# Medical Service Platform and Internet+ Medicine Innovation Construction

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***Abstract***

*Internet+ medicine is experiencing an information age with rapid development. Medical institutions are setting up network information systems to offer a convenient medical service platform to patients and ordinary people, which is beneficial to people and can solve the many medical problems that have long been brought to patients. This paper studies the Internet+ medical service platform. A new, complete, scientific, safe medical platform system is established by improving the safety of the information system, formulating a relevant management system, formulating relational laws and regulations, increasing policy support and supervision, and developing awareness of protecting personal information.*

*Keywords: Internet+, Innovative medical care, Medical reform, Medical service platform, Big data analysis*

## 1. Development environment and advantages of Internet+ medicine

Currently, most Internet+ industries depend on support from national policies to create products for profit. In this epoch, when Internet+ medicine is widespread, Internet+ medical applications are becoming increasingly popular. According to incomplete statistics, there were more than 2,000 types. However, no part must be alive for major medical problems nowadays [1][2].

With society's continuous development, people pay more attention to physical health, so the demand for the medical industry is stricter. The traditional way cannot satisfy people anymore. The fundamental solution to the problem is innovation, providing an open market for the Internet+ medicine industry.

First, Internet+ medicine can solve problems that traditional medicine has nothing to do with. For example, medical information between doctors and patients cannot be updated on time. Patients need to learn to understand experts' information, so they cannot choose the proper doctors, and the treatments are delayed. "Difficult to see a doctor, expensive to see a doctor" has become one of the major problems in society [3].

Then, Internet+ medicine can better allocate medical resources and reduce resource waste. Patients can choose to seek medical treatment online when they have common diseases, which can save medical expenses and time and break the limitations of space and time. From the perspective of doctors, Internet+ medicine provides much more convenience. Doctor

clinical cases can be spread quickly without restricting time and space, so the doctor's fame will improve. It offers more choices for patients and increases doctors' income [4].

Last is the safety problem. With the continuous completion of the internet, people are paying more attention to internet safety. Internet+ medicine based on APP faces security threats in the mobile internet era. As for the development of the whole industry, the network security problem must be solved. Otherwise, the objective function of Internet+ medicine cannot be realized [5].

## 2. Internet+ medicine development trend

Now, there is an urgent problem: it is difficult for people to see a doctor. To solve this problem, Internet+ medicine is launched to simplify the treatment process through the internet and optimize the medical treatment process. Internet+ medicine will be high-profile in the future, and medical models related to Internet+ medicine will spring up continuously. Internet+ medicine will cover every aspect of the medical industry. Ultimately, people will realize online appointment registration, get medical advice online, remote consultations, and buy medicine online.

Medical quality and accuracy are the two main issues concerning Internet+ medicine. Some Western countries have begun to study medical precision. Medical precision is mainly reflected in the following two points: precise visits and treatment. We can ensure accurate treatment only when we solve the problem of precise information between doctors and patients.

Internet+ medicine cannot flourish without support from government policy. In the context of open policy, medicine has achieved great success, and continuous innovation and development also promote further institutional reforms in the medical field. Based on the internet, the relationship between doctors and patients develops harmoniously. The best edge is the help of rational allocation of resources.

At present, the information on the medicine industry is relatively isolated. It cannot be shared and exchanged on time, so an information barrier is formed, which impedes the further implementation of policies. Therefore, solving this problem with Internet+ medicine is urgent. Creating a healthy and safe information system to break the information barrier is the primary mission of Internet+ medicine development.

## 3. Internet+ medicine problems and analysis

### 3.1. The particularity of the industry

The particularity of the industry limits the development of Internet+ medicine. This particularity is manifested in the way that patients are more willing to choose face-to-face treatments and are more likely to accept the traditional medical treatment process psychologically. Although Internet+ medicine provides a convenient medical platform online, the distance in the medical treatment process will always make patients lose confidence in the doctors and cause many concerns about the medical treatment and the accuracy of diagnosis.

