

# Cognition and Thinking on the Construction and Reform of Basic Medical Laboratory

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**Abstract:** Basic laboratory is an important platform for medical professional teaching and scientific research. Under the new situation, with the continuous development of medical professional reform activities in colleges and universities, the status quo of traditional medical basic laboratory construction is no longer able to meet the existing medical research and teaching needs. To explore the reform of basic medical laboratories has become a topic of general concern in the academic circles. This article is based on the excellent experience in the construction of basic medical laboratories, explores its shortcomings, and explores the reform of basic medical laboratories.

**Keywords:** Medical Basic Laboratory; Construction; Reform

The medical profession is a subject with complex theory and high practical operation requirements. In higher medical education activities, the establishment of basic laboratories suitable for multiple medical disciplines can better promote the development of modern medical education and meet the requirements of modern medical disciplines. It can be said that the construction and application of basic medical laboratories have irreplaceable advantages. On the one hand, the construction of basic laboratories can realize the optimal allocation of medical teaching and scientific research resources, reduce the shortage of school infrastructure and improve the utilization rate of laboratories; on the other hand, the construction and application of basic medical laboratories is a comprehensive medical discipline. Development provides opportunities for teachers and students to complete comprehensive experimental activities<sup>[1]</sup>.

## 1. Construction content of basic medical laboratory

### 1.1 The goal of medical basic laboratory construction

First, meet the needs of training medical professionals. Colleges and universities bear the responsibility of cultivating a team of applied talents in advanced technology. In the teaching activities of medical majors in colleges and universities, it is even more important to cultivate students with solid basic theoretical knowledge and strong practical abilities. The medical laboratory is an important place for students to consolidate theoretical knowledge and carry out practical exploration. Therefore, the number of basic medical laboratories built in the new era must meet the practical needs of students; in terms of quality, they must have a corresponding management system and laboratory teaching curriculum system.

Second, it conforms to the development trend of modern medicine. The school is a place that walks in the forefront of the profession. In the basic medical laboratory of the school, it is required to be able to impart the most cutting-edge

research content of the medical profession to students, so that students can master medical education resources. Basic medical laboratories must be able to have the equipment and facilities for the development of education informatization, as well as the latest medical machinery and equipment to meet the needs of students for exploring new medical knowledge.

## **1.2 Construction content of basic medical laboratory**

First, the hardware construction of basic medical laboratories. The hardware construction of the medical basic laboratory mainly refers to the equipment in the laboratory that can meet the multi-disciplinary comprehensive development of medical professional personnel training programs and curriculum system settings. For example, for the basic laboratory of medical imaging technology, it needs to complete the color doppler ultrasound experiment, imaging technology simulation operation training room and so on. At the same time, the hardware construction of the medical basic laboratory also includes the laboratory's footprint specifications, that is, it needs to meet the number of medical students under the background of expansion<sup>[2]</sup>.

Second, the construction of medical basic laboratory system. The construction of basic medical laboratories also includes the construction of various management systems. Only in this way can the service life of basic medical laboratories be prolonged and the utilization effect of various hardware facilities in basic medical laboratories can be better utilized. For example, rules and regulations such as "Laboratory Safety Instructions" and "Laboratory Management System" are formulated to ensure that students can abide by the correct rules of use and perform scientific operations. In addition, it is also required to implement the construction of laboratory responsibility management system, and to provide guarantee for the smooth development of laboratory teaching work by formulating the construction plan of the laboratory and the opening plan of experimental courses.

Third, the construction of the management team of basic medical laboratories. The construction and management of basic medical laboratories need to be carried out by manpower. For example, basic medical laboratories must have specialized management personnel to carry out routine cleaning of the laboratory. Therefore, in the construction of medical basic laboratories, on the one hand, it is required to do a good job in the professional training of medical teachers, and only in this way can the laboratory shine with more powerful use efficiency. On the other hand, it is required to do a good job of training management personnel and experimental technicians, so that technicians can master the latest experimental equipment technical skills, so as to adapt to the continuous development of the laboratory.

