Doctors Truly Without Borders: Teleconsultation in the 21st Century

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What is Telemedicine?

- Telemedicine has been defined as the use of telecommunications to provide medical information and services.
- It may be as simple as two health professionals discussing a case over the telephone, or as sophisticated as using satellite technology to broadcast a consultation between providers at facilities in two countries, using videoconferencing equipment or robotic technology.
What is Teleconsultation?

- It is the leveraging of electronic communications to provide medical expertise or treatment to areas where the expertise is not readily available.
- It may be in real-time (synchronous) or delayed (asynchronous or store and forward).
- It may be quite resource intensive or relatively simple.
Synchronous Telemedicine

- Real time telemedicine may be as simple as a telephone call or as complex as robotic surgery.
- It requires the presence of both parties at the same time and a communications link between them that allows a real-time interaction to take place.
- Video-conferencing equipment is one of the most common forms of technologies used in synchronous telemedicine.
Synchronous Telemedicine

- There are also peripheral devices which can be attached to computers or the video-conferencing equipment which can aid in an interactive examination.
- For instance, a tele-otoscope allows a remote physician to 'see' inside a patient's ear; a tele-stethoscope allows the consulting remote physician to hear the patient's heartbeat.
- These technologies are relatively expensive and require significant technology resources.
Asynchronous Telemedicine (Store and Forward)

- Teleradiology, the sending of x-rays, CT scans, or MRIs (store-and-forward images) is the most common application of telemedicine in use today.
- Teledermatology, telepsychiatry, and telepathology is also fairly commonly used.
- The differentiating feature of these specialties is that they are not reliant on a detail physical examination.
- Close observation of patients typically requires the utilization of high definition (and costly) imaging.
The Role of Telemedicine

- Telemedicine is most beneficial for populations living in isolated communities and remote regions.
- Telemedicine is also useful as a communication tool between a general practitioner and a specialist available at a remote location.
- It addresses health disparities by increasing the quality and availability of health services in remote and medically underserved areas worldwide.
- In summary, it addresses maldistribution and cost barriers of medical care.
NAAMA’s Vision of Telemedicine

- Create volunteer community of health professionals
- Use cost-effective and appropriate information and communication technology
- Build bridges and connections across geographic, social, cultural and technological boundaries
- Make high quality medical knowledge available throughout the Arab World.
Why Does it Exist?

Tele-consultation serves the following purposes:

- Serves to reduce maldistribution of medical expertise
- Serves to reduce transportation barriers to this expertise
- Serves to reduce financial barriers to this expertise
What Can a Teleconsultant Do?

- He/she may provide definitive answers for management of a particular case.
- Alternatively, he/she may provide guidance for the consulting provider as to next steps in the diagnosis or treatment of varied conditions.
- Provide a resource for providers in medically underserved areas.
What Are Requirements for a Successful Network?

- **Interoperability**: Develop telemedicine networks that interface together and create an open environment sharing the application on different participating systems in real-time or seamless interface.

- **Compatibility**: Equipment/systems of different vendors and different versions of the same system, to be able to be interconnected.

- **Scalability**: Equipment/systems inducted for telemedicine to be able to be augmented with additional features and functions as modular add-on options.

- **Portability**: The data generated by an application that runs on one system to be able to be ported to different platforms with a minimum effort.

- **Reliability**: To ensure availability of service with minimum system downtime.

- **Inclusion of all the stakeholders**: Making the recommendation with due consideration of the rights and responsibilities of patient/community, health care service provider, the technology provider, etc.

- **Making recommendations vendor neutral**

- **Making standards technology neutral**
Critical Elements for Success

- Limited or no requirement for new technologies
- No cost barriers to participation
- Leveraging existing infrastructure and technology
- Using local and regional knowledge base to build the network of participants
- Using the local and regional knowledge base to understand what next steps are available for requestors of consults
The Center for International Rehabilitation and NAAMA

A Volunteer Driven, Next Generation Knowledge Network:
Toward a Paradigm Shift in Global Telehealth and Humanitarian Medicine
iCons in Medicine uses the Internet to connect health care providers in remote and medically underserved areas (Requestors) with a network of committed specialty physicians (Volunteers) who provide clinical support.

