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Research on Medical Record Quality Management Based on FOCUS-PDCA Program

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Abstract: **Objective**: To explore the application value of FOCUS-PDCA program in quality control of medical records. **Methods**: 200 medical records of gynecological inpatients in our hospital were selected and randomly divided into two groups. The observation group was treated with FOCUS-PDCA procedure, while the control group was treated with traditional medical record quality control method, and the quality defects of the two groups were compared. **Results**: The defect rate of terminal medical records in the observation group (including homepage information missing or error, progress note defect, admission records defect, operation records defect, informed consent defect, and discharge note defect) was significantly lower than that of control group, $P < 0.05$. **Conclusion**: FOCUS-PDCA program can significantly improve the medical record quality, which is worthy of promotion in clinic.

1. Introduction

Medical records play an extremely important role in understanding the patient condition and physical state, and are also an important basis for measuring the medical quality and the service level of medical personnel [1]. The medical record quality is the core part of hospital medical quality management, which is closely related to the vital interests of patients and medical personnel. Besides, medical records are an important data base for clinical teaching and research, and are also the cornerstone for the protection of the legitimate rights and interests of both doctors and patients in medical disputes [2]. The basic requirements of our country for medical record writing are objective, true, accurate, timely, complete and standardized [3]. How to improve the quality of medical records in accordance with the above requirements is one of the most concerned issues for clinicians and medical record quality managers.

FOCUS-PDCA is a continuous quality improvement method proposed by American Hospital Organization (HCA) on the basis of PDCA cycle in the 1990 s. It includes nine steps, namely find (F), organize (O), clarify (C), understand (U), select (S), plan (P), do (D), check (C) and act (A). The operation of FOCUS-PDCA method is simple, which makes the continuous quality improvement process step by step, as long as analyzing and solving problems one by one, and finally a new standardized process is formed, the operation is simple. This paper introduces

FOCUS-PDCA method to manage the quality of medical records, through the analysis of the focus problems, the defects in each link are understood, and the targeted solutions are solved to achieve the purpose of continuous improvement of the quality of terminal medical records.

2. Materials and methods

2.1. Basic information

This article selects 200 medical records of gynecological inpatients in our hospital from January 2022 to April 2022 as the research objects. The terminal medical record information of the gynecology department of our hospital in this period was derived from the hospital information system, and the medical records were divided into the control group (January-March 2022) and the observation group (April 2022) in chronological order. 10% of the medical records of two groups were randomly selected for quality spot check and research, and the basic data of the two groups of medical records were compared (including disease type, hospital days, surgery rate at grade III or above, and critical rate). The results showed that there was no statistically significant difference between the two groups of patients in the data before management (P>0.05), as shown in Table 1.

Table 1: Comparison of basic data of two groups

Items	Observation group (n=53)	Control group (n=147)	T/χ^2	P value
Hospital days (day, $\overline{x} \pm s$)	7.26±4.550	7.95±5.074	0.861	0.391
Disease (case, %)			2.473	0.290
Primary treatment of malignant tumors	6 (11.3)	15 (10.2)		
Chemoradiotherapy for malignant tumors	11 (20.8)	18 (12.2)		
Benign diseases	36 (67.9)	114 (77.6)		
Surgery of grade III or above (case, %)			0.037	0.848
yes	10 (18.9)	26 (17.7)		
no	43 (81.1)	121 (82.3)		
Critical (case, %)			0.882	0.348
yes	2 (3.8)	11 (7.5)		
no	51 (96.2)	136 (92.5)		

2.2. Methods

2.2.1. Grouping methods

The medical records of control group were sampled and studied three times by month. On the basis of medical records sampling and research in the control group, the observation group implemented the FOCUS-PDCA program, which was divided into five steps of FOCUS and four cycles of PDCA. According to the quality of basic medical records before the implementation of FOCUS-PDCA in our department, improvement measures were formulated and implemented to improve the quality of terminal medical records and form a continuous quality improvement cycle. According to the quality of basic medical records before the implementation of FOCUS-PDCA in our hospital, improvement measures were formulated and implemented to improve the quality of terminal medical records and form a continuous quality improvement cycle.

2.2.2. Implementation process

(1) Find (F)

Through three times of quality inspection and research of medical records, the following problems were found in the terminal medical records: homepage information missing or error,

progress note defect, admission records defect, operation records defect, informed consent defect, and discharge note defect.

(2) Organize (O)

Set up a continuous quality improvement team of terminal medical records, headed by the deputy director of department, responsible for the training and improvement in quality improvement. Then set up one chief quality control officer of medical records, responsible for arranging personnel to conduct random inspections, summarization and statistics of medical records, and report to the quality improvement team leader. And set up nine quality control officers, responsible for spot-checking medical records and registering problems, and reporting to the chief accuser.

(3) Clarify (C)

Through the summarization of medical record problems, the focus of problems can be found.

(4) Understand (U)

The problems are divided into common problems and individual problems. The common problems are analyzed, the reasons are found, and the collective training is carried out in the department quality control meeting. While the individual problems directly correspond to the specific medical record writers to remind them.

(5) Select (S)

The common problems are analyzed by the quality control staff according to the specific situation, find the reasons, and arrange collective learning. Individual problems directly correspond to the specific medical record writers, and arrange people to supervise and correct the problems.

(6) Plan (P)

According to the monthly medical record spot-checking and problem summary, targeted learning is carried out, which mainly focuses on the problems and defects of medical record quality in the recent archived medical records.

