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A Quality Improvement Initiative to Reduce Documentation Burden among Nursing Supervisors through a Structured Report Book

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Abstract

Introduction: Nursing Supervisors are responsible for coordinating patient care, managing resources, and ensuring continuity of clinical and administrative services. Effective nursing documentation is essential for ensuring continuity of care, communication, administrative accountability, and patient safety. The existing handwritten Nursing Supervisor Report Book required repeated manual drawing of lines and tables, duplication of patient information, and variable formats for documenting patient reports and patient death reports. These practices resulted in prolonged documentation time, inconsistent reporting, and workflow inefficiencies. Standardized documentation formats can streamline reporting processes, reduce unnecessary writing, and improve documentation efficiency. Therefore, this Quality Improvement (QI) initiative was undertaken to evaluate the effectiveness of introducing a structured, printed Nursing Supervisor Report Book in reducing documentation time.

Material & Methods: A Quality Improvement (QI) project using Action Research methodology was conducted among Nursing Supervisors at a tertiary care trauma centre. A redesigned Nursing Supervisor Report Book with preformatted tables and standardized documentation fields was developed and implemented to streamline documentation. Documentation time before and after implementation was assessed through structured interviews during evening and night shifts (30 observations per shift). The primary outcome was the reduction in mean total documentation time, while secondary outcomes included activity-wise time savings and improved documentation efficiency. Data were analysed using paired samples t-tests. Prior administrative approval was obtained from the competent hospital authority.

Results: Implementation of the New Nursing Report Book was associated with a statistically significant reduction in documentation time during both evening and night shifts (n = 30 per shift). The mean total

documentation time decreased from 76.77 to 27.40 minutes during the evening shift, saving 49.37 minutes (64.3%; t = 14.48, p < 0.01), and from 109.63 to 44.00 minutes during the night shift, saving 65.63 minutes (59.9%). Activity-wise analysis demonstrated significant reductions across all four documentation activities (p < 0.01). Drawing lines and tables showed the highest percentage reduction (100%) in both shifts, while preparing patient reports and area census accounted for the greatest absolute time savings (24.00 minutes in the evening shift and 29.27 minutes in the night shift). Overall, the redesigned Nursing Report Book substantially reduced documentation time and improved documentation efficiency among nursing supervisors, potentially allowing more time for clinical supervision and patient care activities.

Conclusions: The structured Nursing Supervisor Report Book was an effective, low-cost quality improvement intervention that substantially reduced documentation time and eliminated unnecessary repetitive documentation activities. Standardization of supervisory documentation improved workflow efficiency and enabled Nursing Supervisors to devote more time to clinical supervision, patient safety, staff coordination, and quality improvement activities. The intervention has potential for wider implementation in tertiary care hospitals to strengthen nursing administration and optimize healthcare delivery.

Keywords: Nursing Supervisor, New Nursing Report Book, Quality Improvement Initiative

Introduction

Effective nursing documentation is fundamental to safe, coordinated, and accountable healthcare delivery. Accurate, complete, and timely records facilitate communication among healthcare professionals, support clinical decision-making, ensure continuity of care, and provide essential information for quality monitoring and administrative review. The World Health Organization emphasizes strengthening healthcare processes to minimize preventable harm and improve patient safety.[1] Systematic reviews by Wang et al.[2] and Saranto and Kinnunen[3] further highlight the importance of evaluating nursing documentation to improve its quality, consistency, and usefulness in clinical practice.

Despite its importance, documentation constitutes a considerable component of nursing workload. The Royal College of Nursing reported that nurses in the United Kingdom spent approximately 2.5 million hours per week on paperwork, highlighting the substantial administrative demands associated with nursing practice.[4] Alghamdi[5] identified documentation and administrative responsibilities as components of nursing workload, while Brown et al.[6] emphasized the need to assess documentation burden systematically. De Groot et al.[7] further examined the relationship between nursing documentation and perceived workload among community nurses, underscoring the importance of efficient documentation processes.

Conventional documentation systems may involve repetitive entries, inconsistent reporting formats, and difficulties in retrieving information. Vafaei et al.[8] identified barriers affecting nursing documentation practices, while Blair and Smith[9] discussed documentation frameworks and challenges encountered by nurses. Chelagat et al.[10] also examined the purposes, benefits, and challenges of nursing documentation. These studies highlight the importance of addressing documentation-related barriers through improved recording practices and organizational support.

