



**CIESO IUL**  
CENTRO DE INVESTIGAÇÃO  
E ESTUDOS DE SOCIOLOGIA  
Instituto Universitário de Lisboa

**FCT** Fundação para a Ciência e a Tecnologia  
MINISTÉRIO DA EDUCAÇÃO E CIÊNCIA

**ISCTE IUL**  
Instituto Universitário de Lisboa

# The use of ICT in hospitals: a Portuguese backstage analysis

29<sup>th</sup> PCSI – Helsinki – 20<sup>th</sup> September

Rita Veloso Mendes

1. Objectives

2. Framework

3. Information collection

4. Important Ideas

5. Acting Lines

# 1. Objectives

- **Objective:** understand the role of ICT in the health sector in Portugal, at 3 levels:

policies and  
decision-making

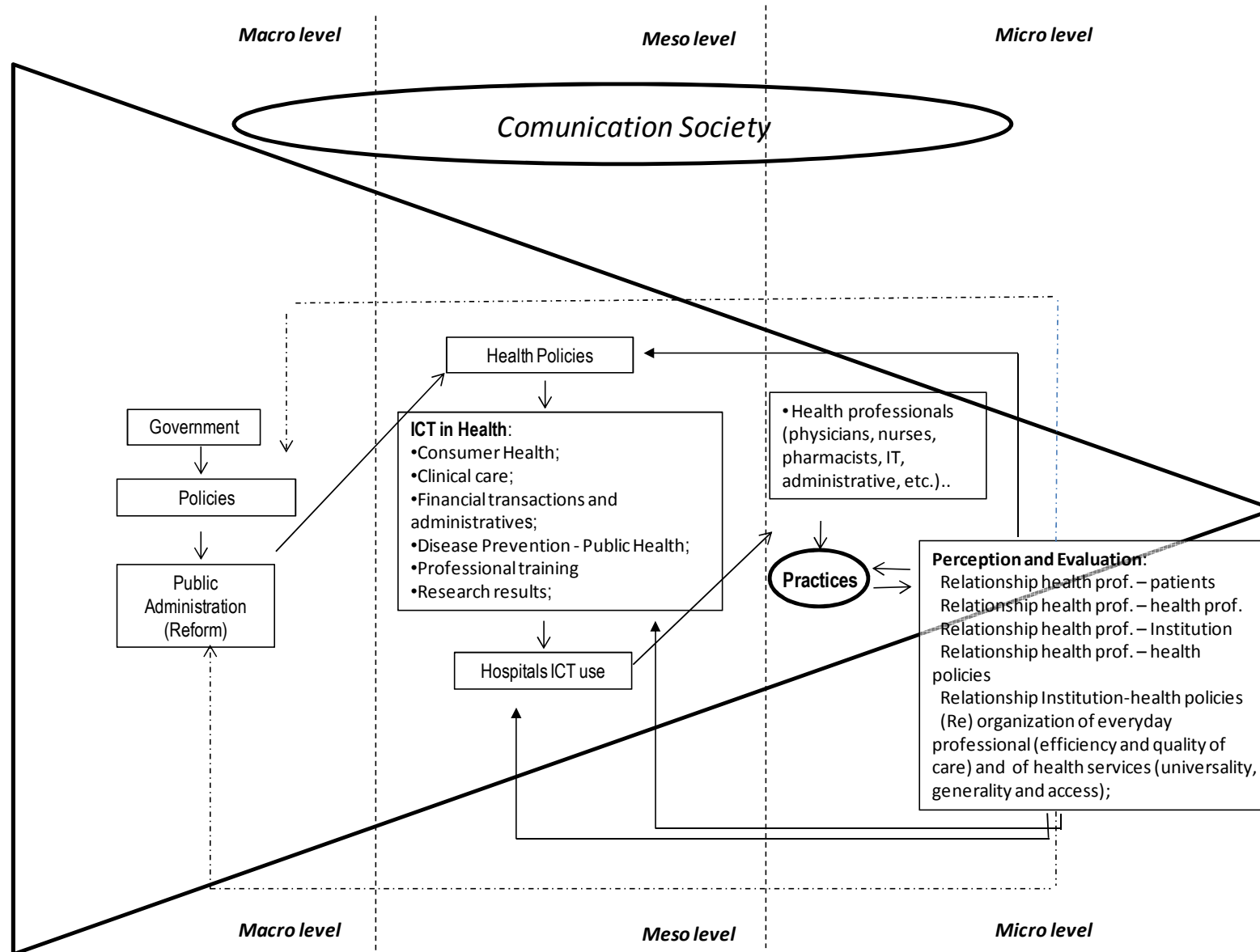
ICT use

representations of practices  
related to ICT

- Portugal has a model welfare state with a Beveridgean inspiration. Health is funded by the state budget and is an area of Public Administration (PA).

(The inclusion of the PA in the study allowed me to compare the political intentions of using ICT in the health sector in the national trend) – *not focused here.*

# 1. Objectives



# 1. Objectives

- Starting questions

## ICT in health policies

- Is there a national strategy for the use and implementation of ICT in the health sector in Portugal, particularly in hospitals? *Does it reflect a national trend in public administration or is limited to health? (not focused here)*

## ICT use in Health

- Is there a ICT use in healthcare in Portugal supported by the notion of network hospital? What is the actual use of ICT in hospitals?

