

## Telemedicine support on Maternal and Newborn Health to Remote Provinces of Mongolia

(2007-2011)

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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



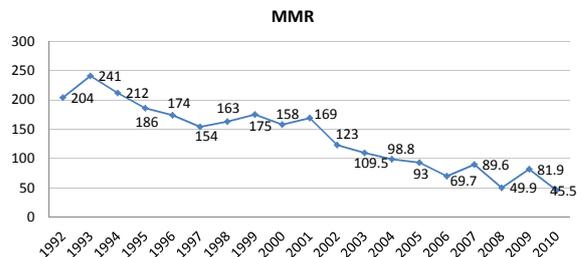
*Harsh climate*

*Poor road*

*Slow transport vs expensive transport*

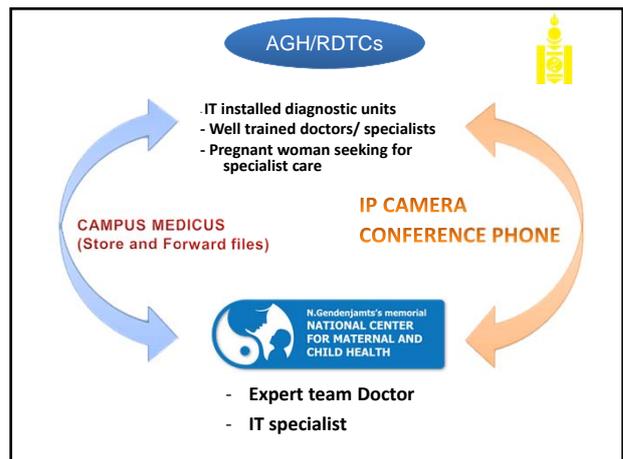
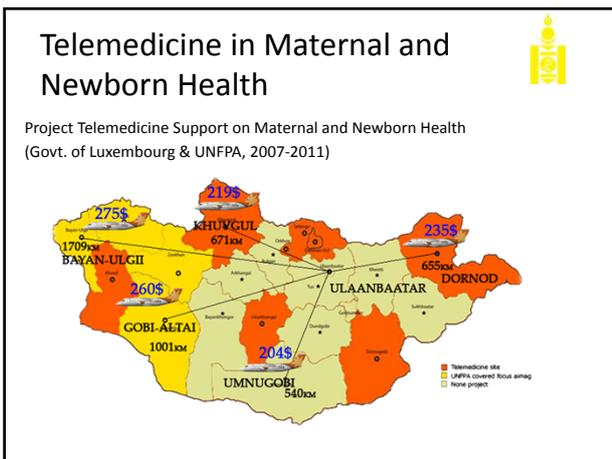
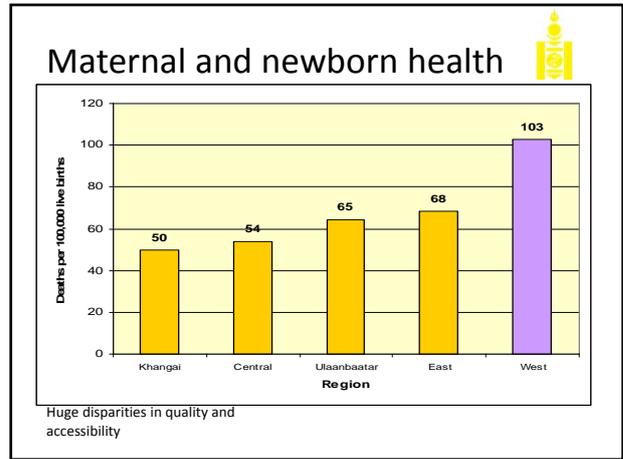
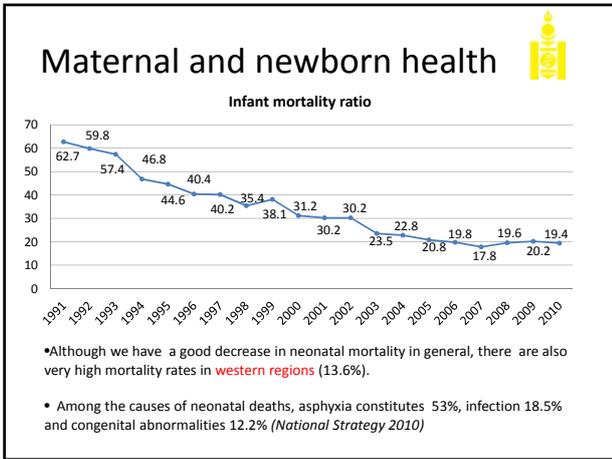
*Those conditions make difficult to deliver quality specialist care and maintain qualified human resources in the countryside.*

## Maternal and newborn health



Year	MMR
1992	204
1993	241
1994	212
1995	186
1996	174
1997	154
1998	163
1999	175
2000	158
2001	169
2002	123
2003	109.5
2004	98.8
2005	93
2006	69.7
2007	89.6
2008	49.9
2009	81.9
2010	45.5

- 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



## 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 complication
  - Cervical pathology screening based on colposcopy and pap-smear imaging
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.