### 3.2. Barriers to medical data

The premise of Internet+ medicine development is the benign development of the medical industry. The character of this model is using the internet to integrate the medical system deeply to maximize the medical effects. Medical data plays a vital role in the Internet+

medicine model. However, patients' clinical information is legally personal privacy, which leads to the inability to share medical data in all directions, limiting the construction of Internet+ medicine mode and promoting reform.

### 3.3. Immature business model

Internet+ medicine has derived two models. One is online consultation tools, including medical websites, BBS platforms, and real-time interactive modules. However, most patients do not accept this mode because of the business element, and it cannot realize the purpose of publicity of medical units. The other is medical devices that can access the network. The concept of this mode is good; it can detect various physical signs of patients on time and provide parameters for personalized treatment. However, the implementation needs considerable financial support, which cannot be spread among general patients, limiting the further development of Internet+ medicine.

## 4. Recommendations for Internet+ medical development

Under the background of deepening medicine reform and advocating the deep integration of Internet+ in every industry, entrepreneurs have gained many opportunities to innovate and become entrepreneurs. Still, both sectors and entrepreneurs are under tremendous pressure simultaneously. In the construction process of the Internet+ medicine platform, firstly, we should conform to the advantages of traditional medicine, then retain the essence and discard the dross to refine networked information in traditional medical service systems to guide the Internet+ medicine platform. Next, we should adopt the "online + offline" combined medical model to enhance the transparency of drug prices, optimize the treatment process, and solve medical problems such as "drugs are expensive, seeing the doctor is difficult."

## 5. "Internet+ medical health" should develop within innovation

Recently, the State Council issued the Opinions on Promoting the Development of "Internet+ Medical Health, mentioning the development strategy of deep integration of the internet and medical health. In the context of the internet, medicine reform continues to deepen. At the same time, the opinion promoted the implementation of the National Health Policy. The opinion mainly focused on the people's difficulty in seeing a doctor. It also proposed guidelines for improving people's health by taking medicine reform as an opportunity. From April 12th, when the State Council executive meeting was determined to develop "Internet+ medical health" measures, to April 16th, when the State Council Information Office published relative policies, people in the different areas were full of expectations of this opinion. At the same time, people in other regions interpreted the core connotation of the opinion and integrated the inherent resources of every area to service the Internet+ medicine platform. The publication of the opinion received a warm response from the media and markets and is regarded as one of the most pragmatic documents in the field of medical reform in recent years.

The opinion defined the guidance of Internet+ medicine in policy, and the government espoused and encouraged the enthusiasm of the innovation team. It also confirmed the emphasis on Internet+ medicine and expanded understanding of Internet+ medicine. It no longer depended only on the internet to seek doctors or medicine. Still, it expanded comprehensively on the pragmatic application of the medical system, such as family doctors, innovative medicine, drug supply, etc. The opinion also defined the behavioral boundary of

"Internet+ Medical Health." It proposed rectification opinions on the three most controversial issues in practice, including online medical consultation, online hospital, and prescription drug e-commerce. The opinion confirmed that the online hospital must be based on the entity hospital and confirmed responsibility attribution of internet medical platforms for third-party organizations. Responsibility attribution is one of the necessary conditions of the Internet+ medicine system because Internet medicine is related to people's life security. Therefore, third-party organizations should ensure that the qualifications of service personnel comply with relevant regulations and that service personnel should shoulder corresponding responsibilities.

All in all, the publication of the opinion is the response to current social demands. It is also a summary and phased improvement of experience from previous medical institution platforms and regional governments about Internet+ medicine. In the future, we should, under the premise of rigorous and inclusive practice, espouse and encourage the continuous innovative development of Internet+ medicine with an unremitting attitude to innovation and reform to promote the implementation of the healthy China strategy.

