Robotic Tele-Echography

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Key aspect

- **TeleHealth**: It is the provision of health services for promotion, prevention, diagnosis, treatment and rehabilitation via health professionals who use information technology and communication, allowing them to exchange data with the purpose of facilitating access and opportunity in providing services to the public that has limitations of supply, access to services or both in their geographic area.
Telemedicine potential

• Access improvement
• Cost reduction
• Improved knowledge policies and decisions
• Improving the quality of Health services

The Potential for practical improving

• Dramatic reduction of medical errors

• Healthcare staff recruitment and retention for health care because IT tools improve quality of life.

• Healthcare professionals improved access especially in rural areas through teleHealth

• Decreased hospital visits, reduced duplication of services, improved productivity through data and shared information.

• Evidence-based care through best practices made possible by integrated decision-support tools

The Potential for practical improving

- Personal enhanced with ongoing training including online initiatives.

- Improves responsiveness to the community through improved performance of healthcare organizations and their employees.

- Improving Health Management System, Planning and Research through the use of better quality information.

Intervention of Technology

Technology is part of required resources to provide products / services of the area. Definition of policies, alignment of the organization, management processes for the good use of technology is essential.
TeleHealth: development priorities

- Provision of health services
- Information, education and communication to the public and health personnel
- Health Services Management

Ref: Department of Informatics and Statistics MOH 2012
Provision of health services

- Tele-Prevention
- Tele-Diagnosis
- Tele-Monitoring
- Tele-Consultation
- Tele-Emergencies

Ref: Department of Informatics and Statistics MOH 2012
Robotic Tele-Echography

IP 1: Quality Imaging

Lugar del Paciente, Honorio Delgado Arequipa Regional hospital

Band Width 450 Kbps (Actual)

IP 2: Audio – Video Permanent

Conventional Ultrasound + Positioner Robot

Diagnosis at the echographer consulting room, INMP

Joystick Transducer Simulator
Robotic Tele-Echography
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Conditions of success

• INTERNAL
  - Team work (MD, Engineers, designers, managers)
  - Definition of the problem, solutions and clinic applications.
  - Model analysis: SWOT matrix
  - Indicators definition
  - Technical and biological tests
  - Results analysis
  - Stage of redefinitions, adjustments and learning curves
  - Definition of business, administrative and care processes
  - Pilot Project (management and performance indicators, objectives and targets)
  - Socialization of results for the corporation

Conditions of success

- **EXTERNAL**
  - Identification of risk areas and type of intervention
  - Information Management Systems (population, social security, epidemiology, reference system, etc.)
  - Design and development of a program according to the locality.
  - State support
  - External socialization program
  - Training of health personnel required (internal and external)
  - Evaluation of task forces’ skills and competencies
  - Fase de pruebas
  - Inicio del modelo operativo
  - Evaluación de calidad, estadísticas y oportunidades de mejoramiento continuo, satisfacción al cliente, etc.

ROBOTIC TELE-ECHOGRAPHY

INTERCONTINENTAL EXPERIMENT – MAY 2012

Lower costs

Optimal times

Increased Quality Diagnosis

Increase in access to care

Social sustainability

TELEMEDICINE

Connectivity

Hardware
Software
Community
Government
Telemedicine: success indicators

- Helping users get the services they need, when and where they need it (**Access**)
- Promoting Health Services work better (**Effectiveness**)
- Improving knowledge and skills of those who provide health services (**Competence**)
- Cooperating with the improvement of legitimation of health Service (**Appropriation**)
Telemedicine: Success Indicators

• Getting better results at low costs (technical efficiency)

• Cooperating with the improvement of treatment dignity, providing autonomy to users, promptness of care (Responsiveness)

• Responding to the population’s needs (Liability)
Barriers to spread telemedicine

– Technical knowledge
– Economic viability
– Organizational alignment
– Behavior modification: Change Management.
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