Australian Telehealth Glossary of Terms

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1 Introduction

In the Australian context, telehealth refers to a health delivery system that provides health-related activities at a distance between two or more locations using technology-assisted communications (National Telehealth Committee, 1996).

Although telehealth is not new, recent years have seen a significant expansion of telehealth applications associated with rapid technological advances and dramatic reductions in costs. Current telehealth practice incorporates videoconferencing for consultations, counselling, supervision, education, training and administration; medical image and data transfer; and access to databases and multimedia information. These new activities complement older, well-established activities such as telephone triage and counselling. Telehealth is used across a range of specialties, including mental health, radiology, pathology, paediatrics and renal medicine.

Unfortunately, evaluation and research have not kept up with the pace of telehealth development and expansion. The lack of a glossary of terms has been a major impediment. This project was undertaken in order to provide telehealth practitioners and those with an interest in telehealth, especially in telehealth evaluation, with a set of common terms, concepts and definitions useful to working in the field.

Telehealth, itself, is a broad area and incorporates many disciplines. Thus, the glossary by necessity needs to encompass terms ranging from information technology and telecommunications to health information systems and management, and health services research. The glossary is not a dictionary, nor is it intended to replace substantive reference material. Rather it has been designed as a single reference for many of the terms and concepts commonly used in telehealth in Australia.

Concurrently, the National Telehealth Committee's Data Definition and Strategic Evaluation Working Group is finalising a much shorter set of standard data definitions for telehealth, and working towards a minimum data set and performance indicators.

This glossary, available in hard copy and on the World Wide Web (http://www.psychiatry.uq.edu.au), consists of a list of terms followed by a list of references. The terms are listed in alphabetical order, with a number in superscript giving the relevant reference or references. Many of the definitions have been paraphrased or adapted for use in the Australian context. For original usage the reader should consult the source material.

It is intended that this resource be updated regularly, at least twice yearly, with revision of existing terms as necessary and addition of new ones. Feedback is welcomed by email, mail, fax or phone to:

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2 List of terms

A

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C

3 Acronyms

AARNet	AUSTRALIAN ACADEMIC AND RESEARCH NETWORK
ADSL	ASYMMETRIC DIGITAL SUBSCRIBER LINE
ATM	ASYNCHRONOUS TRANSFER MODE
B-ISDN	BROADBAND INTEGRATED SERVICES DIGITAL NETWORKS
CCD	CHARGE COUPLED DEVICE
CBA	COST BENEFIT ANALYSIS
CEA	COST EFFECTIVENESS ANALYSIS
CPR	COMPUTERISED (OR COMPUTER BASED) PATIENT RECORD
DICOM	DIGITAL IMAGING AND COMMUNICATIONS IN MEDICINE
EDI	ELECTRONIC DATA INTERCHANGE
EMR	ELECTRONIC MEDICAL RECORD
EPR	ELECTRONIC PATIENT RECORD
FAQs	FREQUENTLY ASKED QUESTIONS
FCIF	FULL COMMON INTERMEDIATE FORMAT
HCN	HEALTH COMMUNICATIONS NETWORK
HL7	HEALTH LEVEL 7
HTML	HYPERTEXT MARKUP LANGUAGE
HTTP	HYPERTEXT TRANSMISSION PROTOCOL
IMM	INTERACTIVE (COMPUTER-BASED) MULTIMEDIA
IMUX	INVERSE MULTIPLEXOR
INMARSAT	INTERNATIONAL MOBILE SATELLITE ORGANISATION
ISDN	INTEGRATED SERVICES DIGITAL NETWORK
ISO	INTERNATIONAL STANDARDIZATION ORGANISATION
ISP	INTERNET SERVICE PROVIDER
ITU	INTERNATIONAL TELECOMMUNICATION UNION
ITV	INTERACTIVE SATELLITE TELEVISION
LAN	LOCAL AREA NETWORK
MCU	MULTIPOINT CONTROL UNIT
MIME	MULTIPURPOSE INTERNET MAIL EXTENSIONS
PACS	PICTURE ARCHIVAL AND COMMUNICATIONS SYSTEM
PAL	PHASE ALTERATION LINE
POP	POINT OF PRESENCE
POTS	PLAIN OLD TELEPHONE SERVICE
PSTN	PUBLIC SWITCHED TELEPHONE NETWORK
QCIF	QUARTER COMMON INTERMEDIATE FORMAT
RVM	ROBOTIC VIDEO MICROSCOPY
SLA	STATISTICAL LOCAL AREA
SVM	SELECTIVE VIDEO MICROSCOPY
TCP/IP	TRANSMISSION CONTROL PROTOCOL/INTERNET PROTOCOL
TIE	TELEMEDICINE INFORMATION EXCHANGE
URL	UNIFORM RESOURCE LOCATOR
WAN	WIDE AREA NETWORK
WWW	WORLD WIDE WEB

4 Glossary

A

AARNet — **Australian Academic and Research Network** - initially had control of Australia's link to the Internet, Telstra took over in May 1995.[1]

Aboriginality — *see Indigenous status*

Acceptability — The quality of being worth accepting, pleasing, tolerable.[2] In health service delivery, this term relates to the degree to which a service meets or exceeds the expectations of informed customers and consumers. Encompasses the issue of cultural appropriateness.[3]

Access to health care — Relates to the ability to obtain health services when needed. Dimensions of access include:

- availability - an issue of particular relevance to the isolated rural population, and the inner city, chronically ill, poor and disadvantaged (relates to adequacy of supply of existing services, facilities, and specialised programs and services);
- accessibility - refers to the location of supply in relation to the location of the clients, and takes into account issues of transportation, travel time, distance, and cost;
- accommodation - refers to the organisational and administrative arrangements and clients' ability to accommodate to these factors, and their perception of their appropriateness;
- acceptability - incorporates cultural and/or social issues; and
- relative affordability.[4,5,7]

see also Availability of health services and professionals

Accuracy — Extent to which a measurement in fact assesses what it is designed to measure.[7]

ADSL — **Asymmetric Digital Subscriber Line** - a delivery platform that overcomes some of the limitations of twisted copper wire pairs, allowing a vastly improved array of services including videoconferencing.[8]

Alerting system System that monitors a continuous signal or stream of data and generates a message (an alert) in response to patterns or items that may require action on the part of the care provider.[7]

Algorithm In general, an algorithm refers to step-by-step instructions for solving a problem. In medical care, it is often used to denote a standard approach to a clinical problem[2]. In telecommunications, the term refers to a mathematical coding scheme for compressing digitised broadband video or audio signals so that signals can be transmitted over a lower (and less expensive) bandwidth. Standards-based algorithms enable communication with standards-based systems from disparate manufacturers. Proprietary algorithms are unique to individual manufacturers and enable communications only between equipment from that manufacturer. Therefore current practice strongly encourages standards-based systems.[9]