## 6. Security problem

### 6.1. Medical information

The continuous completion of Internet+ promotes sound development in all areas. The internet follows the OSI/RM structure, the open system interconnection reference model. The entire network system emphasizes not only the massive storage and transmission of data but even the open and interconnected working mode. Using the mode will put the network under hacking, spoofing, virus propagation, etc., so we should pay attention to information security and take protective measures when constructing the Internet+ medicine platform. In Internet+ medicine, patients' relevant private information may be disclosed when they make online appointments, have online consultations, and purchase drugs online. In addition, there are certain risks when paying for treatment and medicine. These sensitive data are very likely to be defrauded and stolen by criminals, threatening the vital interests of patients. The patient's medical record data and test results will have a severe impact if they are leaked. Therefore, the database should be kept safe to prevent leakage and cause unnecessary losses.

### 6.2. Hospital information system

Another major problem the "Internet+" faces is the security of the hospital information system. Guaranteeing information security is one of the first considerations for reformists in the industry. In the traditional hospital system, information is isolated and closed. Although collecting data is cumbersome and affects the efficiency of hospital work, this information rarely leaks with its physical security features compared with the data exposed on the internet. Traditional hospital information management systems cannot defend against threats, and there is no distinct security division inside the network. Hence, border security needs to be tighter, and many security issues exist. Once network intermediaries discover these problems, they may cause information leakage, resulting in unimaginable losses.

# 7. Countermeasures

## 7.1. Enhance information system security

To ensure the security of the data in the system, hospitals and other medical institutions should invest a large amount of workforce, material resources, and financial resources to gradually realize the concentration of human resources and the standardization of information security departments. The hospital's database can rely on personalized customization from a professional software development company to ensure the management system is complete and safe. In addition, to prevent private data leakage in hospitals and medical institutions, data can be encrypted and advanced coding, and a dedicated backup system for hospitals and medical institutions to reduce the BUG in the information management system and minimize insecurity.

## 7.2. Establish a corresponding management system

### 7.2.1. Rights assignment

Manage and control some inner data of medical institutions by the strategy of rights assignment. Effectively separate the access rights of individuals and organizations and limit the scope and number of accesses. Large medical departments can ensure data security by the way of the cluster. When the data is disclosed, the reason and person in charge can be found in time so that the hospital can investigate relevant legal departments and personnel.

### 7.2.2. Staff training

Medical institutions should conduct training in safety awareness and safety skills for database administrators and operators. Improving the staff's professional responsibility, safety awareness, and management efficiency from a technical perspective will be beneficial.

## 7.3. Formulating relevant laws and regulations

The state should study and introduce management measures to regulate Internet diagnosis and treatment as soon as possible. The government should improve policy support and supervision and continuously strengthen supervision and service levels. The localized management program implements the goal of unified supervision online and offline. Management institutions should also establish a supervision port for the administration of medicine. All medical institutions with internet medical service and all internet medicine platforms should promptly push, back up, and update data to the regional comprehensive health information platform. Medicine administration departments will supervise internet medical behaviors dynamically through a supervision port. At the same time, the government can increase policy support and grant conditions like tax incentives to enterprises that develop Internet medical databases and enterprises that provide Internet medical services to promote the rapid development and progress of the Internet medical industry.

## 7.4. Develop awareness of protecting personal information

Patients should develop an awareness of protecting personal information. It is necessary to continuously improve security awareness, learn security knowledge, change passwords regularly, and increase password difficulty by reading the hospital and related documents in

government and society. Don't log in or visit unidentified websites. Clear the browsing records and traces after surfing the internet in the public network, leaving no opportunity for others to threaten personal information security.

## 8. Conclusions

The information age is developing rapidly, and the Internet+ has caused widespread societal concern. The state continuously increases the support and encouragement of the Internet+ industry. The reform of the Internet+ industry has officially kicked off, and the Internet+ medical industry is even more imposing. However, when the Internet+ and medicine combine profoundly, we should study problems faced by the combination from different aspects. In the development phase, we must not only carry out industrial innovation but also discover and solve some issues in time so that the new industry will gradually mature after continuous improvement. In the future, Internet+ medicine will develop continuously, waiting for the opportunity and facing the challenge.

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