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CENTRAL MONITORING SYSTEM ANALYSIS AND ANALOG-DIGITAL TRANSFORMATION TO RECEIVE DIAGNOSTIC INFORMATION

Abstract: *The effectiveness of modern medical technologies is closely linked to improving methods and independent control tools used in the process of treatment. The non-stop control problem of diagnostic data occupies a special place in medicine, because watching of the current patient condition is of vital importance in the area of medicine.*

Keywords: *Electronics, Analog-Digital Transformation, CMS, CMS, Central Monitoring System*

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АНАЛИЗ ЦЕНТРАЛЬНОЙ СИСТЕМЫ МОНИТОРИНГА И АНАЛОГОВО-ЦИФРОВОЕ ПРЕОБРАЗОВАНИЕ ДЛЯ ПОЛУЧЕНИЯ ДИАГНОСТИЧЕСКОЙ ИНФОРМАЦИИ

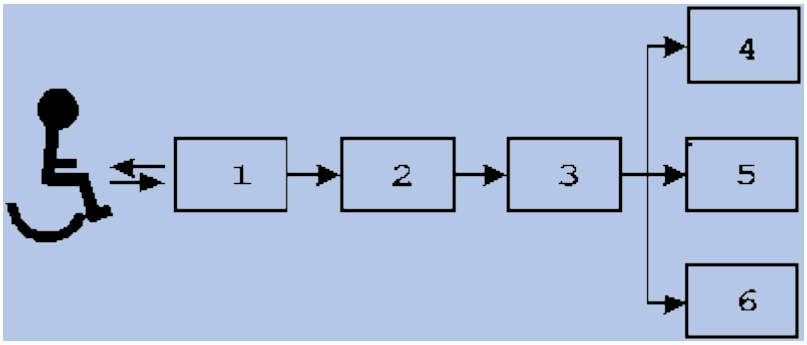
Аннотация: *Эффективность современных медицинских технологий тесно связана с совершенствованием методов и средств независимого контроля лечения пациентов в процессе лечения. Проблема непрерывного*

контроля диагностических данных занимает особое место в медицине, так как наблюдение за текущим состоянием пациента имеет жизненно-важное значение в области медицины [2].

Ключевые слова: *Электроника, Аналогово-Цифровое Преобразование, СЦМ, Система Центрального Мониторинга*.

Construction of clinical monitoring

Physiological data, extracting information investigation, diagnostic variables identification are made in hospital monitoring systems with a user-friendly interface for a better understanding (see figure 1).



1- physiological parameters detectors

2- unit of first processing signals

3- unit of information analysis

4 - registrar

5 - display screen

6 – memory of data base

Figure 1 - Construction of clinical monitoring

Data acquisition in observation system is made on the basis of electrical, chemical, physical signals which display physiological structures functioning in a model for a better investigation and processing.

Human parameters can be obtained from physical quantities (pressure, temperature, voltage, electrical current) or values indicating processes of body that are directly linked to the physical field (infrared, optical radiation, acoustic emission, chemical composition, x-ray radiation) [1].

Recording and measurement of human somatic parameters

Transducers containing sensitive components (that can turn the characteristics into electrical signals) are used for recording and measurement of somatic parameters.

Unit of first processing signals

The first phase of information investigation in the hardware is an electrical impulse processing (expansion or reduction of signals, encryption of broadcast signals, conversion of the analogue signal, changing parameters).

Unit of data analyses

Data investigation is carried out by microprocessors integrated into diagnosing devices that allow plenty of ways to implement hard diagnostic sequences of somatic data processing (differential and integral calculus) after first processing of chemical, electrical, physical signals.

Display screen

Technical devices provide an opportunity to transmit medical equipment data in a visualized format. Doctors can observe established parameters, vital signs, graphs and tables with automated information, reach conclusions and change certain values for accurate treatment.

Memory of data base

Central monitoring systems have become hospital information bases, which provide a lot of opportunities for using medical data base.

Conclusion

Utilization of technical equipment and considerable knowledge can help save many people in medical facilities. Transformation of biological signals to electrical is very important, because it allows to analyze human condition and to find proper treatment in time.

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