

Standardized Management of Digital Integrated Operating Room

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Abstract: With the rapid development of the times, people's cognitive level is constantly improving. Nowadays, people's medical needs have not only stayed on the treatment and prevention of diseases, but also put forward higher requirements for medical services. Digital integrated operating room is a new medical project with the development of minimally invasive technology. Digital operating room integrates computer network technology, automatic control technology, graphic signal processing technology and integrated wiring technology. Using the digital configuration of the existing equipment in the operating room, the hospital's digital network controls the function of the medical device system in operation. Surgery is performed in a traditional operating room, and adjustments to equipment parameters during the procedure are often performed through the sterile field in the sterile area. In order to further promote the modernization of the operating room, it is necessary to establish some corresponding standards for the construction of surgical integration, and promote the healthy development of the operating room.

1. Introduction

Nowadays, medical and medical devices require high-performance medical facilities to cooperate with them. This puts forward stricter requirements for the humanization, automation and intellectualization of the hospital operating room [1]. Operating room as the core place of hospital diagnosis and treatment, its efficiency, process improvement, infection control, has been highly concerned. With the progress of society and the improvement of people's living standards, the demand for medical services has gradually changed from medical treatment to health care [2]. Digital integrated operating room is a new medical project with the development of minimally invasive technology. The integrated operating room solution is a new model created by the continuous integration and continuous innovation of intraoperative medical device system control functions, digitization and network information functions during the development of the operating room for many years [3]. The digital integrated operating room system can help medical staff easily control all equipment in the operating room through the operating platform in the sterile area [4]. How to improve the safety of surgery, the efficiency of the surgical staff and the turnover rate of surgical resources have become the goal of the development of the operating room.

The digital integrated operating room has the advantages of automation, integration, intelligence and humanization. However, it is still in the stage of technology research and development and product improvement in China. The digital operating room integrates computer network technology, automatic control technology, graphic signal processing technology and integrated wiring technology [5]. At present, only the staged research and development results of various manufacturers are applied to actual cases, and some digital functions of the operating room are realized. At present, with the rapid development of modern information technology and its wide application in the construction of modern hospitals. The digital integrated operating room is a new medical project with the application of minimally invasive technology [6]. Using the digital configuration of the existing equipment in the operating room, the digital network of the hospital controls the medical equipment system in the operation [7]. It is called a new mode of solution for integrated operating room. It is a multi-system comprehensive utilization aiming at creating a high

security and efficiency operating room and improving the external communication platform of the operating room [8]. With the development of digital operating room market and the perfection of related technology, the digital function of operating room will be more and more abundant, and the more superior digital integrated operating room will gradually replace the traditional operating room.

2. Analysis of Industry Environment of Digital Integrated Operating Room

The digital integrated operating room is more in line with the operating procedures of today's operating rooms and is more suitable for modern minimally invasive surgery. There are many solutions for the integrated operating room in the current market, and the types of technologies used are different, and the technological content of the technical level is also uneven. As the most important part of the medical process, surgery is a great concern for people and the whole society. Surgery is performed in a traditional operating room, and adjustments to equipment parameters during the procedure are often performed through the sterile field in the sterile area. Through the network to connect the various equipment and facilities in the operating room, the surgeon can control the various equipment and facilities through the central control system and communicate with the relevant departments during the operation [9]. The layout of the operating room is very important for the operation room to meet the requirements of use. Due to the large number of digital equipment, the digital integrated operating room is different from the general cleaning operation room space layout. The distribution of medical resources in China is extremely uneven. In some marginal areas, the medical resources are relatively scarce, while in the eastern developed areas, they are relatively abundant.

With the development of national economic capacity, the construction of operating room is becoming more and more modern. In order to further promote the modernization of the operating room and better serve the development and promotion of the cutting-edge surgical technology. Avoid blind comparison, blind investment, and low-level duplication of construction without a good understanding of network technology. Technology can change productivity, and technological progress will create new demands for the content and delivery of products and services. Digital integrated operating room is to clean the operating room first, on this basis, the use of computer technology combined with digital functions of equipment. To ensure that the operating room has sufficient net space for installation of several towers and other digital medical equipment. The control of all equipment during the operation must be adjusted one by one through the control panel of the equipment. The surgeon's instructions for adjusting the equipment during the operation must be coordinated by the patrolling nurse. It is necessary to formulate some corresponding standards for the integration of operating rooms to avoid detours and promote the healthy development of operating room construction.