Ambulatory care Care provided in a health care facility to patients who do not reside overnight in that facility, exclusive of emergencies. Ambulatory care is commonly provided in physician's offices, ambulatory care centres, outpatient clinics and emergency rooms.[3]

Analogue Information (electronic or otherwise) that is created and transmitted as a continuous stream. Wave forms (eg. oscilloscopes) are analogue. Standard photographs, X-rays, and the "real world" are analogue. Compare this to digital information generated by computers. Modems are used to convert digital computer data to analogue form for sending over standard telephone lines.[9]

Appropriateness The quality of being appropriate. In health care, appropriateness refers to the extent to which an intervention is suitable for a particular person.[3]

Archive In an information superhighway context, an archive is a library of online information available on many online forums and networks. Materials available may include past forum postings, logs of real time meetings, files and programs contributed by members, databases, news clips, lists of frequently asked questions (FAQs) with answers, and other information.[10]

Asynchronous communication An action that takes place in different time frames according to users' convenience eg email.[11] *compare to Real time communication*

ATM

In telecommunications, **Asynchronous Transfer Mode** - provides wideband services for integrating voice, data, video and image.[12]

Audioconference

Two-way electronic voice communications between two or more people at separate locations.[13]

Availability of health services and professionals

Refers to the existence or supply of health care services and professionals in a defined geographic area. The Australian Institute of Health and Welfare defines availability to be *within 25 kilometres* of home and applies the following hierarchy:

- permanent - available at least three days per week;
- visiting - available between 2 days per week and once per month; and
- not available - available less than once a month or not available at all.

It is worth noting that availability does not necessarily mean that health services and professionals are accessible to all who may benefit from them.[14, 3] *see also Access to health care*

B

Bandwidth A measure of the capacity of an electronic transmission medium (ie a communications channel) to transmit data per unit of time – the higher the bandwidth, the more data/information can be transmitted[9]. Where two sites run at different speeds, it is usual for the systems to negotiate the highest bandwidth possible between sites, usually this reflects the highest common standard or protocol that can operate between two units. Typically measured in kilobits or megabits per second (Kbps, Mbps).

Bit **Binary digit -** the basic 0-1 unit of information used by computers for information entry, storage, and transmission. Data rates in telecommunications are often referred to in bits (abbreviated to 'b') per second ie bps.[9]

B-ISDN **Broadband Integrated Services Digital Networks** - a follow up to ISDN for support of data, video and voice. Uses asynchronous transfer mode (ATM) as the transport.[15]

bps ***see bit***

Bridge ***see MCU***

Bridging In telemedicine, the process of establishing a video/audio/data link between three or more sites. Requires a multipoint control unit (MCU) or "data bridge". [16]

Broadband Telecommunication that provides multiple channels of data over a single communications medium using frequency division multiplexing - the term can refer more generically to higher bandwidth that will support real-time, full motion audio and videoconferencing.[9]

Browser A program that provides a way to access information on the World Wide Web (WWW) eg Netscape, Explorer. [9]

Bug report

User's report of an error in a program. The rate of bug reports over time may provide a measure of improvement in a system.[7]

Byte

Each data character eg the letter 'A', is composed of 8 bits, called a 'byte' ('B'). Units of storage are often referred to in terms of the number of bytes eg a 100MB hard drive.[9]

C

CCD

Charge Coupled Device - a 1-CCD ("1-chip") camera contains a single charge coupled device with specialised light sensitive semiconductors. One photosensitive cell equates to one pixel in the displayed image. The number of cells on a chip determines the number of pixels of resolution the camera can display. The larger the chip, the greater the image resolution. Single chip cameras do a good job; 2-CCD cameras use one chip for chrominance and one for l8luminence; and 3-CCD cameras do an even better job because they use one chip each to capture red, green and blue light (but can cost 10 times as much as a 1-CCD camera). [9]

Channel aggregator

see Inverse multiplexor (IMUX)

Client

A person or organisation who seeks the services of another group, organisation or adviser. In health care, a client is the user of the services provided by health professionals. The term "patient" is more often used in hospitals and medical practices.[2] In computer terminology, a client is a computer connected to a network that does not store all the data or software it uses, but retrieves it across a network from another computer that acts as a server.[17] s*ee also Client-server architecture, Server*

Client identifier

Person identifier unique within establishment or agency.[18]

Client satisfaction

In health care, satisfaction relates to the subjective sense of quality, particularly regarding the interpersonal aspect of care that clients or patients experience after one or more health care interventions or encounters.
Client satisfaction can be defined in terms of:

- accuracy[19] of diagnosis
- usefulness[19]
- user friendliness[19]
- comfort[20]
- ease of access[20]
- ability to communicate[20]
- overall satisfaction.[20]

In telehealth, could also include technical quality.

Client-server architecture

In computing, a computer network architecture that places commonly used resources on centrally accessible server computers, which can be retrieved as they are needed across the network by client computers on the network.[17] *see also Client, Server*

Clinical indicators

Population based screens to detect poor processes that do, or could likely, give rise to poor outcomes of clinical care. They are not quality indicators.[3]

Clinical utility

A measure of the effect of the technology on the process of health care delivery eg

- Is the system easy to use?
- Are the patients and providers pleased with its quality and performance?
- What services are most usefully provided and how?
- Does this impact on the current situation eg telemedicine and care of patients in the local community?[21]

Closed architecture

A rigid design, eg of a telemedicine system, that does not permit the substitutions or part replacements possible in an open architecture system.[22] *see also Open architecture*

Coaxial cable

A metal cable consisting of a conductor in the form of a tube which can carry broadband signals by guiding high frequency electromagnetic signals. It is used for voice, data and video.[11]

Codec

A term used for a '**coder/decoder**' electronic device, which converts an analogue signal into a digital form for transmission purposes. It is mainly used to transform video signals into digital form for transmission over digital transmission systems. Generally speaking, this digital information must be reconverted into analogue form at its point of reception.[11]

Commonality

Refers to shared standards on a regional, and preferably national, basis to enable the parts of a network or system to interact and communicate effectively.[22]

Community

An overlapping set of people defined in relation to certain shared interests and outlook and having a degree of self-consciousness of collectivity. Communities are not always neighbourhood or locality based.[2]

Community development

The development and utilisation of a set of ongoing structures which allow the community to meet its own needs.[23]

Comprehensive care

Taking into account the whole human being and not just an organ or just the physical patient.[24]

Compressed video

Video images, which have been processed to remove redundant information, reducing the amount of bandwidth needed to capture the necessary information.[11]

Connectivity

The ability of systems to interact, among the various operating systems on local, regional, national, and ultimately, international scales.[22]

Consultant/ Consulted practitioner

The health care provider whose expertise is requested via a physical referral or telemedicine referral eg doctor, nurse, allied health professional, indigenous health worker.[25]

Consultant data

Any data transmitted from a consulting site to the originating site, such as the recommendations of the consultant for patient management.[25]

Consultant satisfaction

In a clinical context, this term refers to the satisfaction or otherwise of the consultant. Satisfaction relates to:

- diagnostic certainty
- confidence in offering a management plan
- estimate of likely treatment adherence or compliance
- ease in communication
- ability to establish rapport with patient
- personal convenience.

