

## **HUMANITARIAN TELEMEDICINE**

*Potential Telemedicine Applications  
to Assist Developing Countries in Primary  
and Secondary Care*

### **EU-Korea Conference (EKC) 2014**

Session 1: Introduction to Inclusive Development and Cases for  
Appropriate Technology & Community Development

Vienna, AT

25 July 2014

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# From Telemedicine...

## Definition:

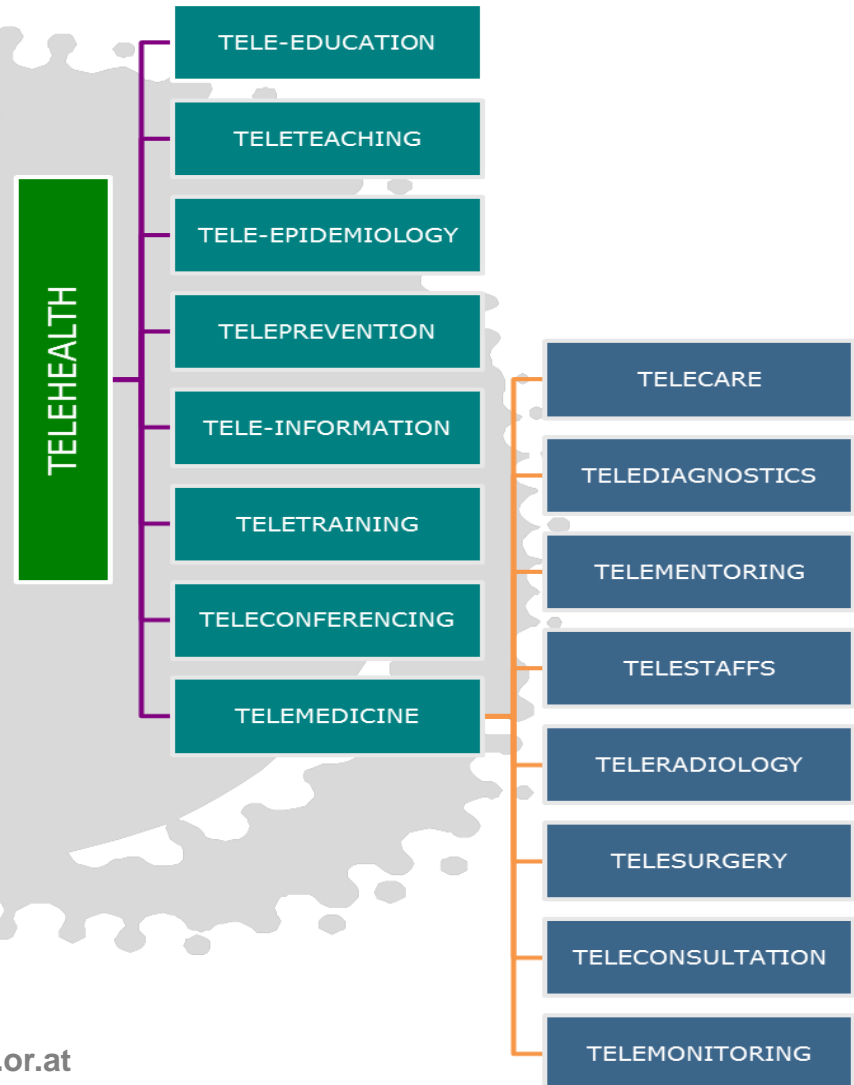
“The delivery at a distance of primary and/or secondary care between a medical professional and a patient or between two or more medical professionals by way of synchronous or asynchronous transmission and communication”.

## Where:

**Primary care** consists of medical treatment provided by medical generalists directly to patients, and

**Secondary care** refers to a treatment dispensed by specialised doctors.

Telemedicine is part of a wider concept referred to as telehealth, and includes applications.



## ... To Humanitarian Telemedicine

### Definition:

Humanitarian telemedicine can be understood as:

“the provision of telemedicine (primary and/or secondary) to developing countries in times of immediate and/or permanent medical need with the aim of improving personal health”.



