

Remote medical education using DVTS: Expansion from Asia to the world

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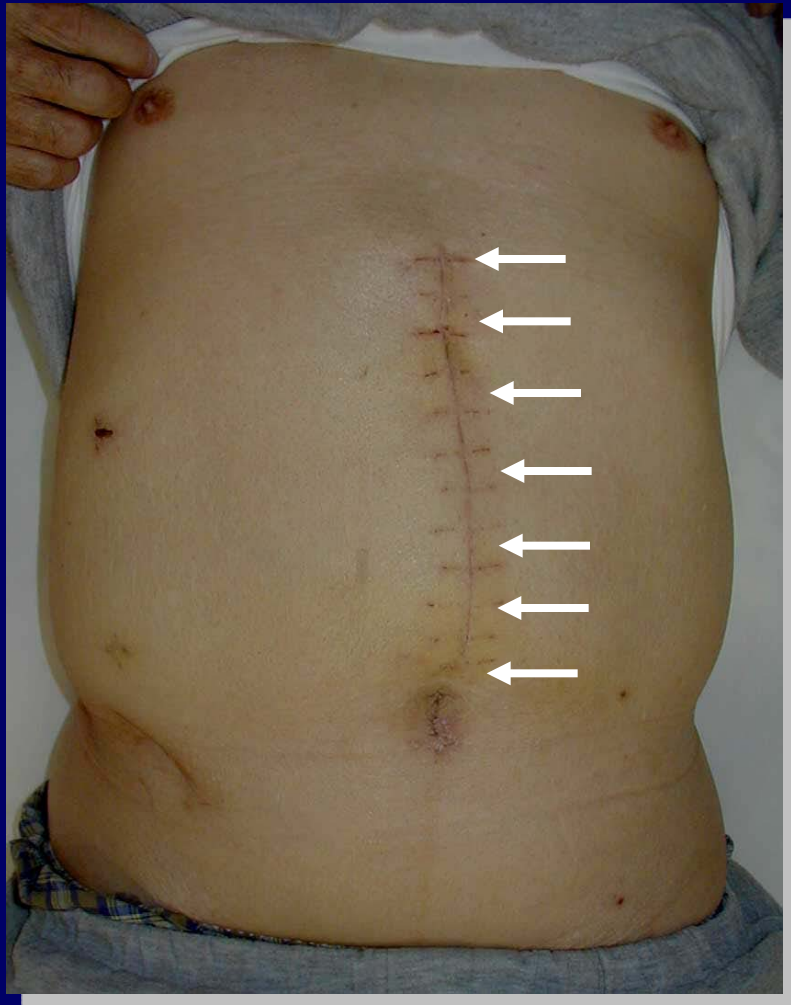
Today's menu

- **Backgrounds**
- **Activities**
 - **Korea-Japan**
 - **Worldwide**
- **Directions to go**

