



Regional Policy Dialogue
Social Protection and Health Network

Digital Transformation of the Health Sector in Latin America and the Caribbean

Electronic medical records

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The first piece of the puzzle



- **IT governance**
 - Elements of the Brazilian strategy for EHR implementation
 - Actors
- **Challenges and good practices during implementation**
 - challenges and facilitating factors of the Brazilian experience
- **ICT Brazilian Survey:2013-2017 (CETIC – NIC.BR)**
- **Legislation**
 - Brazil Internet Bill of Rights
 - General Data Privacy Law

Principles

Governance and Health Informatics

Without a governance structure, IT at healthcare systems can result in late, over-budget projects and disparate systems that do not function well together.

IT governance is needed because there is an almost infinite need for IT and finite resources available.

Handling information may be expensive thus to maximize its resources, a system should have a way to determine which information to retain or dispose based on its use.



GOVERNANCE

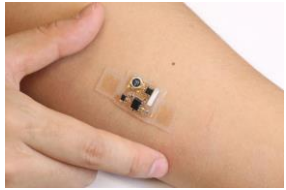
Gives the framework on how correctly, legally and efficiently information should be handled or processed

Guides a Health Informatics System to run smoothly to improve health care services in the country.

Specify the decision rights and accountability framework to encourage desirable behavior in using IT.

Governance is about systematically determining who makes each type of decision (a decision right), who has input to a decision (an input right) and how these people (or groups) are held accountable for their role.

