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Research on innovation of hospital statistical work mode in the era of big data

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Abstract: *the information screening mechanism of hospital statistical work mode is chaotic, resulting in too high delay in the implementation of hospital statistical work. Therefore, research on the innovation of hospital statistical work mode in the era of big data. Innovate the design of hospital statistical work mode in the era of big data, and establish a diversified management system of hospital statistics, so as to build an information screening mechanism of hospital statistical work mode. Accordingly, the hospital statistical system information is processed and the hospital statistical work information collection mechanism in the big data era is formulated, so as to complete the innovation of the hospital statistical work mode. So far, the innovative design of the hospital statistical work mode in the big data era is completed. Through example analysis, the hospital statistical work mode innovation database in the big data era is constructed, and the data quality is controlled into the database. The result analysis shows that the maximum increase and decrease delay of sample data execution storage after the innovation of hospital statistical work mode in the big data era is 1678ms. Therefore, In the era of big data, the innovation of hospital statistical work mode can improve the efficiency of statistical work.*

Keywords: *big data; hospital; Statistics; Working mode; Innovation; diversification*

1. Introduction

Through the collection and sorting of original data and information, and the analysis is fed back to other departments, so as to determine the contents of all aspects of the work of the hospital, which is collectively referred to as hospital statistics. Health informatization has not only promoted the further development of medical statistics, but also changed the working mode of some medical and health fields. The innovation of work mode can be divided into two stages: one is the innovation of work content relying on the boundary of statistical information, and the other is the innovation of work mode integrating with the flexible expansion of labor relations to provide condensed and extended information [1]. To summarize the diversified work innovation mode, we must first analyze the stage of work mode innovation [2]. The innovation of hospital statistical work mode mainly depends on the accumulation of original data, and build a hospital information management system through scientific management of medical data [3]. However, at present, patients have a wide range of employment options, and the number of medical data in the field of health care is gradually increasing, which has brought great pressure to the statistical work of the hospital [4]. Therefore, the hospital statistical work mode should be adjusted to adapt to the current statistical data situation.

2. Innovative design of hospital statistical work mode in the era of big data

2.1. Establish a diversified management system for hospital statistics

To design the working mode of hospital statistics, we must first establish a diversified management system of hospital statistics and strengthen the service logic of all-round hospital. Extract data information from unprocessed original hospital data and improve hospital service level through professional methods. And organize the hospital to count the diversified management content, analyze the disordered medical data from the perspective of diversification, refine the management content through the diversified management system while fixing the management cost, and improve the ability of the diversified management system to perform statistical work. Decompose the statistical work through the diversified management system, and implement the objectives of statistical work into the

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diversified management system. Design diversified management system links, and make link operation implementation for the determined organization system. Learn from the management methods in other fields, formulate the classification and sorting mechanism of diversified management system, and limit the management content of hospital statistical work according to the diversified management system.

2.2. Processing hospital statistical system information

Select useful hospital statistical system information from the established hospital statistical diversified management system, and judge the effectiveness of statistical system information. Formulate the analysis path according to the integrity of statistical work information, and collect hospital medical information for analysis and statistical management. Set the information management indicators of multiple hospital statistical systems, determine the standard derived content according to the content of the indicators, summarize the diversification theory of daily reports from the derived content, and determine the results of periodic general survey and statistics from the management link, which can be used as the basic indicators for supplementary statistical investigation. Through the hospital information statistics cycle, determine the processing direction of the statistical system information, and use the diversified work topic to further analyze the hospital statistical system information. Decision mining is made according to the law of data information, so as to determine the corresponding integration specification of statistical information resources.