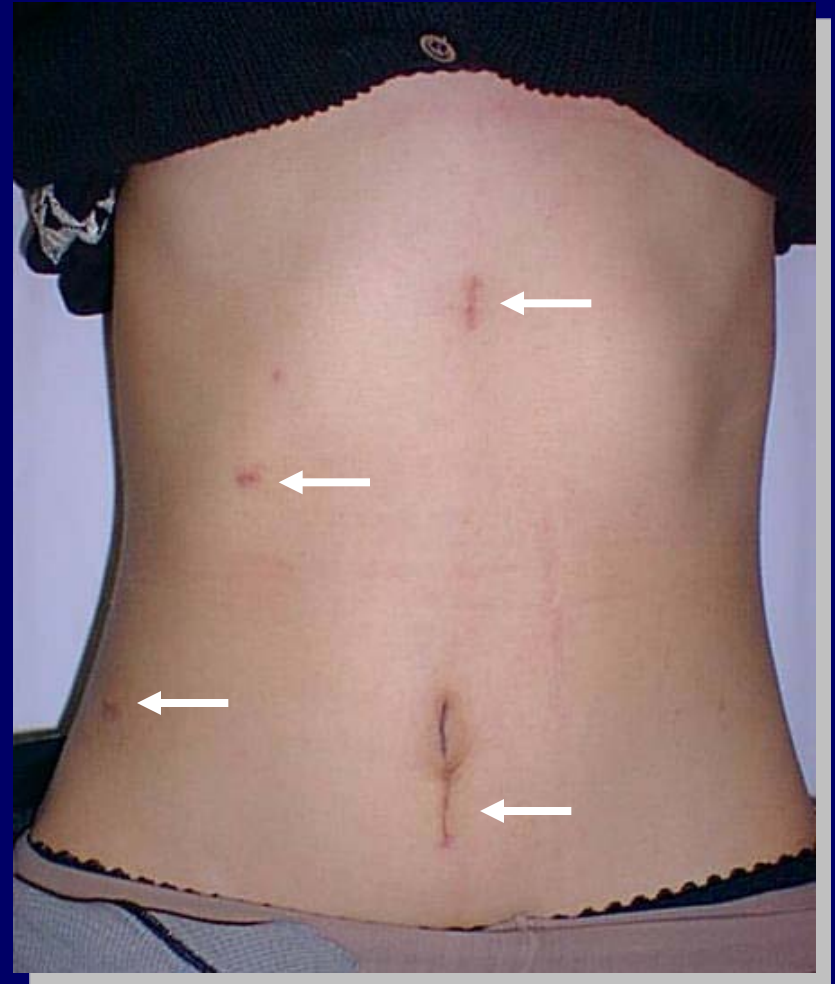


Key hole operation: New surgery

Open



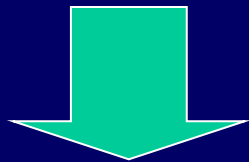
Endoscopic



Remote Education: Convenient and Useful!

Saving time, travel fee, and for continuous exposure

But, NOT popular in surgery yet



Why not?

- 1) Poor-quality moving images, due to compression
- 2) Cost for special video-conferencing system
- 3) Doctors are not familiar with technology, or do not know engineers to help them.