Consultation

The term consultation refers to the occasion on which a person provides their expert services for a specific purpose. In mainstream health care, this may be in the form of a:

- direct consultation, where the client is involved, or an
- indirect consultation, where the client is not involved.

In telemedicine, consultation refers to the time at which the consultant provides expertise for a single telemedicine transaction.[25a] *see also Telemedicine transaction*

Consulting session

In telemedicine, the period of time during which a consultant handles (at one sitting) a number of telemedicine transactions.[26]

Consulting site

The physical location of the telehealth consultant.[26]

Continuity of care

Continuity of care refers to the extent to which medical services are received as a coordinated and uninterrupted succession of events, consistent with the medical or health needs of the patient. This term can be defined by the usual standard of general practice whereby the GP provides ongoing care, over time, and through various states of health and illness, to an individual patient**.** Within a group practice, the "continuity" for the individual patient's care may be provided by the various members of the group.[2]

Continuity of process of care

The likelihood that consumers will receive needed health services, in a proper sequence, and within an appropriate interval of time, and is expressed as a sequence of conditional probabilities based on empirical data.[2]

Convergence

The merging of technologies and information, the coming together of computers, telecommunications and information.[27]

Cost-benefit

Measuring the effectiveness of an intervention (in the health field) and its costs in monetary terms. The result is a statement of the type "running the reminder system cost $20000 per annum, but saves $15 per patient in laboratory tests".[7]

Cost Benefit Analysis (CBA)

Analysis using standardised measures (in monetary terms) to compare costs and benefits – it will determine the various gains or losses (converted to monetary values) that result from telemedicine. Elements to be considered include costs (as described under *Cost of health care*) and potential savings, related to:

- Patient
  - savings in travel and accommodation costs
  - savings in time away from work
  - reduction of risks of travel
  - avoidance of dislocation and isolation from family support
  - improved access to specialist services
- Health Care Provider
  - savings in travel and accommodation costs
  - reduction of risks of travel
  - greater preventative opportunity
  - earlier case detection, treatment and release
  - duplicate personnel charges (eg if locum employed to replace provider in their absence)
- System
  - cost savings, substitutions and redistribution

- improved equity of access to health services
- appropriate cost and reimbursement arrangements
- new service and commercial options
- reduced ambulance costs
- potential staff productivity gains (due to job satisfaction eg through greater support through education, case management, meetings etc). [5,15,11]

Cost Effectiveness Analysis (CEA)

Compares cost of rendering a standardised set of services by alternative methods ie. it compares costs with some measure of effectiveness - it will determine the least costly system capable of reaching desired objectives. [5]

Cost of health care

The monetary cost of (inputs required for) delivering specified health care services.
Generally, health care costs can be broken down as follows:

- direct medical (costs of medical services)
- direct nonmedical (cost of receiving medical services such as:
  - cost of transportation to a provider, or vice versa
  - cost of traveller's time
  - duplicate personnel savings eg if specialist normally travels to town, there is the cost of engaging someone to cover for staff travelling)
- indirect (costs of morbidity & mortality from a disease), or
- intangible (cost of pain and suffering relates to the disease or treatment).

In the telehealth arena, specific costs can be attributed as follows:

- the capital costs of setting up the links between locations;
- the fixed costs of establishing the service, including training of staff and the establishment of administrative arrangements;
- the administrative overheads of the telehealth facility (the cost of staff involved in booking, maintenance and other general overheads);
- the costs of the telecommunications links; and
- the costs of health service staff time involved in service provision at each location (referring and consulted sites) including any support services directly involved in service provision (eg attendance of a mental health worker at a psychiatry teleconference). [5,28]

Cost per connection

Cost/connection is dependent on many things:

- assumptions regarding*:*
  - depreciation; and
  - amortisation [liquidation or extinguishment (of debt) usually by periodic payment];
- cost of equipment, personnel, transmission, technical support and administration; and
- % of usage and costs devoted to consultations (as opposed to

education and training, administration etc).
It is important to determine the mix of activities (education, administration, consultation) and values (access to care, marketing exposure, positioning for future contracts) in establishing the cost per connection. It is also important to note that equipment and personnel costs are fixed, therefore the only way to decrease cost/unit time is to increase use. Hence equipment is used for multiple applications rather than just medical consultation. [29a]

Costs, direct The resources required to provide a service. Those costs incurred by patients and their families and the health services in the provision of health care. [2]

Costs, indirect All costs of the condition/process under study other than the direct costs.[2]

Country of birth The country in which the person was born. *see also Indigenous status*

Context: In health services, ethnicity is an important concept, both in the study of disease patterns and the need for and provision of services. Country of birth is the most easily collected and consistently reported of possible ethnicity data items.[18]

CPR ***see EMR***

Cyberspace Popular term now associated with the Internet, which describes the notional information 'space' that is created across computer networks. [17]

D

Data bridge see MCU

Data compression Processing data to reduce storage and bandwidth requirements. Some compression methods result in the loss of information, which may or may not be clinically important. [13]

Data integrity Refers to the protection of data at all levels, from the operator (the human element) to the systems being used (browsers, networks, servers, and communications infrastructure). [27]

Decision analysis All possible choices needed to be made about patient care are identified, in diagnosis, therapy, and prognosis. Probable outcomes are determined to a large degree by epidemiological data. Possible choices can be shown on a decision tree. [2]

Decision Support Systems (DSSs) Interactive computer based systems that help decision-makers utilise data and models to solve unstructured problems. The computer system helps the user make decisions (rather than making decisions for them) where it would be difficult to do so without this assistance and where the information processing needs outstrip human capacities. [30] In the health sector, this type of system may compare patient characteristics with a knowledge base and then guide a health provider by offering patient-specific and situation-specific advice. Such systems, by definition, offer more than a summary of the patient data. [7]

Delivery platforms Telecommunications technologies include cable-based platforms (PSTN, ADSL, ISDN, coaxial cable, optic fibre and frame relay), wireless-based platforms (terrestrial broadcasting, microwave transmissions, satellite and cellular mobile systems). [8]

Demographic data Information relating to vital and social statistics. [31] Measures may include, but are not limited by:

- age
- sex
- marital status
- preferred language
- ethnic origin.