# Benefits and Opportunities of Humanitarian Telemedicine

## FOR THE PATIENT

- Better access to medical care
- Improved quality of medical care
- Travel and hospitalisation costs are reduced (substantial especially in remote areas)

## FOR HEALTH PROFESSIONALS

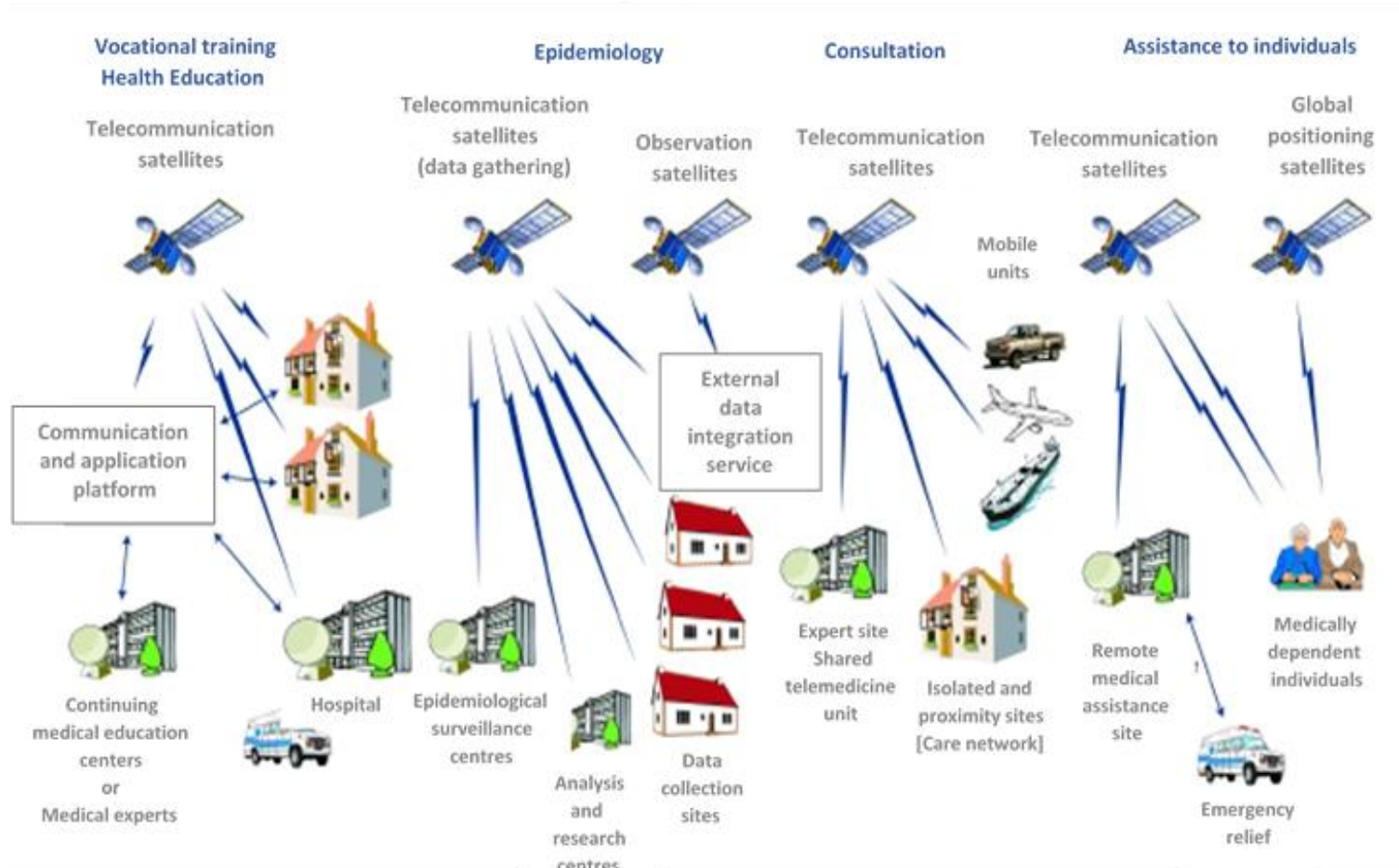
- De-isolation of health professionals
- Greater access and exchange of medical knowledge
- More accurate diagnostic and generally improvement of medical knowledge

## GENERALLY

- Better reach and access to remote areas, especially those the most in need
- Reduction of number of patient transfers, and therefore cost reduction
- Better health contributes to global development and empowerment of local populations
- More globally, increased access to health care is contributing to the achievement of the Millennium Development Goals