Situations changed in 2002: K-J Project



Hanyang U



Korea Advanced Research Network (KOREN)

Korea-Japan Cable Network (KJCN)

QGPOP

- Education
- Culture
- Business
- **Medicine**



Kyushu Univ



Bandwidth **2G** → Big Broadband Network

Key technologies

- DVTS

(Digital video transport system)

- Academic network

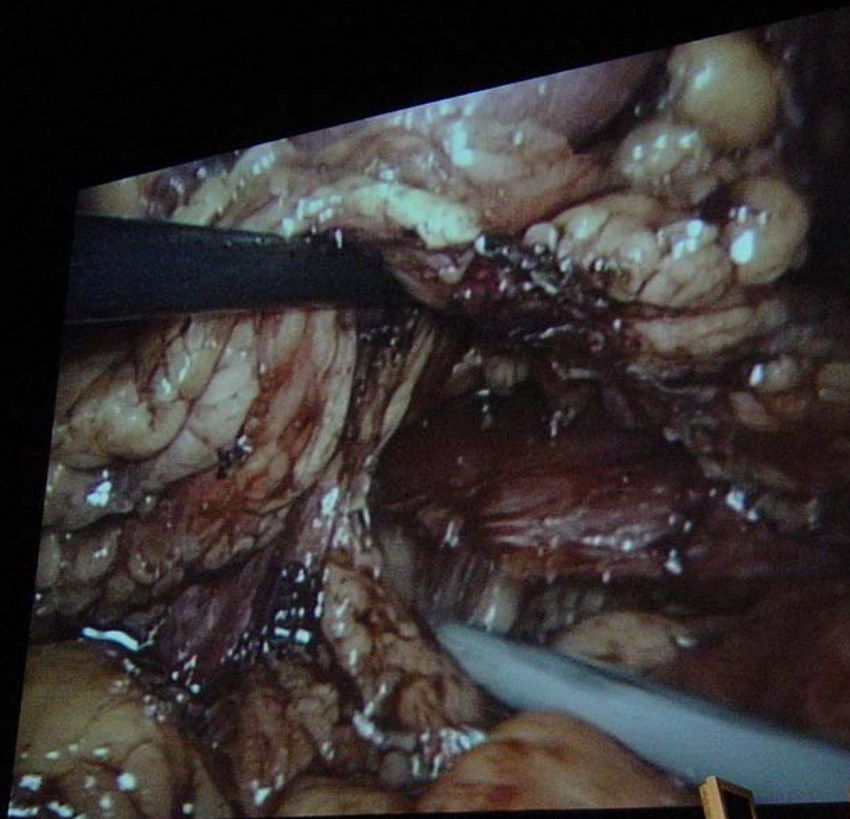
(Research and education network)

