

BRAZILIAN TELEHEALTH INITIATIVE

Ministério da
Ciência e Tecnologia



**The Telemedicine University Network, RUTE,
currently connecting 19 University Hospitals,
will connect 57 across all federal states until 2009**



Ministério da
Saúde



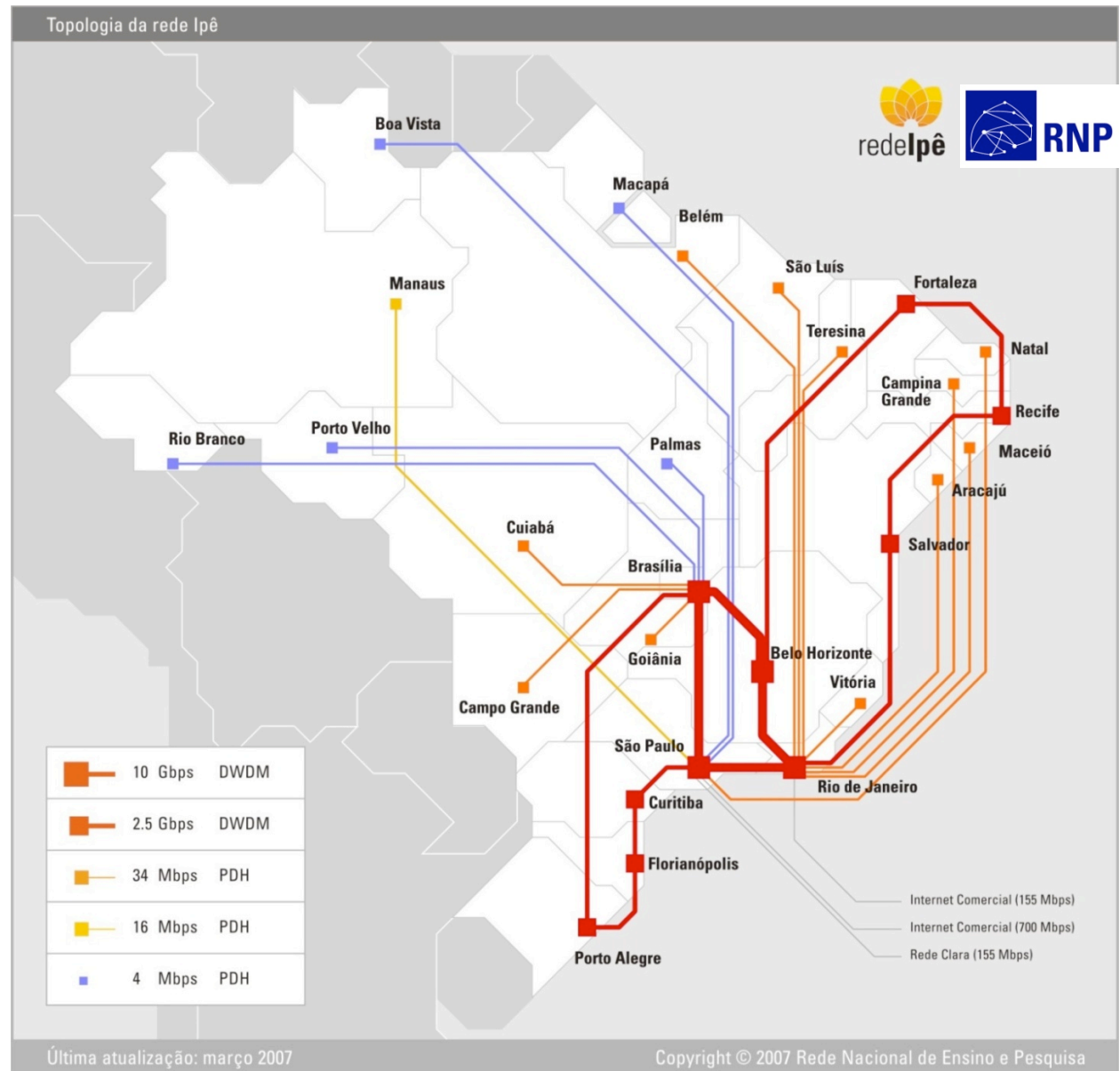
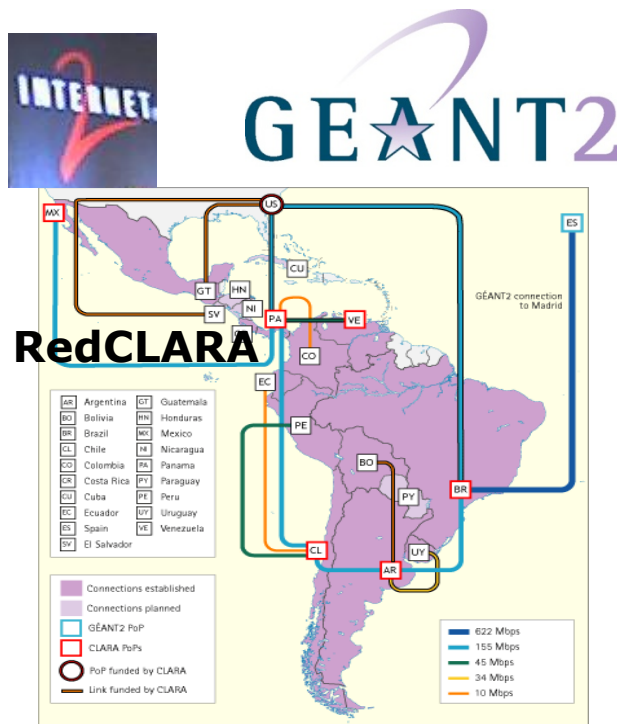
**The National Telehealth Primary Care Program,
initially rolled out across nine states and 900 municipalities**



