How Telemedicine Improve Dental Education?

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Telemedicine

The use of information-based technologies and communications systems to deliver healthcare across geographic distances.

It uses electronic information to communicate technologies to provide and support healthcare when distances separate the participants.

Telemedicine is being used today in academic medical centers, community hospitals, managed-care companies, rural hospitals, and is also being used internationally to link providers in developing countries to hospitals in developed countries. Advances in digital communication, telecommunication, and the Internet introduce an unprecedented opportunity to remote access to medical care.
How a telemedicine event realized?

Each site must provide:
1. Sufficient internet bandwidth (2-3 mbps)
2. Knowledgeable, skillful and experienced network engineer
3. Medical/dental staffs to participate
4. Adequate equipment (laptop, PC, camera, microphone, mixer, CODEC)

Systems to be used:
1. H-323: if all sites have CODEC equipment
2. Vidyo Server: if some sites do not have CODEC equipment
TWO PARTIES CONFERENCE

point to point

AIRLANGGA
Using H-323 / CODEC

INDEX A
Using H-323 / CODEC

AIRLANGGA
Using Vidyo Desktop

VIDYO SERVER

SITE B
Using Vidyo Desktop

SITE A
Using H-323 / CODEC
MULTI-PARTIES CONFERENCE

Multipoint Control Unit (MCU) or Video Server (Web-based)
The aim of this center is to establish effective and consistent medical communications among Asian countries using super-fast internet and advanced technology.

Main activities are as follows:

• Remote medical education: Organizing programs and preparations for the event.
• Remote patient care: Tele-consultations and arrangements for international patient care.
• Development and application of new technology: For more connections and better images.
• Development of attractive contents: Consistent search for the new applications.
• Secretariat of Medical Working Group of Asia-Pacific Advanced Network: http://apan.net/
• Center for international exchange programs: Invitation of foreign medical doctors.
ONE OF TEMDEC ACTIVITIES:

Remote medical (and DENTAL ???) education:
Organizing programs and preparations for the event.

Future chances:
- Remote lecture from overseas Dental Professors
- Scientific teleconference in Dentistry
- Clinical procedures sharing (live or recorded)
- Remote teaching activity from Airlangga lecturers
Remote lecture from Kyushu University Professors in Dentistry

Overseas Dental Professors

Point to point using H.323 or Vidyo Desktop

Airlangga University Dental academic staffs and/or students (Undergraduate, Profession, Master, Doctoral)
Scientific teleconference in Dentistry (Research reports, Seminars)

UNIVERSITY C

UNIVERSITY D

UNIVERSITY B

TEMDEC
MCU and Vidyo Server
Technical support

Airlangga University Dental Faculty

UNIVERSITY A

UNIVERSITY E

UNIVERSITY F

Point to point using H.323 and/or Vidyo Desktop

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Clinical procedures sharing (live or recorded)

Point to point using H.323 and/or Vidyo Desktop

TEMDEC
MCU and Vidyo Room provider
Technical support

Operating Theatre
Remote teaching activity from Airlangga lecturers

Airlangga University, Dental Lecturers

Point to point using H.323 or Vidyo Desktop

Airlangga University Dental students
(Undergraduate, Profession, Master, Doctoral)
TELKOM INDONESIA

AIRLANGGA INFORMATION SYSTEM

FACULTY OF DENTAL MEDICINE

Optic fiber cables

100% WiFi

Airlangga: 1.8 GBPS
Dental Med: 40 MBPS
OUR DEVICES

Scopia XT 1000

Mac all in one desktop
Opportunities For Dentistry Airlangga Univ

- To be the leading innovative dental school
- Increase the accreditation points
- Increase International recognizing
- Make transfer of knowledge and skills more effective
- Certification as International speakers
- Establish **TELEDENTISTRY** in Indonesia

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**Review Article**

**Teledentistry a new trend in oral health**

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**Abstract**

"Teledentistry" is a synergic combination of telecommunications technology, Internet and dentistry. It is a relatively new and exciting field that has endless potential. The first entity to put teledentistry into practice was the US Army in 1994. Since then, various institutions and organizations have practiced teledentistry with varying degrees of success. Teledentistry increased patient access to dental care, improved quality of care and the cost effectiveness. Teledentistry is also useful in long-distance clinical training and continuing education, screening and dentistry-laboratory communication.

**Key words**: teledentistry, teledentistry, e-health, teleconsultation, education, cancer.

**Introduction**

Technologic innovations in the field of dentistry have been extensive in recent years. Just as communication technology and use of electronic information has developed over the years, terms to describe health care services at a distance, such as telehealth and telemedicine, have also evolved. Teledentistry is a combination of telecommunications and dentistry. "Teledentistry" is a Greek word meaning "distance" and "medein" is a Latin word meaning "to heal."

Teledentistry can be defined as the use of electronic information and telecommunications technologies to support long-distance clinical oral health care, patient and professional health-related education, public health, and health administration.

Many years ago how telephones affected people, in the same way within next 10 or 20 years teledentistry will be a routine of life. What was considered relatively distant future some twenty years ago today is the reality in dental clinics. Teledentistry is
Challenges

**Human resources**
- Dedicated, communicable, enthusiastic, and visionary IT manager.
- Knowledgeable, skillful engineers

**Infrastructures**
- Bandwidth
- Codec, camera, large screen LED, mixer, router, PCs, microphones

**Policy and management**
- Top management’s goodwills are extremely required.
- Appreciations for teleconference participants might enhance doctors’s interests. (Certificate for credits)
The Equilibrium

ENGINEERING
- Technical skills
- Problem solvings

EDUCATION
- Give direction
- Promote and assure benefits

EVALUATIONS
FUTURE PLANS

• Expand the teleconf activities for eLearning and education in Dentistry (TELEDENTISTRY).
• Increase human resources competencies (training).
• Promote Airlangga Dental School active participation in International telemedicine sessions
• Suggest some Public Health researches according the Tele Dental Education issues.