But most importantly, **IT SAVES LIVES!**

# Role of Satellites and Space in Telehealth and Telemedicine



English translation from CNES.fr 2008

# Examples of Successful Secondary Care Humanitarian Telemedicine Projects

## RAFT

*(Réseau en Afrique Francophone pour la Télémédecine)*

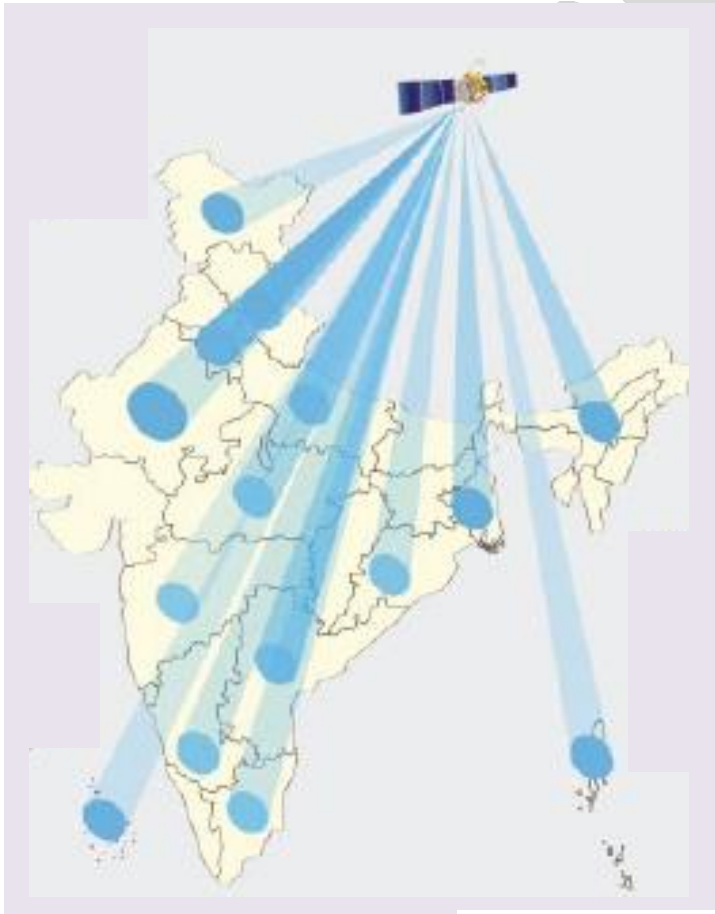
- First established in 2001
- Developed by the Geneva University Hospitals, under Professor Geissbuhler
- Focuses on telediagnosics and tele-education
- Now present in over 20 countries in Africa, and the concept is being replicated on other continents
- 80 percent of the consultations are now carried out to, and from, African countries directly



Source: <http://raft.globalhealthforum.net/>, 2014

Source: [isro.org](http://isro.org), 2005

## Examples of Successful Secondary Care Humanitarian Telemedicine Projects



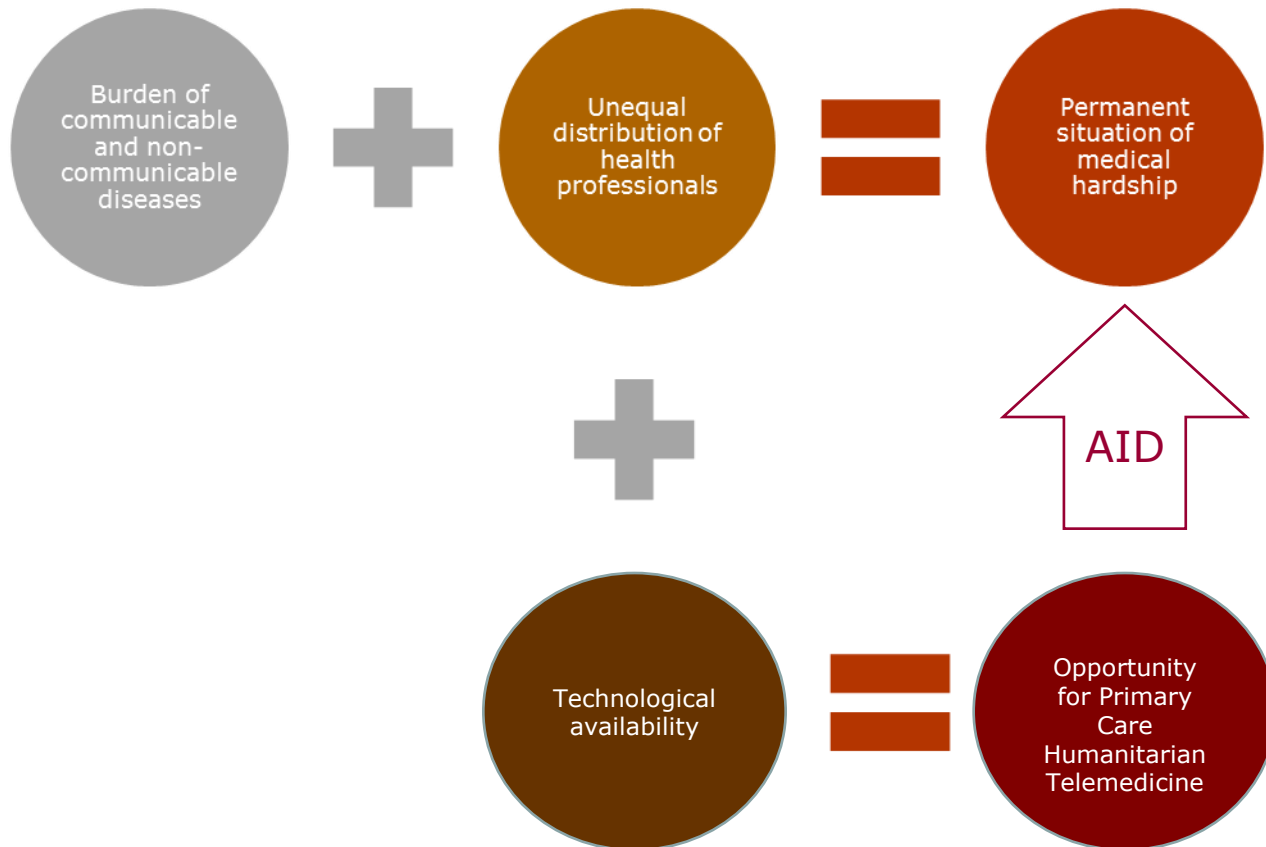
Source: [isro.org](http://isro.org), 2005