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[1] Live surgery between Korea-Japan



2006.4.13



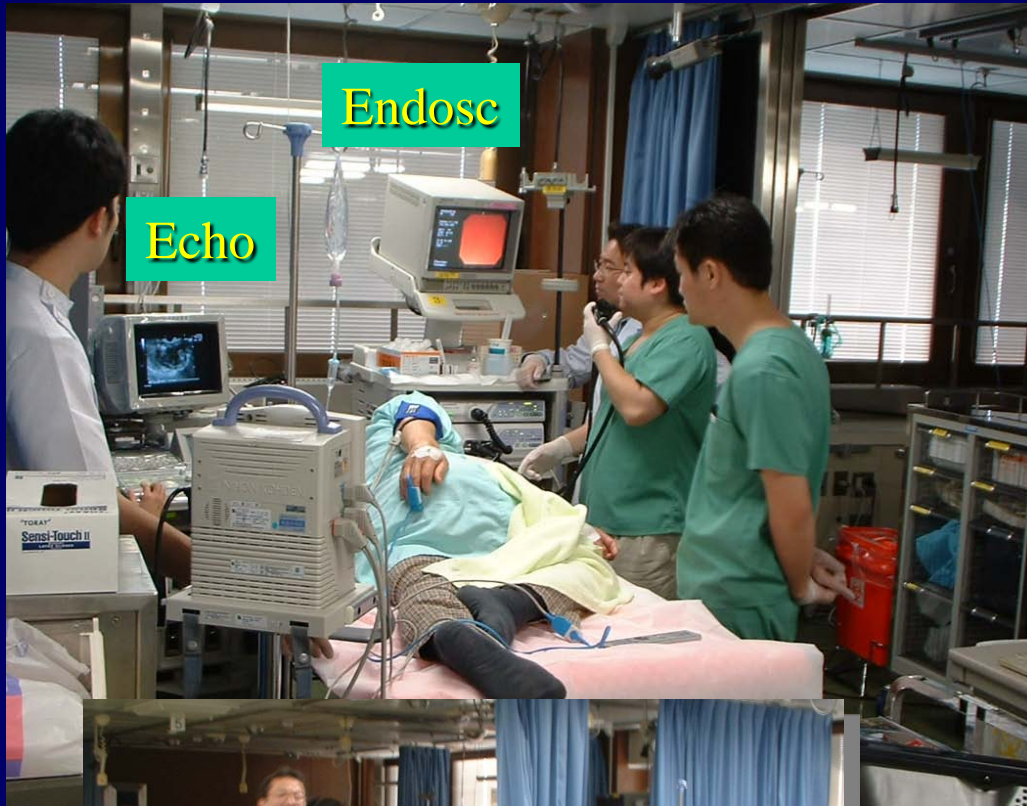
From Korea to Japan



[2] Endoscopy live demonstration

2004.11.15

To NCC



Endosc

Echo



Students

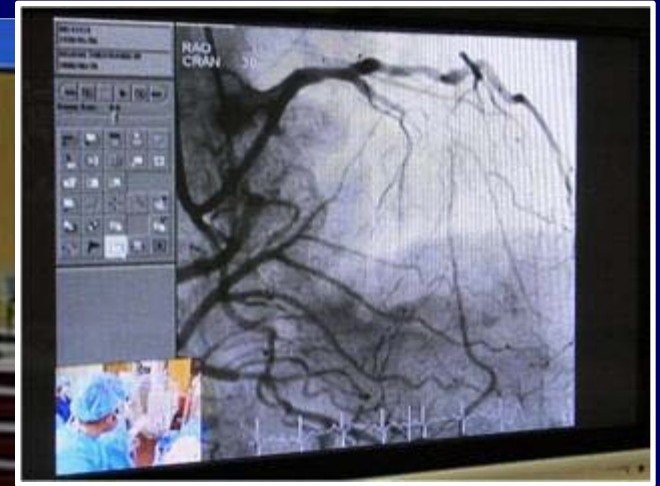


Staff



Microscope

[3] Interventional Cardiology



2008.6

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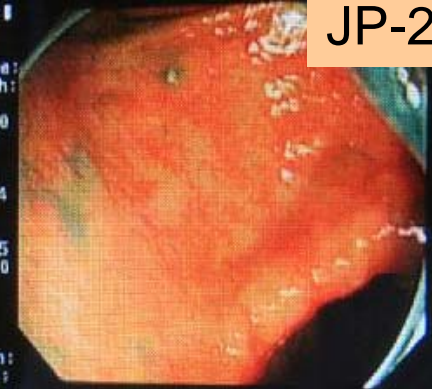
[1] Live Endoscopy: Multi-station

JP-1



ID No. :
Name :
Sex : Age :
D.O.Birth :
2008/08/30
11:34:14
SCV:1
CV: A1/4
CrN Ed: AS
G: 1 Z: 1.0
Physician :
Comment :

JP-2



Korea



JP-3



2008. 3

[2] Continuous Medical Education to Asia

2009.6.26



Fukuoka, JP



Cho Ray Hospital
Ho Chi Minh, VN



Shanghai, JP



Cancer Institute
Tokyo, JP

Kyushu, Tokyo, Shanghai, Ho Chi Minh)
conference on 2009/6/26(AriakeCIH)

