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(54) Title: INFORMATION NETWORK INTERROGATION OF AN IMPLANTED DEVICE

(57) Abstract: A communication system is provided which permits of communication between a deployed implantable medical device (IMD) and a computing resource capable of storing and distributing patient and device data. A deployed IMD may be polled by a network interface external to the host patient, and data may be received by wireless communication. This data may be transmitted to a computer for storage and distribution, and changes to a treatment or instruction regimen, or firmware or software upgrades, may then be transmitted to the network interface for immediate or eventual loading into the IMD via wireless communication. The system is adapted to provide communication service between multiple IMDs deployed in a patient or a number of patients.

The proliferation of patients with multi-implant medical devices worldwide has made it imperative to provide remote services to the IMDs and timely clinical care to the patient. The use of programmers and related devices to communicate with the IMDs and provide various remote services has become an important aspect of patient care. In addition to the instant invention, the use of programmers may be implemented in a manner consistent with the co-pending applications detailed in the foregoing Cross Reference to Related Applications, and assigned to the assignee of the instant invention. In light of the disclosures of these incorporated references, the present invention provides a vital system and method of delivering efficient therapy and clinical care to the patient.

In a representative embodiment of the instant invention, one or more IMDs, such as a pacemaker, defibrillator, drug pump, neurological stimulator, physiological signal recorder may be deployed in a patient. The IMD may be equipped with a radio frequency transmitter or receiver, or an alternate wireless communication telemetry technique or media which may travel through human tissue. For example, the IMD may contain a transmission device capable of transmitting through human tissue such as radio frequency telemetry, acoustic telemetry, or a transmission technique that uses patient tissue as a transmission medium. Alternately, an IMD may be deployed in a configuration where a transmission or receiving device is visible externally to the patient but is connected directly or via wires to the IMD. An external device, which may generally be termed an IMD Network Interface (IMDNI), may be positioned outside the patient, the IMDNI being equipped with a radio frequency or other communication means compatible with the communication media of the IMD or the IMD transmitter/receiver, which may be external to the IMD and may further be external to the patient. In an illustrative embodiment of the subject invention, IMDNI contains a radio frequency transmitter/receiver or similar radio frequency telemetry device. Communication may be effected between the IMD transmitter/receiver and the external IMDNI, e.g. via radio frequency. The IMDNI will be connected via a wireless or physical communication media, e.g. via modem and direct dial connection, with a data network, LAN, WAN, wireless, or infrared network. In an alternate embodiment of the subject invention, the IMDNI may have a direct