Body and Personal Area Network



Global Area Network

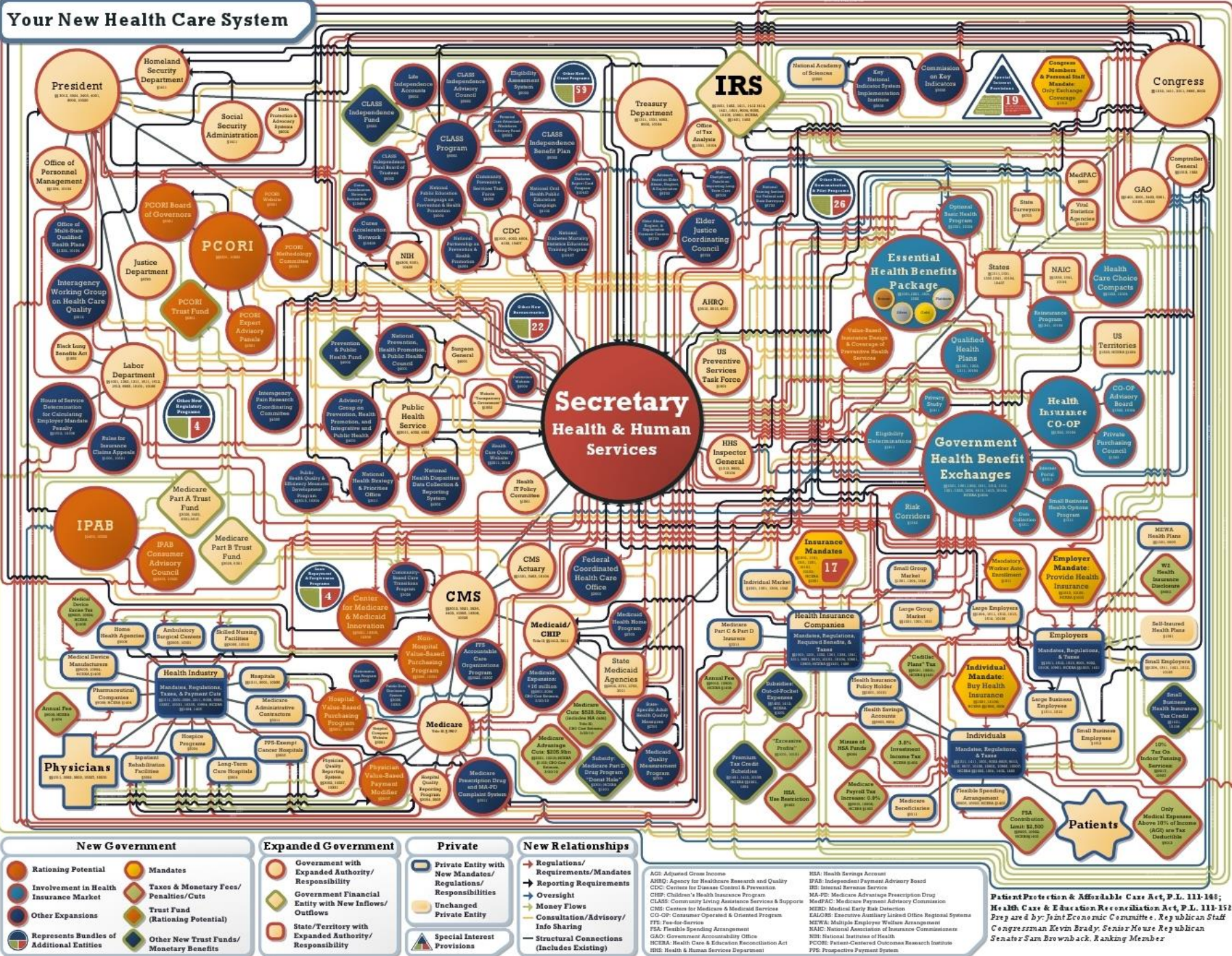


RDFI - Sensors



Local and Wide Area Network

Your New Health Care System



MORE THEN 70% OF BRAZIL'S POPULATION USE THE PUBLIC HEALTH SYSTEM EXCLUSEVELY

71,1% of Brazilian residents declare to use the public health care system (PNS 2013)

47,9 million Brazilians have some type health insurance (ANS 2017)

The public health system benefits every Brazilian with actions such as vaccinations programs, urgency network and surveillance



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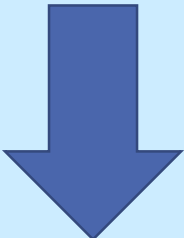

How do we structure the IT governance?

- **E-Health Strategy Steering Committee**

- The highest level of e-Health management in Brazil, linked to the Minister of Health
- Functions:
 - elaborate the e-Health Strategy for Brazil;
 - coordinate the development of computerized applications within the scope of the Ministry of Health, aiming at collecting information on health care processes, supporting administrative activities of health and flow facilities in the health care network, ensuring resolutivity.

- **General Data Protection Law**

Why MDS?

Current Situation	Setting up the future
<p>DATASUS Systems: over 600 different systems to collect data after the patient encounter.</p> <p>Local processing Txt archives</p> 	<p>Data collection during the encounter</p> <ul style="list-style-type: none">• EMR• eSUS AB• eSUS AMB• eSUS HOSP• Discharge summary 
<p>Development of systems according to the isolated national needs</p>	<p>BUS Service</p> <p>Electronic Health Record</p> <p>Minimum Data Set</p>

Information Systems

The image displays six distinct medical forms used in the Brazilian health system, each with a unique layout and purpose. The forms are arranged horizontally, showing a progression from general patient information to specific clinical and administrative data. The forms are: BPA-C, BPA-I, APAC, AIH, RAAS-AD, and RAAS-PSI. Each form includes fields for patient identification, medical history, and treatment plans.