This program expands treatment options for patients who otherwise would not have access to specialty care.

The alliance of volunteer physicians fosters international understanding and engages in global collaboration by providing expertise, encouragement and advice.
How iCONS Works-
Who Can Join?

- Health care providers in clinics, hospitals or NGOs working in remote or medically underserved areas, who are licensed to practice medicine in the jurisdiction in which they work, are eligible to join and request tele-consultations.
- Physicians licensed to practice medicine in the jurisdiction in which they reside are eligible to join and provide volunteer tele-consultations.
The Software

- The medical collaboration is made possible by a special computer software and social networking website.
- The software allows health care providers in remote and medically underserved areas to upload a case consultation form including digital images. The software saves the information until connectivity is available.
- Functions like e-mail once connectivity is obtained.
- The software routes consultations to volunteer physicians according to the specialty requested.
The Website

- The website allows volunteers to respond to cases with clinical advice through its built-in communication tools.
- Allows all participants to post profiles of themselves, their organizations and their practice areas.
- This global registry of constituent members collates information on areas of interest and expertise allowing members to interact with others with relevant knowledge or capability facilitating a vibrant practice community.
A volunteer network of medical professionals who provide teleconsultations to primary care doctors in remote and medically underserved areas of the world.
Five Easy Steps

1. Patient with a difficult case requiring a specialty consultation visits physician.

2. The physician submits a consultation form using the iCons computer program.
Five Easy Steps

3. All available volunteer specialists with the appropriate medical background receive an email notification that assistance is needed on a case.

4. A specialist visits the iCon website to review the consultation form and accept the case.
5. The specialist replies to the requesting physician within 48 hours. The two physicians continue to collaborate on the case as needed.
Benefits of Participation

• Physicians in remote and medically underserved areas gain access to specialty consultations at no cost.
• Volunteers can help those in need, around the world, from the convenience of their home or office.
• In addition to receiving or providing improved patient care, participants can expand their professional networks and engage with a community of committed, caring physicians.

To learn more about iCons in Medicine or to join visit www.iconsinmed.org or www.naama.com
National Secretariats

- At the national level, licensed affiliate organizations (National Secretariats) oversee the enrollment of chapters and member organizations within their geographic boundaries.
- A National Secretariat (NS) may be an existing establishment such as a hospital or university.
- The function of the NS within an existing establishment is that of an independent charitable entity, in accordance with the laws of its country’s jurisdiction.
Volunteer Chapters

- Volunteer consultants join chapters. It takes three physicians to form a chapter (Chair, Medical Director and Secretary). Chapters must accredit their members and each member must agree to provide a minimum of three consults per year.
Member Organizations

- Healthcare organizations that work in medically underserved areas may apply to receive assistance through the iCons Network. They must be non-profits and have a mission and activities that are compatible with the iCons Network. They enroll their staff.
The iCon Paradigm Shift -

From/To

- Two Way Communications / Networked Interactions
- Pretty Amazing New Stuff (PANS) / Commercial Off-The-Shelf (COTS)
- High Cost of Entry / Reduced Cost of Entry
- Professionally Driven (Top Down) / Professional/Amateur (Pro Am) Bottom Up
Expected Outcomes for Volunteers

- Instill new perspectives of global citizenship, medical diplomacy, cross-cultural sensitivity.
- Increase the impact of volunteerism through collaboration.
- Deliver better health services at a lower cost.
- Build capacity and expand the pool of new and returning health care volunteers.
- Encourage volunteers to become a “social network,” and create a global community of practice within and across sectors.
Expected Societal Benefits

- Increase the awareness of the role and value of global health service.
- Heighten cultural understanding and religious tolerance.
- Empower a "global medical workforce" with new resources to address complex problems with targeted efficiency.
- Advance innovation in the field of telemedicine.
- Foster a deeper understanding of health disparities, while nurturing insights that can lead to political, social and economic change.
- Improve the quality and availability of health services in remote and medically underserved areas.
- Build world-wide relationships among doctors and other medical providers.
Who of you is prepared to become a National Secretariat?

Who of you is prepared to become a Volunteer Chapter?

Who of you is prepared to become a Member Organization?