutes prior to arrival for pump switchover. The vendor brought in additional staff, all dressed similarly (same color) such that they were easily recognizable as vendor employees assisting in the switchover. The Resource Nurses wore easily recognized badges such that the staff knew that they were there to assist in the switchover. Vendor staff and patient care units were divided up and teams were assigned to specific units. Each team was led by an individual who had been involved with the project from the beginning and who knew the layout of the hospital.

Three units were covered at a time. In the end, 1,072 pumps were switched over in approximately 10 hours. None of the staff on the units was surprised or unprepared when the conversion teams arrived. Occasionally there was a nurse or two who had not been trained, but a Resource Nurse intervened right away.

#### **CONCLUSIONS**

The critical success factors in the training and conversion process for the new safety software infusion pump technology included:

1. Involvement of the multidisciplinary conversion team from the start, where the contact experts are involved early on and feel like they are part of the whole process. This helps create buy-in by validating that their input is important.
2. Involvement of the end-users from the beginning, where they felt like they were included in the process and provided valuable recommendations.
3. Know your informal, but influential leaders and involve them in the process. Gaining their buy-in will influence others to follow.
4. Repetitive communication and regular status updates are invaluable. Persistence when needed may be necessary to ensure understanding and keep the process moving forward.
5. Vendor expertise should be included early in the process. Do not be afraid to request support.

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