BPA-C

BPA-I

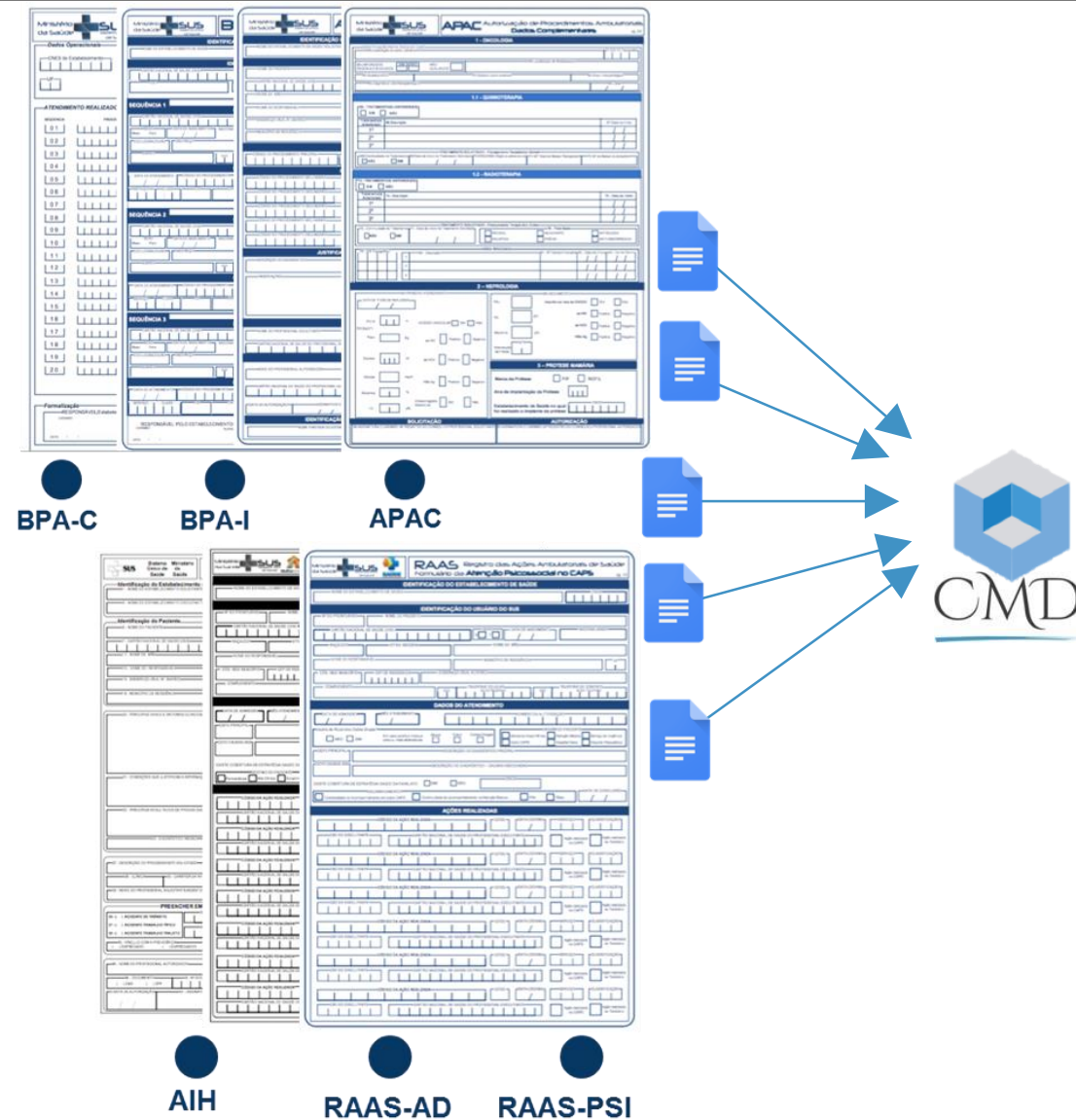
APAC

AIH

RAAS-AD

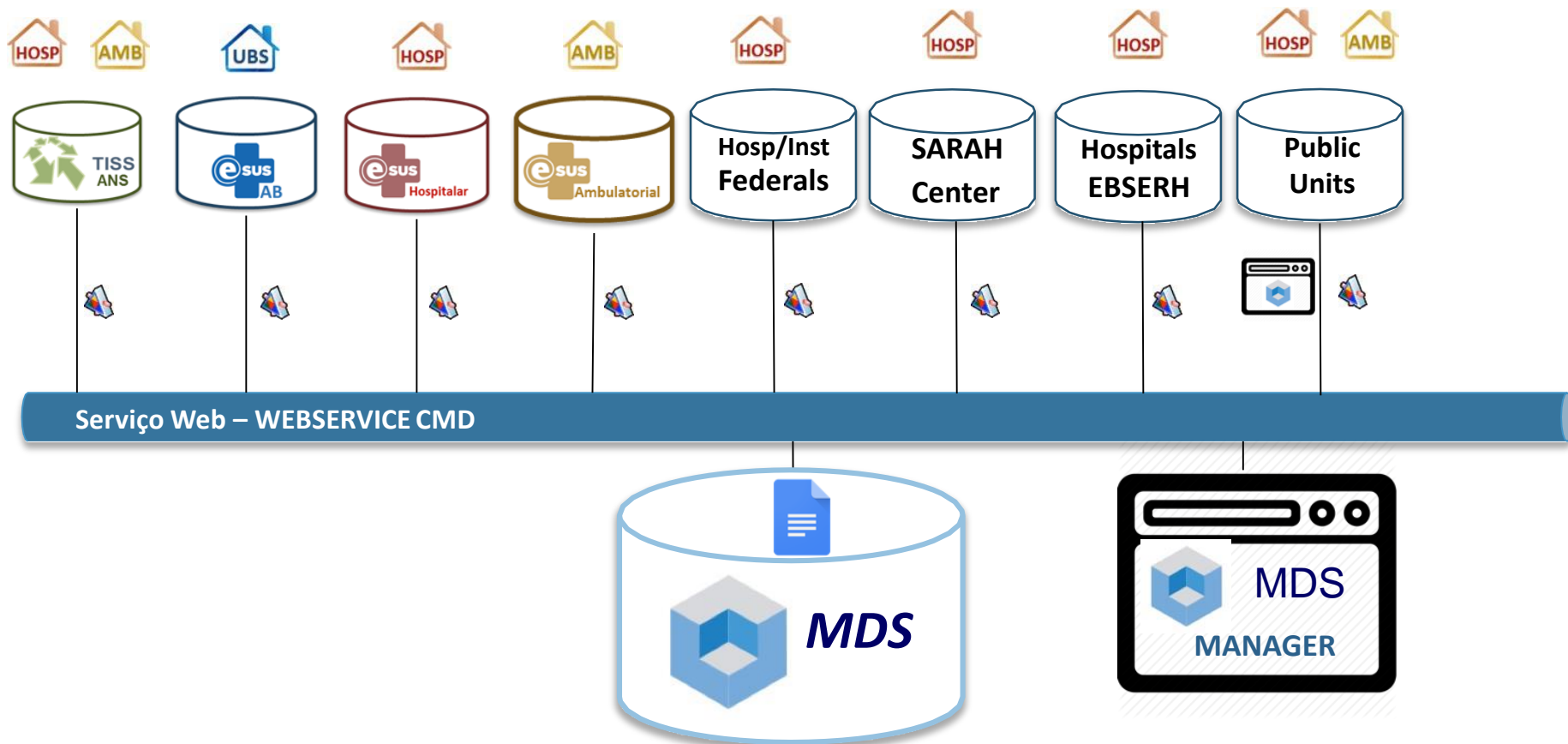
RAAS-PSI

Unifying information models



Item/Level	Occurrence	Information Model
1	[1..1]	Identification
2	[0..1]	CNES Number
2	[1..1]	Admission Data
3	[1..1]	Data
3	[1..1]	Precedency
3	[1..1]	Care Model
3	[1..1]	Assistance Type
2	[1..1]	Clinical Outcome
3	[1..1]	Outcome
3	[1..1]	Data
3	[1..1]	Referral
1	[1..1]	Reason for Admission, Diagnose, Associate or Developed Pathologies
2	[1..1]	Diagnose terminology – ICD 10
4	[1..1]	Major Diagnosis
5	[1..1]	Indicator - Admission Presence
4	[1..1]	Secondary Diagnosis
1	[1..1]	Procedures, Medicines, Treatments, Surgery
2	[1..N]	Financial
3	[1..N]	Terminology - procedures
5	[1..N]	Code of procedure
6	[1..1]	Quantity
6	[1..1]	Data

