

# A QUALITY ASSESSMENT OF IMMEDIATE POSTOPERATIVE NURSING CARE DOCUMENTATION

*Avaliação da qualidade dos registros de enfermagem nos cuidados pós-operatórios imediatos*

*Evaluación de la calidad de los registros de enfermería en los cuidados postoperatorios inmediatos*

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**ABSTRACT: Objective:** To assess the quality of immediate postoperative nursing care documentation in reference units in the state of Pernambuco, Brazil. **Method:** A descriptive, cross-sectional, documental and comparison study with a qualitative approach performed in three hospitals (A, B, C). The sample was comprised of 130 health records from October to November 2015 and the data was collected from a semi-structured form. **Results:** The records, checking and evaluation of procedures were performed differently in each of the assessed hospitals. In hospital A, there was no recording of vital signs, whereas in hospitals B and C, there was. In institutions A and C, in 100% of the cases, there was no calculation performed that used the Aldrete-Kroulik scale. The three institutions demonstrated good results with legible documentation that did not have many erased items. **Conclusion:** It was found that the hospitals analyzed don't meet the standards proposed by the predominant postoperative care literature regarding nursing documentation.

**Keywords:** Quality of health care. Nursing records. Postoperative care. Operating room nursing.

**RESUMO: Objetivo:** Avaliar a qualidade dos registros de enfermagem nos cuidados pós-operatórios imediatos em unidades de referência no estado de Pernambuco. **Método:** Estudo transversal, descritivo, documental e comparativo com abordagem quantitativa, realizado em três hospitais (A, B, C). A amostra foi composta por 130 prontuários no período de outubro a novembro de 2015 com dados coletados por meio de um formulário semiestruturado. **Resultados:** Os registros, a checagem e as avaliações dos procedimentos foram feitos de formas diferentes nos hospitais avaliados. No hospital A não houve registro dos sinais vitais, enquanto nos hospitais B e C, os mesmos foram verificados. Sobre a escala de Aldrete e Kroulik (AK), nas instituições A e C não houve realização do cálculo em 100% dos casos. As três instituições apresentaram bons resultados, como prontuários legíveis e sem a presença de rasuras. **Conclusão:** Os hospitais analisados não atendem aos padrões preconizados pelas principais literaturas na área de cuidados pós-operatórios quanto aos registros de enfermagem.

**Palavras-chave:** Qualidade da assistência à saúde. Registros de enfermagem. Cuidados pós-operatórios. Enfermagem de centro cirúrgico.

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**RESUMEN:** **Objetivo:** Evaluar la calidad de los registros de enfermería en el cuidado postoperatorio inmediato en las unidades de referencia en el Estado de Pernambuco, Brazil. **Métodos:** Estudio transversal, descriptivo, documental y comparativo con enfoque cuantitativo realizado en tres hospitales (A, B, C). La muestra estuvo compuesta por 130 registros médicos durante el período de octubre a noviembre de 2015 con los datos recolectados a través de un formulario semi-estructurado. **Resultados:** Los registros, el control y la evaluación de procedimientos fueron hechos de diferentes maneras en los hospitales evaluados. En el hospital A, no hubo registro de signos vitales, mientras que en los hospitales B y C, han sido verificados. En la escala de Aldrete y Kroulik, en las instituciones A y C, no había ninguna realización del cálculo en el 100% de los casos. Las tres instituciones mostraron buenos resultados en lectura de cartas y la presencia de raspaduras. **Conclusión:** Parece que los hospitales analizados no cumplen con las normas recomendadas por las principales literaturas en el área de cuidados postoperatorios acerca de los registros de enfermería. **Palabras clave:** Calidad de la atención de salud. Registros de enfermería. Cuidados posoperatorios. Enfermería de quirófano.

## INTRODUCTION

Nursing notes are primary documents that record the actions and activities performed by the nursing team, proving that they provided quality care. The notes are records that are meant for the entire nursing team and they are essential for the systematization of nursing care (*sistematização da assistência de enfermagem* — SAE). They should evaluate and reflect the complexities of the patient and should involve, in particular, biopsychosocial aspects that allow for the case to evolve, and for strategies to be made that aim at completing comprehensive care<sup>1</sup>.

These records guarantee more effective communication among the members of the health team and are used as ethical and legal tools to reveal negligence from the part of nursing professionals and from the hospital itself to evaluate the quality of the services<sup>2</sup>. To manage the quality of nursing care and the costs associated with the rendering of services, auditing has been the most widely used evaluating instrument<sup>3</sup>.

