The Impact of an Innovative LPN-RN Care Delivery Model

Marie L. Desir, MSN, RN, CCRN-K
Deborah Laughon MSN-Ed, DBA, CCRN, CENP
AdventHealth Celebration
marie.desir@adventhealth.com

Purpose

The purpose of this study is to evaluate the effectiveness of an innovative patient care delivery model on optimizing patient care and nursing outcomes.

Background

The nursing workforce is experiencing a shortage that is different from previous shortages. The dynamics include COVID19 pandemic, significant nursing shortage and the acuity-complexity gap, related to high turnover. These factors affect quality and cost of nursing care, negatively impact the work environment and patient outcomes.

Research findings suggest re-integrating Licensed Practical Nurses (LPNs) and RNs within the acute care setting with a new Care Delivery Model (LRCDM) to reduce the Registered Nurses' (RNs) workload and help address the nursing shortage based on improved teamwork and communication. (Havaei, MacPhee, & Dahinten, 2019). The training and orientation plan integrated the Married State Preceptorship Model (MSPM), an evidence-based training method.

The preceptor and preceptee are partnered throughout the orientation process to promote safety, reduce transition-to-practice anxiety, promote trust, and decrease turnover. (Figueroa, Gardner, Irizarry, & Cohn, 2016).

Sample/Methods

Design: 12-month longitudinal study (**3 phased**: baseline, 6-month, 12-month)

Setting: AdventHealth Celebration Hospital; 2 Progressive Care (PCU) and 1 Med-Surg/Med-Tele (MS/MT) Units.

Sample: (**n=156**) Convenient cohorts of blinded clinical team members met eligibility criteria to participate in a longitudinal study to determine how the LRCDM impacts the work environment, nursing engagement and turnover, and staff satisfaction. Members for the Intervention Groups were recruited from 1 PCU and 1 MS/MT unit and members for the Control Group were recruited from a second PCU. Members were recruited via flyers, emails, and staff meetings.

Data Collection: IRB approval was obtained prior to recruitment and data collection. Baseline survey data was collected using QR codes to answer the 31 questions. The survey was repeated using the same method at 6-month and at 12-month intervals. The effectiveness of the model was measured during the intervention period (January 2021 through January 2022).

Procedure

LPNs were hired into the acute care setting to work on a team-based nursing care model alongside RNs. Previous research provides evidence that LPNs' unique skills can address the "escalated workloads," as well as the opportunity to enhance clinical outcomes and the quality of care provided. (Havaei, Dahinten, & McPhee, 2019). Utilizing the MSPM to train the LPNs has strengthened the concepts of trust, collaboration and communication amongst the team. (Walters, 2019).

The tools utilized to examine the impact of the new patient care delivery model on nurses' perception of the work environment, intent to leave include fifteen nursing work index items, and three subscales (autonomy, control over practice and LPN-RN relationships). The turnover intention scores were compared among three surveys using One-way ANOVA with Bonferroni Correction.

Interventions

The intervention consists of utilizing LPNs on two pilot nursing units, a Surgical Progressive Care Unit and a Medical-Surgical/Telemetry Unit to work with RNs on a modified "team-based" model. The LPNs training and orientation are based on the MSPM. Both intervention units utilize the care delivery model foundations of teamwork, collaboration, trust and role clarity to support their practice. A Cardio-Thoracic/Vascular Surgical Progressive Care Unit (CTV/PCU) is being utilized as the Control Unit.
The pilot program is led by a Clinical Education Specialist who supports the LPN-RN dyad. The Specialist researches evidence-based guidelines to support practice strategies that align with the LPN's scope of practice and organizational policies.

Intervention Unit 1 (IU:1) – PCU(C3IU) is a 30-bed fast paced, short stay surgical unit which prior to the LPN-RN initiative, practice in a primary care delivery model. Currently, LPNs and RNs work on a team approach model to provide patient care interdependently. The LPNs function within their scope of practice and work in partnership with two RNs on the team model. A Patient Care Technician (PCT) supports the team.

Intervention Unit 2 (IU:2) – MS/MT (C2SU) is a 31-bed unit with a combined medical-surgical patient population with varying length of stays. The LPNs and RNs work on a team approach and provide primary patient care interdependently. Each nurse owns their patient load, and the LPN is supported by the RN to fulfill the tasks that are outside of the LPN scope of practice. The team is supported by a PCT.

Control Unit – PCU (C5SU) is a 32-bed CTV/PCU with longer patient stays and is being used as the control unit. RNs work solely on a Primary Care Model using the traditional nursing approach. The primary nurse accepts responsibility for providing and coordinating all aspects of the patient's care. The primary RN is supported by a PCT who aids in providing limited assistance to support patients' needs.