MDS webservices

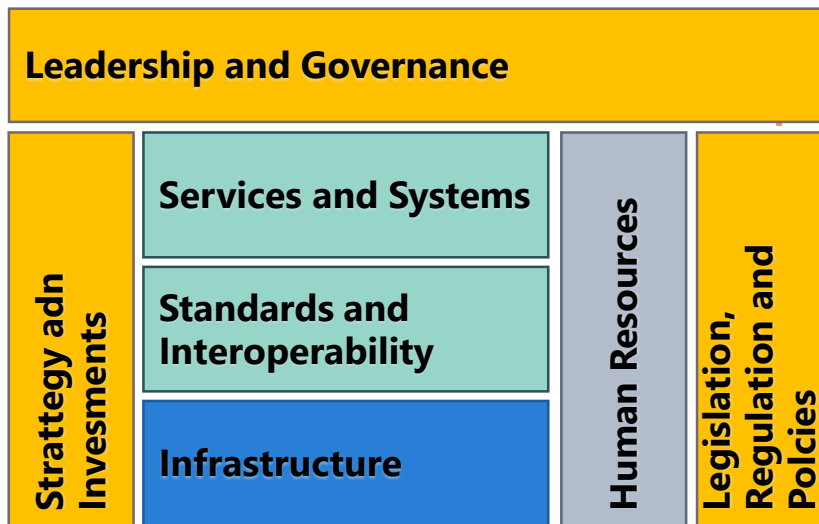


- **Phase I: documentation for Service integration.**
- **Phase II: all encounters with no charges**
 - ✓ Portal for Managers: processing, charging control, evaluation
 - ✓ Training professionals: portal and collecting data
- **Phase III : all encounters**