The practice of auditing in the health field emerged with the purpose of evaluating the quality of care provided to patients. It is a method that systematically and independently evaluates facts obtained through observations and through the assessment of recommendations established in the current norms, and it aims to determine if the health services and their results are in agreement with the quality indicators<sup>3</sup>.

Thus, an evaluation of the quality of services provided by the nursing team reflects the analysis of the records identified in the audit. The lack of records results in less continuous care and a decrease in care in the sectors with high complexity procedures, such as the post-anesthetic care unit (PACU). Nurses should ensure that patients are evaluated

comprehensively, especially with regard to the recording of vital signs and the occurrence of complications<sup>4</sup>.

The PACU has peculiar routines for patient care. It is characterized by critical care and aims to provide intensive care in the immediate postoperative period (IPO) of patients who undergo surgeries with anesthesia and diagnostic procedures<sup>4,5</sup>.

This hospital unit is intended for patients at the end of their procedure and lasts until their vital signs and consciousness are stable, in order to detect and avoid complications that may occur as a result of anesthesia or surgery<sup>5</sup>.

The relevance of this issue is corroborated by the need for nursing documentation in the medical records and, particularly, by the care given to vital signs and nursing interventions. The gaps in research on record quality in the PACU deserve attention considering the kind of evidence that such records represent for the classification of practices carried out by the nursing team.

## OBJECTIVE

To assess the quality of immediate postoperative nursing care documentation in reference units in the state of Pernambuco, Brazil.

## METHOD

A descriptive, cross-sectional, documental and comparative study was implemented with a qualitative approach that performed a quality assessment of nursing documentation in the PACU of reference units in the state of Pernambuco.

A quantitative approach was chosen because it corresponds to the stage of the descriptive analysis process that allows for the exploration of data that comes as close as possible to the studied reality. Furthermore, it searches for some relevant pattern or behavior that is present in the data set<sup>6</sup>.

Data collection was carried out from October to November of 2015, at the PACU of three reference hospital units in the city of Recife, Pernambuco, Brazil. The institutions are here designated as hospital A, hospital B and hospital C, with 16, 7 and 9 beds, respectively.

The inclusion criteria were records of patients admitted to these POI care units, and who were undergoing elective surgical procedures. The patients were over 18 years of age, were of both genders and had a minimum stay of 2 hours in the PACU. Considering these criteria, the study sample consisted of 130 medical records, 50 from hospital A, 50 from hospital B, and 30 from hospital C.

For the data collection, a semi-structured form composed of three parts was used. From this form, the identification of nursing admission data, the characterization of nursing records related to hemodynamic monitoring, the Aldrete and Kroulik (AK) index, and the identification of the main complications and actions registered by the nursing team in the reference units were carried out.

Part I of the instrument was comprised of eight objective and subjective questions, which dealt with the quality of nursing records with regard to epidemiological and clinical aspects, such as gender, age, diagnostic hypothesis, allergies, surgical specialty, type of anesthesia, and clinical history (CH)<sup>7</sup>.

Part II included the recording of hemodynamic monitoring and vital signs (HMVS) and patterns such as blood pressure (BP), heart rate (HR), oxygen saturation (Sat O<sub>2</sub>), respiratory rate (RR) and temperature (T)<sup>7</sup>.

Part III was comprised of complication records that occurred during the stay in the PACU and the nursing care applied with each complication. It is highlighted that the data collection instrument was based on similar studies and underwent some changes and adaptations<sup>7</sup>.

For data analysis, a database was built in a Microsoft Excel® spreadsheet, which was then exported to the Statistical Package for the Social Sciences (SPSS) software. In order to evaluate the quality of the nursing records with regard to the epidemiological and clinical profile of the charts from each hospital, the percentage frequencies and the frequency distributions were calculated.

A survey of the factors related to hemodynamic monitoring and HMVS of the patients, the factors related to the admission record and nursing actions, the complication records and the nursing interventions performed was also carried out for each institution evaluated. To compare the factors evaluated between institutions, the  $\chi^2$  test for homogeneity was applied. All analyses were performed considering a significance level of 5%.

The study was approved by the Research Ethics Committee of the University of Pernambuco (CEP / UPE), in compliance with Resolution No. 466/2012 of the National Health Council (opinion number 1,265,296). For the present research, it was not necessary to use a Free and Informed Consent Form (*Termo de Consentimento Livre e Esclarecido--TCLE*), since it was a study that only used documents.

