Ten-year Experience of Remote Medical Education in Asia
- Possible expansion to Latin America -

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Fukuoka, Japan

July 14, 2016, Webinar, RedClara
Today’s menu

- Background
- Activities
- Changes
- Latin America

Kyushu Univ., Fukuoka
Many doctors want to learn the new surgeries.
Int’l Teleconf/Live demo 1990s

Internet

Satellite

Poor image!

Expensive!
Specific characteristics/conditions in telemedicine

- High resolution
- Moving images
- Varieties at each hospital

* Technically challenging

* Common videoconference
  1. Sit in front of monitor
  2. Slides at most
  3. Uniform equipment
Our project started in 2002

Network revolution!

Big Internet (2G).

Hub in Kyushu U
New technologies

- DVTS
  (Digital video transport system)

- Academic network
  (Research and education network)
Point 1: Big broadband Internet

ISDN

- 0.4 Mbps
- Compressed, degraded

DVTS

- 30 Mbps
- Original quality
- Clear & Smooth Movie transmission
Point 2. Cheap and User-friendly

Video camera

PC

DVTS: free software
Today’s menu

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Kyushu Univ., Fukuoka
Gastric cancer

China
Taiwan
India
Thailand
Vietnam
Malaysia
Singapore
Philippines
Latin America

Early detection is very important!
China-Japan Early Gastric Cancer Teleconference

Diagnosis of early gastric cancer

Fukuoka/JP

Tokyo/JP

Shanghai/CN

Beijing/CN

2011.11.15
Endoscopic Demonstration in Asia & Europe

Kyoto, JP
ESD: New treatment for GC

Xian, CN
Fukuoka, JP
Seoul, KR

Hamburg, GR
Kuala Lumpur, MY
Bangkok, TH
Taipei, TW

2007.8
Infection: Bird Flu Teleconference

2007.1.24

Indonesia
Vietnam
Philippines
Australia
China
USA

- Dengue
- Ebola
- MERS
- Zika

Japan

Thailand
Expansion of Network to South Africa

Network revolution

South Africa 2010

FIFA WORLD CUP
First Live Surgery to South Africa

Kyushu U, JP

U Cape Town, ZA

Cho Ray, VN

2011.9.21

14,000km

2011.3

Video
Endoscopy 32%
Surgery 22%
Fetus 5%
Pancreas 4%
Healthcare 4%
Student 4%
Nurse 3%
Pediatrics 3%
Transplantation 2%
Technology 2%
Medical Infomatics 2%
Cardiology 1%
Resp Surgery 1%
Hematology 1%
Urology 1%
Neurology 1%
Infection 1%
Oriental Medicine 1%
Others 10%

Others:
- Gynecology
- Neurosurgery
- Ophthalmology
- ENT
- Robotic surg
- Dental
- Pathology
- Orthopedics

N=620
Today’s menu

- Background
- Activities
- Changes
- Latin America

Kyushu Univ., Fukuoka
### Choice of new technologies

<table>
<thead>
<tr>
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<th>DVTS</th>
<th>HD-H323</th>
<th>Vidyo</th>
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<td><strong>Image quality</strong></td>
<td>u-SD</td>
<td>c-HD</td>
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<td><strong>Equipment</strong></td>
<td>PC</td>
<td>VC system</td>
<td>Server, PC</td>
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<tr>
<td><strong>Network</strong></td>
<td>Big</td>
<td>Small</td>
<td>Small</td>
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<td><strong>Global IP</strong></td>
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<td>Yes</td>
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<tr>
<td><strong>Mobile</strong></td>
<td>No</td>
<td>Yes</td>
<td>Easy</td>
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<td><strong>Bottom line</strong></td>
<td>Network</td>
<td>Hardware</td>
<td>Sending image</td>
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*One-way **streaming** is another handy option.*
System: dramatic change in use

DVTS

Vidyo

H323
Increasing demands for multi-connection

More and more hospitals want to join.
Today’s menu

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Kyushu Univ., Fukuoka
Our first trials with Latin America

Not so good…

2009

U San Paolo, BR

Internet2 (US)

University of São Paulo (BR)

CL

TX

MX

BR

Seattle
Visiting Latin American hospitals

Alemana Hosp/CL

USP/BR

INNSZ/MX

Univ. of La Plata/AR
Successful Endosc. teleconf. with Latin America

Using DVTS and its MCU

2013.1
## Telemedicine by countries

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Teleconference with Latin America

Gastric Cancer Screening in a High-Risk Country
Department of Gastrointestinal Oncology,
Osaka Medical Center for Cancer and Cardiovascular Diseases
Noriya Uedo

2013.8.21

KUH, JP
BR
INNCZ, MX
Alemana, CL
MX

La Paz, BO
Osaka, JP
Cali, CO
CR
MX
The First Live Demonstration of Endoscopy from Japan to Mexico
XII International Course in Bolivia 2015.4

La Paz, BO

TEMDEC, JP
The 7th International Course of Gastroenterology

Kobe, JP

Kyoto, JP

2015.6.27

Dr Elias/Police Hosp/Bogota

Colombia
Engineers make it possible, and Medical staff make it meaningful.

“No engineers, No telemedicine”
Conclusions

1. Networks are improving in Latin America, and medical teleconferences/live demonstrations have been organized in some countries.

2. These telemedicine projects shown here mainly in Asia and Latin America, can be applicable and expandable worldwide with variety of remote medical education programs over global research and education network.