Stack the odds in favor

# of newly licensed RNs

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In the changing landscape of healthcare, patients are sicker, the use of electronic health records (EHRs) is increasing, and patient lengths of stay are shorter.[1] As nurses, we play an important role in achieving enhanced patient outcomes while simultaneously providing competent and comprehensive care in the most time-efficient manner.[1] However, multiple studies have demonstrated that the stress and difficulties newly licensed registered nurses (NLRNs) experience when they transition to professional nursing practice can make it difficult to meet that high standard of care.[2,3]

For the NLRN, these stressors are substantial and can lead to his or her departure from a nursing unit, a healthcare organization, or even the profession of nursing.[4,5] For the organization, nurse turnover represents a substantial financial loss–as much as $6.4 million for a large, acute healthcare organization.[6-8] In a 10-year longitudinal study investigating turnover among NLRNs, researchers found that nearly one in five (17.5%) leave their first job within 1 year and roughly one in three (33.5%) leave within 2 years.[9] The top reasons for leaving include perceptions of excessive workload, stress, and inability to do quality work.[10]

The hurdle of effective time management can be particularly distressing for NLRNs.[11,12] What amount of time should they budget for common nursing activities? What activities are routinely delegated? Although the problem of NLRN retention is multifaceted, skilled prioritization and care coordination are key to organizing the nurse's workflow and promoting positive patient outcomes.[13] This dynamic and complex cognitive

process, called stacking, involves decision making, organizing, and reorganizing based on patients' changing needs.[14-17] Improving stacking skills decreases stress among NLRNs and helps promote a healthier work environment, supporting safety and quality in healthcare.[14]

Studying common nursing activities

The purpose of this study was to identify time parameters for common nursing activities in the acute care setting, particularly documentation within the EHR. For nurse managers and executives, the study findings can shed light on current workflow patterns, areas of efficiency, and opportunities for improvement. Also, nurse preceptors may appreciate the findings as a way to assist NLRNs with developing cognitive stacking processes, such as organization and care prioritization.

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A search of multiple databases using the keywords *time, time management, preceptor, precepting, nurse transition,* and *novice nurse* resulted in publications primarily limited to anecdotal narratives highlighting opinions and tips to promote successful time management. Only three studies were selected for this literature review: one qualitative study and two quantitative studies.[18-20]

The qualitative study examined the time management strategies of 68 nurses working in a variety of inpatient units in New Zealand. The study included a mix of data collection methods: narrative analysis of data collected in a previous study (n = 22), focus groups (n = 24), and semistructured interviews (n = 22). The use of routines and prioritization were the two primary time management strategies that emerged from the data. Experts contend that developing and following a routine can decrease time spent in planning and reduce time-related stress experienced by nurses. Both processes are influenced by external factors, such as unit schedules, interruptions, and instances of delegation.[18]

The first of the quantitative studies examined time and motion using self-reported data from 30 Swedish day-shift nurses working 7.65 hours per day. The nurses were recruited from three medical-surgical units and one mental health unit. Time duration for nursing activities varied by unit. Verbal report from night to day shift took an average of 80 minutes (15% of the workday). Documentation averaged 60 minutes (13% of the workday). Preparing and distributing medication was the most time-consuming activity.[19]

The second of the two quantitative studies also focused on time and motion, looking at 767 medical-surgical unit nurses at 36 American hospitals. Participants included RNs, LPNs, and LVNs who worked 10-hour shifts. The nurses were provided with a personal digital assistant and asked to document their nursing activities in real time. For these nurses, documentation–not medication administration–was the most time-consuming activity. Medication administration averaged 72 minutes per shift (17.2% of the workday), whereas documentation averaged 147.5 minutes (35.3% of the workday). Only 31 minutes (7.2%) were devoted to patient assessment.[20]

The limitations of these three studies varied; neither quantitative study reported the nurse-to-patient ratio or the types of documentation systems used, nor did these studies involve night-shift nurses or nurses working on intensive or intermediate care units. Additionally, time duration was reported as aggregate data for the nurse taking care of multiple patients, rather than time duration of each activity per patient.

After a review of the literature, we designed our study to obtain a large sample size with nurses from both day and night shifts. We also included areas of specific interest to the nursing student coinvestigators involved in this study, such as *minutes spent reviewing the EHR before seeing patients* and *minutes until all assessment documentation complete*.