Brazilian Telehealth Institutional Activities at national level

- ❑ Integration of Federal Ministries initiatives : Health, Science & Technology, Education, Communication and Defense
- ❑ RUTE – Telemedicine University Network, Ministry of Science and Technology, started January 2006
- ❑ Portaria n° 561, March 16th 2006, Ministry of Health constitutes the Permanent Commission of Telehealth
- ❑ Portaria n° 35, January 1st 2007, Ministry of Health constitutes the National Telehealth Program in the Primary Attendance, 9 States and 900 remote municipalities
- ❑ 2 International Workshops of the Laboratory of Excellence and Innovation in e-Health - Latin America and Europe, Belo Horizonte, Dec 2006 and Sep 2007
- ❑ Internet2 and RNP signed October 11th 2007 an MoU in Telemedicine and Telehealth, RUTE and US Health Sciences, to jointly lead and collaborate on the development of next-generation telemedicine and telehealth technologies and applications
- ❑ eHealth Public Policies in Latin America – BID(RG-T1509)

Brazilian National Education and Research Network



Rede Nacional de Ensino e Pesquisa (RNP) is a not-for-profit corporation incorporated under the laws of Brazil that interconnects over 350 education and research institutions, helping an estimated public of over a million users, and linking all the Brazilian regional academic networks.

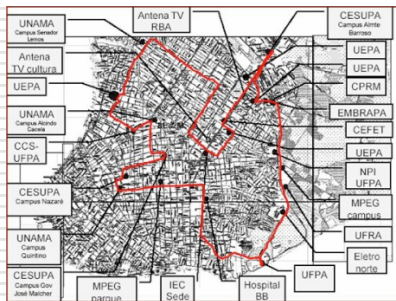


REDECOMEP

Education and Research Community
Metropolitan Area Network

www.redecomep.rnp.br
info@redecomep.rnp.br

National Education and Research Network – RNP
“promoting the use of advanced networks in Brazil”
A 1Gbps R&E-Ring in each of the 27 state capitals!