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

## 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



GROUP

Distance learning  
Neonatology  
Cervical pathology  
High risk obstetrics  
Gynecology

Cases      Descriptions      Expert opinions

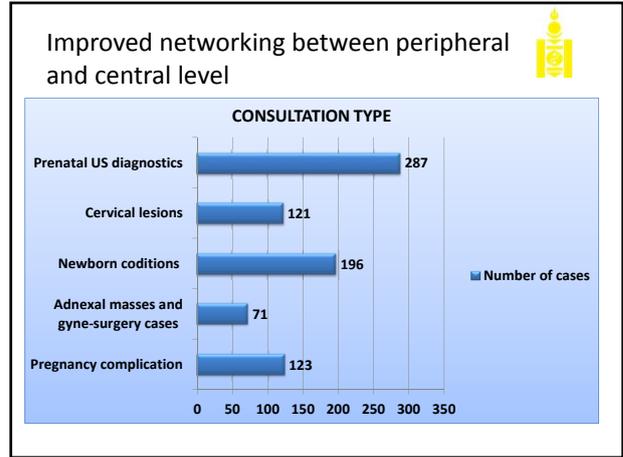
-Web based  
-Audio /Video applications  
-Documentation / Statistics

## Tele-consultation platform





**Main Achievements:**

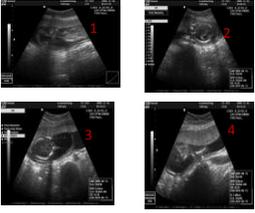




**Improved diagnostic and treatment quality**

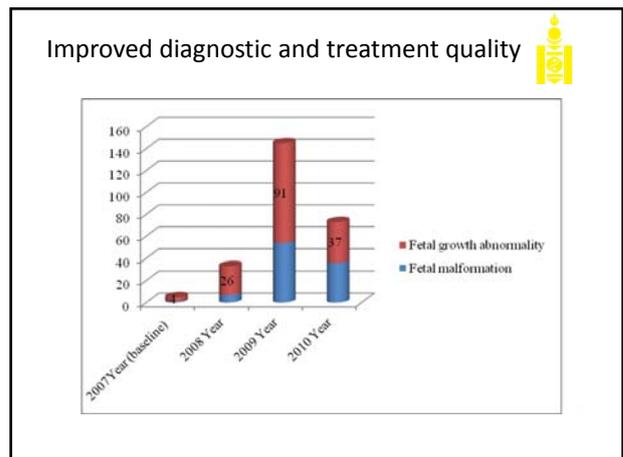


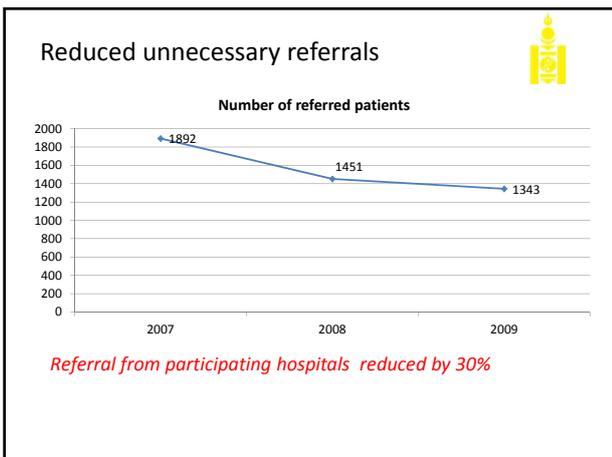
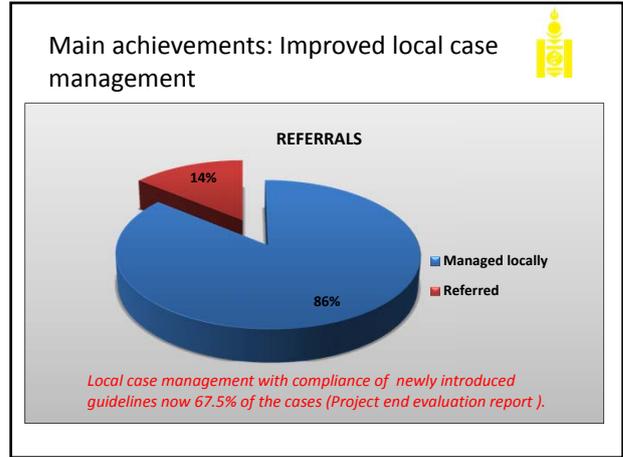
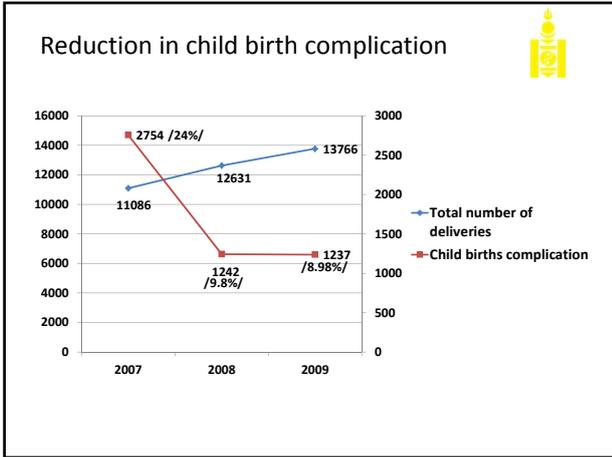
Image sent August 2008



Serial images sent in December 2010

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





### 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.*