The emergence of new technologies has enabled society to increase demand for emerging industry products such as digital integrated operating rooms, enabling companies to produce high-quality, high-performance products through the use of new technologies. Integrate integration in software and hardware to maximize the use of the device and to meet the needs of the surgical conditions to the greatest extent. Since the operating room has its independence and particularity compared to other departments of the hospital, it should be considered to reserve a relatively independent space as the general control room of the digital integrated operating room. Digital operation room digitalization, through the application of advanced information technology and clean engineering to the operating room. At present, in order to meet the requirements of digital operation room, the feasibility of building a new digital hospital is very low. At this stage, some of the research and development achievements of digital integration have been used in the operating room, and some of the digital functions have been achieved. All the inconveniences in the traditional operating room and the integrated operating room solutions can optimize the operation process and control mode.

3. Strategic Choice of Digital Integrated Operating Room

The digitization capabilities of existing devices continue to increase, using their digital capabilities combined with computer technology. Integrated integration from hardware and software to optimize the use of the device. In the overall implementation process, we must start with each specific equipment and strictly control it. The system is then integrated according to the actual needs of the modern operating room. The overall construction of hospital informationization lacks forward-looking planning, and the phenomenon of repeated construction of projects has occurred frequently. The modern operating room is no longer a lonely world. In many cases, communication, teaching, demonstration, and surgical procedures need to be transmitted to any place outside the operating room in real time [10]. Although the data of each system are correlative, they are independent of each other. It is necessary to have a general integration platform to support various applications. Digital operating room investment is higher in the initial stage, but in the long run, it will make a great increase in benefits. Through the construction and implementation of the digital integrated operating room system, the operating room is no longer an information island. Thus, it becomes a platform for information sharing in medical, teaching, scientific research and other fields.

On the basis of clean operating room, digital integrated operating room utilizes digital function of equipment and computer technology. Integration of hardware and software can optimize the function of the equipment and meet the needs of surgical conditions. Compared with the general operating room, the digital operating room realizes the information circulation and opening, and uses the combination of remote medical imaging technology and real-time data detection. Doctors need to communicate with the outside world, based on similar needs. Operating rooms need modern video communication systems to communicate with outdoor objects or experts thousands of miles away. All operating equipment in the operating room is suspended from the medical suspension tower except the operating Table. Make room on the ground for disinfection and sterilization in the operating room.

The digital integrated operating room brings us an integrated integrated control service environment, which is a humanized operating room construction concept and solution. The configuration of the operating room equipment cannot be completely based on one manufacturer's products and equipment. Therefore, integration must be compatible and must be an open system in the true sense. The Ministry of Industry and Information Technology also authorizes some industry associations to be recognized as software enterprises in its administrative region, based on the work performance of industry associations. Medical staff can easily and real-time access to a large number of patient-related information. Most hospitals build digital integrated operating rooms under the background of the original hospital. With the construction of hospital digitalization, all functions of digital integrated operating room are gradually realized.

4. Conclusion

With the continuous innovation of medical technology and the continuous development of digital technology and network technology, the construction of operating room will be continuously promoted. Through the analysis of domestic digital integrated operating room industry and market, we can see that the market potential of digital integrated operating room in China is huge. This industry is a new sunrise industry, which is still in the early stage of development. Every enterprise is in an open market environment, and the global competition is becoming more and more fierce. With the development of medical and social economy in our country, digital integrated surgery will gradually replace the ordinary operating room in the next few years. The integrated operating room program is a new model for the construction of modern hospital operating rooms, and is an inevitable choice for the development of operating rooms to a certain extent. With the continuous innovation of medical technology, digital technology and network technology continue to develop, and will continue to promote the development of operating room construction. In order to further promote the modernization of the operating room. It is necessary to set some corresponding

standards for the construction of surgical integration. The construction of the integrated operating room has been at a high starting point from the beginning, which has promoted the healthy development of the operating room.

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