Methods

Eighteen baccalaureate nursing research students served as coinvestigators in this study. The students helped with study design and completed all of the data collection. Once the needed documents were

Table 1: Results for each variable by shift

Variable	Day shift (n = 165)		Night shift (n = 154)	
	Mean	SD	Mean	SD
Age	34.78	(9.69)	31.57	(9.02)
Years as a nurse	7.77	(7.942)	5.54	(7.07)
Years on unit	5.92	(6.08)	3.89	(4.92)
Minutes spent reviewing EHR before seeing patients	20.56	(12.54)	20.34	(10.66)
Minutes to receive report on all patients	35.48	(9.04)	35.58	(10.3)
Minutes to complete one patient assessment	13.41	(6.99)	12.75	(6.92)
Percent of time nurse documents assessment in hallway	16.75	(21.79)	16.45	(24.12)
Percent of time nurse documents assessment in patients' rooms	33.24	(25.05)	26.74	(22.02)
Percent of time nurse documents assessment at nurses' station	50.01	(30.16)	56.81	(28.66)
Minutes until all assessment documentation complete	164.62	(63.85)	143.44	(63.33)
Time spent assisting with bathing (in minutes)	21.58	(21.77)	18.14	(23.11)
Time spent assisting with oral care (in minutes)	13.61	(13.89)	17.73	(23.43)
Time spent assisting with feeding (in minutes)	25.56	(28.96)	26.67	(37.34)
Time spent assisting with patient activity—walking, turning, positioning (in minutes)	63.86	(49.71)	67.25	(62.03)

prepared, Institutional Review Board approval was sought and obtained.

Nurses working on either a general or intermediate nursing unit in a large, tertiary medical center located in the Midwestern United States comprised our study population. Rather than handwritten documentation, the medical center used an EHR. Sample size was calculated using a sponsored website.[21] Based on a population of 605 nurses, a confidence level of 99%, and a confidence interval of 5, the necessary sample size was 305 participants. Quota sampling was used to obtain a representative number of nurses from each unit and shift. Day-shift nurses were those nurses working 0700 to 1500 and/or 0700 to 1900. Night-shift nurses were those nurses working 1500 to 2300, 2300 to 0700, and/or 1900 to 0700.

Participation was voluntary and no incentives were offered for participation. Data were collected over a 3- week period using interviews. Student researchers arrived on the units at a time determined by the respective unit managers and read a scripted consent followed by the study questions to each clinical nurse.

The interview tool comprised eight demographic questions and seven study questions related to daily tasks performed by a nurse. Research committees from both the researchers' college and the medical center assessed the tool for validity. Once data collection was complete, the data were analyzed using statistical software.

Results

In total, 319 nurses participated in this study: 165 day-shift nurses and 154 night-shift nurses, with 58 (18.18%) of the nurses in intermediate care and 261 (81.82%) nurses from general units. Participant ages ranged from 21 to 64 years old; 20 of the respondents (6.27%) were male and 299 (93.73%) were female. Total years as a nurse and time on the respective unit both ranged from less than 1 year to 39 years.

Participants were asked to rate their organizational skills using a Likert scale, with 0 being *completely disorganized* and 10 being *very organized*. Night-shift nurses reported a slightly higher mean score (M = 8.05) than day-shift nurses (M = 7.98). *Table 1* shows the results of all variables studied by respective shift.

For the variable *minutes to complete one patient assessment,* mean patient assessment time was calculated by shift and also by unit type. For the nurses working on intermediate units (n = 58), the mean was 15.34 minutes (SD = 8.26). For the nurses working on general units (n = 261), the mean was 12.6 (SD = 6.53). The slightly longer time for intermediate units was expected given higher patient acuity.

For the variable *minutes until all assessment documentation complete*, a

few nurses indicated that their documentation could take several hours. These extreme values are reflected in a seemingly large standard deviation of greater than 60 minutes as shown in *Table 1*. Although the reported values were outliers, data were statistically analyzed as reported and outliers weren't removed or modified before analysis. When the data were transformed to modify outliers, the mean assessment minutes for the day shift was 160.62 (*SD* = 51.50); for the night shift, it was 139.58 (*SD* = 55.40).

The study results highlight a number of areas where nurse managers can improve task efficiency, workflow, and organization.

