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Research on quality control and continuous improvement strategies of clinical application of medical technology

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Abstract: *The clinical application of medical technology is an important symbol of the development of medical technology. Quality control and continuous improvement of clinical application of medical technology is an important guarantee for medical institutions to make rational and effective use of limited medical resources, ensure the safety and health of patients, and improve the quality of medical services. Therefore, it is necessary to strengthen the quality control and management of clinical application of medical technology, and take scientific and effective measures to improve the quality and safety of clinical application of medical technology. Based on the analysis of the problems in the clinical application of medical technology, relevant measures and suggestions are put forward to improve the quality and safety of clinical application of medical technology in our country.*

Keywords: *medical technology; Clinical application; Quality control; Continuous improvement*

1. Introduction

The quality control and continuous improvement of clinical application of medical technology is a complex system engineering, involving many management links and many technical details[1]. In order to improve the quality of clinical application of medical technology, it is necessary to strengthen the management of clinical application of medical technology in medical institutions, establish a perfect management mechanism, unify the thinking from top to bottom, form a joint force, and promote continuous improvement. This article elaborated our country medical technology clinical application present situation, problems and reasons analysis further medical technologies in China is proposed to improve the clinical application of quality control and continuous improvement strategy , as shown in Figure 1.

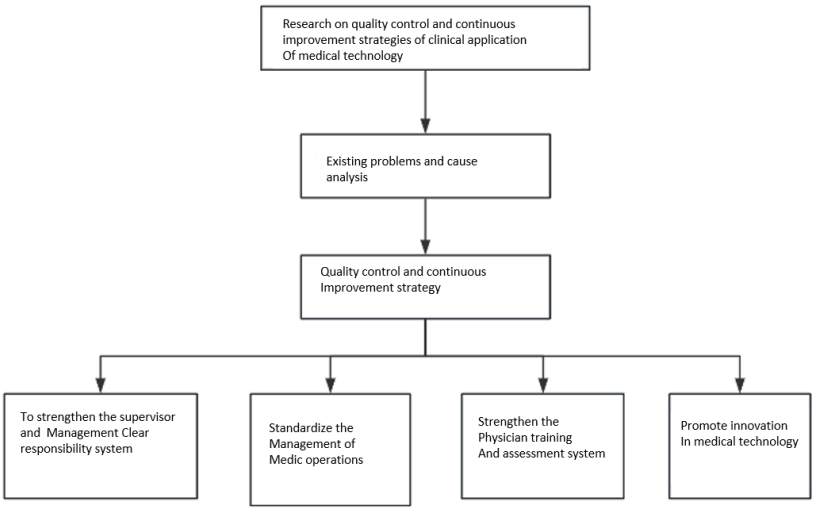

Figure 1: Research on quality control and continuous improvement strategies of clinical application of medical technology

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2. Current status of clinical application of medical technology

According to the Administrative Measures for the Clinical Application of Medical Technology issued by the National Health Commission of the People's Republic of China (hereinafter referred to as the Measures), medical technology refers to the medical professional means and measures taken by medical institutions and their medical personnel to diagnose and treat diseases, make judgments on diseases, eliminate diseases, relieve conditions, relieve pain, improve function, prolong life and help patients recover health for the purpose of diagnosing and treating diseases. The Council on Global Governance states that governance is the sum of the many ways in which individuals and institutions, public or private, manage their common affairs. According to the theory of technology life cycle, medical technology is a series of medical service activities provided by medical institutions for patients with clear diagnosis and treatment effects, clear indications, fixed technical specifications and operating procedures. Medical technology is a kind of medical technology with strong professionalism and high risk, and it is an important means to protect and guarantee the right to life and health of patients. With the development of China's health service, medical technologies are constantly emerging, with more and more types and wider applications[2].

3. Existing problems and cause analysis

In the current health care system, our country faces many challenges, especially in the clinical application of medical technology in our country. First of all, the highly professional nature of medical technology determines that the frequency, depth and effectiveness of its regulation are limited. WeiJianWei current national and local provinces and cities have set the key to strengthen supervision of medical technologies that limit the clinical application of medical technology (hereinafter referred to as the restricted technology) directory, and issued a technical management standards and quality control indicators. The content of supervision is mainly limited to the qualification requirements of technical management standards, and the technical ability can not be deeply judged, such as the name of the same code of surgery, intraoperative operation, operation duration, blood loss, postoperative outcome, etc. Moreover, even if the external supervision activities are popular, it is only the task of the regulatory department, without really improving the autonomy of medical institutions, nor translating into the governance ability of medical institutions.

Secondly, in 2022, the National Health Commission of China issued the Measures for the Grading Management of Surgical Institutions to standardize the surgical behavior of medical institutions and strengthen the grading management of surgical institutions[3].

