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Medical Intelligence Service Provider Based On Interconnected, Cooperating Medical Decision Support Systems

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Background: Knowledge-based medical decision support systems (MDSSs) were shown to be useful in patient care, especially when fully integrated into hospital or laboratory information systems, patient data management systems for intensive care, or medical practice software systems for the practitioner [1]. In order to remain medically up to date, the knowledge bases must be continually revised, extended, and made accessible to their sites of application. In addition, MDSSs are offered via the World Wide Web, to be accessed through a web browser or, browser-less, in order to receive queries and automatically return answers within a network-based communication protocol. Objective: The general aim is to establish a web application that not only offers single, autonomous MDSSs but also provides an array of interconnected, mutually supportive MDSSs. By doing this, parts of, or the entire, medical decision making process in patient care is mimicked. For example, an MDSS that assists in the clinical differential diagnostic process in hepatology, a field of internal medicine, might generate - on the basis of jaundice, enlarged palpable liver, and increased bilirubin levels - the hypothetical diagnosis of hepatitis, among others. Hepatitis serology laboratory tests will now be required in order to confirm or exclude a viral cause for the inflamed liver. The one system (internal medicine) demands information from the other system (laboratory medicine) and, if available, incorporates these results in its own decision. Methods: As shown previously [1], software-based medical knowledge modules are well suited to form the core of MDSSs. A next step is taken by providing a web interface that exhibits the different medical specialities as components that interact with each other, as (specialized) physicians do in actual medical situations. The components are backed by medical knowledge modules for the respective speciality. Calls for switching from one MDSS to the next and back, if appropriate, are triggered by the respective MDSS. Results: Based on several autonomous MDSSs (Rheumexpert [2], Hepaxpert [3], Thyrexpert [4], and Toxopert [5]) that have been routinely applied, a general web-based interface showing the specialities of internal and associated laboratory medicine is established. In this methodological and technical study, a blackboard system was used: it serves as a common communication platform between clinically oriented systems and systems for the analysis of laboratory test results. Conclusion: We report the initial steps taken to establish a web-based medical intelligence service provider that includes MDSSs for the many large and small specialities of practical medicine, and also follows the information and decision flow in actual patient care by means of interconnected, mutually supportive MDSSs.

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Techniques for Customizing Patient's Diagnosis User Interface

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This paper proposes an approach of introducing a specific user interface (or diagnosis screen) to enter efficiently patient's diagnosis details. We discuss various aspects and techniques for providing efficient way to enter diagnosis details in efficient manner. However, there are few facilities in user interface development that are being covered and analyzed. We discuss methods for providing automatic data view by focusing on efficient design and effective viewing strategies so that user can fill up related information with less typing efforts. Various drag and drop window-screens will be provided to enhance various user interface styles. Data manipulation and data extraction features are introduce to manage a link with user interface for the user's better interaction.

Telecardiology System Using Internet and Picosatellite Connections

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Background: We have designed an experiment to research the performance of the telecardiology system using internet and picosatellite connections for telemedicine, the principal interest is to bring medical services to isolated communities Objective: The objective of this research is to evaluate the performance of a telecardiology system on internet and picosatellite networks. Materials: A fully functional telecardiology system was used on internet and network simulation system. Methods: the telecardiology system are composed by acquisition , compression and error control modules, we send compressed ecg data through internet to the ground station of the picosatellite network, later the data are sending to the satellite, they are received at the other ground station in remote place and transmit on internet to the hospital where there are medical specialist for analisys and diagnosis. Finally this communication process is used to return diagnosis data to source place where there is the patient. Results: We send compressed data through internet later we uses data for simulitating satellite transmission using matlab communications tollbooks, as a result some doctors in Bogotá carried out observations to the results with ecg reconstructed in reception and they concluded that it is acceptable the ecg waveform for diagnosis. Conclusions: Using internet and picosatellite networks will enable the develop of integrated networks in order to establishing the infrastructure with the capability to develop space activities for special purposes on medicine. it is possible to take ecg data of a patient from remote place for attending the principal necessities of medical services in the community.

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Disability Informatics: Meeting the Needs of People with Disabilities

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Disability Informatics is an emerging field that seeks to better understand how individuals with disabilities can use information technology and information systems to address any functional issues they encounter, improve their self-efficacy and empower them to be as independent as any other person. Disability Informatics research often involves identifying and addressing the