Telemedicine uses computers and telecommunications lines to deliver health care at a distance. Telemedicine may use store-and-forward technology to transmit still images or interactive videoconferencing for real-time consultation. Any medical information can be transmitted as e-mail or video, using technologies from plain old telephone service to dedicated high-speed lines. The uses of telemedicine continue to grow in part because the U.S. Department of Veterans Affairs (VA) has adopted telehome care, in part because more insurers cover it, in part because of the growing prison population; telemedicine has been used in prisons for years.

- Subspecialties: teleradology (radiological images), telepathology (microscopic images), teledermatology (skin conditions), teleophthalmology (eye care), telecardiology [most often second opinions for emergency rooms (ERs) for suspected heart attacks], teleneurology including telestroke and the treatment of epilepsy, and telehome care, using remote monitoring devices

Internet-based services can connect patients wearing pacemakers to their doctors.

- Bluetooth technology can connect various devices, so that, for example, when the pacemaker senses a dangerous event, the cell phone automatically calls 911. Telephone-based heart monitors are being used in Japan.

- Telemedicine is particularly important when time is a consideration; telestroke patients can be evaluated by experts miles away to see if they need tPA (a clot busting drug that needs to be administered within a few hours of a stroke).

- Teleneurology uses e-mail and videoconferencing, so that a neurologist can diagnose at a distance. Teleneurology is also making referrals using e-mail. Video can be used to study gait.

- Telepsychiatry is used where there are few psychiatrists but is not appropriate for all conditions.

- Remote monitoring devices make it possible for patients to be monitored at home.


- Telehome care involves a link between the patient's home and a hospital or central office that collects the data. Equipment is installed in the patient’s home. Using it, the patient can telecommunicate vital signs to a nurse at a distant location and can also speak to the nurse. Telehome
care has been found to cut rehospitalizations and ER visits and to reduce hospital stays.

- Telemedicine in prisons is cost-effective, enhances security, and improves medical care.

Other Uses of Telemedicine

- Baby CareLink
- RetCam to diagnose retinopathy of prematurity
- Treatment of Alzheimer’s (using motion detectors to monitor patients)
- In daycare
- Teletrauma in Vermont
- Telemedicine is also used in weight management, pain management, spinal cord injury, and podiatry. Teleoncology systems are helping cancer patients avoid lengthy trips to the doctor and feel more secure because they have a twenty-four-hour link to health care.
- SATELLIFE delivers information to health care workers in remote areas.
- Telenurses and doctors are using the eICU Smart Alerts® to monitor intensive care patients from afar and send alerts to the ICU personnel.
- In July 2006, the FDA approved a wireless electronic capsule to help diagnose stomach disorders.
- Telenursing involves teletriage and the telecommunication of health-related data, the remote house call, and the monitoring of chronic disease.
- For telemedicine to fulfill its promise, certain technical, legal, insurance, and privacy issues need to be addressed and an appropriate telecommunications infrastructure must be in place.
  - In addition, legal issues such as licensing, medical liability, insurance, and privacy concerns need to be addressed.