Belem



Vitória



**Manaus,
Amazonas**

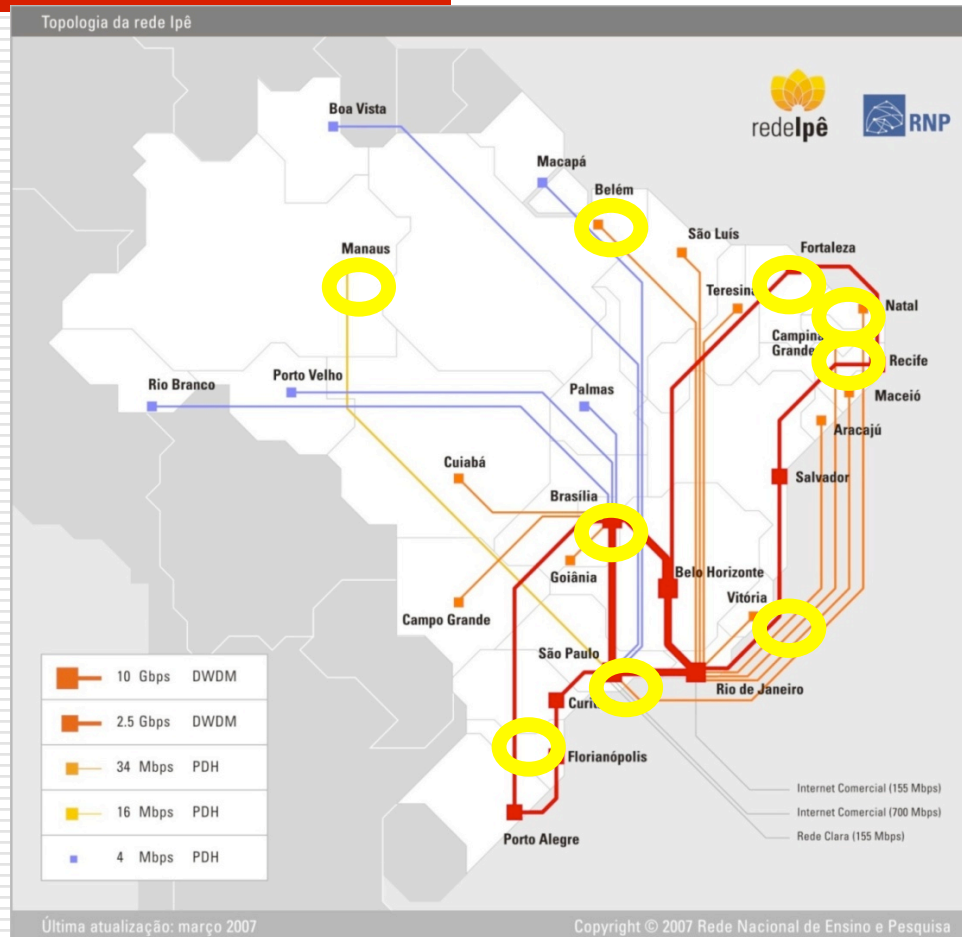


Brasília

REDECOMEP

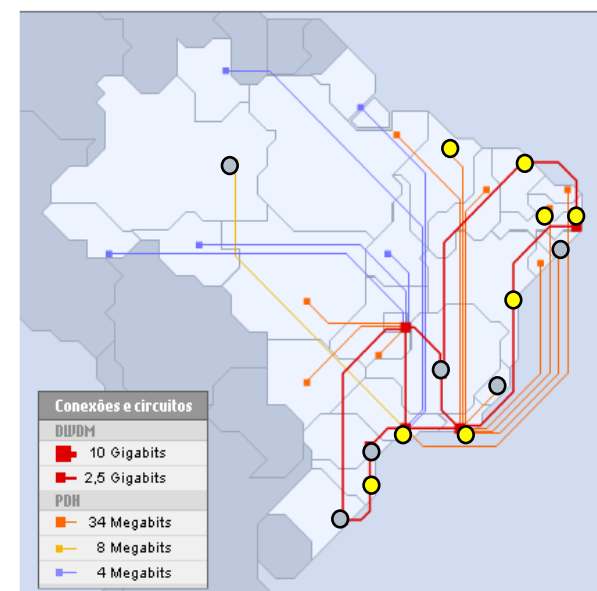
Education and Research Community Metropolitan Area Network

www.redecomep.rnp.br
info@redecomep.rnp.br



- Hospital São Paulo e Escola Paulista de Medicina - Unifesp, (São Paulo)
- Hospital das Clínicas - FM USP, (São Paulo)
- Hospital Universitário de São Paulo - USP (São Paulo)
- Hospital das Clínicas da Unicamp (Campinas/SP)
- Instituto Dante Pazzanese de Cardiologia (São Paulo)
- Hospital Universitário Pedro Ernesto - UERJ (Rio de Janeiro)
- Fundação Oswaldo Cruz, (Rio de Janeiro)
- Hospital Universitário Prof. P. E. de São Thiago - UFSC (Florianópolis)
- Hospital das Clínicas Prof. Arnóbio Marques - UFPE (Recife)
- Hospital Universitário Walter Cantídio - UFC (Fortaleza)
- Hospital da Irmandade da Santa Casa de Misericórdia, (Porto Alegre)
- Hospital Universitário Getúlio Vargas - UFAM (Manaus)
- Hospital das Clínicas – UFMG, (Belo Horizonte)
- Hospital Universitário - UFES (Vitória)
- Hospital Universitário Prof. Alberto Antunes - UFAL (Maceió)
- Hospital Universitário Prof. Edgar Santos - UFBA (Salvador)
- Hospital das Clínicas - UFMA (São Luís)
- Hospital Universitário Lauro Wanderley -UFPB (João Pessoa)
- Hospital Universitário - UFPR (Curitiba)

RNP > Operação do backbone > Mapa do backbone RNP



Participating Hospitals – January 2006



RNP



R · U · T · E
REDE UNIVERSITÁRIA DE TELEMEDICINA

Which infr@structure services are essential for a Telemedicine University Network?

- Enable the communication infr@structure
 - Guarantee the service quality and integration
 - Stimulate collaborative research, medical assistance and interinstitutional courses
 - Involve the main actors: government, academy and enterprise
 - Provide indicators and evaluate tele-services
 - Enable demonstration projects
 - Organize health specialties groups
-



Federal Medical Council

Resolução CFM nº 1643/2002

Art. 1º - Defines Telemedicine as the Medical practice through the use of interactive audio-visual communication methodologies, with the aim to assist, educate and research in Health.

Resolução CFM nº 1639/2002

Art. 1º - Approves Technical Norms for Systems that store and handle Electronic Health Records.

