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**Technical specification for telemedicine information system
(English Translation)**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

The main drafting organizations of this standard. China-Japan Friendship Hospital, the First Affiliated Hospital of Zhengzhou University, the Statistical Information Center of the National Health and Family Planning Commission, Guizhou State and Provincial Health Information Center, Zhejiang Digital Medical and Health Technology Research Institute.

1 Scope

This standard specifies the overall technical requirements, system functions, information resource specifications, infrastructure specifications, and security regulations for telemedicine information systems.

Fan and performance requirements, etc.

This standard applies to the medical institution of one party (hereinafter referred to as the inviting party) inviting other medical institutions (hereinafter referred to as the inviting party) to use the Internet Communication and computer technology are medical activities that provide technical support to patients and medical staff in this medical institution.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article Pieces. For undated

references, the latest version (including all amendments) applies to this document.

WS 363 Health Information Data Metadirectory (all parts) WS 364 Health information data element range code (all parts) WS 365 Basic data set of health records of urban and rural residents WS 445 Basic data set of electronic medical records (all parts) WS/T 447-2014 Technical specifications for hospital information platform based on electronic medical records WS/T 500 (all parts) Specification for shared electronic medical records WS/T 529 Basic functional specification of telemedicine information system the basic structure and data standards of electronic medical records (for trial implementation), former Ministry of Health, 2009

3 Terms and definitions

The terms and definitions defined in WS/T 529 apply to this document.

4 Abbreviations

The following abbreviations apply to this document.

5.1 Overall framework

The overall framework of the telemedicine information system mainly includes the application of the telemedicine information system, the services of the telemedicine information system, and information resources.

Source center, information exchange layer, basic measures, standard specifications, and security assurance are shown in Figure 1.

Figure 1 The overall framework of the telemedicine information system

5.2 Technical architecture

The technical framework of the telemedicine information system is shown in Figure 2.

Figure 2 Technical architecture of telemedicine information system

5.2.1 Application layer

The application layer of the telemedicine information system consists of telemedicine service applications and telemedicine supervision. Through a unified telemedicine service portal Access, which can realize remote consultation, remote image diagnosis, remote pathological diagnosis, remote ECG diagnosis, remote monitoring, remote surgery teaching, remote for remote medical services such as medical education, each application can realize "plug and play"; through the functions provided by the remote medical supervision module, Various monitoring functions such as analysis, statistics, and decision-making of the operation of telemedicine systems at all levels.

5.2.2 Service layer

The services provided by the service layer of the telemedicine information system include registration services, remote services, storage services and electronic medical record file services.

It is used to directly interact with the telemedicine business logic layer through the telemedicine data transmission object, and centralize the processing of the business logic of the system.

Message exchange and message transmission between services run through each service layer. Message exchange between services needs to be based on common exchange standards and industry exchanges.

Change the standard.

5.2.3 Resource layer

The resources provided by the resource layer of the telemedicine information system include structured data, unstructured (document, audio and video data) data, structure document data, application service resources, etc. Mainly used to support the management and coordination of cross-regional telemedicine work; support cross-regional telemedicine Construction of the effectiveness of medical treatment work; assisting decision-making to carry out data statistical analysis services; providing support for the National Telemedicine Supervision and Resource Service Center and various districts Regional telemedicine supervision and resource service centers, as well as the interconnection between regional telemedicine supervision and resource service centers, provide information services Service.

5.2.4.1 Telemedicine information resource exchange layer

Including. Enterprise Service Bus ESB, Service Integration SMP, General File Transfer GTP, Data Integration ETL, Unified Media Control Unit MCU. According to the business process, the information exchange layer exchanges data with other information systems through data interfaces or message transmission to achieve information sharing.

Sharing, data reporting and other functions. Mainly used to meet the information exchange and collaborative application of clinical information across hospitals and regions; for medical service funding Source registration, application, authorization, management, and monitoring to realize service-based information resource sharing and exchange;

Data standard business information collection, and file-based data exchange services for external systems; used to meet the requirements of telemedicine data warehouse construction Data integration requirements for data collection, processing, and conversion in the design process; used to meet the cross-hospital and cross-regional interaction of

audio and video information, in accordance with the requirements of peacetime and wartime integration, the video conference system for emergency command of public health emergencies is integrated. Solve the problem that hospitals rely on regional telemedicine supervision Information interconnection and intercommunication in the process of carrying out telemedicine business with the resource service center.

5.2.4.2.1 Emergency command system

The telemedicine information system is connected to the emergency command system, and the video site is used to connect to the hospital network to provide audio and video of the scene and the treatment process Dynamic information, realize the linkage of information sharing and handling in emergency response, which can not only enable patients to obtain diagnosis and treatment through remote video, but also help doctors the nurses report the latest situation of the patient to the command center at any time and analyze any potential new diseases.

5.2.4.2.2 Medical and health information system

Mainly include electronic medical record system, hospital information system, laboratory information system, clinical information system, ECG diagnosis system, image diagnosis Systems, pathological diagnosis systems and other medical information systems. Through the connection of telemedicine information system and medical information system, cross-hospital Information sharing and business collaboration between.

The telemedicine information system is connected with the regional health information platform to provide real-time information on telemedicine supervision and business services, and share the original health information.

Health archives and electronic medical record information enable the regional health information platform to have comprehensive management functions for telemedicine services.

For example, a medical institution has established a hospital information integration platform for data sharing, and it will be integrated with the telemedicine information system through the platform mechanism.

Docking, reducing the number of data interfaces, and realizing information sharing and business collaboration across hospitals.

5.2.4.2.3 Medical information collection equipment

Medical information collection equipment mainly includes multi-parameter vital signs monitors, digital imaging equipment, digital electrocardiographs, ventilators and other Other medical information collection equipment is mainly used to collect patient's vital signs, blood sugar, blood pressure and other data.