Discussions/Limitations

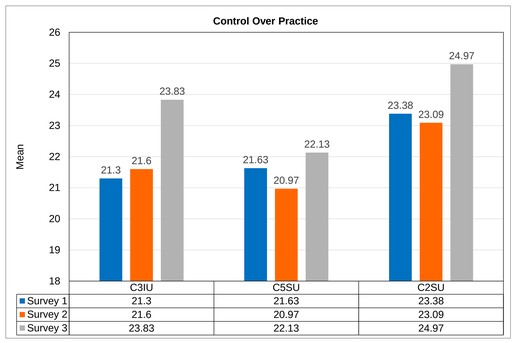
Several variables contributed to this research limiting factors. Since this was a longitudinal study, RNs and LPNs responding to the survey change over time due to attrition and new staff onboarding. Another variable that potentially impacted the study results is the dynamics of change in the healthcare environment during the COVID19-Delta Variant surge at the survey mid-point. Staffing and patient placements were challenging.

Competing priorities to care for patients may have impacted staff participation. Previous studies suggest the LPN models are not as effective in fast-paced environments as those with longer patient days and such was used as one of the intervention units (IU:1). The models used on the intervention units were not uniform and may reflect the paucity in the samples for those two units.

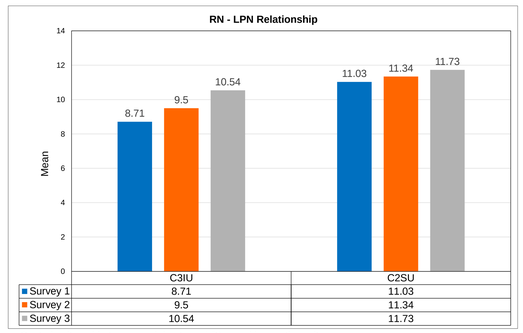
Project Outcomes

The nursing work index subscales of autonomy, control over practice and LPN-RN relationships were used to aggregate and analyze the results of the model on the work environment. The one-way ANOVA test revealed statistical significance (**IU:1** = p<0.001); (**IU:2** = p<0.028) of the 3-phased survey regarding the LPN-RN working relationships for the intervention groups. Of statistical significance also, was the upward improvement trend that was noted at the 12-month timepoint in the LPN-RN relationship for the intervention groups (**IU:1** = p<0.004) and (**IU:2** = p<0.029) respectively.

In addition, the units with LPNs indicated they had enough nurses to provide quality patient care during phase 1 and phase 3 of the survey points. There was statistically significant improvement (**IU:1** = p<0.014); (**IU:2** = p<0.004) for the intervention groups at the 12-month timepoint. They had much higher scores when compared to the control group. Another statistically significant finding in the area of control over practice supported the care delivery model concepts of autonomy, trust, and collaboration.

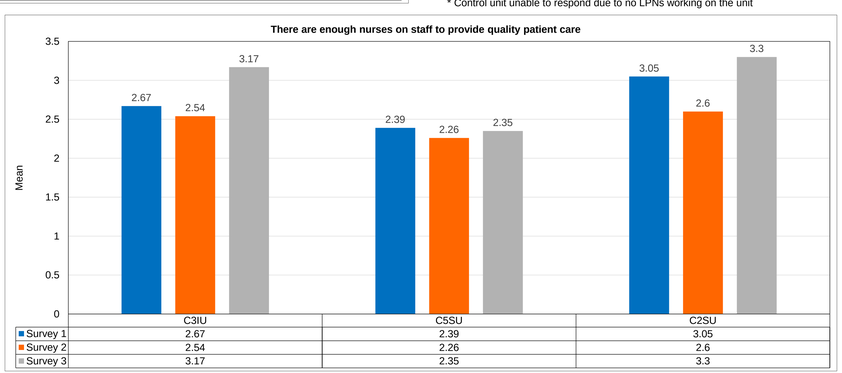


	C3IU	C5SU	C2SU
Survey 1	21.3	21.63	23.38
Survey 2	21.6	20.97	23.09
Survey 3	23.83	22.13	24.97



	C3IU	C2SU
Survey 1	8.71	11.03
Survey 2	9.5	11.34
Survey 3	10.54	11.73

* Control unit unable to respond due to no LPNs working on the unit



	C3IU	C5SU	C2SU
Survey 1	2.67	2.39	3.05
Survey 2	2.54	2.26	2.6
Survey 3	3.17	2.35	3.3

Summary

The research results provide evidence suggesting that implementing a LRCDM provided added staffing resources necessary to provide adequate patient care. It also revealed that the model of care enhances the nurses' work environment in the areas of autonomy, control over practice and teamwork.

There is strong correlation that supports the perception that the intervention units "have enough nurses on staff to provide quality patient care." when compared to the control unit. Several campuses within our hospital system have implemented LPN-RN programs to support the nursing workforce. Developing a systematic approach to develop standardized processes to train and orient the LPNs will contribute to further success of the model.

Further research in nursing areas with fast paced and high patient turnover rates would be recommended to gain new insight into other creative approaches where LPNs can be used to support the workforce. The impetus to develop innovative programs to support the nursing workforce has become essential.

Leaders can use strategic and evidence-based practices to initiate care delivery models that blend trust, collaboration, teamwork and interpersonal relationships as added resources to support nurses, reduce the RNs' workload, and help address nursing shortages.

References

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