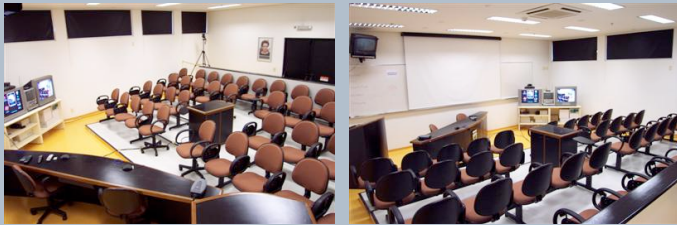
Phase 2/2007: Manual for Certification of Electronic Health Record Systems

Support to Telemedicine and Telehealth Workshops:

- Manaus, Amazonas, March 2007
- Recife, Pernambuco, May 2007
- Brasília, Federal District, September 2007

Existing Groups and Applications

Medical
Videoconferences
Collaborative Work
Case Study

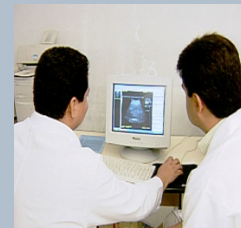


Unifesp

Teleconsulting
and Image
Telediagnostic



ISCMPA

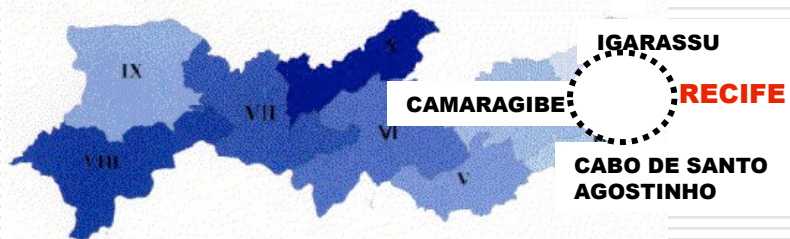


Ufes

Distant Education
Continuous Education



FM-USP



Health Family Program
Video on demand
VC Sessions
Distant Courses
Specialties participation

