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| **Abstract:** | Hospital’s information systems have accumulated a large amount of clinical medical data which sets the foundation for medical health big data applications. In the era of big data, the integration, analysis and research on multi-source heterogeneous information of medical data will bring revolutionary changes to the medical field. The establishment of fusion technology standards related to the multi-source heterogeneous clinical data will promote the development of clinical aid decision-making based on big data. |

1. **Background and Effectiveness**

Medical health concerns everyone, and medical health big data applications are an important part of the “healthy China”. As hospitals’ information is continuously updated, HIS, LIS, PACS, RIS, CIS and other systems have made great contributions in improving hospital management, hospital management processes, and management efficiency. At the same time, these systems have accumulated a large amount of clinical medical data which sets the foundation for medical health big data applications.

These clinical data come from multiple medical services, departments and medical information systems. Data presentation formats include various types with obvious multi-source heterogeneity. They are textual type (such as demographic characteristics, medical advice, electronic medical records, medication use, etc.), digital type (such as physiological data, biochemistry data, vital signs data, etc.), and image type (such as B-ultrasound, CT, MRI, X-ray, etc.). In the era of big data, the integration, analysis and research on multi-source heterogeneous information of medical data is beneficial to discover the evolution of disease and treatment mechanism and to assist clinical decision-making, which will bring revolutionary changes to the medical field.

The establishment of fusion technology standards related to the multi-source heterogeneous clinical data is conducive to establish a technology system that is fused multi-source medical health information, promote the development of clinical aid decision-making based on big data, lay the foundation for the development of intelligent medical care. It is also conducive to the formation of a comprehensive disease intervention method based on multi-source information fusion, the establishment of the clinical management model based on information fusion, and setting a theoretical foundation for the innovation of medical service.

The establishment of fusion technology standards related to multi-source heterogeneous clinical data is beneficial to the establishment of a graded diagnosis and treatment system. The system is clinical application-oriented which is helpful to improve doctors’ decision-making through information-based means, promote the quality of medical services, and accelerate the application of quality medical resources. Meanwhile, the system is useful to data collection in the converged area including hospitals and related medical management departments and the construction of a national medical information platform.

1. **Experience Sharing and 2018 Priorities**

The main experience includes three points:

* The state attaches great importance to the work of health care big data.
* The medical institutions attach great importance to construction of hospital information which grantees the collection, storage and quality control of clinical data.
* Clinicians cooperate with computer technicians to advance the development and use of clinical data.

The following priorities are three points:

* The processing of medical health data and the establishment of data base.
* The construction of fusion methods and technical systems related to the multi-source heterogeneous clinical data, including the integration of feature layer and decision-making layer.
* The application and countermeasures of the fusion methods and technical systems related to the multi-source heterogeneous clinical data.

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