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

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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

- Harsh climate
- Slow transport vs expensive transport
- Those conditions make difficult to deliver quality specialist care and maintain qualified human resources in the countryside.

Maternal and newborn health

- MMR
- Main cause of maternal death are complications of pregnancy associated medical conditions (44.6%) and pregnancy complications (33.6%) (Health stat, 2009).
- Inequality of care and access
Maternal and newborn health

Infant mortality ratio

- 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)

- Well trained doctors/specialists
- Pregnant woman seeking for specialist care
- Expert team Doctor
- IT specialist
Main strategies used

1. Setting up fully functional tele-consultation network in remote hospitals
   - High risk obstetrics care 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.

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 fetal-maternal medicine foundation
     » Swiss Surgical Team
Main Achievements:

- Improved networking between peripheral and central level

### Improved Networking Between Peripheral and Central Level

<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>121</td>
</tr>
<tr>
<td>Newborn conditions</td>
<td>196</td>
</tr>
<tr>
<td>Adnexal masses and gyne-surgery cases</td>
<td>71</td>
</tr>
<tr>
<td>Pregnancy complications</td>
<td>123</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.

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

Local case management with compliance of newly introduced guidelines now 87.5% of the cases (Project end evaluation report).

Reduced unnecessary referrals

Referral from participating hospitals reduced by 30%
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.