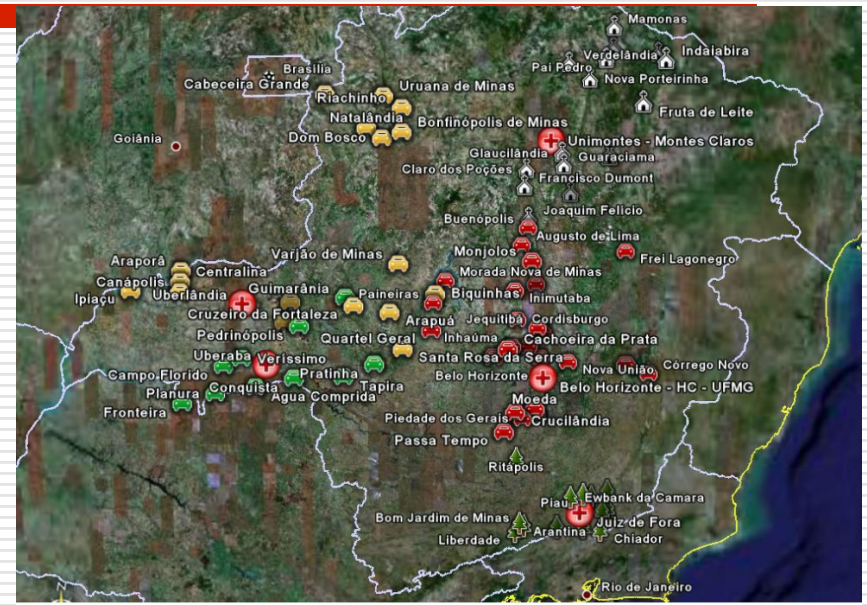


University Hospital
Federal University of Pernambuco - UFPE



Telehealth - Federal University of Minas Gerais - UFMG

Minas Telecardio
Minas Gerais State Secretary of Health



**More than 300
Municipalities**

**12hours a day
500 ecg/day
(UFMG, UFU,
UFTM, UFJF)**



Fraunhofer Gesellschaft



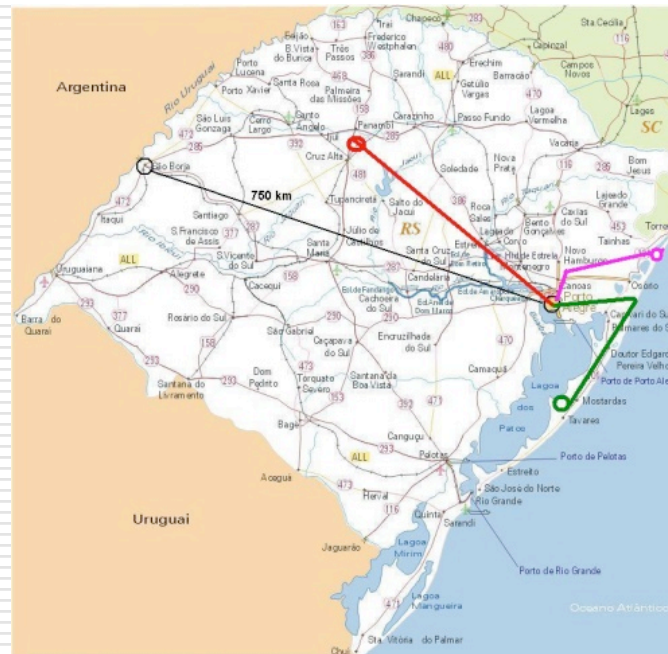
Biomedical Engineering

Computer Graphics Research

State of Espírito Santo



State of Rio Grande do Sul



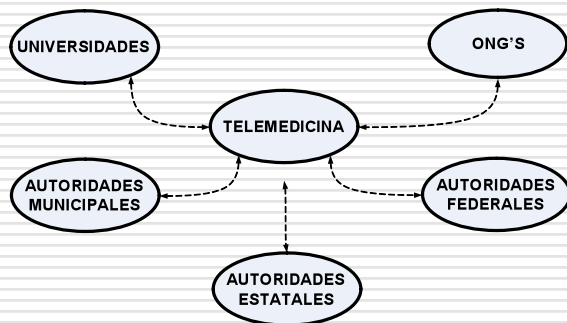
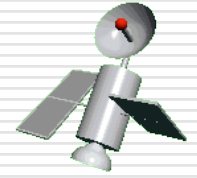
Telemedicine for Remote and Rural Underserved Regions in LA Using e-Health Platforms