## **2. Current status of existing medical basic laboratory construction**

Based on the above, the construction of medical basic laboratory is a comprehensive and systematic engineering project, which involves a huge investment of human, material, and financial resources. In the construction of basic medical laboratories in major universities, there are still some unsuitable planning measures, which directly affect the practical application of basic medical laboratories<sup>[3]</sup>.

### **2.1 Homogeneous construction of basic medical laboratories**

The basic content of the construction of basic medical laboratories mentioned above is also a necessary content of its construction. However, in the medical teaching activities of major colleges and universities, the school's educational goals are different, and the current medical teaching status of the school is different. The basic medical laboratory is required to have some differences in details. Only in this way can the teaching resources be truly optimized. Configuration to better utilize the application efficiency of medical basic laboratories. But in fact, the construction of basic medical laboratories in major scientific research institutions, whether they are medical majors in higher vocational colleges or undergraduate colleges, has obvious homogeneous development. Both the laboratory management system and the laboratory hardware equipment are similar, and there is no personalized expression.

### **2.2 The construction of basic medical laboratories lacks dynamic characteristics**

With the development of information technology, the current Internet+ education has become the main trend in the development of the education industry. Most basic medical laboratories have just been constructed, and related equipment has been added one after another. The construction of a systematic and complete medical basic laboratory cannot be completed

overnight, but requires pre-planning, mid-term construction supervision, and post-review management. The development of society is changing with each passing day. The teaching effect brought by a complete medical basic laboratory will change with the changes of the times, and it is not easy to realize the reconstruction of basic laboratory. Therefore, it is required to be able to adopt forward-looking design and planning concepts during the construction of basic medical laboratories to complete the expansion of basic medical laboratories, but the planning and design of basic medical laboratories lack consideration of this expansion. As a result, it is difficult for established medical basic laboratories to achieve dynamic innovation and optimization.

### **3. Optimization and reform measures of medical basic laboratories**

#### **3.1 Design basic medical laboratory based on actual needs**

At present, major universities and scientific research institutions must be able to establish a personalized concept in the process of building basic medical laboratories. According to the school's medical professional curriculum teaching system and medical personnel training model, the construction of basic medical laboratories is carried out. For example, for schools that focus on the development of nursing medicine, their basic laboratories can achieve a tendency to invest in resources during the construction process. This will not only achieve the highest utilization of resources, but also make better use of basic medical laboratories in medicine, which can play an active role in professional education activities<sup>[4]</sup>.

#### **3.2 Improve the scalability of medical basic laboratory construction**

Same as computer systems, only basic medical laboratories with high scalability can radiate strong vitality and creativity with the development of the times. The current implementation of the expansion reform of the construction of basic medical laboratories requires on the one hand to hire more professional planning and design personnel, based on the analysis of the development trend of medical disciplines, to carry out the planning and design of the school's basic medical laboratory; on the other hand, It is required to adopt some flexible equipment and facilities or management systems in the construction of basic medical laboratories. Only in this way can we realize the dynamic construction management of the entire medical basic laboratory and the development of innovative applications.

### **4. Conclusion**

In summary, the construction of basic medical laboratories is gradually transformed from single-subject laboratories. The purpose of construction is to meet the needs of higher education medical teaching reforms and to achieve the optimal allocation of medical teaching resources. However, the emergence of a new thing does not happen overnight, and the construction and application of basic medical laboratories also need a long period of reform and improvement. Based on the excellent experience in the construction of existing medical basic laboratories, it is known that to build a comprehensive basic laboratory, it is necessary to update the teaching concept, adjust the teaching content, and the teaching system to meet the needs of the basic laboratory; it also needs to be able to complete the medical experiment. The training of technical personnel can better meet the development needs of basic medical laboratories. Finally, the optimization design of the software and hardware facilities of the medical basic laboratory is completed. In the actual application of the medical basic laboratory, the laboratory is faced with the situation that the curriculum construction is not comprehensive enough, and the laboratory hardware and software infrastructure is not specific enough. Therefore, it has become a top priority to start the optimization reform of medical basic laboratories with the right medicine.

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