The documentation burden is particularly relevant in tertiary care hospitals, where Nursing Supervisors undertake multiple clinical and administrative

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responsibilities, including monitoring bed occupancy, coordinating nursing services, documenting critical incidents and patient deaths, and ensuring effective communication between shifts. Collins et al.[11] quantified nursing flowsheet documentation burden in acute and critical care settings, demonstrating the importance of examining documentation activities. Oliveira and Peres[12] also evaluated the quality of nursing process documentation within clinical decision support systems, emphasizing the role of structured documentation in healthcare information management.

Standardized documentation formats incorporating predefined fields, organized sections, and preformatted tables offer a practical approach to reducing repetitive writing and improving workflow efficiency. Tyagi et al.[13], in a quality improvement initiative conducted at AIIMS, New Delhi, reported a substantial reduction in nursing documentation time following the introduction of a structured nursing record format. Similarly, Donabedian's structure–process–outcome framework[14] provides a conceptual basis for improving healthcare delivery through process redesign.

At present, the conventional handwritten Nursing Supervisor Report Book required manual preparation of tables, repetitive recording of patient-related information, and completion of reports without a fully standardized format. These activities were identified as potential contributors to avoidable documentation workload. Accordingly, a standardized printed Nursing Supervisor Report Book incorporating predefined fields, preformatted tables, and organized reporting sections was introduced to streamline supervisory documentation.

Although previous studies have examined the benefits of structured nursing documentation, evidence specifically addressing the time required for Nursing Supervisors to prepare shift reports using standardized printed report books remains limited. Evaluating such interventions is particularly relevant in resource-constrained healthcare environments, where optimizing administrative processes may help nursing personnel manage competing clinical and supervisory responsibilities.

Therefore, the present Quality Improvement initiative was undertaken to evaluate the effectiveness of introducing a standardized printed Nursing Supervisor Report Book in reducing mean documentation time during evening and night shifts. The study also aimed to assess activity-wise time savings and determine whether the redesigned format could improve documentation efficiency by minimizing repetitive manual formatting and simplifying supervisory reporting processes.

Methodology

This Quality Improvement (QI) initiative was conducted at tertiary care trauma centre, using an Action Research approach with a before-and-after comparative design to evaluate the effectiveness of a standardized printed Nursing Supervisor Report Book in reducing documentation time. The initiative involved assessing the existing handwritten Nursing Supervisor Report Book (old format), identifying time-consuming and repetitive documentation activities, developing and implementing a redesigned printed report book (new format), and evaluating changes in documentation time. The new format incorporated predefined fields, preformatted tables, and organized sections to facilitate systematic recording of supervisory information and eliminate the need for manually drawing lines and tables. Documentation time was assessed during evening and night shifts, with 30 observations recorded for each shift. Data were collected through structured interviews with Nursing Supervisors regarding the time required to complete routine documentation activities, including recording special points and bed/patient information,

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drawing lines and tables, preparing patient reports and area census, and documenting patient deaths. The initiative was undertaken with institutional administrative approval as an internal quality improvement activity, without direct patient participation.

Action Research Cycle



Results

The implementation of the new report book significantly improved documentation efficiency during both the evening and night shifts by reducing the time required for all major documentation activities.

Section 1: Activity-wise comparison of mean time taken in evening shift

Table 1: Activity-wise Comparison of Mean Documentation Time Using Old and New Nursing Report Books During the Evening Shift, with Percentage Reduction and Paired "t" value (N = 30)

Activity	Mean Time taken in Old report book format	Mean Time taken in New report book format	Mean Time Saved	Percentage Reduction in Time taken	"t" value
Special points, bed & patient information	15.07	8.83	6.23	41.4%	9.70
Drawing lines and tables	10.13	0.00	10.13	100.0%	23.10
Patient report & area census	39.17	15.17	24.00	61.3%	8.51
Death report	12.00	3.40	8.60	71.7%	17.79

The activity-wise analysis revealed statistically significant reductions in documentation time across all four activities using the New Nursing Report Book ($p < 0.01$). Drawing lines and tables showed the highest percentage reduction (100%; 10.13 minutes saved), followed by death reports (71.7%), patient reports and area census (61.3%), and special points and patient information (41.4%). However, the greatest absolute time saving was observed in preparing patient reports and area census (24 minutes). Overall, the findings indicate improved documentation efficiency and reduced workload among nursing supervisors.