**Image Telediagnosis: Ultrasound, X-Ray, Tomo
University Hospitals and Health State and Municipal Secretaries**

Telemedicine National Program e-México



<http://www.centec.gob.mx>



Telecardiografía
Tele-educación
Telecirugía



Parallel Session e-health , Lisbon, April 28th -29th 2006

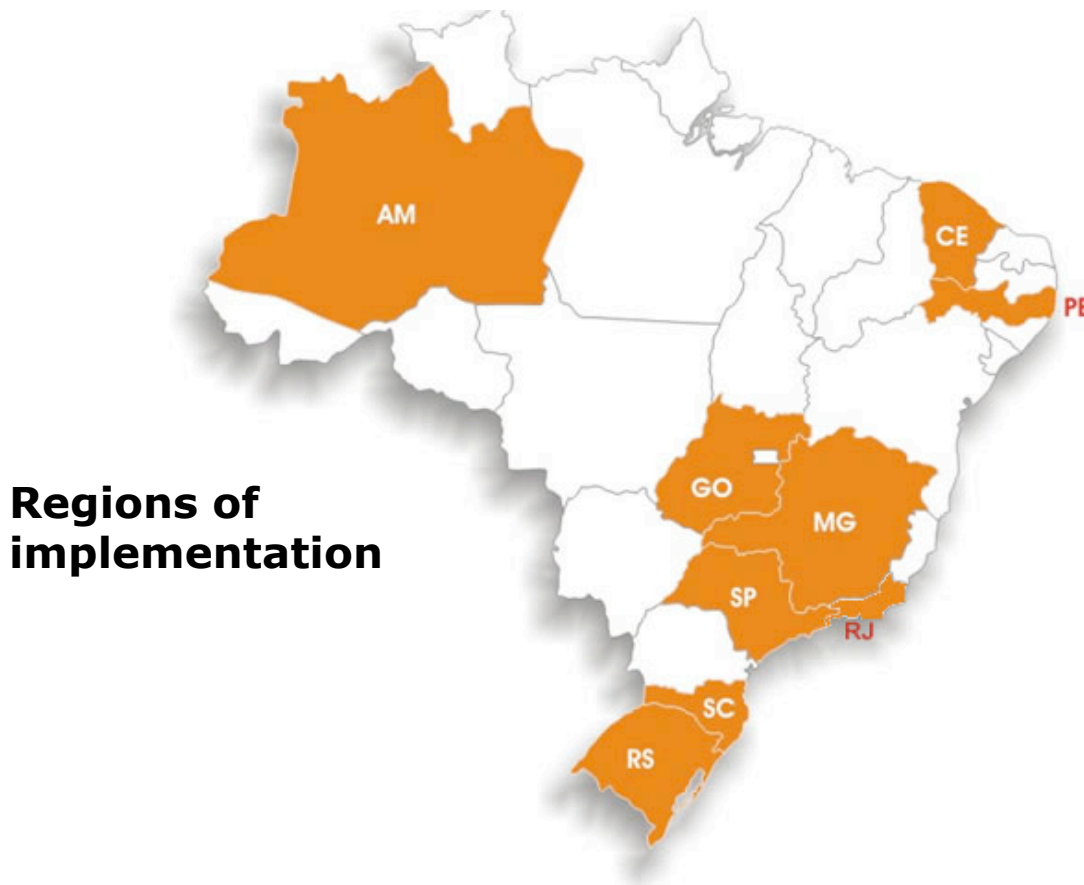
Revista FOCUS – Septiembre 2006

Evento de Lanzamiento de la Red Académica Avanzada Ecuatoriana – CEDIA

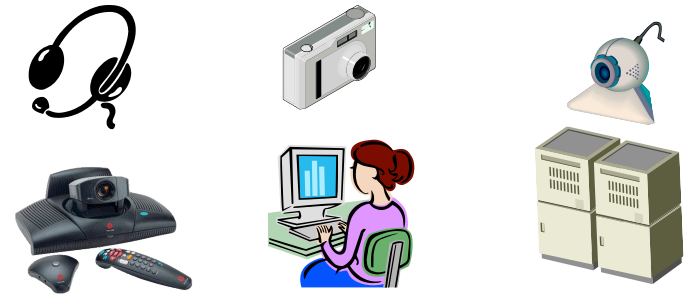


- **Acceso al Proyecto T@LEMED – Telemedicina de Brasil**, esta presentación, tuvo la participación local del Dr. Ricardo Hidalgo, Decano de la Facultad de Ciencias de la Salud de la UTE y desde Brasil al Dr. Leonardo Avanza, Experto en tele diagnóstico de la Universidad Hospital de Espírito Santo de Brasil.

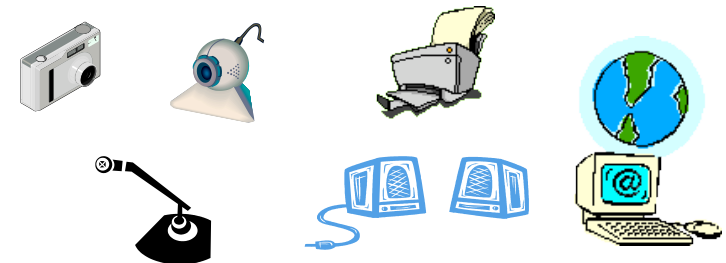
Telehealth applied to Primary Care and the Family Health Program