### ISRO

*In collaboration with the Apollo Hospitals Network*




- First project launched in 1998
- Started with the establishment of a secondary care hospital in a rural setting linked to a Chennai-based hospital via VSAT connectivity
- ISRO has now established a satellite-based telemedicine network (through INSAT):
  - 400 nodes (330 remote/rural hospitals connected to 52 specialty hospitals, and 14 mobile units)
  - Over 400,000 Teleconsultations carried out (data from 2009)

## Need and Opportunity for Primary Care





# Potential pilot projects in the field of Primary Care Humanitarian Telemedicine

<i>PROTOTYPE OPTION 1</i>	<i>PROTOTYPE OPTION 2</i>	<i>PROTOTYPE OPTION 3</i>
Fully mobile unit	Unit operating independently in rural settings	Unit operating alongside local healthcare facilities
		
<ul style="list-style-type: none"> <li>➤ Best patient reach</li> <li>➤ Technological autonomy</li> <li>➤ Highest costs</li> <li>➤ Risk of difficult integration</li> </ul>	<ul style="list-style-type: none"> <li>➤ Good patient reach</li> <li>➤ Possibility of technological autonomy</li> <li>➤ High costs</li> <li>➤ Risk of difficult integration</li> </ul>	<ul style="list-style-type: none"> <li>➤ Poorest patient reach</li> <li>➤ Technological dependence</li> <li>➤ Lower costs</li> <li>➤ Possible adverse bias in local health system</li> </ul>

# Practical Challenges

- **TECHNOLOGICAL**
  - The robustness, availability, compatibility and reliability of technology can prove problematic
  - Technologically demanding projects can raise project costs
- **LEGAL**
  - Data privacy (confidentiality, protection and integrity of information) can be at risk when it is shared by multiple actors
  - Responsibility, and liability of doctors. Which law is applicable?
- **CULTURAL**
  - Culture differences between patient and doctor; i.e.: Language, culture regarding health, perception issues
  - Aversion to not having a face-to-face contact with the patient
- **SUSTAINABILITY**
  - Lack of evaluation and assessment in many projects
  - Sustainability issues, especially if the local actors are not involved enough

## Evaluations & potential partnerships

- The key component of the prototype phase is to quantify the effects of the project, and to evaluate whether it is scalable and replicable.
- Each type of unit presents advantages and disadvantages with regards to evaluation.
- Research partnerships will need to be established in order to successfully evaluate the carried out prototype.
- Medical partnerships will aim to ensure the best possible care provision for the host population of the project.
  - One such partnership would link patients with expatriate doctors native of the same countries, but who are practicing in Europe or North America

## Conclusions and recommendations

- Humanitarian telemedicine contributes to increasing access to healthcare, especially in remote and most in need regions, and should therefore continue to be utilised (Recommendation 2)
- There are quite a few success stories in secondary care humanitarian telemedicine to be found, in both countries in times of immediate and permanent medical need
- Issues of sustainability, culture, evaluation, partnerships, and needs prioritisation must be accounted for (Recommendations 3, 4, 5)
- Every low-hanging fruit should be considered (Recommendation 6)
- There is a lack in primary care, while there is a dire need for it. It should therefore be further explored, prototyped, and evaluated (Recommendations 1, 7, 8)

**An event will be organised at ESPI to explore the three types of prototypes proposed, and ultimately go forward with one of them.**

Thank you for your  
attention.

Visit [www.espi.or.at](http://www.espi.or.at) for the full  
Humanitarian Telemedicine report