## RESULTS

Table 1 shows the distribution of the epidemiological and clinical profile of the patients, according to each hospital evaluated.

When observing the homogeneity test, it was verified to be significant in all factors ( $p$  value = 0.002 for gender and  $p$  value <0.001 for the others), indicating that there is a difference in the prevalence of these factors in the hospitals evaluated.

The distribution of factors related to the hemodynamic monitoring of patients is shown in Table 2.

The homogeneity test of the distribution of factors related to hemodynamic monitoring and vital signs among the hospitals evaluated was significant for all factors ( $p$  value <0.001), indicating that the records, checks and evaluations of the procedures are done in different ways in the three institutions. Hospital A's results were the most distinct from the ones recommended in the literature.

Table 3 shows the distribution of factors related to admission records and nursing activities, according to the hospital evaluated.

The homogeneity test of the distribution of factors related to nursing records and activities in the three hospitals evaluated was significant in all factors, ( $p$  value <0.05), indicating that the admission records and nursing activities are done in different ways in hospitals A, B and C. Hospital C had the best record situation, except in the case

**Table 1.** The distribution of nursing records with regard to the epidemiological and clinical profile of the patients, by hospital.

Variables	Hospital			P value	
	A	B	C		
Gender n (%)					
Male	35 (70.0)	18 (36.0)	19 (63.3)	0.002*	
Female	15 (30.0)	32 (64.0)	11 (36.7)		
Age (years)					
Minimum	19	18	34	–	
Maximum	87	81	84	–	
Average±SD	48.0±18.5	56.5±16.3	60.9±13.0	–	
Surgical specialty n (%)					
Bucomaxilofacial	3 (6.0)	–	–	–	
Cardiovascular	–	–	28 (93.3)		
General	7 (14.0)	14 (28.0)	–		
Neurosurgery	13 (26.0)	–	–		
Oncology	5 (10.0)	23 (46.0)	–		
Orthopedics	13 (26.0)	–	–		
Plastic	2 (4.0)	1 (2.0)	–		
Urology	–	12 (24.0)	–		
Vascular	7 (14.0)	–	2 (6.7)		
Type of anesthesia n (%)					
Block	4 (6.7)	–	–	–	
Sedation	8 (13.3)	6 (9.0)	–		
General	17 (28.3)	23 (34.3)	27 (90.0)		
General balanced	9 (15.0)	6 (9.0)	2 (6.7)		
Local	1 (1.7)	3 (4.5)	1 (3.3)		
Epidural	3 (5.0)	11 (16.4)	–		
Spinal	14 (23.3)	17 (25.4)	–		
Total intravenous	4 (6.7)	1 (1.5)	–		
Allergies n (%)					
Yes	8 (16.0)	12 (24.0)	2 (6.7)		<0.001*
No	27 (54.0)	38 (76.0)	28 (93.3)		
Not informed	15 (30.0)	–	–		
Clinical history n (%)					
Yes	25 (50.0)	33 (66.0)	28 (93.3)	<0.001*	
No	10 (20.0)	17 (34.0)	2 (6.7)		
Not informed	15 (30.0)	–	–		

SD: standard deviation; \*p-value of the  $\chi^2$  test for homogeneity (if  $p < 0.05$ , the distribution factor evaluated is identical in the hospitals evaluated).

of complications and nursing interventions, in which there was no notification in any of the hospitals.

## DISCUSSION

Based on the data obtained, it was observed that more men were admitted to the PACU in hospitals A and C. Only institution B recorded a larger number of women admitted. The prevalence of males in the present study differs from the literature. In a study analyzing the medical records of 260 surgical patients admitted to the PACU, more than 50% were female<sup>4</sup>.

**Table 2.** The distribution of nursing records with regard to factors related to hemodynamic monitoring and patients' vital signs, by hospital.