9 Reference Centers



9 x 100 remote sites



25.000 teams → 100.000.000 people

www.saude.gov.br/sgtes

Ministry of Health



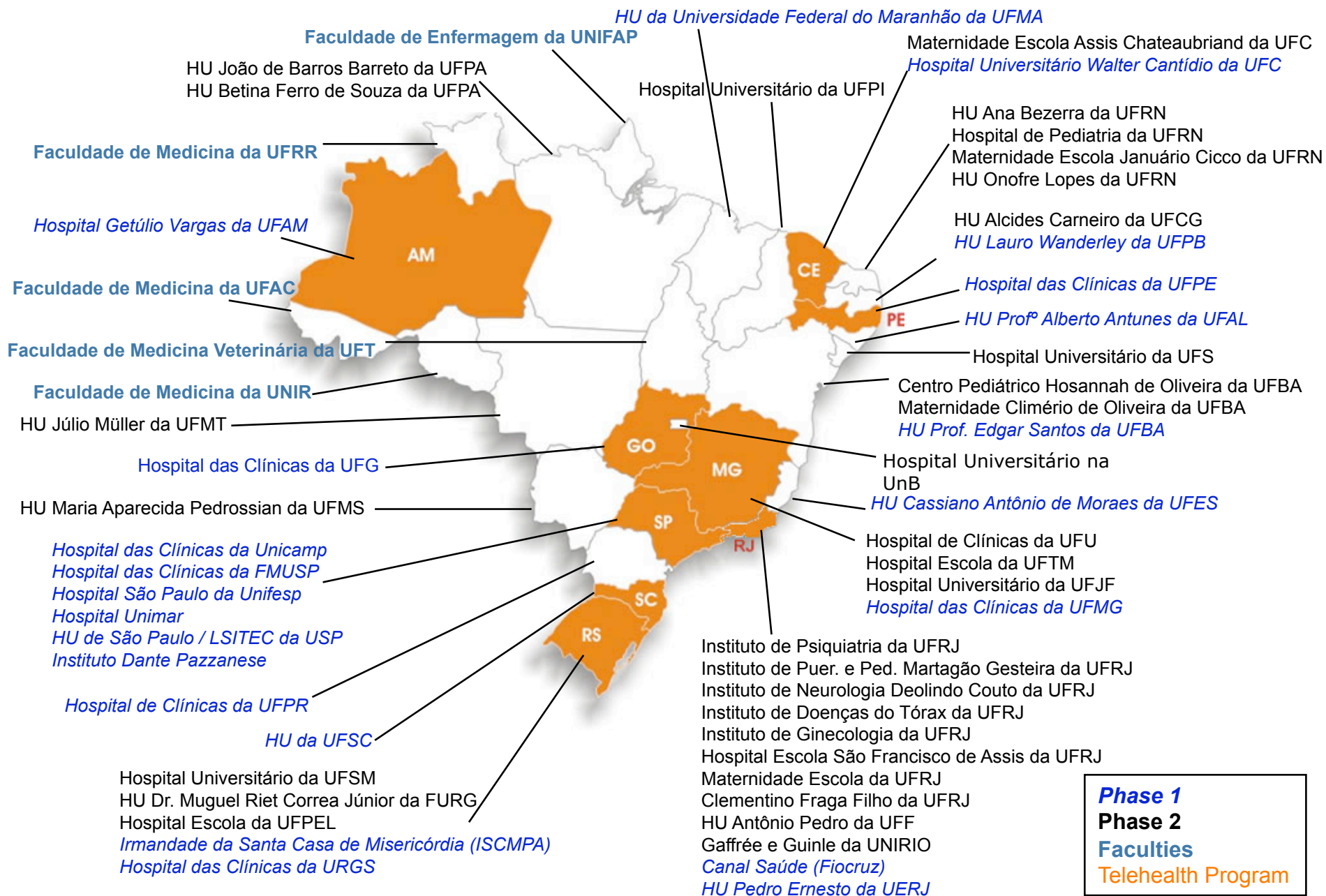
Points of Telehealth

**Telehealth points
in Brazil for 2008**



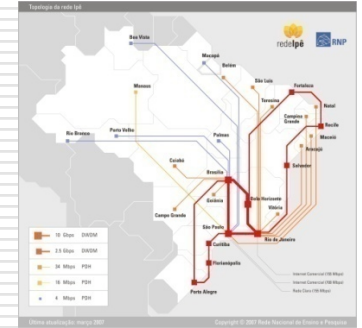
Participation of all Brazilian States

List of University Hospitals – Telemedicine University Network RUTE – 01/2007



Phase 1
Phase 2
Faculties
Telehealth Program

University Hospital Infra-structure



- ❑ Connection to a 1Gbps Metropolitan R&E Ring
- ❑ Create a Telehealth Unit with Videoconference Room, Teleconsult, Telediagnosis
- ❑ Participate in Special Interest Groups
- ❑ Demonstrate teleassistance, teleeducation and teleresearch

12 University Hospitals on-line

+7 December 2008

+ 18 June 2009

+ 20 December 2009

Special Interest Groups - SIGs

- Telehealth Standards
 - Nursing
 - Dentistry
 - Otorrinolaringology
 - Toxicology
 - Trauma and Ortopedics
 - Dermatology
 - Pediatrics Radiology
 - Neonatology
 - Children and Adolescent Health
 - Cardiology
 - Continuous education
 - Others under construction ...
-

Health Sciences Partnerships so far identified between Universities and Health Institutions in Brazil and USA

MoU Internet2 and RNP

Brazilian Universities and Health

Institutions:

Universidade Federal Paulista UNIFESP
Universidade Estadual de São Paulo USP
Universidade Federal de Minas Gerais UFMG
Universidade Estadual do Rio de Janeiro UERJ
Universidade Federal do Rio de Janeiro UFRJ
Universidade Federal do Espírito Santo UFES
Universidade Federal de Santa Catarina UFSC
Universidade Federal do Ceará UFC
Universidade Federal da Bahia UFBA
Universidade Federal de Brasília UnB

Special Interest Groups -

SIGs: Oncology,
Orthopaedic Surgery,
Pathology, Pediatrics,
Autopsy, Virtual Man, Rural
Internship, Sportmedicine,
Radiology, Orthopedica and
Trauma, Cardiology,
Gastroenterology, Hepatology,
Liver transplantation,
Immunology, Infectious
Diseases, Tropical Diseases,
Adolescent Medicine &
Health, Contraception/
Human Reproduction,
Telepsychiatry, Dermatology,
Bio-Informatics, Nursing,
Otorrinolaringology,
Anesthesiology, Pediatric
Surgery, Endocrinology,
Pneumology, Rheumatology,
Alzheimer, Mastology,
Nefrology, Urology, Violence
Prevention, Health Rights,
Ethical and Legal Issues.

American Universities and Health Institutions:

University of Florida ,
St. Jude Children's Research Hospital ,
Colorado University,
University of Pittsburgh,
University Medical School Chicago,
Medical Missions for Children,
Georgetown University,
University of California ,
Stanford University,
Cornell University Medical College,
University of Iowa,
University of Pennsylvania,
University of Cincinnati,
University of Maryland,
Children Hospital in Pittsburgh,
Cleveland Clinic Children's Hospital,
Virginia Commonwealth University,
University of Kentucky,
University of Arizona,
University of Miami Miller School of Medicine,
University of New York

2008 PICMED Speaker Schedule

2008 Program of Innovative Continuing Medical Education in Dermatology

"Evidenced Based Care of Venous Leg Ulcers and Diabetic Foot Ulcers"

Dr. Robert S. Kirsner, M.D., PhD
Vice Chairman & Stiefel Laboratories Professor
Department of Dermatology & Cutaneous Surgery
University of Miami Miller School of Medicine