Desktop video-conferencing Dial up systems, including codec, camera, microphone and software, that are added to a personal computer. [9a]

Diagnosis The process of categorising a patient or deciding the nature of a disease based on the patient's characteristics, symptoms, signs and signals (results of laboratory tests or other diagnostic intervention). [3]

Diagnostic intervention An intervention conducted for the purpose of establishing a diagnosis or categorising a patient for a particular purpose, usually treatment selection. [3]

DICOM **Digital Imaging and Communications in Medicine** - a collection of industry standards for connection of, and communication among, medical imaging devices. The most recent iteration is DICOM 3. Originally developed by ACR/NEMA for CT and MRI images, now with its own standards committee.[9]

Digital Information coded in discrete numerical values (bits). Digital data streams are less susceptible to interference than analogue data streams. Also, because they are made up of zeros and ones (bits) they can be manipulated and integrated easily with other data streams (voice/video/ data). [9]

Digital camera Captures images (still or motion) digitally using CCD or CMOS chips, and does not require analogue to digital conversion before the image can be transmitted or stored in a computer. This conversion usually causes some degradation of the image, and a time delay in transmission. [9]

Distant provider Service provider who is geographically distant to the recipient of the service.

Distant site In the context of telecommunications, any site that is geographically separated from the local site. *see Local site*

Document camera and/or stand Typically used for capturing and transmitting images of documents. Can also be used for skin lesions and the like. Typically uses a 1CCD (1-chip) camera. [9] *also known as Graphics stand*

Download To retrieve a file from another computer. [11]

E

Early intervention

Action taken by society or an individual which 'steps in' (ie intervenes) at an early stage to improve health eg medical treatment, preventative campaigns. [32]

EDI

Electronic Data Interchange - general term describing the need for healthcare applications to be able to exchange data, requiring the adoption of agreed common standards for the form and content of the messages passing between applications. [17] s*ee also HL7*

EDIFACT

A security protocol and set of standards being developed and implemented mainly in the European Community. Not necessarily compatible with HL7. [33]

Effectiveness

In medical terms, the degree to which an intervention produces measurable increases in survival or improved quality of life (or improved outcomes) when applied in routine practice. [3]

Efficacy

The extent to which a specific intervention, procedure, regimen or service produces beneficial results under ideal conditions. Ideally the determination of efficacy is based upon the results of a randomised controlled trial. [2]

email

Electronic Mail - messaging system available on computer networks, providing users with personal mailboxes from which messages can be sent and received. [17]

EMR

Electronic Medical Record - a general term describing computer based patient record systems. It is sometimes extended to include other functions like order entry for medications and tests, amongst other common functions. [17] *also known as EPR (Electronic Patient Record) or CPR (Computerised (or Computer-based) Patient Record*

Encryption

A mathematical transposition or scrambling of a file or data stream so that it cannot be deciphered at the receiving end without the proper key. Encryption is a security feature that assures that only the parties who are supposed to be participating in a video conference or data transfer are able to do so. This has not been an essential feature for telemedicine systems, but with the growing concern about patient privacy in telemedicine networks, it may well become one.[9] *see Firewall*

EPR

see EMR

Evaluation

Evaluation encompasses a range of activities including monitoring, review and specific program or service evaluation. Monitoring and review activities generally involve the routine collection and regular analysis of information to enable the tracking of progress in the achievement of previously agreed plans and schedules. Formal evaluations tend to take a more strategic frame of reference to consider the overall effectiveness and impact of the program or project within a broader context. In this way, evaluations address issues related to future planning, resource allocation and delivery of programs and services. In telehealth, evaluations should compare telehealth applications with the benefits, effectiveness and costs of other relevant health care alternatives.[28]

Extranet

A network, apart from the Internet, that uses Internet technologies and protocols to securely exchange information between intranets.[9]

F

FAQs — **Frequently Asked Questions** - common term for information lists on the Internet which have been compiled to newcomers to a particular subject, answering common questions that would otherwise be asked by submitting email requests to a Newsgroup. [17]

FCIF — **Full Common Intermediate Format** - *pronounced 'Full sif'* - a measure of video resolution: 144x176 pixels. Considered by some to be a requirement for telemedicine video. [9] *see also QCIF*

Feasibility study — Preliminary "proof-of-concept" evaluation demonstrating that a system's design can be implemented and will provide reasonable output for the input it is given. [7]

Firewall — A security barrier erected between a public computer network like the Internet and a local private computer network. [17]

Formative study — Study with the primary intent of improving the information resource under study by providing the developers with feedback or user comments. [7] Evaluation focuses on the description of the system design and implementation, and more importantly, on the assessment of its intermediate- or short-term effects on the process and content of care. [34] *see also Summative study*

Frame grabber — Captures, into a computer, the analogue display output of cameras, VCR's etc. [9]

Frame rate — The number of images per second displayed in a video stream. Approximately 24 frames per second (fps) is considered full motion video. [35] A frame rate of 15fps is noticeably jerky. Slower rates may be inadequate for gait and motion observations. [9]

Frame relay — A technology for transmitting data packets in high speed bursts across a digital network encapsulated in a transmission unit called a frame. Frame relay requires a dedicated connection during the transmission period. It is not ideally suited for voice or video transmission. However, under certain circumstances, it is used for voice and video transmission. [9]

Freeze frame ***see Snapshot***

Full motion video Video running at 25 (PAL, SECAM) or 30 (NTSC) frames per second (fps), down to 15 fps - any frame rate less than about 10fps is approaching slow scan video.[9]

G

Graphics stand *see Document camera and/or stand*

H

HCN

Health Communications Network - an Australian company specialising in the development of communications solutions to suit the health sector and the provision of health information via the Internet.[36]

Health

Defined by the World Health Organisation as a 'complete state of physical, mental and social wellbeing', health refers to the general condition of the body or mind with reference to soundness and vigour. [37,31]

Health care

Those activities directed towards maintaining an optimum balance of health undertaken by the individual and the community, assisted to a variable extent by a wide variety of health personnel, working in a variety of settings. [37a]

Health frameworks

A conceptual framework of health service delivery that typically includes consideration of the type of health care services provided, and the philosophy behind and rationale underpinning their delivery. [37]

Health models

Refers to particular types and arrangements of health care services provided within the community. [37]

Health outcome

A change in the health of an individual, or a group of people or a population, which is attributable wholly or partially to an intervention or series of interventions. [18]