2.3. Formulate the information collection mechanism of hospital statistical work in the era of big data

In order to clarify the data flow of hospital statistical work and formulate the summary mechanism of hospital statistical work information. By unifying the content of data information integration, sort out the summary results of hospital statistical work information, and combine the data collection warehouse with the data collection platform. The data warehouse is constructed according to the data loading process, and the data warehouse platform is established through the data source of data extraction to summarize the data extraction into a unified hospital information system. As a routine statistical model of hospital statistical work information, through logical data construction decision-making, control the medical quality and safety management information, and find out the statistical characteristics of intuitive analysis from the relevant data. With the advantage of interoperability, promote the transformation of hospital statistical work mode, and establish workload data receiving interface, so as to make mathematical statistics for hospital statistical work.

2.4. Complete the innovation of hospital statistical work mode

According to the summary mechanism of hospital statistical work information, the data dimension of hospital general information is subtracted, and a new data query mode of hospital statistical work information is formulated by reducing the multifaceted dimension of hospital statistical information. Through data structure, the shared content of hospital statistical work mode is modified, and the script content is written according to the statistical needs. Update the statistical work data to be maintained, determine the specific index value according to the operation instructions, integrate the historical data with the added statistical data, and write the statistical data summary script accordingly. Judge the data table according to the date of script data, and make the hospital statistical work data update table after merging into the local database. Using the characteristics of database control and management, re design the data structure sharing platform for the rapidly changing demand data, integrate the hospital statistical work mode with the script, and control the structured and higher data construction structure through big data reports, so as to innovate the hospital statistical work mode.

3. Case analysis

3.1. Set up a database

Take Microsoft SQL as an example, establish a local database, change the name to hospital statistics database, import the medical record statistics of a provincial hospital in the background, and import the results of various data statistics scripts according to the query report categories. The corresponding hospital statistical database structure is obtained, as shown in Table 1.

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Table 1: Structure of hospital statistical database

Serial number	Report name	Table code	Index range
1	Work report (outpatient)	Tmzjdkajf	Outpatient
2	Work report (emergency)	Tmzjdkajf	Outpatient
3	Medical Technology Department report	Tmzjdkajf	Medical technology
4	Custom project report	Tmzjdkajf	Medical technology
5	Inpatient Report	Hislaldk	Inpatient
6	Ward work log	Hislaldk	Inpatient
7	Hospital income statement	Tmzjdkajf	Income category

It is known that some data contents are beyond the structural scope of the statistical database, so it is not emphasized here. Further addition processing shall be carried out according to the actual statistical items.

3.2. Data quality control

Analyze the database structure in specialized work, control the data quality of hospital statistical work, add the script to the database, compare the added content of historical data and script writing data, and combine the statistical report to be made with the execution content. Set the representative characters of department number of hospital statistical work data, and determine the added items in the database according to the text content in the hospital work report.

3.3. Result analysis

Compare the sample data of hospital statistical work mode innovation in the era of big data application with the increase or decrease delay of unapplied execution storage, as shown in Table 2.

Table 2: Implementation of hospital statistics

Kacode	Before the application(ms)	After the application(ms)	Variance(ms2)
M54	702	699	4.5
MBBYH	1203	1036	13844.5
MBNK	1920	1227	240124.5
M50	368	147	24420.5
MBYH	1879	1678	20200.5
MBB1	1582	1421	12960.5
M53	1033	943	4050

By analyzing the data in the table, it can be seen that the maximum increase and decrease delay of sample data execution and storage before the innovation of hospital statistical work mode in the era of big data is 1879 MS, and the maximum increase and decrease delay of sample data execution and storage after the innovation of hospital statistical work mode in the era of big data is 1678 Ms, Therefore, in the era of big data, the implementation and storage delay of sample data innovated by hospital statistical work mode is lower.

4. Conclusion

Through this research, the innovation of hospital statistical work mode in the era of big data can reduce the execution and storage delay of hospital statistical work, improve the hospital statistical workload in the era of big data and accelerate the progress rate of statistical work. In the future, the hospital statistical work mode in the era of big data should be further discussed, the statistical index data type should be compiled according to the index data structure, and the data statistical analysis should be made for the data index name of the index compilation.

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