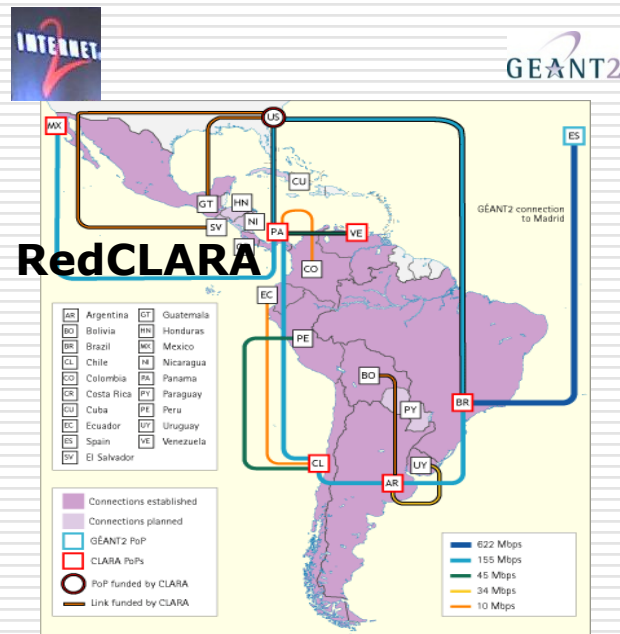
Friday, September 5, 2008
12:00noon – 1:00pm EST (Miami)



Date	Speaker	Topic
7 March 2008	Dr. Lawrence Schachner	Vesicular eruptions of newborns
4 April 2008	Dr. Robert Johr	Dermoscopy: basics
2 May 2008	Dr. Joely Kaufman	Light Treatments
6 June 2008	Dr. Brian Berman	What's New for Warts & Keloids?
11 July 2008	Dr. Jonette Keri	Acne and rosacea update
1 August 2008	Dr. Paolo Romanelli	Histopathology of wound healing, basic concepts and novel markers
5 September 2008	Dr. Robert Kirsner	Evidenced based approach to venous leg & diabetic foot ulcers
3 October 2008	Dr. Javier Alonso	"Ulcerative Psoriasis"? Beware of Fatal Cytotoxic Cutaneous Lymphoma
7 November 2008	Dr. Anne Burdick	Hansen's Disease
5 December 2008	Dr. Keyvan Nouri	Cutaneous Laser Surgery



**Ministries of Health participating:
Brazil, Colombia, Ecuador, México, Uruguay**



Project components

- 1. Regional Standards for transmission and infra-estructure**
- 2. Strategy for the promotion, prevention and assistance through telehealth**
- 3. Regional guide for telehealth managing**
- 4. Strategy for a LA Telehealth University Network**
- 5. Telehealth training and certification**

Project RG-T1509 : eHealth Public Policies in Latin America

First steps to nation wide eHealth

- ❑ Availability of communication infra-structure
 - ❑ National dissemination of eHealth activities (research, education and assistance)
 - ❑ National eHealth coordination and execution
 - ❑ Ministerial Integration
-

State and municipal steps

- ❑ Integrate local and national projects
 - ❑ Integrate and motivate health professionals in rural and underserved areas
 - ❑ Develop an operational partnership on specific exams such as ECG
 - ❑ Stimulate R&E Agencies and demonstrate eHealth results
-

Scientific Impact

- ❑ Increase national, regional and international collaboration, yielding increase in the scientific production
 - ❑ New teaching methodologies and contribution to human resources development
 - ❑ Increase scientific production in regions yet with no significant contribution
 - ❑ Results dissemination to scientific, entrepreneurial and governmental communities
 - ❑ Authorities awareness to eHealth procedures at municipal, state and national level
-

Technological Impact

- ❑ Opportunity to execute technological development and collaboration in advanced communication networks
 - ❑ Human resources specialization in rural and underserved areas
 - ❑ New tools and technologies to support eHealth (research, education and assistance)
 - ❑ Stimuli to creating specialized pedagogical media
 - ❑ Stimuli to integrating specialists in on-line discussions, increasing video- and web-conferencing
 - ❑ New processes to regulate procedures and internship
 - ❑ Remote patients monitoring
-

Economic Impact

- ❑ Cost reduction to maintain network access
 - ❑ Cost reduction for future network evolution
 - ❑ Reduction in unnecessary patients displacements
 - ❑ Reduction in waiting queues for attendance
 - ❑ New statistic information
 - ❑ Disease outbreak previous deteccion in rural and underserved areas
-

Social Impact

- ❑ eHealth Digital inclusion
 - ❑ Specialized remote diagnosis and consulting
 - ❑ Better health attendance in rural and underserved areas
 - ❑ Increase specialized attendance
 - ❑ Continuous education to health professionals
 - ❑ Innovative approach to the Brazilian Family Health Program
-

Lessons applied in Brazil

- ❑ Family Health Program
 - ❑ Connectivity and eHealth Units in university and educational hospitals
 - ❑ Implement Telehealth procedures (continuous education, second opinion and Teleconsult) into rural and underserved regions
 - ❑ International collaboration
 - ❑ National coordination
-

Achieved Results

- ❑ Comprehension of the technological opportunity
- ❑ Infr@-structure in University and Educational Hospitals
- ❑ Acceptance of eHealth norms
- ❑ Stimulate academy, government and enterprises
- ❑ Broaden discussion on health prevention
- ❑ Enable international collaboration

Telemedicine and eHealth – building collaborative Networks in Research, Education and Assistance for Diagnosis and Health Treatment in Brazil



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