Health outcome indicators

A statistic or other unit of information which reflects, directly or indirectly, the effect of an intervention, facility, service or system on the health of its target population, or the health of an individual. [18]

Health promotion

Health promotion refers to a range of health care practices including health education, preventive services, community development, regulation and policy advocacy. The common characteristic is that they are seen as contributing to better health at the individual or population level. Health promotion includes, but goes beyond, disease prevention. Its wider scope corresponds "to a more general concept of health as being broader than simply the absence of disease or infirmity".[2]

Health services research

The integration of epidemiological, sociological, economic and other analytic sciences in the study of health services. Health services research is usually concerned with the relationships between need, demand, supply, use and outcome of health services. The aim of health services research is evaluation, the components of which include:

- structure;
- process;
- output; and
- outcome. [2]

Health status

An integrated indicator of health (ie well being), typically incorporating biological function, physical and mental health, social and role functioning.[3]

HL7

Health Level 7 - a health care specific communication standard for data exchange between computer applications. [17] It effectively allows different health care providers to communicate with each other through their computer systems about information on a range of clinical issues. [38] Not necessarily compatible with EDIFACT.

HTML

Hypertext Markup Language - the simple system of codes used to construct Web home pages. In Internet addresses, it is always all lower case. [10]

HTTP

Hypertext Transmission Protocol - a communication protocol used on the Internet for the transfer of HTML documents. [17]

'Hub' site

Referral site (typically a tertiary centre). [29] *see also 'Spoke' site, Utilisation*

Hypertext

A marked section of text linked to another Web document. Hypertext links are typically identified by specially underlined type. To retrieve the linked document, simply click on the hypertext. [10]

I

Image quality

Of particular importance in teleradiology and telepathology applications, image quality has two important criteria:

- "noise" level - measured by the signal-to-noise ratio (SNR) recorded in decibels (the higher the SNR, the better quality of the image); and
- resolution.[39] *see Resolution*

IMM

Interactive (computer-based) multimedia - includes laser disk and CD-ROM systems.[11]

Impact

Effect of an information resource on health care, usually expressed as changes in the actions or procedures undertaken by health care workers or as outcomes such as patient morbidity and mortality. [7]

Indicators

Specific measures which enable the assessment of progress towards a goal. Indicators offer an *indication* of progress and are not intended to provide a measure of all factors relevant to the specific issue. [40] *see also Input indicators, Process indicators, and Outcome indicators*

Indigenous status

An Aboriginal or Torres Strait Islander is a person of Aboriginal or Torres Strait Islander descent who identifies as an Aboriginal or Torres Strait Islander and is accepted by the community in which he or she lives.[18]

Context: Given the gross inequalities in health status between Indigenous and non-Indigenous peoples in Australia, the size of the Aboriginal and Torres Strait Islander populations and their historical political context, there is a strong case for ensuring that information on Indigenous status is collected for planning and service delivery purposes and for monitoring Aboriginal and Torres Strait Islander health.

Informatics

The application of computer science and information science to the management and processing of data, information and knowledge. [11]

INMARSAT

International Mobile Satellite Organisation - provides satellites for maritime, aeronautical and land mobile communications. [33]

Input indicators

Measures that describe the resources devoted to a problem. For telemedicine systems, input indicators might include:

- the amount of equipment available to perform consultations;
- the number of sites online;
- the number of hours the system is available; and
- the number of technicians or health providers available to use the equipment. [21]

Interactive

Permitting a real-time communication exchange eg using video conferencing. [25]

Internet

A loose aggregation of thousands of computer networks forming an enormous worldwide WAN. [9] *see How the Internet Works at www.whatis.com/tour.htm*

Interoperability

Refers to the actual ability of different components within a single telemedicine system or between different systems to interact without having to overcome considerable technological barriers. [22]

Intervention

An action that intends to change the course of events (to achieve a desired, or to avoid an undesirable, outcome). In healthcare, a process (or an action that is part of a process) that intends to improve a patient's health status. Healthcare interventions may be classified as preventative, diagnostic, therapeutic or rehabilitative. They comprise a technology and its delivery mechanism. [3]

Intranet

A 'private internet' that employs TCP/IP communications protocols used over the Internet. The intranet may be linked to the public Internet through a tightly managed, controlled gateway. Intranets within different businesses may be linked by an extranet. [9]

Inverse multiplexor (IMUX)

Used with ISDN to combine channels to create a single channel with bandwidth capacity greater than the base 64-128 Kbps.[9] Also known as channel aggregator. *see also ISDN*

IP address

The address of a computer on the Internet (via its Internet Provider), that permits it to send and receive messages from other computers on the Internet. [17]

ISDN — **Integrated Services Digital Network** – a low-to-medium speed technology that uses digital telephone lines instead of analogue lines. Usually transmits at 64-128 Kbps, although higher speeds are possible. It delivers multiples of 64 Kbps capacity which is more than twice as high as ordinary phone line's capacity, enabling video, voice and data to be delivered more efficiently. Basic Rate Interface (BRI) generally provides a 128kbps rate while Primary Rate Interface (PRI) can provide up to 1.54 Mbps.[9]

ISO — **International Standardization Organisation -** establishes and coordinates worldwide standards for electronic information exchange.[9]

ISP — **Internet Service Provider -** the company or organisation that offers access to the Internet to individuals or organisations**.**[33]

ITU — **International Telecommunication Union -** the United Nations agency responsible for telecommunications.[9]

ITV — **Interactive satellite television -** involves one-way delivery of live video, usually via satellite, with two-way interaction through the telephone system. This type of interaction distinguishes ITV from normal broadcast television.[11]

L

LAN — **Local Area Network -** a computer network linking computers, printers, servers and other equipment within an enterprise. Can support audio, video and data exchange.[9] *see also WAN*

Local provider — Service provider who is located geographically close to the originating site.