(7) Do (D)

The final two days of each month are arranged for spot checks and problem summaries of the monthly archived medical records, and the chief quality control officer reports to the leader of the quality improvement team, reminding us to arrange quality control meetings as soon as possible. The quality control meeting explained in detail the quality problems and defects of medical records in recent archived medical records. Arrange a medical record quality control mutual aid group to supervise each other in daily work and help each other improve the quality of medical records.

(8) Check (C)

The leader of the continuous quality improvement team for terminal medical records leads the team members to evaluate the effect of monthly medical record quality improvement.

(9) Act (A)

Through the implementation of FOCUS-PDCA program, the medical record quality problems and defects in the newly archived medical records of each month are explained in detail, especially the review of the previous medical record quality problems of new recruits, so as to reduce the possibility of re-emergence of previously solved problems.

2.2.3. Evaluation method

The research data were processed by SPSS 25.0 software. The measurement data were expressed as ($\overline{x} \pm s$), and paired sample t test was used. The enumeration data were expressed as percentages, and the $\chi 2$ test was used for the comparison between groups. $P<0.05$ indicated that the difference was statistically significant.

3. Results

After three months of rectification, various medical record defects (such as missing or error rate of information on the front page of medical record, defect rate of course record, defect rate of admission record, defect rate of surgical record, defect rate of informed consent and defect rate of discharge record) were significantly reduced, $P < 0.05$. The evaluation results show that the quality of terminal medical records has been effectively improved, as shown in Table 2.

Table 2: Comparison of medical record defects of two groups

Group	Observation group (*n*, %)	Control group (*n*, %)	χ^2	P value
Homepage information missing or error	7 (13.2)	54 (36.7)	10.172	0.001
Progress note defect	8 (15.1)	47 (32.0)	5.566	0.018
Admission records defect	5 (9.4)	44 (29.9)	8.849	0.003
Operation records defect	7 (13.2)	41 (27.9)	4.605	0.032
Informed consent defect	6 (11.3)	45 (30.6)	7.631	0.006
Discharge note defect	7 (13.2)	40 (27.2)	4.249	0.039

4. Discussion

As the most real records of patients, medical records can directly reflect the dynamic changes of the patient's condition, and play an important reference role in subsequent diagnosis, treatment and nursing [4]. They are also an important source of information and management basis for evaluating medical quality. The writing of past medical records lacks systematicness and standardization, and there are often phenomena such as incomplete records, misremembering, misremembering or formatting errors, which is not conducive to the dynamic monitoring of patients' conditions [5]. In addition, with the continuous improvement of people's legal awareness and the full implementation of the Tort Liability Law, the authenticity and standardization of medical records are also facing unprecedented challenges [6], and it is imperative to strengthen the quality management of medical records. As an effective work improvement strategy, FOCUS-PDCA program has been widely used in nosocomial infection control, nursing management, personnel training, teaching management and other fields [7-10]. In this manuscript, the FOCUS-PDCA method is introduced into the medical record management to achieve continuous improvement of the quality of terminal medical records.

Through the analysis of 200 cases of gynecological medical records in our hospital, it is found that the common defects in medical records writing and their main manifestations are as follows. The missing or error information of medical record homepage is the most defective content, mainly including the inconsistency between the patient's marriage and the medical record, wrong relationship between patient and her family, incomplete diagnosis, failure to sort operation name by size, checking error of whether or not to plan readmission within 30 days. The progress note defect are mainly reflected as similar ward round or vital signs, no analysis judgment and treatment when illness changes, no reasons for changing important orders in case records, no consultation record, insufficient content of medical record discussion, and undefined surgical indications in preoperative discussion. The admission records defect are mainly reflected as the inconsistency between current medical record and complaint, inconsistency between physical examination record and patient's previous history (such as no record of skin scar after previous operation), and inconsistency between marital status and marital history. The operation records defect are mainly manifested in the application of templates, which ignores the patient's individual condition difference, lack of detailed records, and inconsistent operation and anesthesia records. The informed consent defect mainly include incomplete selection of blood transfusion and anesthesia informed consent, template of surgical informed consent, and vacant entry for routine admission signature. In addition, the

discharge note defect are mainly reflected as the delayed recording of pathological results, uncharted discharge notification, and simple recording of treatment process.

Through the introduction of FOCUS-PDCA strategy, the defect rate of terminal medical records in the observation group (including homepage information lack or error, progress note defect, admission records defect, operation records defect, informed consent defect, and discharge note defect) was significantly lower than that of control group, $P < 0.05$. It can be seen that FOCUS-PDCA has obvious advantages in improving the overall quality of medical records. The reason for this is that the implementation of the FOCUS steps enhances the awareness of department attention and standardizes the working methods and processes. At the same time, the cycle execution of PDCA process not only reduces the defect rate, but also ensures the integrity and reliability of information, and ensures the timeliness of checking and processing when problems occur. The fine management of medical record quality control based on FOCUS-PDCA program is an inevitable link and foundation of hospital management, a prerequisite for eliminating doctor-patient disputes and improving nurse-patient relationship, and a scientific bridge for establishing a virtuous cycle of medical quality management system.

In summary, the application of FOCUS-PDCA program in the quality control of terminal medical records can significantly reduce the defect rate of various cases, and then control the proportion of rework cases. The clinical promotion is of great significance.

Authors' contributions

Jialan Chen contributed to the data collection and manuscript writing. Cuige Yu, Fan Wang and Lihong Chen contributed to the data collection. Xin Shen and Qinfeng Liu helped perform the data analysis. All authors have read and approved the manuscript.

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