A Multiagent Based E-Hospital

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MULTI-AGENT BASED E-HOSPITAL

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Purpose: The current Internet infrastructure together with the intelligent agents technology allow for intricate and often highly complex systems to be modeled in a highly organized manner. A hospital is an ideal example of a system in which many distinct agents are employed to maintain the functionality of the entire system. This research work aims to build an agent-based e-hospital. The proposed e-hospital is a complex multiagent system that regulates and controls the flow of patients' information among units within a hospital and between different hospitals.

Methods. The system is equipped with components that can process, summarize, and extract the key-phrases from different types of patient data such as text, voice and image. Many unique agents are designed specifically to manage and provide the necessary computational capabilities for their respective units within a hospital. The patient treatment-planning agent uses the keyphrases to plan and schedule the patient's treatments. This is mainly done through collaborations with unit agents and the hospital information agent. The hospital information agent acts as the main controller. It also collects statistics for different stakeholders such as government, research centers, pharmacies, and drug companies. In this system agents work together for the benefit of the entire system, however, they must not act in a detrimental fashion to their own locally assigned goals.

Conclusion. The agents' collaborative efforts speed up the clinical decision making process and reduce the delay in obtaining patient's data from different units and hospitals.