Local site — In the context of telecommunications, the site that is geographically connected to the reference point. *see Distant site*

Log — A transcript of an online session, often used to record the exchanges of a real time meeting. The software for some commercial services includes a log function that enables users to keep a copy of all their online transactions.[10]

M

MCU

Multipoint Control Unit - in telehealth, a device that enables participants at three or more sites to participate in a video/audio/data conference. [9] *also called a Bridge or Data bridge*

MIME

Multipurpose Internet Mail Extensions - a TCP/IP standard used on the Internet to allow electronic mail headers and mail bodies to contain information other than plain text. It enables mail transfer in complex organisations. [27]

Modem

Modulator/Demodulator - enables transmission of digital data (by transforming it to and from analogue waveforms) over standard analogue phone lines and cable video systems. [9]

Multimedia email

Refers to the development of store-and-forward electronic mail, allowing transmission of not just text, but also audio, still images and video. [41]

N

Narrowband — A telecommunications medium, such as copper wire or part of a coaxial cable channel, that uses (relatively) low frequency signals. [11]

Network — An assortment of electronic devices (computers, printers, scanners, etc) connected (by wires or wireless) for exchange of digital information. [9]

Non-terrestrial infrastructure — Also known as air-based communications, include radio, microwave, infrared and satellite. Satellite communications have the capacity to transmit voice, data and video, and they have the advantage of being able to cover large geographic areas. [11]

O

Off-line Time spent preparing documents and/or files to be sent electronically before connecting to the network. [11]

Open architecture A design feature, eg of a telemedicine system, involving the use of changeable and replaceable parts that can be purchased from several vendors and put together in functioning totality – permits the design of modular systems. [22]

Originating site The originating site is the site that has initiated the request for information, consideration, decision, consultation etc. [31a]

Originator The originator can be defined broadly as any individual(s) who initiates contact with a health care provider or service - the originator could be a health care practitioner or a consumer.

Originator data ***see Referral data***

Outcome In health care, the term outcome usually refers to the post-intervention results or measurements - the observed outcomes of an intervention - whether or not one can confidently attribute those results to the preceding intervention (process). [3]

Outcome indicators Outcome indicators describe the effect of a technique or technology. In medical applications, they are used to gauge the medical impact of care and/or technology on the health of an individual or a population, and include measurable factors such as morbidity, mortality, number of days lost etc. Subjective outcomes such as satisfaction (both client and practitioner) also exist, and impact on utilisation of services may also be measured. [21a] *see also Health outcome indicators*

Outpatient care Care provided in a hospital outpatient clinic, which is staffed by salaried or sessional medical, nursing and allied health professional staff. Common referral sources to outpatient clinics include follow-up of recently discharged inpatients, general practitioner practices and accident and emergency services. [2]

P

PACS

Picture Archival and Communications System - these systems, although generic in concept to apply to many medical and non-medical applications, are generally associated with the digitisation of radiology departments. PACS consist of various modules integrated to form a coherent system:

- image acquisition;
- digital networks;
- image archives; and
- image display workshops. [33]

also known as digital image management systems and digital image networks

PAL

Phase Alteration Line - a European alternative, adopted in 1967, to NTSC composite video signalling used in North America. Provides greater bandwidth for chrominance, yielding better colour resolution. 625 scan lines. [9] *see SECAN, Video format*

Patient identifier

see Client identifier

Patient satisfaction

see Client satisfaction

Peripheral devices

Attachments to a system to increase its capabilities. In telehealth peripheral devices are used to augment communications and/or medical capability by capturing images, anatomic sounds or other physiological parameters and include items such as electronic stethoscopes, oto-/opthalmoscopes, dermascopes, document camera and/or stands, video cameras and scanners. Non-medical peripheral devices useful in telemedicine may include document/graphics camera, VCR, slide projector, fax machine and personal computer. [9,26]

Pilot study

Trial version of a study (often conducted with a small sample) to ensure that all study methods will work as intended or to explore if there is an effect worthy of further study. [7]

Pixels

An abbreviation of '**picture element**' - the smallest identifiable points on a computer or television screen. [11]

Point of Presence (POP)

The location of an access point to the Internet. A POP necessarily has a unique IP address. POP also refers to the building or site where a high bandwidth telecommunications line terminates; subsidiary lines then emanate from the POP. [9]

Point to point

Direct connection between systems via a communications link. [42]

POTS

Plain Old Telephone Service - conventional analogue telephone service. [35] *also known as PSTN*

Presenting problem

In the opinion of the referring practitioner, the health problem or concern giving rise to the consultation.

Note: Immediate reason for referral, not the underlying cause.

Preventative intervention

An intervention that is conducted with individuals who do not display symptoms of a disease, as a preventative measure against that disease.

Prevention

An action undertaken to prevent an activity from occurring. In relation to health, this term can be classified as follows:

- primary prevention - prevention of onset or incidence of disease;
- secondary intervention - detection and effective treatment at the earliest possible time after they begin - many screening activities fit under this category eg pap smears, blood pressure checks; and
- tertiary intervention - adoption of best practice in the clinical treatment, rehabilitation and social support of clients with established disease, thereby minimising complications. [40a,43]

Primary health care

Basic level of health care service provided by a professional, eg doctor or nurse, to a patient, especially in the treatment of ordinary health problems. [3] May also refer to the first level of contact the public has with the health system, mixing personal care with local efforts in the promotion of health, the prevention of illness and community development. [43]

Process indicators

Measures used to describe the activity of the inputs available. For example, given the number of hours a telemedicine system is available:

- how many hours was it actually used?
- how much continuing education time was actually delivered?
- how many consults were actually done within a given period of time? [21]

Program

In telemedicine, a group of sites affiliated with one or more institutions operating the same telemedicine system. [25]

Project

A project is an undertaking that has a beginning and an end and is carried out to meet established goals within cost, time-frame and quality objectives, as opposed to an ongoing program or service.[59]

Protocol

In computer terminology, the complete set of conventions governing the information travelling between modems. Standard protocol allows computers of different name brands, or using different software packages, to communicate with each other. [11]

Public Switched Telephone Network (PSTN)

see POTS

Q

QCIF

Quarter Common Intermediate Format - *pronounced 'Q-sif'* - a measure of video resolution, displaying 144 by 176 pixels. Has one quarter of spatial resolution of FCIF (288x352). QCIF is the default minimum format.[9]

Quality of health care

The degree to which health care services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.[13] Can be divided into:

- Interpersonal - Relates to personal treatment satisfaction of both provider and client and includes additional issues of communication eg establishing rapport with client/physician; supportive care of the individual etc
- Technical - Pertains to the process of care and its outcome.[5]

R

Real time

Communication that takes place in real time, simultaneously.[11] *as opposed to Store and forward; also known as Synchronous communication*

Referral

The process of obtaining the expertise of a consultant by the originator.[25]

Referral data

Any data, such as patient history, radiographs, or EEG, transmitted from the referring site to a consulting site.[25]

Referring practitioner

Healthcare provider who initiates a physical referral or telemedicine referral following a primary examination.[25a] *see also Originator*

Referring practitioner satisfaction

In a clinical context, this term refers to the satisfaction or otherwise of the referring practitioner. Satisfaction may relate to:

- degree of comfort with technology;
- diagnostic certainty;
- confidence in management plan proposed;
- satisfaction of the client;
- ease of access;
- user friendliness; and
- personal convenience.

