Telemedicine support on Maternal and Newborn Health to Remote Provinces of Mongolia (2007-2011)

Dr. Tsedmaa B. Sydney 2012

INTRODUCTION - Mongolia

- Location: center of Asia
- Vast territory with lowest pop. density (2.7 million, 1.7 per square)
- Weather: Extreme continental, harsh winter
- Poor infrastructure

INTRODUCTION - Mongolia

Maternal and newborn health

MMR

- Main cause of maternal death are complication of pregnancy associated medical conditions (44.6%) and pregnancy complication (33.6%) (Health stat, 2009)
- Inequality of quality care and access

Those conditions make difficult to deliver quality specialist care and maintain qualified human resources in the countryside.
Although we have a good decrease in neonatal mortality in general, there are also very high mortality rates in western regions (13.6%).

Among the causes of neonatal deaths, asphyxia constitutes 53%, infection 18.5% and congenital abnormalities 12.2% (National Strategy 2010)

Telemedicine in Maternal and Newborn Health

Project Telemedicine Support on Maternal and Newborn Health
(Govt. of Luxembourg & UNFPA, 2007-2011)
Main strategies used

1. Setting up fully functional tele-consultation network in remote hospitals
   - High risk obstetrics case management based on patient e-files
   - Prenatal US diagnostics – image transfer
   - Newborn complications
   - Cervical pathology screening based on colposcopy and pap-smear imaging

   Training more focused on hands-on clinical skills, more in work stations, as a team

2. Staff development and knowledge transfer
   - Facility upgrading with installation of quality diagnostic and treatment equipments
   - Capacity building of service providers on new innovative approaches and techniques using updated clinical reference materials.

Main strategies used

3. Setting up multidisciplinary expert team at reference centers;
   - Clinical decision support (Tele-ward round)
   - Distance learning
   - Updating guidebook
   - Support Meetings and Congresses (once a year)
     - Team Spirit
     - Professional networking – To reach international standards at central level
       - McMaster University
       - Korean hospitals
       - ISUOG, Asian feto-maternal medicine foundation
       - Swiss Surgical Team

Tele-consultation platform

- Web-based
- Audio/Video applications
- Documentation/Statistics

Tele-consultation platform

Cases, Descriptions, Expert Opinions
Main Achievements:

- Improved networking between peripheral and central level

![Diagram](image)

### CONSULTATION TYPE

<table>
<thead>
<tr>
<th>Consultation Type</th>
<th>Number of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prenatal US diagnostics</td>
<td>287</td>
</tr>
<tr>
<td>Cervical lesions</td>
<td>112</td>
</tr>
<tr>
<td>Newborn conditions</td>
<td>176</td>
</tr>
<tr>
<td>Adnexal masses and gyno-surgery cases</td>
<td>71</td>
</tr>
<tr>
<td>Pregnancy complication</td>
<td>133</td>
</tr>
</tbody>
</table>

Improved diagnostic and treatment quality

- Improvements in quality
  - Successful and complete transmission of data,
  - Improved IT and equipment use skills
  - Questions on treatment tactics became more focused.

![Images](image)

Serial images sent in December 2010
Main achievements: Improved local case management

- Total number of deliveries
- Child birth complication

Reduced unnecessary referrals

- Number of referred patients

Improved communication between rural and urban health professionals - Happy doctors with full support
Potential Challenges / Lessons learnt

- Equipment maintenance
  - Electrical fluctuations
  - Biomedical staff
  - Local service agreement
- Internet Issues
  - Trained IT support
  - Speed (94% store and forward)
  - High cost of Internet
- Knowledge transfer
  - TOT model
- Image quality
- More skills – Continuous training
- High resolution machines
  - Standardization of equipment may be essential
- Incentives for expert team
  - International training/conferences
- Financial???

Telemedicine in Mongolia - Sustainability

- Project contributed:
  - For better access to quality specialist services to vulnerable (distance)
- Sustainability
  - Good opportunity for further continuation - growing skills and knowledge of doctors
  - The increasing capacity of provincial hospitals and the progress made in policy level (eHealth strategy) are the valid reasons for project’s continuation.

Conclusion

- Telemedicine is an excellent recourse for providing quality clinical management to women at risk of poor pregnancy outcomes in geographically remote areas.
- Efficient utilization of network for timely and appropriate care - can prevent emergency.
- Telemedicine – a tool
  - Never replace local health care
  - It only serves as a support and educational mechanism
  - Successful coordination of parties is vital for a positive outcome.

A lucky mother, whose life was saved by telemedicine.