[3] First connection to India for live surgery



Seoul, KR



Mumbai, IN

2008.4.28



Fukuoka, JP



Tata Memorial Hosp.
In Mumbai, India

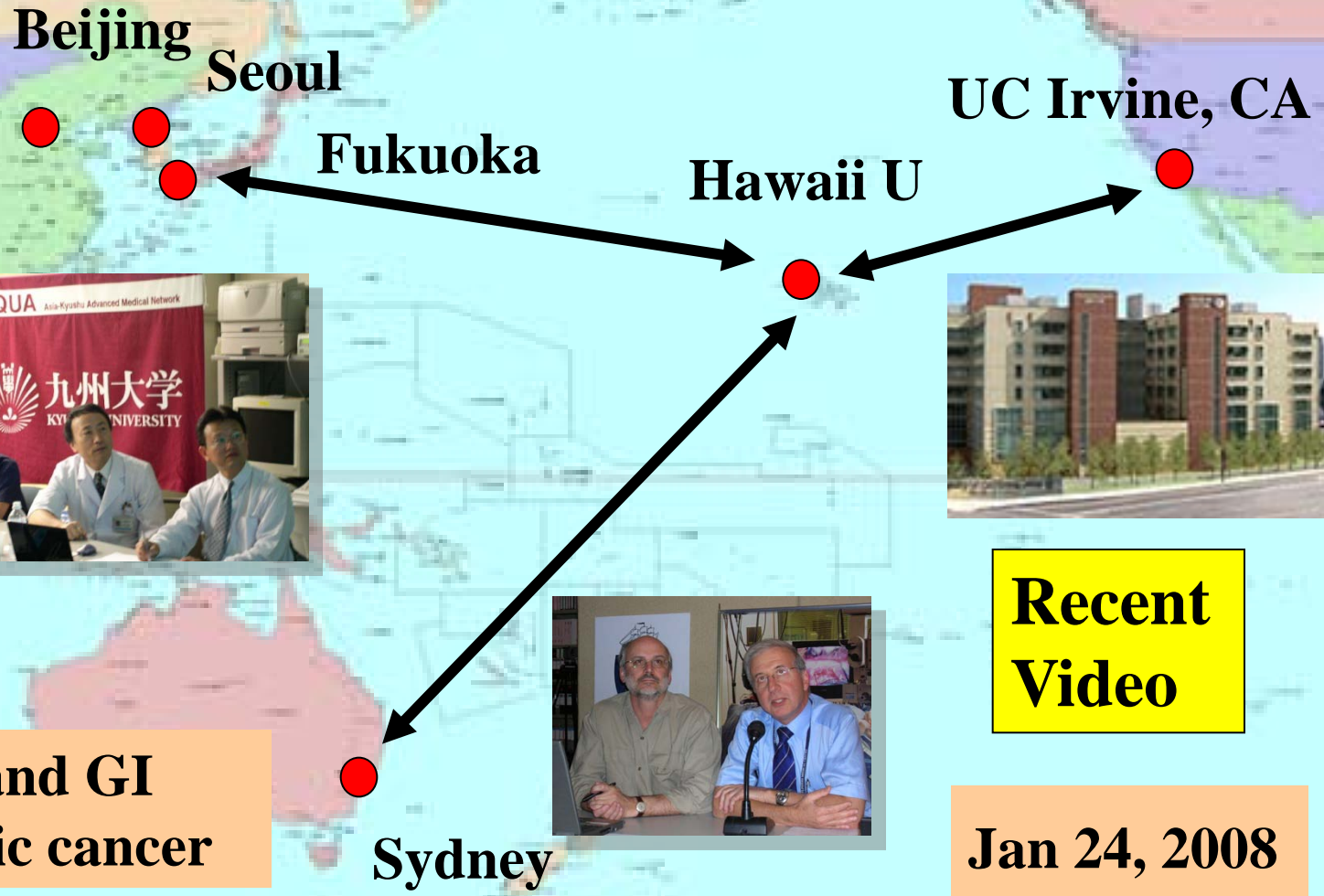
[4] Live demonstration around Pacific rim



