Virtual Nursing: Implementing Innovative Models of Care

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Background

Nurse workload is increasing due to the complexity of patient care and the nursing shortage. Nurses are consumed with administrative tasks while not always working at the top of their license. Tenured nurses are leaving the field with an expected 4 million nurses retiring by 2030 (American Journal of Nursing, 2021), creating a widening gap of skills and expertise. The virtual nurse is less likely to be interrupted and studies show that interruptions lead to clinical errors ("Virtual Nursing: Improving Patient Care and Meeting Workforce Challenges," 2023).

Objectives

The objectives are to establish Virtual Nurse workflows that create care models that focus on supporting and alleviating time-intensive tasks with the goal of improving:

- Patient satisfaction
- Patient outcomes
- Patient throughput
- Staff engagement
- Recruitment and retention
- Quality of documentation

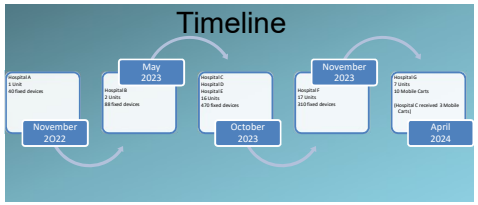
Development

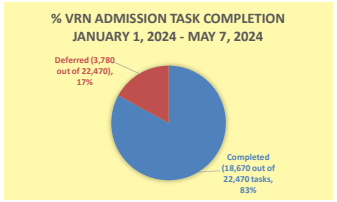
Design and workflow collaborations were held to identify guiding principles. Admission and discharge use cases were developed during this process and workflow analysis was completed. Data driven decisions were discussed regarding key performance indicators (KPI) and appropriate site selection based on productivity and other criteria.
Meaningful evaluation and selection of a virtual care technology vendor was conducted with collaboration between clinical and technology stakeholders.
Long term strategy for the Virtual Care Program included installation of fixed devices in patient rooms to allow future use case creation and AI capabilities.
A virtual nurse team was created by leveraging nurses performing telephone triage.

Methods

A proof of concept was launched on one med-surg unit in one hospital to prove the feasibility of the two-way audio/video technology and admission and discharge workflows. Once the technology proved successful, technology was installed on a second hospital on two med-surg units. After the completion of the proof of concepts, a pilot project was created to include four hospitals on all med-surg and PCU's.
The use of mobile carts was then introduced for speed to market strategy at a hospital that was experiencing increased staffing shortages and a high productivity index.
Education for bedside staff and ancillary departments was done with flyers, marketing materials, learning video and huddles.
The virtual nurses created an extensive onboarding education for new employees.
vRNs work from home and cover seven days a week. Hours vary between facilities.
Service level agreement to complete admission task is four hours and discharge is 2 hours.
Across all hospitals, 908 fixed cameras and 13 mobile carts have been deployed.

Figures





Results

- 51,902 completed tasks since program inception (11/2022)
- Admission tasks completed: 34,832
  - Estimated 7,642 hours of vRN time spent with patients (avg 16 min/admit)
- Discharge tasks completed 17,070
  - Estimated 2,357 hours of vRN time spent with patient (avg 9 min/discharge)
- Total estimated hours vRNs spent with patients: 10,425
- Significant improvement in Adverse Drug Events per 1,000 patients (6/6 hospitals)
- Improvement in LOS Index (5/6 hospitals)
- Overall improved patient engagement scores (4/6 hospitals improved in at least 2 questions)
- 2,413 calls using translation services

Conclusions

- Expand Virtual Nurse scope to include inpatient holds in the ED
- Expand Virtual Nurse hours to cover up to 100% admissions
- Virtual Nurse provides high quality teaching; streamline workflows to increase discharge tasks completion rate
  - Considerations for different discharge processes in each hospital
- Streamline communication pathways between vRN and bedside staff to decrease alert fatigue

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Notes

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Abstract

Today's healthcare workforce faces a critical gap between demand and supply of new and experienced nurses:

- In 2020, the median age of RNs was 52, with more than 20 percent anticipating retirement in the next 5 years (Smiley et al., 2021).
- A 2020 survey reported that 32 percent of RNs said they may leave bedside nursing, up 10% from 10 months earlier (Berlin et. al., 2022)
- Nursing schools turned away nearly 92,000 qualified applications in 2021 due to a lack of faculty and clinical sites (American Association of Colleges of Nursing, 2023).
- Four million nurses are predicted to retire by 2030 (American Journal of Nursing, 2021).

In response, healthcare organizations and health systems are deploying new technologies to deliver care efficiently and safely, such as HCA Healthcare's new virtual nursing pilot program.

This innovative care model increases patient satisfaction and lowers alternative care costs, while reducing burnout, providing a less physical and more flexible work environment, and offering the potential to rehire high-performers who have left nursing.

HCA Healthcare initially piloted virtual nursing in a 25-bed surgical unit in a hospital with no emergency department holds and no critical throughput needs, and a second hospital with two medical surgical units and 88 total beds, with a heavy emphasis on throughput and use of a discharge lounge.

In each case, a virtual nurse handled admission and medication history documentation, providing bedside nurses with 18 more minutes for hands-on patient care that they previously spent on intake tasks, according to an HCA study.

HCA also found that virtual nursing improved completion and accuracy of intake documentation, including an increase of 45 percent in the response rate on one admission form that led to more effective MRSA screening.

In a second use case, HCA deployed a new virtual nursing workflow for discharge, aiming to reduce documentation time while accommodating for the various resources available at individual facilities.

Based on its early success with virtual nursing, HCA recently scaled up the program to cover six facilities and almost 900 inpatient beds.