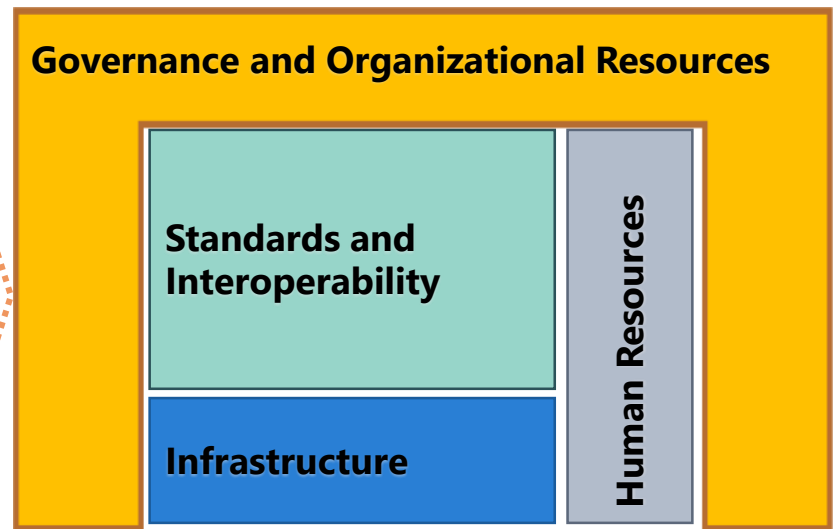
Digital Health Strategy

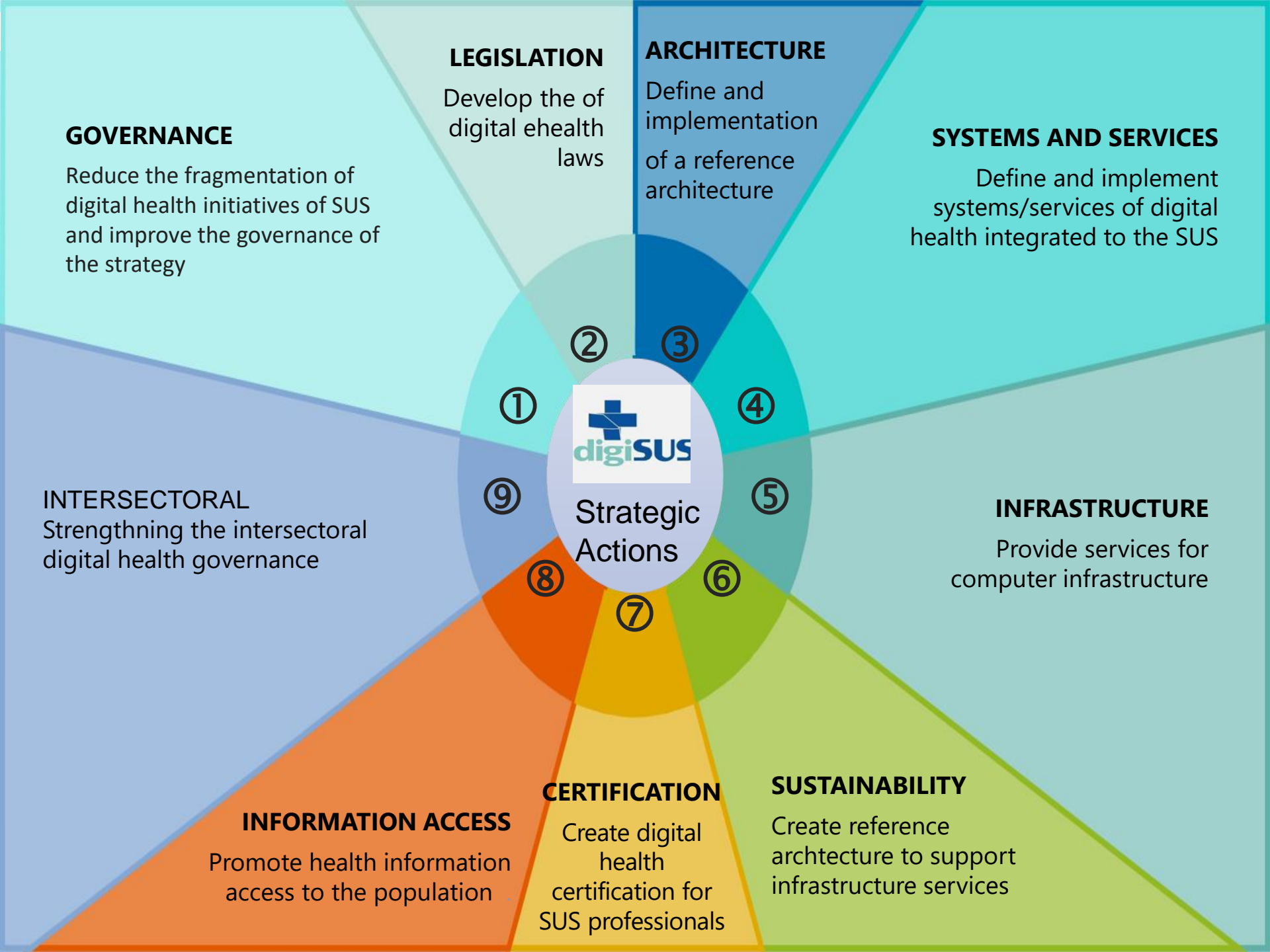
National e-Health Strategy Toolkit - WHO