Referring site

Site at which the primary assessment, examination or activity is conducted and from which a referral is made to another practitioner.[25a] *see also Originating site*

Rehabilitative intervention

An intervention that assists in the rehabilitation of a client.

Remote

'Remote' is a term commonly associated with mining activities, broadacre farming, Aboriginal communities and very low population densities. The term also implies distance – distance from neighbours, large towns and cities, and the goods and services offered by large towns and cities. The Rural, Remote and Metropolitan Areas (RRMA) classification defines the term 'remote' in terms of distance and applies

an index of remoteness. 'Remote' areas have been classified as follows:
- Remote centres (urban centre population >or =5000); and
- Other remote ares (urban centre population <5000). [45] *see also Rural*

Remote rural practice

A rural practice in communities over 80 km or 1 hour by road from a centre with no less than a continuous specialist service in anaesthesia, obstetrics and surgery and a fully-functional operating theatre. [46] *see Rural practice*

Remote site

in the context of telecommunications, see Distant site

Resolution

Number of pixels per unit of area. The more pixels the higher the resolution and detail of an image. [11] There are two components**:**
- contrast resolution measures the ability of distinguishing two objects of different composition
- spatial resolution is related to the sharpness of an image, measuring the ability to separate two closely placed objects. [39]

Robotic Video Microscopy (RVM)

Remote consultation via a robotic microscope. [47]

Room-based videoconferencing

Room-based videoconference units are large, self-contained systems with 1 or 2 monitors, used for meetings and educational as well as clinical interactions. Rollabout systems incorporate a trolley. Also referred to as group systems. [48]

Rural

The term 'rural' is applied in a variety of ways, is commonly associated with mixed farming, small villages and towns, and population densities less that those of the metropolitan areas, and is often referred to as 'the country'. The Rural, Remote and Metropolitan Areas (RRMA) classification defines 'rural' in terms of the degree of 'remoteness' of an area. 'Rural' areas are 'less remote' than 'remote' areas and have an index of remoteness of <10.5). 'Rural' has been categorised as follows:
- Large rural centres (urban centre population =25 000-99 000);
- Small rural centres (urban centre population =10 000-24 999); and
- Other rural areas (urban centre population =<10 000). [45]

Rural practice

A medical practice outside urban areas which requires some general practitioners to have, or to acquire, procedural and other skills not usually needed in urban practice. [46] *see Remote rural practice*.

S

Scalability

The adaptability of systems and equipment to various settings, ranging from large and complex to small and simple. [22]

Scanner

Converts text or drawings or pictures into computer-recognisable data by using a form of optical recognition. Optical recognition systems use a light beam to scan input data and convert it into electrical signals, which are then sent to the computer for processing.
Scanners fall into three categories:

- Flatbed scanner - typically scans one sheet at a time, and can scan bound documents;
- Sheetfeed scanner - motorised rollers feed the sheet across the scanning head; and
- Handheld scanner - least expensive and least reliable category, portable.

If you wish to scan a document and then edit the text, special software is needed. Called Optical Character Recognition (OCR), this software can identify the individual letters, rather than treating the text as one big picture. In addition to text and images, optical recognition can process data appearing in a variety of forms: optical marks, optical characters, bar codes and handwritten characters. [49]

Selective Video Microscopy (SVM)

Fields to be examined are selected by the referring pathologist and transmitted at low speed via an ordinary telephone connection. [47]

Server

A computer on a network that stores commonly used resources such as data or programs, and makes these available on demand to clients on the network. [17] *see also Client, Client-server architecture*

Set-top videoconferencing

Dial up systems that sit atop or beside a standard television set. Video and audio are routed through the television system, saving the cost of a monitor and speakers. Sometimes referred to as compact systems. eg SwiftSite. [48]

Slow scan

A slow progression of freeze-frames (less than 1 or 2 per second). [9] *also known as still video; see also Full motion video*

Snapshot Useful in a medical consultation, this feature allows the consultant to get a well-framed and focused still image of a lesion or other item of interest for closer examination. Often images captured from a live video picture and as a result may provide more diagnostic value. [9] *also known as Freeze frame; see also Slow scan, Frame grabber*

'Spoke' site Referring site (typically rural centre). [29] *see also 'Hub' site, Utilisation*

Standard of care The level of conduct used to assess health care, particularly medical practitioners' conduct. [3]

Store and forward A mode of transmission involving data that have been acquired and saved in format. For example, a digital camera is used to take images of a patients skin condition, these are electronically saved to a computer hard drive and subsequently transmitted. [25]

Summative study Study designed primarily to demonstrate the value of a mature information resource. [7] In telemedicine, summative evaluation seeks to determine the ultimate effects of telemedicine systems on health outcomes, which can be measured in a variety of ways, including objective and subjective measures, problem resolution, and functional performance. [34] *see also Formative study*

T

TCP/IP

Transmission Control Protocol/Internet Protocol - the most popular open standard protocols used in data networks today. TCP is the underlying protocol that the Web server and its clients use to communicate HTTP requests. The IP is used to route pockets of data on a network. [9]

Technical data evaluation

Evaluation of the technical data in a telemedicine system relates to the functionality and performance of the technology and its ability to meet the demands of the telemedicine applications for which it is being employed. Evaluation should include:

- value of individual system features specific to individual telemedicine applications;
- ease of use of each system component;
- necessity of available features or components;
- features which are unavailable but necessary;
- functionality;
- user friendliness; and
- quality of still images, video and/or audio. [26]

Telecentres

These centres are community-managed facilities where members of the public can gain access to computing information technology on a cost recovery basis. Originating in Scandinavia, the first centres opened in Australia in the early 1990's, and are of particular value to smaller communities in rural and remote areas. Cybercafes are a contemporary commercial example of telecentres**.** [50] *also known as telecottages*

Telecommunications

In telehealth, telecommunications technologies include all infrastructure components that are used to connect teleconferencing equipment located at different sites. Including telecommunication carrier services, cable, optic fibre, or wireless based platforms, such as broadcasts, microwave transmissions, satellite and cellular mobile systems.

Teleconferencing

Interactive electronic communication between two or more people at two or more sites, which make use of voice, video, and/or data transmission systems. [13] *see also Audioconference, Videoconferencing*

Teleconsultation Clinical consultation carried out using technology-assisted communication. Includes real time, store and forward, and videoconferencing technologies.

Tele-education Education and training activities carried out using technology-assisted communication. Includes videoconferencing, audiographics, Internet etc.