Independent samples were used to determine differences between shifts. As shown in *Table 2*, Mann-Whitney testing demonstrated two instances of significance: *minutes until all assessment documentation complete* and *percent of time spent documenting in patients' rooms.*

Discussion

The study results highlight a number of areas where nurse managers can improve task efficiency among unit nurses and NLRN orientation can be modified to improve workflow and organization. Shift report, for one, is critical communication that maintains quality and safety.[22] At the medical center where study participants worked, bedside shift report is used. For both day shift and night shift, the mean time to receive report was just under 36 minutes. This is somewhat longer than the 29 minutes reported by other researchers, reflecting both the time used to receive report as well as the time used waiting for the offgoing nurse to give report.[23] These findings warrant an investigation into the amount of time that's used waiting for an offgoing nurse to give report to an oncoming nurse.

The early identification of a change in a patient's condition is essential for timely intervention and the prevention of patient deterioration.[24] Completing one patient assessment should take between 5 and 10 minutes.[25,26] However, the results of this study demonstrate that nurses take, on average, 12.75 to 13.41 minutes to conduct a patient assessment. These findings provide useful benchmark data for nurse preceptors, given that a majority of prelicensure programs teach just under 100 physical assessment skills when only 30 of these skills are routinely used in nursing practice.[27,28] It's imperative that nurse preceptors assist NLRNs in honing their assessment skills to address individual patient needs and promote timely intervention. This becomes even more critical when NLRNs transition from the care of one or two assigned patients as a student to the care of four to six patients.

Overall, nurses who participated in this study completed assessment documentation on their assigned patients between 143 and 165 minutes after the onset of their shift. These reports represent time until documentation was complete and aren't a direct measurement of the time nurses spent entering data directly into the EHR. Perhaps this reported time range reflects the actual time needed to perform assessments and enter documentation; it may also reflect the many interruptions in the nurse's day or it may suggest that nurses don't see documentation as a priority activity. Further research is needed in this area.

The reason for a significant difference in time for assessment

Table 2: Instances of significant results between shifts

Variable	Day shift median	Night shift median	*U*	*Z*	*p*	*r*
Minutes until all assessment documentation complete	150	120	9662.5	-3.749	0.000	0.16
Percent of time spent documenting in patients' rooms	25	20	10852.5	-2.266	0.023	0.14

documentation between day and night shifts isn't known. Perhaps the interruptions in workflow for nurses on night shift are fewer. However, this is just speculation and needs investigation.

Further, the Institute of Medicine advocates a culture of safety among healthcare organizations.[30] Rather than delaying documentation and relying on memory, documenting at the point of care (POC) is a critical component to the culture of safety and promoting accurate and timely entries in the patient's EHR.[31] However, the findings of this study indicate that nurses often delay documentation, with just one-third of day-shift nurses and one-fourth of night-shift nurses documenting in the patient's room. Typically, barriers to POC documentation include concerns over patient privacy, distractions, or interruptions from patients and visitors. The researchers concluded that further investigation is needed concerning perceived barriers and nurses' workflow patterns.[31,32] Again, for nurse preceptors, educating NLRNs about the reasons for POC documentation and promoting this practice as a workflow pattern may assist in the development of desired habits.

Last, the data show that the time nurses spend assisting with patient hygiene is considerable. Regardless of shift, the cumulative mean of these activities accounts for slightly more than 2 hours of every shift. These activities (such as feeding, oral care, and repositioning) may warrant direct nursing care or represent opportunities for increased delegation. Most NLRNs have limited experience with delegation.[33] These findings may present an opportunity to dialogue with NLRNs about care coordination and productive delegation.

Additional considerations

This study's findings provide nurse managers and nurse administrators with benchmark data to structure effective workflow patterns and identify strengths and weaknesses in current time expenditures. The study also provides quantitative measures that may be used for educating NLRNs on cognitive stacking in the clinical setting to ease the transition from student to professional nurse.

Although this study offers insight into basic time measures and parameters for common nursing activities, it also raises more questions for further research. Certainly, repeated research is needed to support this study's findings, and data collection involving direct observation rather than self-reported data would strengthen the evidence. Time parameters concerning medication administration weren't within the scope of this study. However, data on medication administration, as well as time spent addressing interruptions or locating resources, may help identify common time parameters for these activities.

A broader longitudinal study focusing on the acclimation of NLRNs to the clinical setting over the first 12 to 18 months of practice may provide valuable information regarding transition to practice. Many organizations in today's tumultuous healthcare climate can benefit from decreased NLRN turnover. Effective time management education through the use of benchmark data can help with this effort, decreasing stress and increasing care quality. NM

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