Factor evaluated	Hospital			P value
	A	B	C	
	n (%)	n (%)	n (%)	
Record of vital signs				
Yes	20 (40.0)	39 (78.0)	30 (100.0)	<0.001*
No	30 (60.0)	11 (22.0)	–	
Verifying the heart-rate record				
Yes	14 (28.0)	39 (78.0)	30 (100.0)	<0.001*
No	36 (72.0)	11 (22.0)	–	
Verifying the respiratory frequency record				
Yes	12 (24.0)	38 (76.0)	30 (100.0)	<0.001*
No	38 (76.0)	12 (24.0)	–	
Verifying the blood pressure record				
Yes	15 (30.0)	39 (78.0)	30 (100.0)	<0.001*
No	35 (70.0)	11 (22.0)	–	
Verifying the oxygen saturation record				
Yes	14 (28.0)	38 (76.0)	30 (100.0)	<0.001*
No	36 (72.0)	12 (24.0)	–	
Verifying the temperature record				
Yes	–	6 (12.0)	30 (100.0)	<0.001*
No	50 (100.0)	44 (88.0)	–	
Application of the Aldrete and Kroulik Index				
Yes	–	15 (30.0)	–	<0.001*
No	50 (100.0)	35 (70.0)	30 (100.0)	
Correct application of the Aldrete and Kroulik Index				
Yes	–	6 (40.0)	–	–
No	–	9 (60.0)	–	

\*p-value of the  $\chi^2$  test for homogeneity (if  $p < 0.05$ , the distribution factor evaluated is identical in the hospitals evaluated).

The predominant surgical interventions performed in the hospitals were neuro, orthopedic, oncological and cardiovascular surgeries. When associated to the variables “type of surgery” and “gender”, the National Policy on Men’s Health Care (Política Nacional de Atenção à Saúde do Homem) points to a greater number of accidents due to external causes. Furthermore, it shows the aversion these individuals have with regard to their own self-care and to the prevention of morbidities, which forces the system to assist them in the more advanced stages of diseases and treatment<sup>8</sup>.

It was observed that general anesthesia was the anesthesia most often used in the hospitals. It is of great importance to record the type of anesthesia used in surgical procedures, because through correct and effective monitoring, it is possible to quickly identify changes presented in the post-anesthetic period and, consequently, a greater understanding of the drugs<sup>4</sup>.

**Table 3.** The distribution of factors related to the quality of nursing records, according to the hospital evaluated.

Factor evaluated	Hospital			p value
	A	B	C	
	n (%)	n (%)	n (%)	
Legible Medical Record				
Yes	33 (66.0)	35 (70.0)	30 (100.0)	0.002*
No	17 (34.0)	15 (30.0)	–	
Medical Record with erasures				
Yes	11 (22.0)	19 (38.0)	–	<0.001*
No	39 (78.0)	31 (62.0)	30 (100.0)	
Records are signed and initialed				
Yes	32 (64.0)	23 (46.0)	30 (100.0)	<0.001*
No	18 (36.0)	27 (54.0)	–	
Record of the time of the interventions				
Yes	8 (16.0)	39 (78.0)	30 (100.0)	<0.001*
No	42 (84.0)	11 (22.0)	–	
Record of the complications				
Yes	3 (6.0)	5 (10.0)	8 (26.7)	0.020*
No	47 (94.0)	45 (90.0)	22 (73.3)	
Record of the nursing intervention				
Yes	1 (2.0)	3 (6.0)	7 (23.3)	0.003*
No	49 (98.0)	47 (94.0)	23 (76.7)	

\* p-value of the  $\chi^2$  test for homogeneity (if  $p < 0.05$ , the distribution factor evaluated is identical in the hospitals evaluated).

To ensure patients’ safety, it is imperative that their allergies are recorded in their medical record. When nurses correctly identify and check the prescriptions before the patients take them, the risk of allergic reactions and complications is minimized. In hospitals B and C, allergies were recorded in all of the medical records analyzed. However in hospital A, this information was missing in 30% of the records, showing a failing in the care<sup>9,10</sup>.

With regard to clinical history, it was observed that in a significant number of the medical records from hospital A, the comorbidities of the patients were not present. Patient information was collected from nursing records, with the purpose of evaluating personal and family history, as well as analyzing risk factors for patients’ overall health<sup>11</sup>. The lack of this information makes patients more vulnerable and increases their risk for postoperative complications<sup>12</sup>.

The patients in the three hospitals studied were primarily adults. Findings from studies that include age as a variable affirm that it is necessary to assist patients of an advanced age with more caution, since morbidities and the aging process increase the risk of complications in the postoperative period, due to the imbalance of basal functions. In a comprehensive study review, complications during the post-anesthetic period were investigated, and blank spaces were detected in the verification of complications and nursing management. Thus, it is critical to record this information in order to plan care throughout the postoperative period and to identify problems early on<sup>13,14</sup>.

