

TELEMEDICINE

- Telemedicine is the use of electronic information and communication technologies to provide and support healthcare when distance separates the participants.
- It is a system that connect primary care physicians, providers, specialists, and patients.

Telemedicine System

- Telemedicine system can be categorized according to on three different features (layer):
 1. Transportation protocol layer
 2. Medical devices layer
 3. Application layer

	Home Care	Emergency	Radiology
Applications	TOPCARE, TeLeCare	DELTASS, REMSAT	Chili, DicomWorks
Devices	Medication dispenser, ECG, glucose, BP, SPO2	ECG, SPO2, BP	Ultrasound, MRI, CT, PET
Protocols	Appropriate P2P, HTTPS	Appropriate P2P	Appropriate P2P, DICOM, HTTPS, email

Telemedicine Protocols

- Telemedicine applications have the need to transmit and receive patients records, and Radiological images includes ECG results (heart tracings).
- Transmission may be done in one of two ways:
 1. Real-time transmission
 2. Store-and-forward

- Real-Time
 - Immediate feedback. Emergency triage, interactive, treating situation, and meeting.
- Store-and-forward
 - Don't need immediate feedback. Data is stored, forwarded, accessed. This less costly as data can be compressed and batch for transmission.
- Transmission via satellite, or terrestrial media.
- Terrestrial media include microwave, fiber-optic, and conditioned copper cables.

Telemedicine devices

- Alatan yang digunakan dikategorikan kepada 2 berdasarkan jenis maklumat yang diperolehi:
 1. Capture Images – Ultrasound, CT, MRI, dan PET.
 2. Capture vital signals – ECG, Blood Pressure, Oxygen Saturation, Temperature, and Medication Dispenser/pill dispenser.

Telemedicine applications

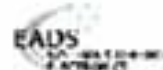
- DELTASS
- TOPCARE
- TeLeCare
- CHILI – Digital Radiology
- DicomWorks
- TeleinVIVO
- Telematics/ Interactive Communication

DELTAASS

Disaster Emergency Logistic Telemedicine Advanced Satellite System



Permanent Centre



Patient Systems

TOPCARE Station 1 

Medical Device
Medical Device
Medical Device

TOPCARE Box 2 

Medical Device
Medical Device
Medical Device

TOPCARE Box 3 

Medical Device
Medical Device
Medical Device

WAN /
socket
connection

Healthcare Institutions

Browser based representation
of patient records

LAN /
https

Telehealth
Client 

Telehealth
Client

Telehealth
Client

WAN /
https

Telehealth
Client

TOPCARE Telehealth Centre

Upload/
Download
Server

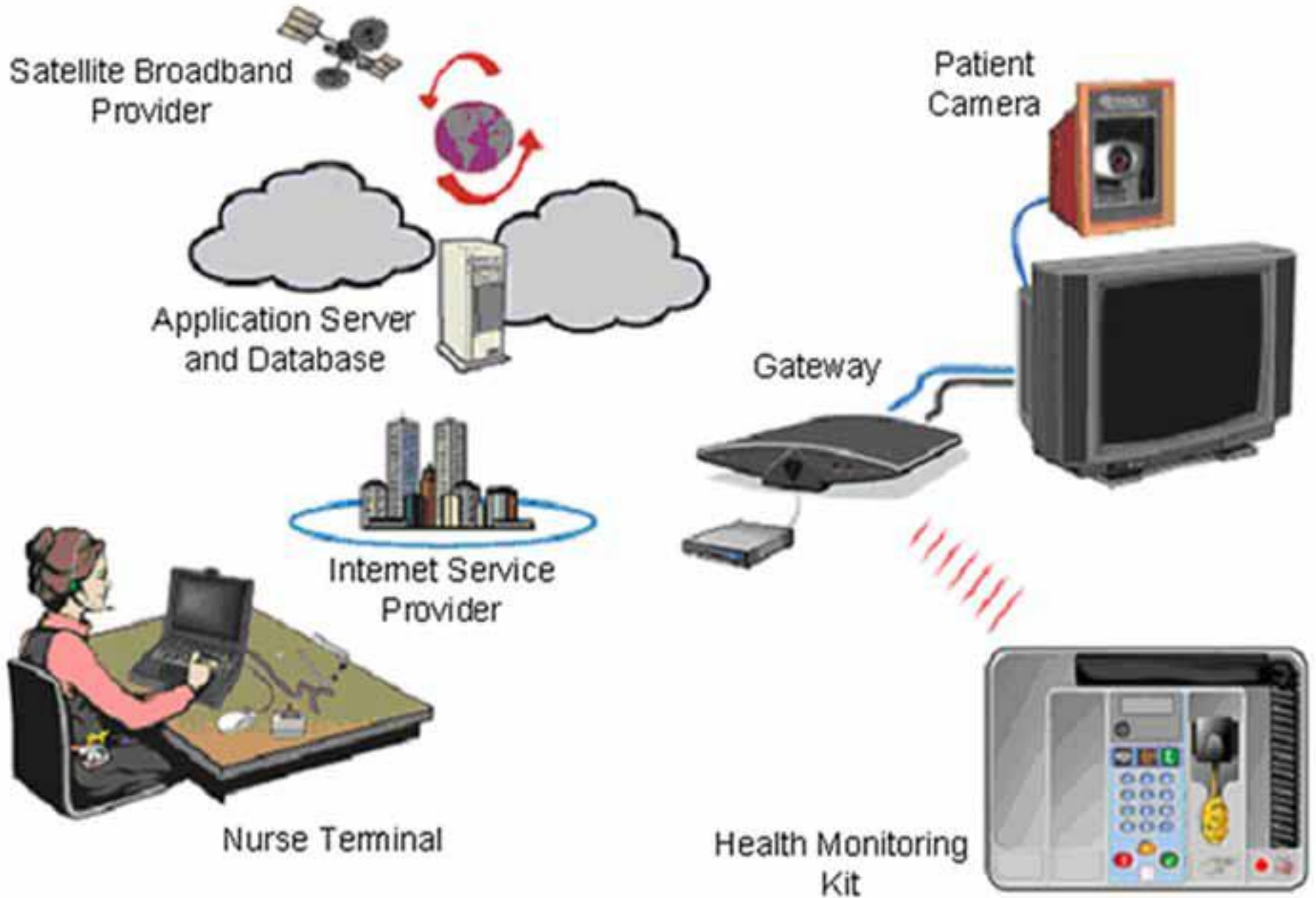
Patient
Records

Middle
-ware
Web-
Server

TOPCARE Server



TeLeCare



CHILI – Digital Radiology

