Universe Scientific Publishing

Discussion on PDCA Working Mode of Clinical Pharmacists in ICU

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Abstract: Objective: exploration of the application effect of PDCA working mode in the daily work of clinical pharmacists in ICU. Methods: on the basis of PDCA cycle theory, a plan for the construction of ICU clinical pharmacists' work mode is made, so as to evaluated its application effect combined with work examples. Results: the work mode of clinical pharmacists in ICU based on PDCA cycle theory adheres to initiative, timeliness and pertinence, which can solve the problem of irrational clinical medication, and improve the rationality and safety of medication. Conclusion: the application of PDCA cycle theory in the work mode of clinical pharmacists in ICU is worthy of promotion.

Keywords: Clinical Pharmacist; Intensive Care Unit; Working Mode

1. Introduction

It is necessary for clinical pharmacists to carry out pharmaceutical care in ICU ward, which is a necessary way to change the function of hospital pharmacy discipline and a practical embodiment of the concept of patient-centered, so it is imperative [1]. Based on the characteristics of ICU patients, complex diseases and rapid changes of illness, if there is no effective and reasonable work mode to guide clinical pharmacists to carry out various work, it is likely to lead to various clinical governance problems, and also increase the pressure on clinical pharmacists, so that they cannot quickly and effectively integrate into the pharmaceutical care work in ICU. In order to ensure the safety of drug use in ICU, combined with my own work experience, this paper explores the effective working mode of pharmaceutical care in ICU, hoping to promote the better development of clinical pharmacy.

2. PDCA working mode and implementation of clinical pharmacists in ICU

PDCA includes four stages: plan, do, check and action. Continuous quality improvement of clinical pharmacists is made according to P_ D_ C_ A cycle , and loop Continuously[2]. The structure diagram is shown in Figure 1

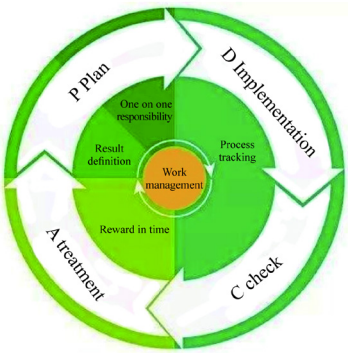

Figure 1 PDCA cycle diagram

Plan (P): developing the quality improvement plan for clinical pharmacists in ICU.

It investigates and finds the problems of clinical medication, analyzes the causes and makes plans, which are easily ignored by doctors in practice, such as drug selection, medication methods, usage and dosage, etc. After finding the problems, we should analyze the causes of medication problems, take targeted measures, and carry out systematic training for pharmacists, so as to improve their working ability, constantly improve, and set the expected goal to achieve it.

Implementation (D): developing training programs, strengthening pharmacist occupation skills training, and improving the professional level of pharmacists. The enthusiasm and participation of doctors are mobilized in the training process, and the results of pharmacist training are finally assessed combined with actual case analysis.

Check (C): checking the feasibility and scientific nature of the improvement plan. Check during the execution of the scheme is to evaluate whether the desired effect has been achieved.

Action (A): namely, summing up experience. The scheme needs to be improved again before entering the next cycle.

3. PDCA working mode and examples

Examples are shown in Table 1

Table 1 example analysis

Stage	Primary coverage	Specific events
P	Developing medication improvement plan	Based on the characteristics of carbapenem antibiotics PD, the different medication methods of meropenem were introduced
D	Implementation plan, clinician medication management	Doctors were trained twice on drug characteristics and medication methods of “meropenem”
C	Checking the degree of improvement / implementation	The patients with severe infection maintained medication for 2 weeks, and were supervised and intervened for many times
A	Summarizing experience, forming joint force and medication guidance	Soliciting clinical opinions, forming Reference of Meropenem Medication

After ward round, it was found that the actual dosage of meropenem was increased from 1g, q8h to 1.5g, q8h, and then to 2g, q8h. The patients with severe infection did not improve and still had fever. The problem is that pharmacists are not proficient in the clinical pharmacological characteristics of meropenem, and the use of meropenem is too single, resulting in the medication cannot achieve the desired effect. In view of the problems, the paper puts forward specific suggestions for the improvement of the work:

4. Suggestions on improving the working ability of clinical pharmacists in ICU

4.1 Focusing on key patients and medication, strengthening pharmaceutical care

Clinical pharmacists should reasonably choose the monitoring mode according to the characteristics of patients’ diseases and drugs. For ICU patients who use toxic drugs, drugs with severe properties, drugs that are prone to adverse reactions alone or in combination with large doses of drugs, or have special treatment methods such as enema, and liver and kidney dysfunction, they should strengthen the awareness of drug safety, drug varieties and their suitability monitoring of adverse reactions. According to the patient’s specific condition, individualized monitoring schedule plan is made, and the corresponding medication history is established. For example, to monitor whether there are gypsum, oyster, clam shell, cuttlebone and other high calcium components in drugs, so as to avoid increasing the cardiotoxicity

of patients with certain diseases.

4.2 Paying attention to the details of doctor's order review

Doctor's advice and its audit are the necessary work for clinical pharmacists to ensure the safety of drug use, and it is an important part of standardizing doctors' prescription behavior and carrying out intervention on irrational drug use. When clinical pharmacists review medical orders, they mainly include the review of electronic cases and medication information. In addition, in the process of ward round, they review newly issued pharmacies and medical orders. The review contents should include drug function indications, whether medication is consistent with treatment needs, whether drug usage and dosage are appropriate and based, whether there are repeated medication, whether there are drug contraindications, and whether there are incompatibility contraindications. We should pay more attention to the dosage and indications of injection drugs.

4.3 Paying attention to the management of drug storage and preparation

Drug storage and quality management are often loopholes in ICU medication service. There are many kinds of diseases in ICU, and most of them are high-risk diseases, involving many kinds of drugs. Insulin, sedative analgesics and high concentration electrolytes are very common, which increase the difficulty of drug management. Clinical pharmacists should often check the display, use and shift management of drugs, pay attention to whether there are inappropriate storage conditions and expired drugs, and strengthen the management of narcotic drugs and psychotropic drugs, so as to propose potential safety hazards and improvement measures to nurses and other direct managers if problems are found. In the process of drug preparation, the quality management should be strengthened, and the configuration environment and operation process should be standardized to avoid drug contamination. For example, in the configuration of enteral nutrition preparations rich in protein, sugar and other substances, it is necessary to add ingredients in the clean area according to the requirements of aseptic operation. Whether oral or intravenous drugs, strict quality management should be given.

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