According to the Brazilian Association of Surgery Center, Anesthetic Recovery and Central Sterile Supply Department Nurses (*Associação Brasileira de Enfermeiros de Centro-Cirúrgico, Recuperação Anestésica e Centro de Material e Esterilização — SOBECC*)<sup>15</sup>, it is essential to perform hemodynamic and HMVS monitoring during the patient’s stay in the PACU. Furthermore, it is necessary to perform an evaluation using the AK scale in order to discharge the patient. The PACU is a place where patients receive intensive care. Its main objective is to prevent and detect early postoperative complications, emphasizing vital sign stability and regaining consciousness<sup>16</sup>.

The hospitals studied each presented different results regarding the hemodynamic verification and the vital signs check. No consensus was observed when measuring certain parameters, including the failure to record items such as temperature.

When patients are admitted to and stay in the PACU, especially in the IPO, there is a period with a greater incidence of complications. As such, nurses must perform adequate physical examinations, stabilize the HMVS, and assess the patient's level of consciousness, ensuring that he or she is seen comprehensively, taking the surgical procedure, the anesthetic agents used, and potential risks into account<sup>4</sup>.

Nurses should always be attuned to hemodynamic monitoring. Verifying RF is essential, since it is significantly affected by the residual action of neuromuscular blockers found in anesthetics. The instability of the cardiovascular system requires attention to CF, since hypotension is one of the most common findings and it has different causes, such as vasodilation and decreased cardiac output<sup>4,16</sup>.

BP monitoring should also be performed rigorously, since its increase may be related to pain in the IPO, bladder distension, neuromuscular agitation, among others. Sat O<sub>2</sub> should always be measured and evaluated, considering that respiratory function is significantly affected by the residual action of the anesthetics used<sup>4,16</sup>.

It is also important to evaluate the thermoregulatory system, since the T can vary up and down. Hypothermia is one of the most prevalent findings and may be a consequence of a delayed awakening or a long hospital stay<sup>4,16</sup>.

The AK scale evaluates parameters such as muscle activity, respiration, circulation, consciousness and Sat O<sub>2</sub>, and is a simple, effective scale that is easy to apply. Applying this scale is the basis for the PACU patient discharge criteria. Neglecting these criteria poses risks to patients' hemodynamic stability<sup>16,17</sup>.

For the item that showed the application of the AK scale, it was observed that hospitals A and C did not perform the calculation in all cases. In hospital B the calculation of AK was performed, however, an evaluation of the patients' expressive percentage was incorrect. In the evaluated hospitals, there was a sample that was worrisome because the discharge criteria instrument was not used, which could contribute to the morbimortality of the patients.

In line with such evidence, the PACU is characterized by highly complex care. The absence of nursing records in this sector can harm the patients assisted and cause damages to the institution, decreasing the safety of care performed by the nurse and his or her team<sup>18</sup>.

The three hospitals analyzed presented good results from the medical records that were legible and had

the presence of erasures. These results are in line with the recommendations from the Federal Nursing Council Resolution (*Resolução do Conselho Federal de Enfermagem — COFEn*) n° 311/2007, the Code of Ethics of Nursing Professionals (*Código de Ética dos Profissionais de Enfermagem*). In its description, nursing documentation must be recorded in an objective and readable way, guaranteeing that the information may be correctly identified by other health professionals<sup>19</sup>.

The absence of records makes it difficult to identify the health professional working with the patient, the procedure performed and the medication prescribed, as well as whether alterations were observed during the patient's stay in the PACU<sup>19</sup>.

The limitations found in the study include the limited amount of evidence on the subject, as well as the difficulty of accessing medical records, and the inability to understand notes and records made by the nursing team in the PACU.

## CONCLUSION

The findings of this study allowed us to conclude that the nursing record practices performed in the hospitals analyzed are not in line with the standards recommended by the literature in the area of postoperative care.

There are deficits in the records of the three hospitals evaluated. The deficits in the records of hemodynamic monitoring and the anesthetic recovery index through the AK scale, for example, are prone to procedure failure and diminished quality of care, which compromise the assessment, the severity classification, and the general condition of the patient.

It should be noted that the absence of intervention records makes the health-sickness process less known, but also makes it difficult to prove that the specified clinical-surgical procedures were performed on the patient.

Finally, the nurse, as leader of the nursing team, must be attentive to the records as a way to guarantee comprehensive care, as it is he or she guides the nursing care plan during the patient's stay in the PACU, and protects against possible ethical or legal sanctions.

Therefore, it is recommended that studies be carried out that seek to characterize nursing records and annotations, as well as to understand the particularities and priorities of the postoperative nursing field.

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