Mapping of e-Health components



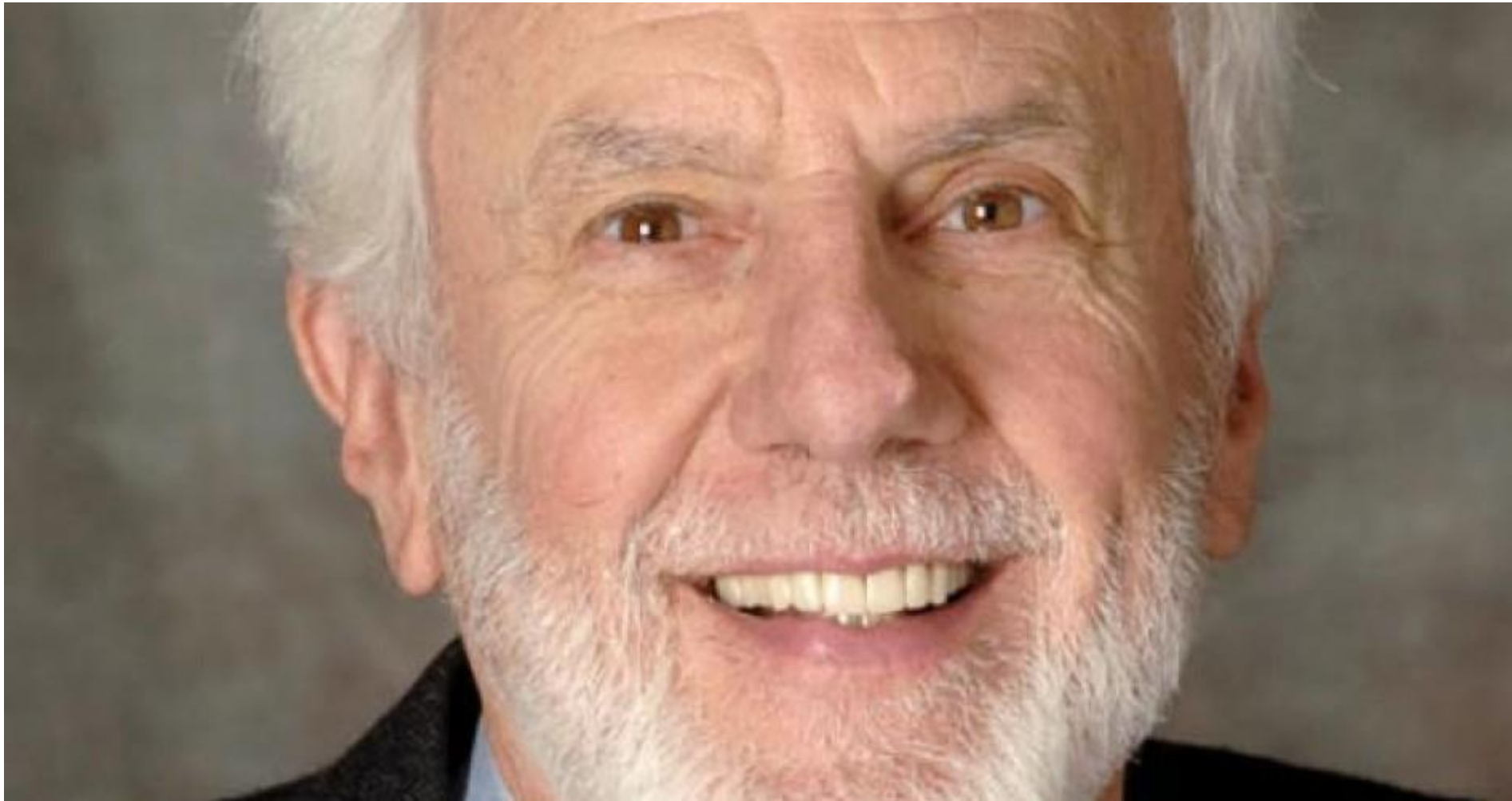
Brazilian Strategy





Which have been the key actors in each of the these elements?

Key Actors	Role
Steering Committee for the eHealth Strategy –	The highest e-Health management body in Brazil, linked to the Minister of State for Health.
The Brazilian Health Informatics Society - SBIS	Certification of Software in Healthcare
The Regional Center for Studies on the Development of the Information Society - CETIC – ICT in Health Project – NIC.BR (Brazilian Internet Steering Committee)	Research and mapping the infrastructure and adoption of EHR
Academia	National Strategy Toolkit Design and training for SUS professionals
Professional Federal Councils	Dissemination/ training



“Patients are the most underused resource”

Warner Slack, 1933-2018

SOME BRAZILIAN HEALTH CHALLENGES BEING FACED

- ✓ Improve health management and financing
- ✓ Improve SUS information systems
- ✓ Strengthen the Industrial Health Complex
- ✓ Expand and update clinical protocols and therapeutic guidelines
- ✓ Provide ongoing training to over 4 million health professionals
- ✓ Strengthen actions to promote health and prevent diseases
- ✓ Implement the operation of Emergency Care Units, Basic Health Units, ambulances and equipment purchased and not installed



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Which have been the main challenges and facilitating factors of the Brazilian experience?