**Recent
Video**

Jan 24, 2008

**Robotic surgery and GI
endoscopy for gastric cancer**



[5]Endoscopic Demonstration with Germany

2007.8

Bangkok, TH

Xian, CN

- France
- Italy
- Belgium
- Czech
- Spain
- Norway

Fukuoka, JP

Seoul, KR

Taipei, TW

Kyoto, JP

Hamburg, GR

Kuala Lumpur, MY



[6] First to Africa: Cairo University/Egypt

Cairo, EG



Fukuoka, JP



2009.5

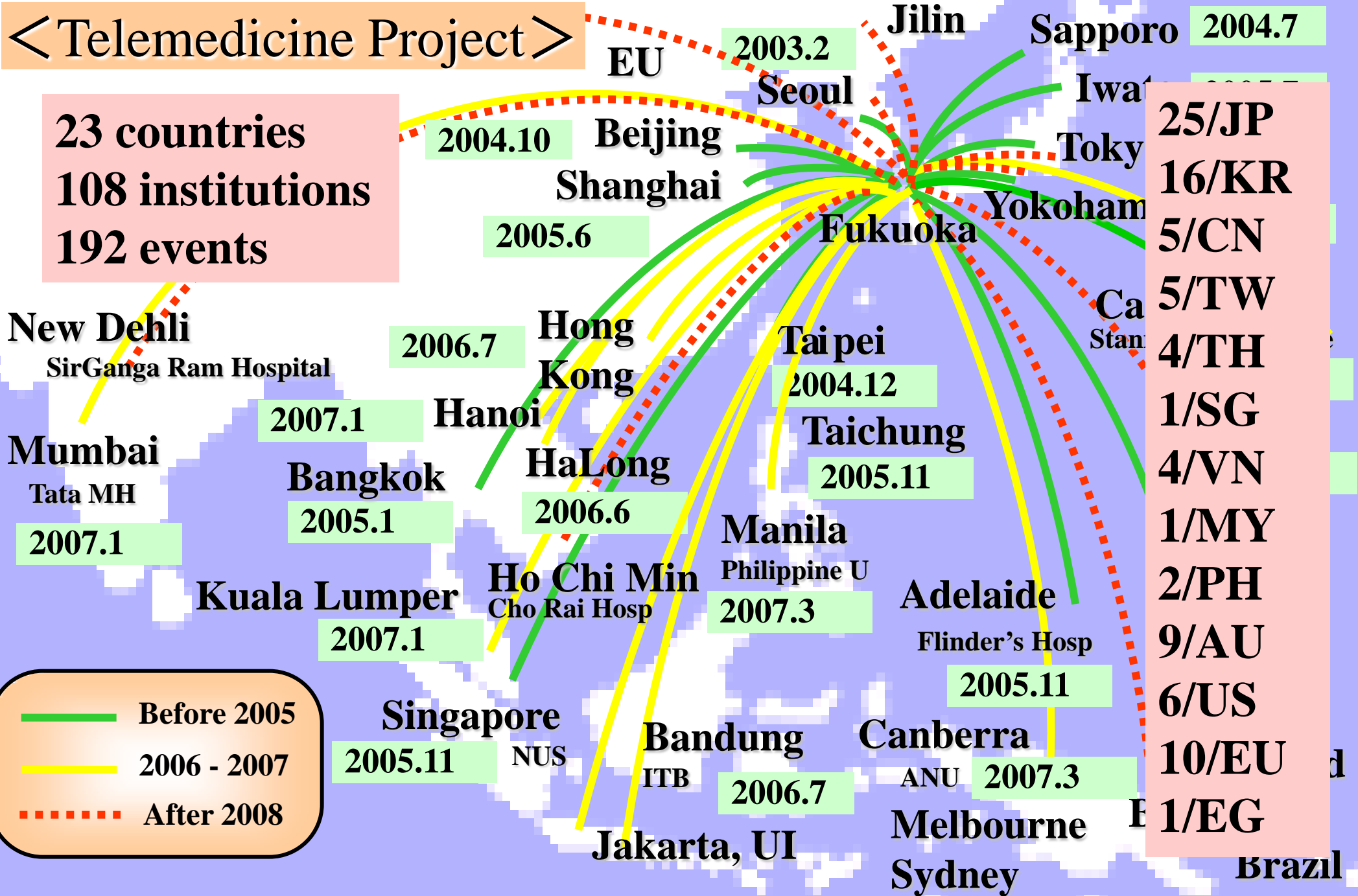


Kyoto, JP



< Telemedicine Project >

23 countries
108 institutions
192 events



New Dehli
SirGanga Ram Hospital

Mumbai
Tata MH
2007.1

Kuala Lumpur
2007.1

Singapore
NUS
2005.11

Bangkok
2005.1

Ho Chi Min
Cho Rai Hosp
2006.6

HaLong
2006.6

Hanoi
2007.1

Hong Kong
2006.7

Shanghai
2005.6

Beijing
2004.10

EU
2003.2

Jakarta, UI
2006.7

Bandung
ITB
2006.7

Manila
Philippine U
2007.3

Taichung
2005.11

Taipei
2004.12

Fukuoka

Canberra
ANU
2007.3

Adelaide
Flinder's Hosp
2005.11

Melbourne
E
2007.3

Jilin

Sapporo
2004.7

Iwa

Tokyo

Yokoham

Ca
Stan

25/JP
16/KR
5/CN
5/TW
4/TH
1/SG
4/VN
1/MY
2/PH
9/AU
6/US
10/EU
1/EG

Brazil

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Collaborating Medical Associations

