

Brazilian Policy Standards for Health IT: a practical approach for interoperability of telehealth systems

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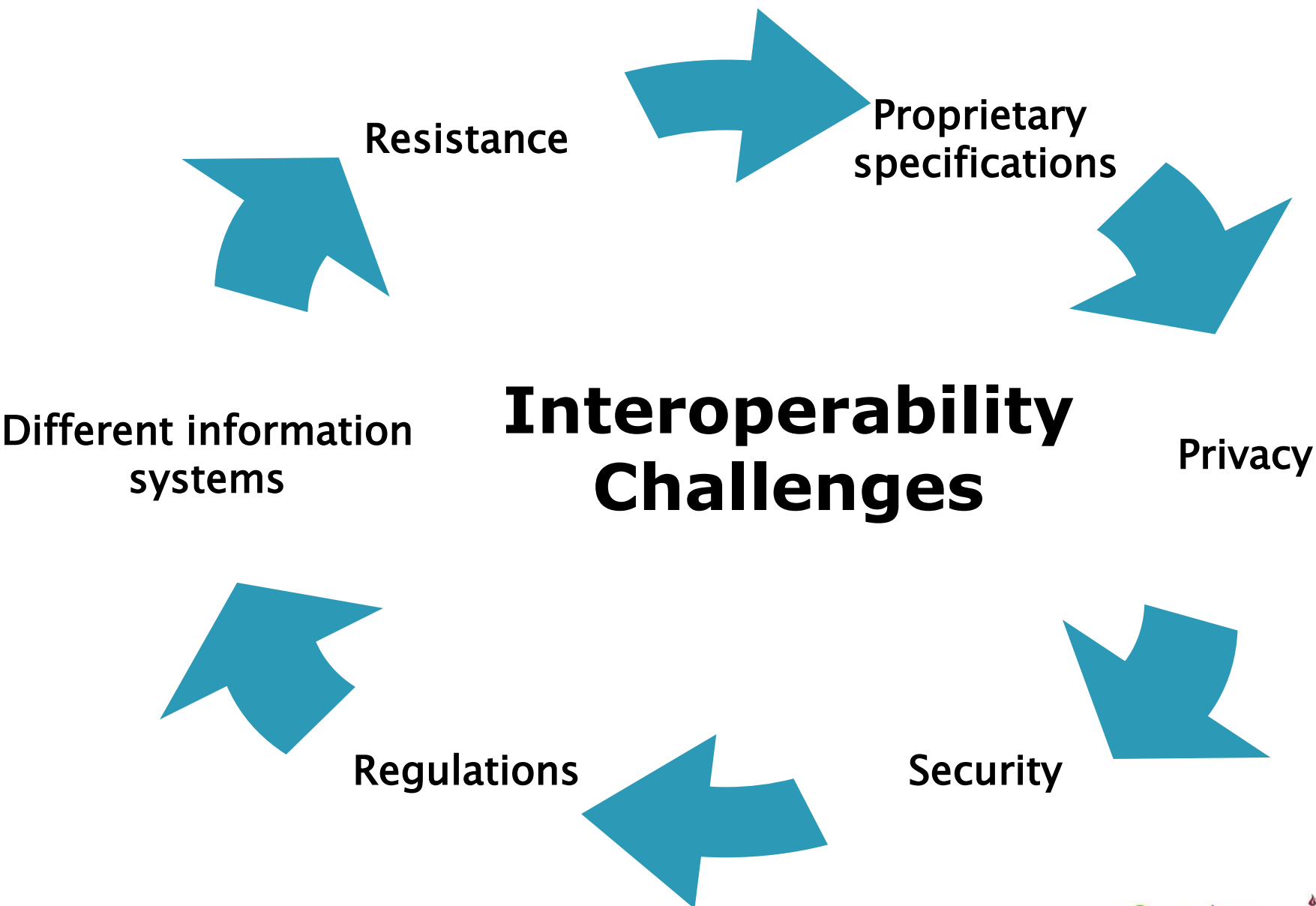
Telehealth services could potentially help health systems cope better with the

- ✓ **Growing demands arising from aging populations**
- ✓ **Need for chronic disease management**
- ✓ **Ever-increasing consumer expectations**

Interoperability



Exchange both computer data and human information and knowledge



Different practices

Different technologies



Teleassistance



Teleconsultation



Telemonitoring



mHealth



Tele-education

Teleseminars

Telemanagement



Telemeeting

On a multi-actors environment:

- **Hospitals**
- **Pharmacies**
- **Primary care physicians**
- **Patients in their homes**
- **Administrative entities**
- **Insurance companies**
- **Academic institutions**
- **Government agencies**

Problems of Lack of interoperability

- **Limits data sharing, utilization, and the comparison of data, algorithms, and approaches**

(Developing Next-Generation Telehealth Tools and Technologies: Patients, Systems, and Data Perspectives. Telemed J E Health. 2010 Jan-Feb; 16(1): 93-95)

Initiatives

- **Integrating the Healthcare Enterprise**
- **Continua Health Alliance**
- **European Institute of Health Records**
- **European Health Telematics Association**

In Brazil, the Ministry of Health released a new recommendation

“Regulates the use of standards for interoperability and health information systems under the Brazilian Health Unified System, for Municipalities, Districts, States and Federal levels, for public systems and private health care”

(Ordinance Number 2.073, August 2011)

*open***EHR**



SNOMED-CT

SOAP



Ontologies



A major challenge right now is to bring into practice these standards for the Telehealth Brazilian strategies.

The Brazilian Ministry of Health has established an eHealth program in 2007

- To deal with the lack of health care providers in rural communities, small or isolated areas and a high staff turnover
 - Focus on primary care
 - Today up to 30,000 family health care teams
- The program implemented a national telehealth network to improve access and quality of patient care by providing "in-service" professional updating and second opinion

The screenshot shows the homepage of the Telessaúde Brasil Redes website. At the top, there is a header with the Telessaúde logo and the text 'GOVERNO FEDERAL Ministério da Saúde'. Below the header, there is a search bar and a 'PESQUISAR' button. The main content area is divided into several sections: 'Programa Telessaúde' with a list of topics like 'Expansão do Telessaúde', 'Relatos de experiências', 'História do Telessaúde', and 'Legislação'; 'Perguntas Frequentes' with a list of questions like 'Como está composto o Telessaúde?', 'Quem pode utilizar os serviços oferecidos pelo Telessaúde Brasil?', and 'Como se dá a ampliação e expansão do Programa Telessaúde Brasil?'; 'Teleodontologia em Foco' with a list of topics like 'Rede Nacional de Teleodontologia e núcleos', 'Objetos de aprendizagem', and 'Segunda Opinião Formativa Saúde Bucal'; 'APS e Redes de Atenção à Saúde' with a list of topics like 'Segunda Opinião Formativa', 'Objetos de aprendizagem', and 'BVS APS'; 'Telessaúde em Foco' with a list of topics like 'Núcleos e pontos de telessaúde', 'Reuniões, oficinas e seminários', 'Glossário de Telessaúde', 'Literatura em Telessaúde', and 'Espaço Colaborativo'; and a right sidebar with a video player showing a man speaking, and sections for 'Acontece no Telessaúde' (Seminário Virtual Rede Álcool e Drogas, dia 03/10 às 14h; Curso Atenção à Saúde da Gestante e Puérpera) and 'Acontece na Teleodontologia' (Você conhece a Rede Nacional de Teleodontologia?). At the bottom, there is a section for 'Rede Telessaúde Brasil' with a table listing the states and territories covered: Norte (Amazonas, Tocantins), Nordeste (Ceará, Pernambuco), Centro-Oeste (Goiás, Mato Grosso do Sul), Sudeste (Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo), and Sul (Rio Grande do Sul, Santa Catarina). Below the table, there are logos for the RNP (Rede Nacional de Ensino e Pesquisa), RUTE (Rede Unificada de Telessaúde), and UNA-SUS (Universidade Aberta do SUS).

www.telessaudebrasil.org.br

Program infrastructure

- 11 statewide telehealth networks connecting telehealth centers to sites on family health care facilities over the internet
- In January 2012, the program reached 1500 health sites in 950 municipalities all over the country
- Each state telehealth network using the same approach but different systems to provide the services

Telehealth Sites



Primary care facility



Communities and Schools

Telehealth Services



The program has the challenge to overcome incorporating telehealth services in the health care supply chain