Challenges

Sustainability:
political influences

Financial
guarantee

Professional
Competencies
(Coding and Health
Informatics)

Facilitating Factors

Acknowledge of
country needs on
information
interoperability

ICT project
influences public
policies – use of
data and
information

Faculty influences
to disseminate
best practices on
adoption and
successful
selection`

ICT Brazilian Survey - CETIC NIC.BR

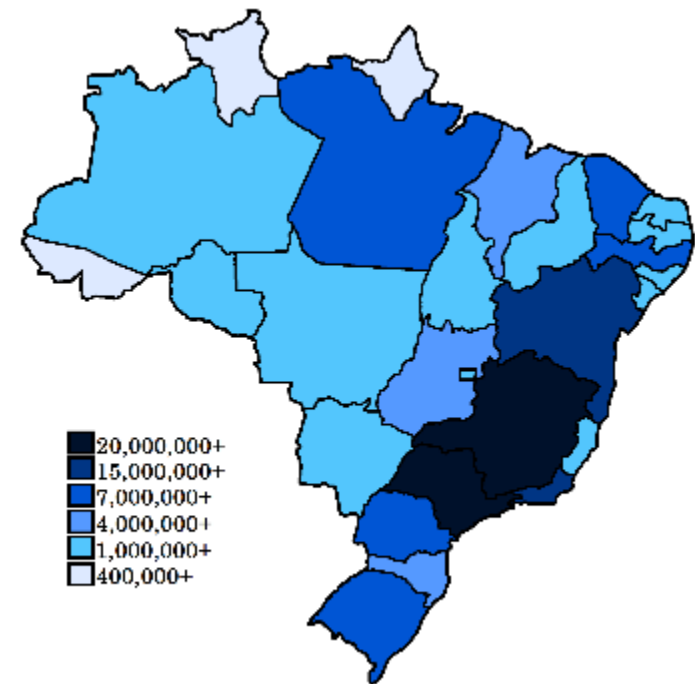
N= 2,336 facilities; 2,652 nurse; 1,629 physicians

- **Healthcare infrastructure**

- 94% have computers; 87% access to Internet
- 12% primary health units= no computers and 28% no internet access (10,700 units).

- **Electronic Health Record**

- 92% in private facilities and 68% in public facilities
- 21% stored clinical and demographic information in electronic format.
- 76% physicians and 64% nurses using computers when caring for patients
- 93% of physicians and 91% of nurses: ICT improved overall quality of treatment
- 42% physicians 36% nurses: systems were well-adapted to their needs.



Population 2018 = 210,867,954

Legislation

– *Brazil Internet Bill of Rights*

- Law 8.771/2016

– *General Data Privacy Law*

- Law 13.709 – August 14th, 2018
- Establishes clear rules for collection, storage, processing and sharing of personal data.
- All organizations/vendors have 18 months to adapt to the new rules

General Data Privacy Law

- Provides rules for personal data processing, including digital media
- Legal entity under public or private law
- Protect fundamental rights of freedom and privacy and the free development of personality of the natural person.
- The discipline of the protection of personal data is based on:
 - I - respect for privacy;
 - II - informational self-determination;
 - III - freedom of expression, information, communication and opinion;
 - IV - the inviolability of intimacy, honor and image;
 - V - economic and technological development and innovation;
 - VI - free enterprise, competition and consumer protection
 - VII - free development of personality, dignity and citizenship.

Stupidity
is also a gift
of God,
but one
mustn't
misuse it.



Karol Józef Wojtyła
1920 - 2005

*Change, but start slowly
because the direction is
more important than the
speed*

Clarice Lispector, 1920-77

Thank you

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