Section 2: Activity-wise comparison of mean time taken in night shift

Table 2: Activity-wise Comparison of Mean Documentation Time Using Old and New Nursing Report Books During the Night Shift, with Percentage Reduction and "t" value (N = 30)

Activity	Mean Time taken in Old report book format	Mean Time taken in New report book format	Mean Time Saved	Percentage Reduction in Time taken	"t" value
Special points, bed & patient information	35.00	20.33	14.67	41.9%	10.50
Drawing lines and tables	13.50	0.00	13.50	100.0%	22.42
Patient report & area census	49.33	20.07	29.27	59.3%	9.46
Death report	11.80	3.60	8.20	69.5%	15.92

The activity-wise analysis revealed statistically significant reductions in documentation time across all four activities using the New Nursing Report Book during the night shift ($p < 0.01$). Drawing lines and tables showed the highest percentage reduction (100%; 13.50 minutes saved), followed by death reports (69.5%), patient reports and area census (59.3%), and special points, bed and patient information (41.9%). However, the greatest absolute time saving was observed in preparing patient reports and area census (29.27 minutes). Overall, the findings indicate that the New Nursing Report Book was associated with improved documentation efficiency and reduced documentation workload among nursing supervisors during the night.

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Section 3: Activity-wise Comparative Analysis of Documentation Time Using Old and New Nursing Report Books During Evening and Night Shifts

The bar graph illustrates a reduction in mean documentation time across all four activities using the New Nursing Report Book during both evening and night shifts. Drawing lines and tables showed the highest percentage reduction (100%) in both shifts, as this activity was completely eliminated. The greatest absolute time saving was observed in preparing patient reports and area census, with reductions of 24 minutes during the evening shift and 29.27 minutes during the night shift. Documentation time was generally higher during the night shift, particularly for special points and patient reports. Overall, the findings indicate that the New Nursing Report Book was associated with improved documentation efficiency and reduced documentation workload among nursing supervisors during both shifts.

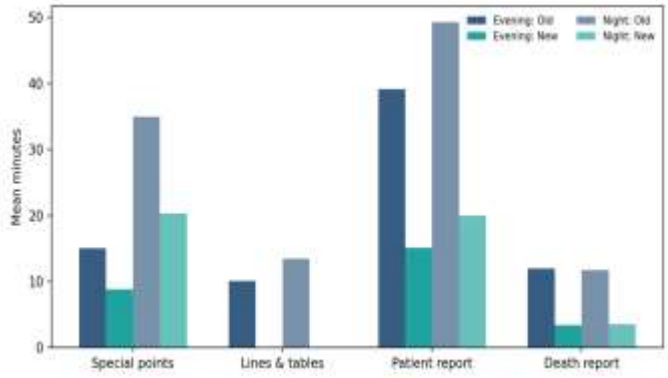


Figure 1: Activity-wise Comparison of Mean Documentation Time Using Old and New Nursing Report Books During Evening and Night Shifts

Section 4: Mean Difference in total documentation time in evening and night shift.

Table 3: Comparison of Mean Total Documentation Time and Percentage Reduction Between Old and New Nursing Report Books During Evening and Night Shifts N-30

Shift	Old Total Time Mean (min)	New Total Time Mean (min)	Mean Time Saved (min)	Percentage Reduction in Time
Evening	76.77	27.40	49.37	64.3%
Night	109.63	44.00	65.63	59.9%

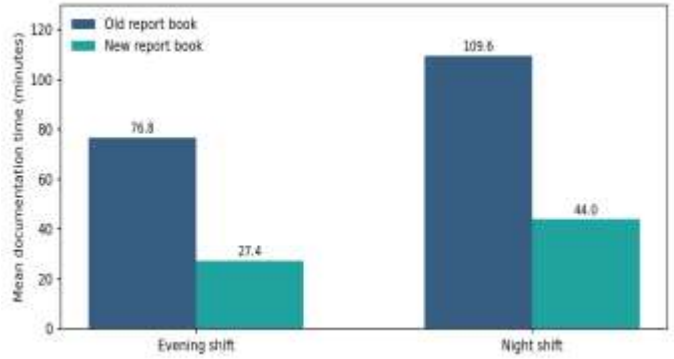


Figure 2: Comparison of Mean Total Documentation Time Using Old and New Nursing Report Books During Evening and Night Shifts

As evident from table 3 & figure 2, Evening shift mean documentation time decreased from 76.77 to 27.40 minutes, saving 49.37 minutes (64.3%) whereas night shift time decreased from 109.63 to 44.00 minutes, saving 65.63 minutes (59.9%).

