HUMANITARIAN TELEMEDICINE

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

Open Informal Session
14 May 2014, New York City, USA

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Guided by the belief that every life has equal value………

Average cost of bypass operation in US $: 75 345

Approximate cost of diarrhea treatment in Ghana: $ 20
Density of health workers:
Less than 25 per 10.000 in most of Africa
Over 100 per 10.000 in the US

How to bridge the divide??
Space must be modest: Is normally an enabler, not a goal in itself
A telemedicine link can connect doctors from well-served regions with patients in underserved regions.

A telemedicine link can allow those ready to help to do so!!
Preventing the deaths that can be easily prevented - the role of first diagnosis and primary care
Understanding the issues:

. The cultural difficulties

. Putting the patient and the medical need first!

. Technology is not a problem

. Maintenance and sustainable solutions are

. The fit with the local health system

. Do not create competition to local doctors
Be cautious with good ideas: the need for proto-typing and randomized control trials

The ethics of trying!
Defining 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”.

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**Diagram:**

- **Developing Countries**
  - States
  - International Organisations
  - NGOs
  - Private Entities

- **Industrialised Countries**
  - States
  - International Organisations
  - NGOs
  - Private Entities

**Partnership Opportunities**

- **Developing Countries**
  - Humanitarian Situations of Crisis
  - Permanent Situation of Hardship

- **Primary care**
- **Secondary care**
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 THE HEALTH PROFESSIONALS

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

GENERALLY

- Better health contributes to global development and empowerment of local populations
- Increased access to health care is contributing to the needs of global health agenda

But most importantly, it saves lives!
Examples of Successful Secondary Care Humanitarian Telemedicine Projects

**RAFT**

- **First established in 2001**
- Developed by the Geneva University Hospitals, under Professor Geissbuhler
- Focuses on telediagnostics 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

**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)


Source: isro.org, 2005
Need and Opportunity for Primary Care

- Burden of communicable and non-communicable diseases
- Unequal distribution of health professionals
- Technological availability
- Permanent situation of medical hardship
- Opportunity for Primary Care

AID

Humanitarian Telemedicine, 14 May 2014, New York City
## Potential pilot projects in the field of Primary Care

**Humanitarian Telemedicine**

<table>
<thead>
<tr>
<th><strong>PROTOTYPE OPTION 1</strong></th>
<th><strong>PROTOTYPE OPTION 2</strong></th>
<th><strong>PROTOTYPE OPTION 3</strong></th>
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<tbody>
<tr>
<td>Fully mobile unit</td>
<td>Unit operating independently in rural settings</td>
<td>Unit operating alongside local healthcare facilities</td>
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<tr>
<td>✓ Best patient reach</td>
<td>✓ Good patient reach</td>
<td>✓ Poorest patient reach</td>
</tr>
<tr>
<td>✓ Technological autonomy</td>
<td>✓ Possibility of technological autonomy</td>
<td>✓ Technological dependence</td>
</tr>
<tr>
<td>✓ Highest costs</td>
<td>✓ High costs</td>
<td>✓ Lower costs</td>
</tr>
<tr>
<td>✓ Risk of difficult integration</td>
<td>✓ Risk of difficult integration</td>
<td>✓ Possible adverse bias in local health system</td>
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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

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<th>OPPORTUNITIES</th>
<th>CHALLENGES</th>
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<tr>
<td>➢ Primary care humanitarian telemedicine should be further explored</td>
<td>➢ As humanitarian projects based on partnerships with local actors are generally more successful and sustainable, humanitarian telemedicine projects should follow this lead.</td>
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<td>➢ Humanitarian telemedicine, fostered by technological advances, should</td>
<td>➢ A number of important cultural considerations, from host to donor populations, should be accounted for.</td>
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<td>continue to be utilised to improve health care for those the most in need</td>
<td>➢ In order to make such projects successful, the medical needs of end users must be prioritised.</td>
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<td>➢ Every low-hanging fruit should be considered</td>
<td>➢ Evaluation is critical for the success of such projects.</td>
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<td>➢ To test the validity of primary care humanitarian telemedicine, pilot</td>
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<td>projects need to be developed</td>
<td>An event will be organised at ESPI to explore the three types of prototypes proposed, and ultimately go forward with one of them.</td>
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Thank you for your attention.

We will gladly address any questions and/or comments.

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