In addition, although the state and government attach great importance to the construction of general practice, there are still some hospitals and medical schools that do not implement it in place, and the teaching and research departments responsible for general practice in tertiary hospitals are not accurately or even misaligned, resulting in insufficient discipline construction and serious shortage of personnel training. In addition, the rotation time of ophthalmology, dermatology, otolaryngology, infectious diseases and other departments in the training rules is short, and the training plan is not clear, which leads to poor training effect and cannot be applied in the community. In addition, the lack of standardized process in training and assessment leads to the existence of speculation, which seriously affects the level of medical talents[4].

Besides, there is obvious imbalance in the clinical application level of medical technology. Some medical institutions for the clinical application of medical technology, given the relatively limited attention, medical staff also exist on mastering related technical knowledge and skills. These differences not only in the technical level, but also in the whole medical team to new technology acceptance and use of ability are inconsistent, which affects the patient's therapeutic effect. The lack of quality control and continuous improvement measures is also a prominent problem. The shortcomings of these measures are mainly reflected in the following aspects: on the one hand, the quality control and continuous improvement framework is not mature and systematic; On the other hand, the incentive mechanism of medical institutions for these key links is not perfect, and there is a lack of scientific and reasonable evaluation indicators. Combination of these factors lead to the efficiency and quality of medical technology clinical application are difficult to secure.

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4. Quality control and continuous improvement strategy

4.1 To strengthen the supervision and management, clear responsibility system

The National Health Commission proposed that relevant health administrative departments should strengthen the supervision and management of the clinical application of medical technologies by medical institutions within their respective administrative regions, establish a national information management platform for clinical application of medical technologies, and collect, analyze and feedback information related to the clinical application of national restricted technologies[5]. In addition, through the principle of information disclosure by the health administrative department, the information related to medical technology application of hospitals and medical institutions has been publicized to the public in a timely manner, and the supervision of the public has been strengthened.

4.2 Standardize the management of medical operations

As an important means of diagnosis and treatment of diseases, surgery is one of the important ways for medical institutions to serve patients. Recently, the National Health Commission of the People's Republic of China issued the "Grading Management Method for Surgery in Medical Institutions", which will further promote the development of surgical management to high-quality, and greatly ensure the safety and quality of surgery. According to the complexity of surgery, patient status, operation time, qualification requirements of surgeons, staffing required for surgery, and complexity of surgical instruments and equipment required, the operations were divided into different levels, and corresponding management strategies were adopted for different levels of surgery. The fine management of surgery divided into four levels can maximize the role of medical resources and management costs, avoid surgical risks and ensure patient safety.

4.3 Strengthen the physician training and assessment system

Therefore, clinical skills training base should establish and improve the rules and regulations and procedures, clear responsibilities and management requirements, strengthen the management of training teachers. Training programs and plans were made in strict accordance with the unified training syllabus and textbooks, and training files were established to ensure the quality and effect of training. The training base should decide whether to accept the doctors according to the principles of openness, fairness, merit-based admission and two-way selection. For restricted technologies, the provincial health administrative department should strengthen the assessment and evaluation of the standardized training bases for clinical application of restricted technologies. If the training and assessment do not meet the conditions of the training base or fail to carry out the training and assessment in accordance with the requirements, the provincial health administrative department should order them to stop the training work and announce it to the public. The provincial health administrative departments should strengthen the assessment and evaluation of the standardized training bases for clinical application of restricted technologies. If the training and assessment do not meet the conditions of the training bases or fail to carry out the training and assessment in accordance with the requirements, they should order them to stop the training work and announce it to the public[6-7].

4.4 Promote innovation in medical technology

The diagnosis and treatment requirements of patients are the fundamental problem of technology management, the focus of patients' attention, the difficulty of technology management, and the key problem to be solved in scientific and technological innovation. Therefore, in the process of technical governance, we should closely revolve around enhancing the mass and socialization level of the technical governance system, take the principle of maximizing the enthusiasm of the masses as the principle, and enhance the technical innovation ability of medical institutions for the diagnosis and treatment of patients. A medical institution shall establish all new technology and new technology and new process by day is the ancient north trial method must go through the relevant technical management committee and the medical ethics committee approved, may carry out clinical application. Medical institutions should establish a dynamic evaluation system for the self-clinical application of new technologies and new items, and implement whole-process tracking management and dynamic evaluation of new technologies and new items. A medical institution shall expressly to carry out the clinical application of new technology and new project scope of professionals and strengthen new technologies and new project quality control work.

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5. Conclusion

Above all, medical technology is an important symbol of modern medical development, it can provide effective medical service for patients, improve patient quality of life. Therefore, under the new situation, medical institutions must attach importance to the clinical application of medical technology management, set up perfect quality control system, in order to improve the quality of the medical technology clinical application. Medical institutions must be unified ideological understanding, from top to bottom to establish and perfect the medical technology clinical practice management mechanism, improve staff awareness of medical technology clinical application. We should strengthen the innovation of clinical medical technology and the publicity and education of patients, and actively promote scientific and reasonable medical treatment.

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