Table 4: Comparison of Mean Total Documentation Time Between Old and New Nursing Report Books During the Evening Shift Using a Paired Samples "t" value (n = 30)

Report Book Format	Mean	Mean Difference	SDd	Standard Error	Calculated "t" Value
Old Report Book	76.8	49.37	18.68	3.41	14.48*
New Report Book	27.4				
*"t" value for df (29) level = 2.75 at 0.01 level of significance.					

The calculated t-value of 14.48 is greater than the stated critical t-value of 2.75 at the 0.01 level of significance (df = 29). Therefore, the difference is statistically significant. Overall, the redesigned report book substantially reduced the documentation burden by eliminating manual

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formatting, standardizing documentation, and simplifying reporting processes. The greatest improvements were observed in the elimination of manual table preparation and the reduction in patient report and census documentation time. These changes enabled Nursing Supervisors to save time, allowing more time for direct patient care, clinical supervision, staff coordination, and quality improvement activities while enhancing workflow efficiency.

Discussion

The present Quality Improvement (QI) initiative demonstrated a substantial reduction in estimated nursing supervisory documentation time following the introduction of a standardized printed Nursing Supervisor Report Book. The mean documentation time decreased from 76.77 to 27.40 minutes (64.3% reduction) during evening shifts and from 109.63 to 44.00 minutes (59.9% reduction) during night shifts. These findings are consistent with Tyagi et al.,[5] who reported a reduction in nursing documentation time following the introduction of a structured nursing record format.

Activity-wise analysis revealed that eliminating the manual drawing of lines and tables resulted in a 100% reduction in time spent on this activity, while preparation of patient reports and area census contributed the greatest absolute time savings in both shifts. These findings highlight the importance of minimizing repetitive documentation activities, consistent with studies by Brown et al.[3] and Cooper et al.[4] on nursing documentation burden. The use of predefined fields and standardized reporting sections also aligns with the principles of systematic documentation and healthcare process improvement described by Wang et al.[2] and Donabedian.[6]

The initiative demonstrates that a simple, low-cost intervention can improve documentation efficiency without requiring advanced technology. However, the findings are limited by the single-centre setting, reliance on interview-based time estimates rather than direct observation, and exclusion of routine morning shifts. Furthermore, documentation accuracy, completeness, and patient outcomes were not independently assessed. Despite these limitations, the findings suggest that standardized reporting formats may reduce administrative workload and potentially allow Nursing Supervisors to devote more time to clinical supervision and patient care coordination.

Implications for Nursing Administration:

- Reduces documentation burden.
- Increases time available for patient care.
- Improves nursing workflow.
- Standardizes reporting practices.
- Facilitates quality assurance.

Limitations

- The study was conducted at a single tertiary care hospital, and included a relatively small sample of 30 observations per shift, which may limit the representativeness of the results.
- A continuous time–motion study could not be conducted because documentation activities were fragmented and performed intermittently throughout the shift, alongside other supervisory responsibilities. This limited the feasibility of continuous direct observation and precise measurement of documentation time.
- The study primarily focused on documentation activities during evening and night shifts, as morning shift reports are prepared only on Sundays and gazetted holidays. Therefore, morning shifts were not included in the study, which may limit the applicability of the findings to these shifts.

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Conclusion

The structured Nursing Supervisor Report Book proved to be an effective intervention for reducing documentation burden. Across all duty shifts, documentation time was reduced by more than half, demonstrating that simple administrative innovations can significantly enhance nursing efficiency. Adoption of standardized documentation formats has the potential to improve workflow, optimize nursing resources and strengthen patient care services in tertiary care hospitals.

Recommendations

- Develop an electronic Nursing Supervisor Report Book.
- Integrate with Hospital Information Systems.
- Conduct multicentre validation studies.
- Evaluate documentation quality and user satisfaction.
- Assess cost-effectiveness and long-term sustainability

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