Practical Experience of Telehealth Supporting System Between Antarctic Station and Japan

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JARE
Japanese Antarctic Research Expedition
Since 1956
Syowa station
JARE 53rd is now wintering over.

Population of diseases of wintering Syowa Station (4744 cases) 1957-2001
- Otorhinolaryngology 13%
- Psychiatry 2%
- Ophthalmology 6%
- Dermatology 13%
- Dentistry 13%
- Internal Medicine 12%
- Surgery/orthopedics 10%
- Urology 0%
Global Telehealth Conference 2012

Two doctors every team
Restricted medical equipment with no co-medical staff
No evacuation, no rescue

Age of wintering Doctors
(mean 33.6 y.o.)

Specialty of Antarctic Doctors
- neurosurgeon 4%
- gynecologist 3%
- anesthetist 8%
- int. med. doc. 12%
- surgeon 53%
- others 8%

Number of doctors

Back ground

1) Morbidity in Antarctic is not so high. But wide spectrum of disease occurs.

2) Two or one young doctors must manage all diseases without evacuation nor rescue.

3) Telehealth between Antarctic and Japan has been sought and tried for long times.

Historical changes of JARE telehealth

- 1956 (JARE-1) radiotelegraphy
- 1975 (JARE-16) radio Facsimile
- 1981 (JARE-22) satellite radio-telephone
- 1981 (JARE-22) satellite radio-facsimile
- 1997 (JARE-38) e-mail (INMARSAT)
- 1997 (JARE-38) making connection each 2 hour maximum 100kb/mail
- 2004 (JARE-45) INTELSAT
- 2004 (JARE-45) connection constantly maximum 10Mb/mail
- 2004 (JARE-45) moving picture possible

Radiotelegraphy makes……
Histological changes of JARE telehealth

1981 (JARE-22)
Telephone makes oral consultation
Facsimile makes black-and-white image communication

1997 (JARE-38)
e-mail (INMARSAT) makes colored digital image

2004 (JARE-45)
INTELSAT makes Real-time visual consultation
Methods

- The regular telemedicine consultation is done once a month.
- SYOWA station sends beforehand some reports about the patients’ information.
- The telemedicine consultation is usually made at 16:00 JLT after routine work of Japan (10:00AM at SYOWA Station)

11:40am station (17:40 Japan)
Accident happened
20:00pm Japan
Hospital received emergency call

Syowa station can call up the hospital directly
The hospital sets up hot line
Lumbar compression fracture

Rehabilitation excursion

Operational support

Dental trouble
**Practical cases of Telehealth**

2005 Feb. ~ 2006 January

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**More fine image than movie**

**Practical experience of Antarctic telehealth shows**

1) Diagnosis
2) Therapeutic treatment
3) Medical education
   (The lecture of “Prevention of lumbago”)
4) Advice of Specialists.
5) Direct counseling (psychiatrist etc)
6) Advice when the station doctor is absent.
7) Technological stability
8) Prompt connection in emergency.
9) Cooperation of the hospital in Japan

**Thank you for your attention**

How to contact us:
Catch on the floor