- WGO (World Gastroenterology Organization)
- IASGO (International Association of Surgeons, Gastroenterologists, and Oncologists)
- ELSA (Endoscopic and Laparoscopic Surgeons of Asia)
- APHPBA (Asia-Pacific Hepatobiliary Pancreatic Asso.)
- APGCC (Asia-Pacific Gastric Cancer Conference)
- CMA (Chinese Medical Association)
- KSGE (Korean Society of Gastroenterology)
- TAGE (Thai Association of Gastroenterology)
- JSS (Japan Surgical Society)
- JAMI (Japan Association of Medical Informatics)
- JUA (Japanese Urology Associations)



Problems and future directions

- Multi-connection system: Quatre



Problems to be considered

- Multi-connection system: Quatre
- Transmission of HD quality

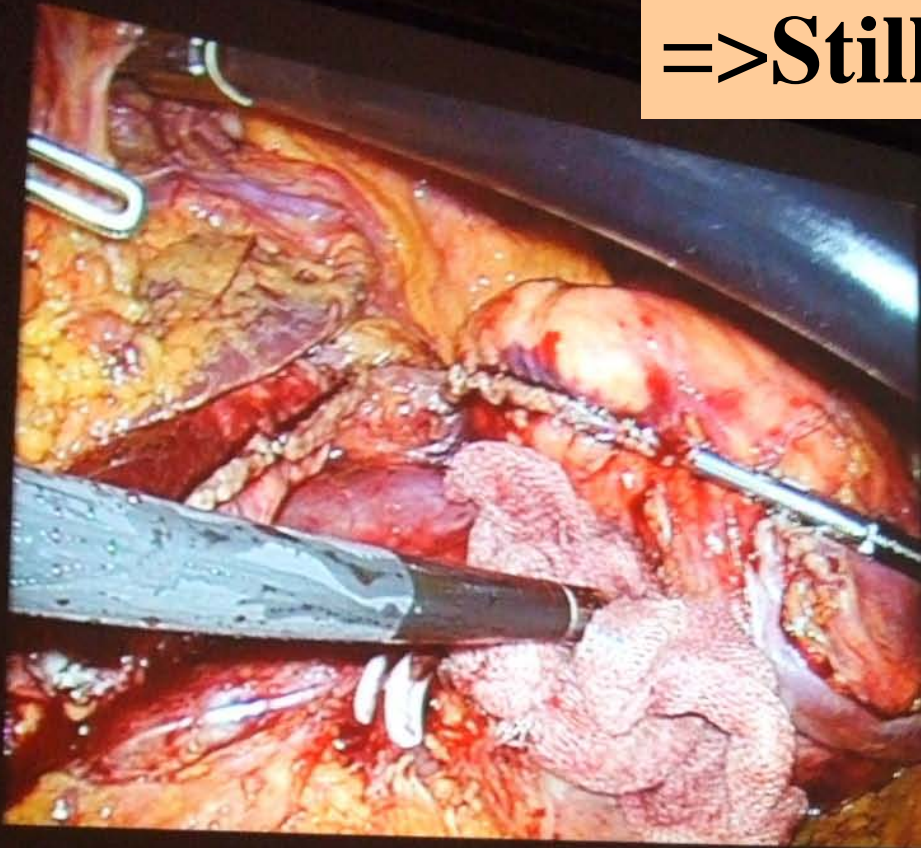


High Definition: Uncompressed HD

=>Still experimental!

2007.3.23

1.6G



Surgery/HD



Operating room/
DVTS

Chairman

Problems to be considered



- Multi-connection system: Quatre
- Transmission of HD quality
- Network to hospitals; last one mile



Conclusions

1. Quality is the key in telemedicine.
2. REN made the transmission of clear movies possible, which is very helpful in medicine.
3. Currently, DVTS is the best solution, both in quality and cost.
4. High-definition quality, which is cheap and powerful, should replace DVTS soon.
5. Further technical breakthroughs are awaited.

Endoscopic training centers' project