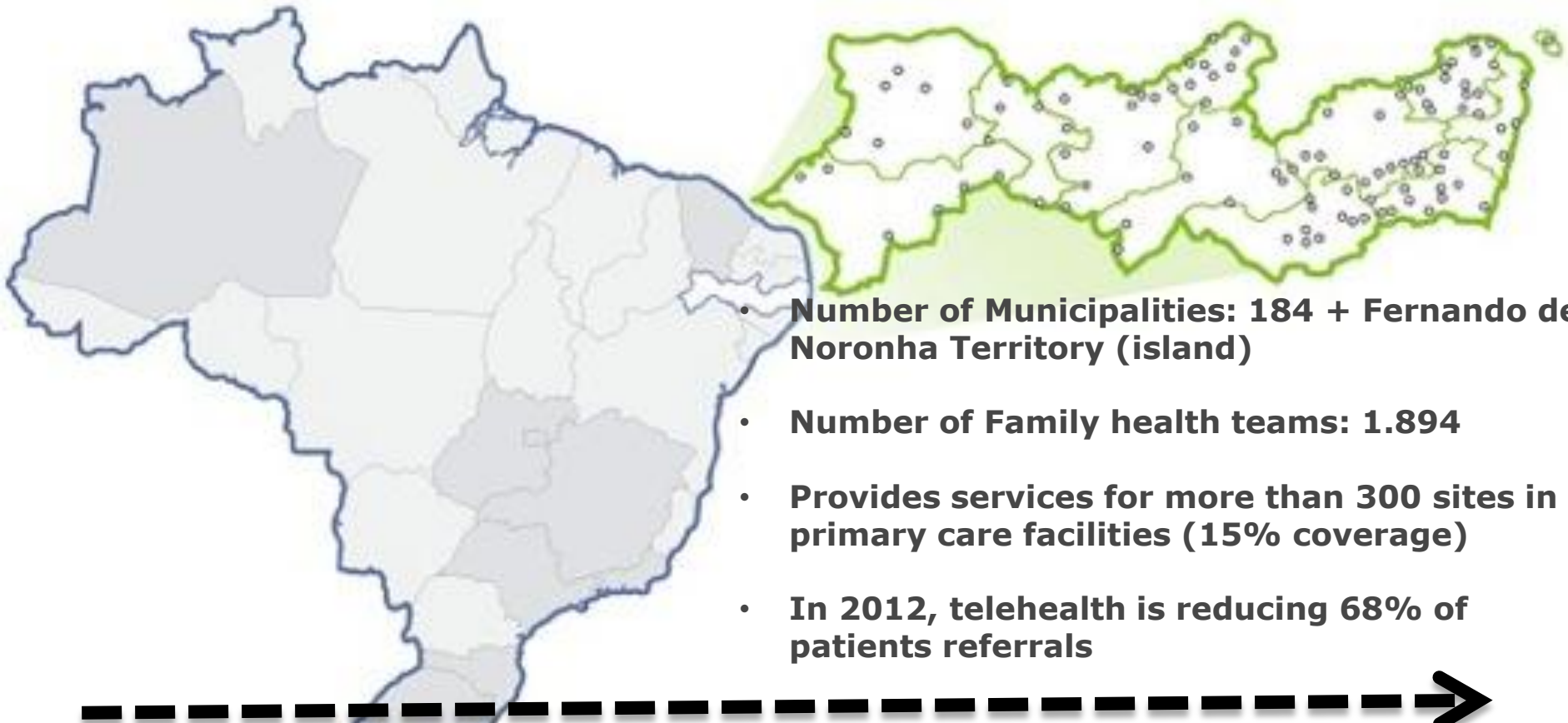
- **Defining new health care procedures for telehealth.**
- **Creating new telehealth data registries.**
- **Integrating telehealth procedures into the patient electronic record systems.**
- **Integrating telehealth systems into others health care systems.**
 - such as for service regulation (specialized procedures scheduling) in order to referral patients to other levels of care
- **Incorporating telehealth registry information into the National Electronic Health Record.**
- **Providing clinical evidence to support information retrieval and to enhance patient care.**
- **Generating new health care indicators for decision making process.**

RedeNUTES Telehealth Centers Network of Pernambuco

**Member of The Brazilian eHealth Program of the Ministry
of Health
Coordinated by the Telehealth Center of UFPE**



Telehealth Centers Network - RedeNUTES in Pernambuco



RedeNUTES faces the problem of telehealth interoperability

► Several services using different software:

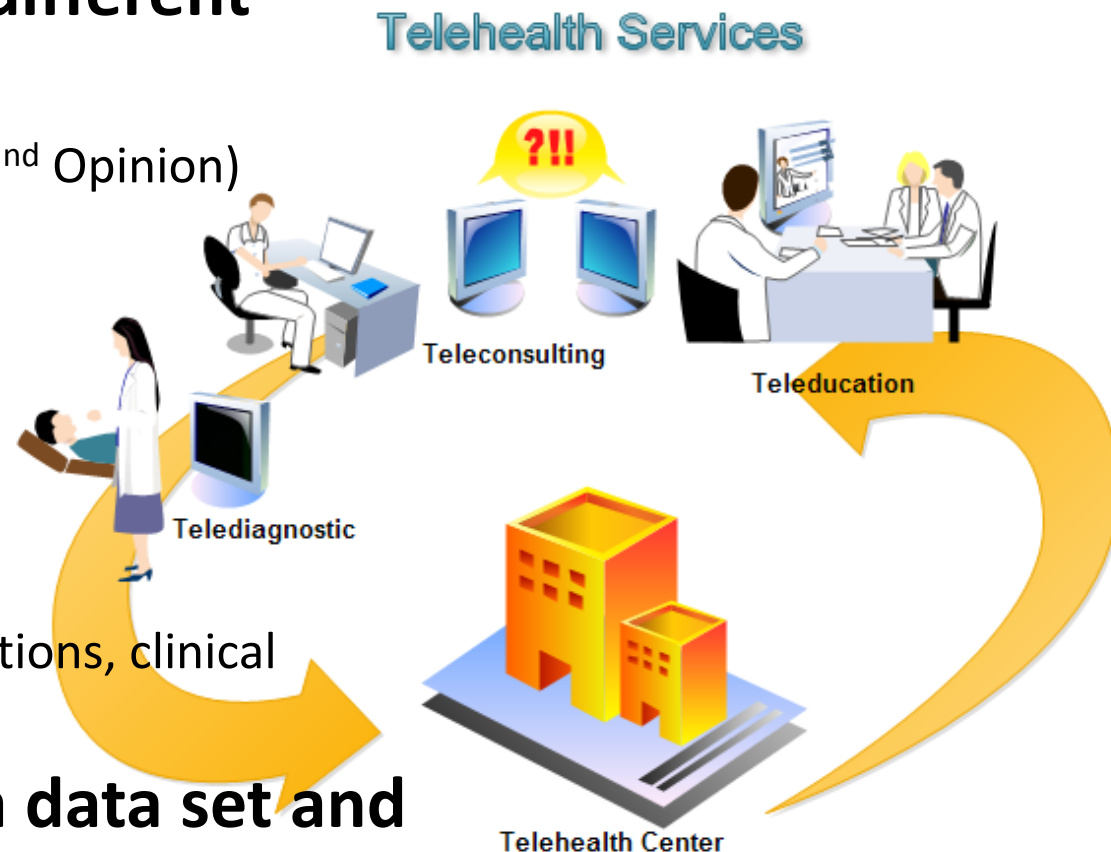
- Synchronous Teleconsulting (2nd Opinion)
- Asynchronous Teleconsulting
- Telediagnostic
- Tele-education

► Replicated data over different systems:

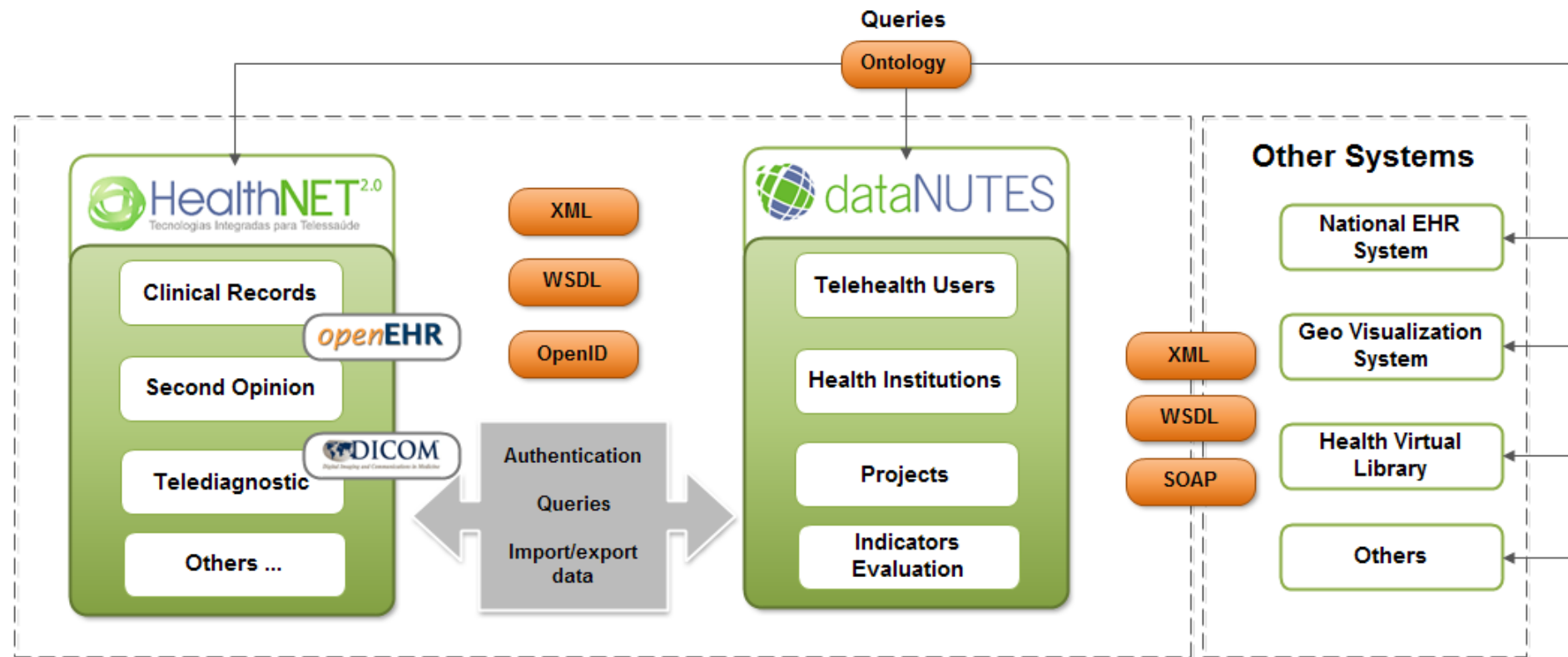
- Patients, Professionals, Institutions, clinical information, etc.

► Each system provides a data set and produces different indicators

- Telehealth registries



RedeNUTES interoperability strategy (under development)

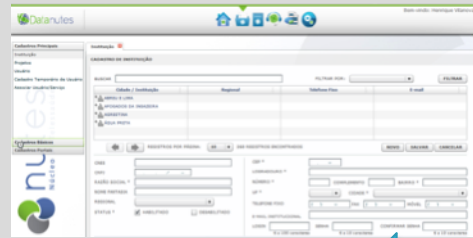


Ontologies enable semantic interoperability

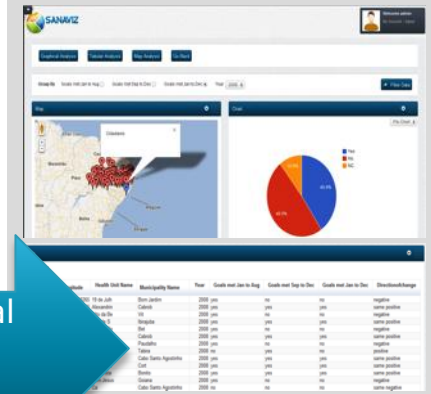
Social Network Platform to Telehealth services



Telehealth Management Information System



Geo visualization System



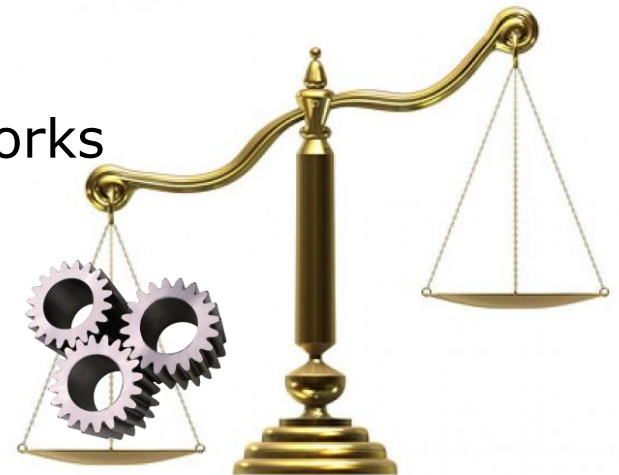
Patients, Clinical
information,
Indicators

Users, Clinical
information,
Indicators

The need of a unified telehealth services management to facilitate outcomes evaluation and the decision making process

Despite all available standards ...

- **System integration and interoperability is still a major concern for stakeholders and developers to meet the real need of end-users**
- **Implementation can lead to higher costs of development**
 - Specialized professionals skills
 - User-friendly system interface
 - High-performance computer and networks



Thank you !

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