Telehealth Telehealth is the name given to a health delivery system, which provides health-related activities at a distance between two or more locations using technology-assisted communications.[4] The World Health Organisation (WHO) uses the following broad definition for tele*medicine* which reflects current Australian thinking on tele*health:* '…the delivery of health care services, where distance is a critical factor, by health-care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, and for the continuing education of health care providers as well as research and evaluation, all in the interests of advancing the health of individuals and their communities.[51] *see also Telemedicine*

Telehealth activity Any health-related activity that is conducted at a distance between two or more locations using technology-assisted communications. Telehealth activities can be classified, but not limited by, the following:

- client care services eg consulting or diagnostics *see also telehealth services*;
- education and training eg mentoring, continuing medical education, distance learning;
- management and administration;
- research and evaluation;
- consumer and community use*;*
- health promotion*;* and
- public health.[52a]

Telehealth service Healthcare service provided using telecommunications technology between two or more locations. Can be categorised as follows:

- initial urgent evaluation of patients, triage decisions and pre-transfer arrangements;
- medical and surgical follow-up and medication checks;
- supervision and consultation from primary-care encounters;
- routine consultations and second opinions based on history, physical examinations and available text data;
- transmission of diagnostic images;
- extended diagnostic work-ups or short-term management of self-limited conditions;

- management of chronic conditions;
- transmission of medical data;
- preventative medicine and patient education;
- pre-admission assessment; and
- discharge planning. [53a]

Telehealth session

Any health-related activity occurring while using telecommunications technology for the purposes of delivering health service, providing professional support and peer supervision, or conducting educational and administrative interactions between two or more locations. A telehealth session may be between:

- a client and a healthcare worker;
- a client, a healthcare worker, and another person such as an interpreter, another healthcare worker, or family member/carer;
- two or more healthcare workers; or
- people involved in educational and administrative interactions, which may or may not include healthcare workers. [54]

Telehealth target populations

- rural and remote communities;
- underserved;
- urban;
- indigenous;
- corrections;
- military; and
- developing countries. [52]

Telehealth technologies

Health information can be communicated through a number of different mechanisms. In telehealth, videoconference, image transfer and data transfer are the three main formats utilised. The technology employed to support these formats include:

- audio-conference equipment;
- video-conference equipment
- computer networking (including LANs and WANs);
- audiographics;
- interactive (computer-based) multimedia (IMM);
- the internet and world wide web;
- interactive satellite television (ITV); and
- broadband networks. [11]

Telematics

A combination of telecommunications and informatics[55]; provides for an electronic method of communication using computer, modem, fax and 2 telephone lines (1 for data, 1 for voice). Allows for simultaneous communication (real-time). [56]

Telemedicine

In Australia over the last few years, telemedicine has fallen out of favour as a general term for the provision of health-related activities at a distance, using telecommunications and information technology, for being too medically and clinically focussed. It has been replaced by the term telehealth. Telemedicine still continues to be used, however its use refers specifically to clinical, but not necessarily medical, applications, as per the following definition:
"The delivery of health care services between geographically separated individuals, using telecommunication systems eg videoconferencing".[17]
see also Telehealth

Telemedicine connection

A period of time during which a telemedicine system eg videoconferencing, is being used continuously for transmission of information between sites.[25]

Telemedicine transaction

The entire process, between the primary examination and the transaction disposition, including the telemedicine work-up, telemedicine connection(s), and the consultation. [25] *see Telemedicine connection and Transaction disposition*

Telemedicine work-up

Gathering of information as a result of a primary examination. In telemedicine, the term "telemedicine workup" is used to identify the gathering of information specifically for telemedicine purposes. [25a]

Telemetry

A way of monitoring and studying physiological functions of a human being or animal (eg heart rate or blood pressure), from a remote site. [33]

Telepathology

Practice of diagnostic pathology at a distance using computer and telecommunications technologies. [42]

Telepresence

A technique in which a person has the virtual feeling of being present at a chosen site even though he/she is not physically at the site. [33]

Teleradiology

A system that transmits radiographic images over a distance, between enterprises, using leased or switched transmission lines. [9] *Compare to PACS which deals with image transmitted within an enterprise*.

Terrestrial infrastructure

A telecommunications transmission system using land-based facilities (microwave towers, telephone lines coaxial cables, fibre optic cable) as distinguished from satellite transmission. [11]

Therapeutic intervention

An intervention for the purposes of treatment; specifically, one intended to improve a patient's health status. [3]

TIE

Telemedicine Information Exchange – a comprehensive online information exchange for telemedicine found on the Internet at: www.TIE.telemed.org

Timeliness

Within the health field, services are completed in a timeframe that maximises health benefit and satisfaction of the patient. [3]

Transaction disposition

The resolution of a transaction with a patient, such as prescription of treatment, development of a management plan, follow-up visit, or the requesting of more information by either the originator or the consultant.[25]

Transmission rate

The amount of information per unit time that a technology can transmit information. A typical POTS-based modem can transmit 33.6 thousand bits (Kbps) of information per second. [9]

U

UN/EDIFACT *see EDIFACT*

Urban City or town. In broad terms an urban centre is a population cluster of 1000 or more people. [57]

URL **Uniform Resource Locator** - the addressing system used on the Internet to identify a resource on the WWW. The URL tells the Web browser which computer to connect to and where on the computer a required Web page is located. [58]

Usual residence Geographical location of usual residence of the person. [18]

Utilisation (in terms of telemedicine use)

$$\frac{\text{no. of activities /time period}}{\text{total no. of sites}} = \text{average activities per site/time}$$

Can be calculated for overall activity or broken down according to telehealth application or telehealth service.

V

Videoconferencing Connection of two or more people or locations via video camera and monitors, allowing all parties to speak to each other, see each other and in some cases exchange data simultaneously. [11] *see Desk-top, Room-based and Set-top videoconferencing*

Video format includes NTSC, PAL, HDTV, SECAM[9]

Videophone Small, stand-alone video appliance with a small camera and monitor, speaker, and microphone. These enable interactive audio-video communications over POTS or ISDN, and are not dependent on a computer or larger videoconferencing system. [9]

Virtual Reality Computer simulated environment within which humans are able to interact in some manner that approximates interaction in the physical world. [17]

W

WAN

Wide Area Network - wider in geographic scope than a LAN, which is confined to within an organisation. Provides digital communications (voice, video, and data) over switched or unswitched networks (some consider commercial dial-up networks such as America OnLine and the Internet to be WANs). [9]

Whiteboard

In telemedicine, a document-conferencing function that lets multiple users simultaneously view and annotate a document with pens, highlighters and drawing tools. More advanced whiteboard programs handle multipage documents and provide tools for delivering them as presentations. [35]

World Wide Web (WWW, the Web or W3)

A powerful internet tool; for retrieving and distributing information, which uses a system of linking pages of related information together (hypertext). It acts as a global publishing system. [58]

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