## Health ICT perception

- What is the health professionals perception of the ICT implementation and adoption at the relational, organizational and social level? How are those technologies appropriate? How health professionals perceive them?

1. Objectives

2. Framework

3. Information collection

4. Important Ideas

5. Acting Lines

## 2. Framework

Communication Society – transversal

ICT in Health

## 2. Framework

### 1.1. Communication Society

Emergency informationalist model Castells, 2002:605)

- ICT is a result of technological change, but still a social phenomenon;
- Changes at the social, organizational and structures levels, in which society is based (economic models, market work, borders ...);
- The power of flows overlaps the flows of power in all areas of society;
- Network society that is characterized by the primacy of social morphology over social action;
- Emergence of the notion of Reflexivity and Risk (ability to deal with problems and insecurities induced and introduced by global society, constantly changing where the "globalization of doubt" interferes in the autonomy of citizens (Beck, 2004: 21) );
- Governmental power: state as a catalyst or inhibitor in the use of ICT (strategy of power exercised).

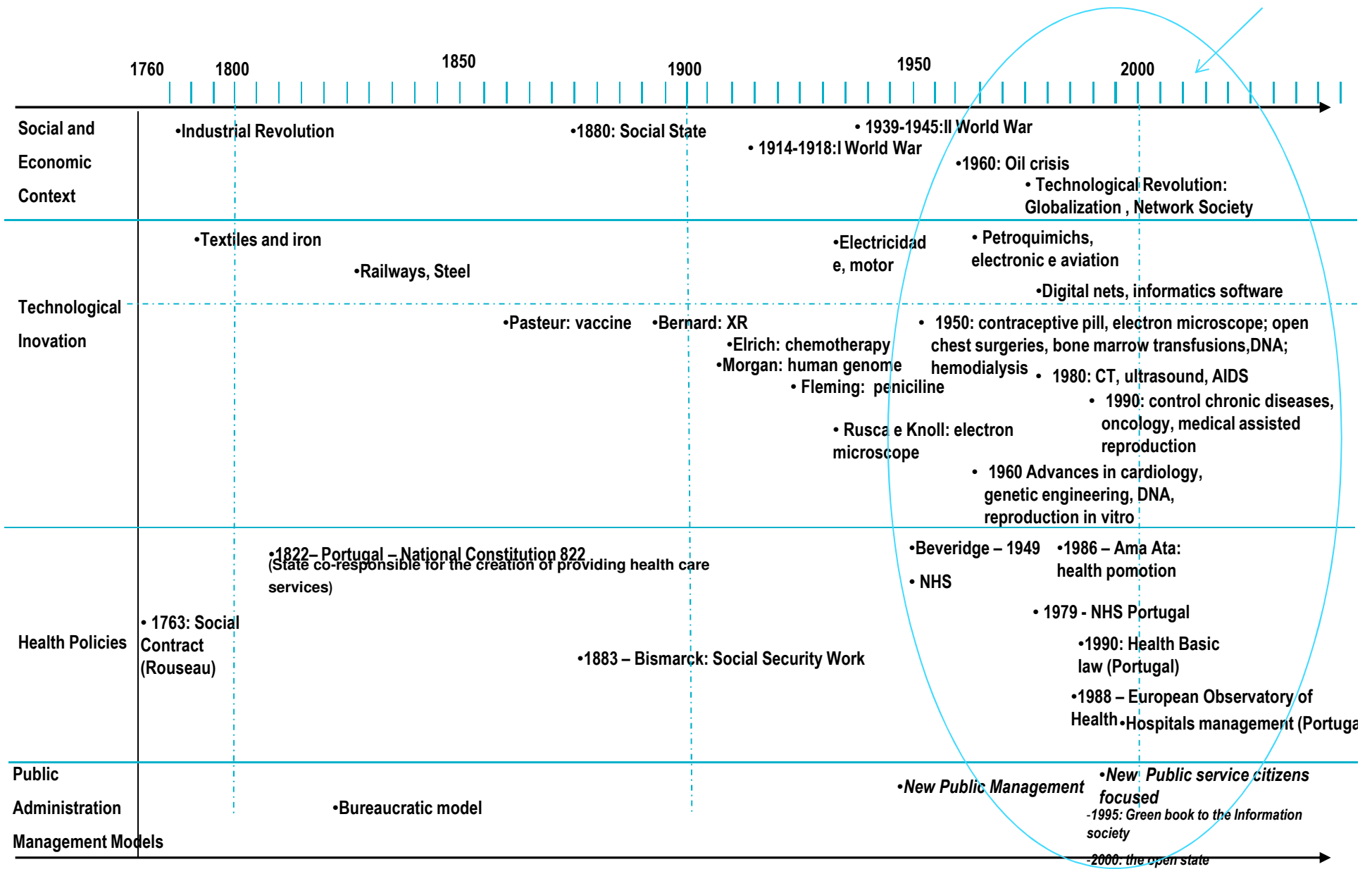


## 2. Framework

### 1.2. ICT in Health

- ICT in Health

ICTs allow information flows (images, sounds, etc..) bringing new possibilities for medicine and health care organization (IOM, 2008; Thomas, 2006), since they "interposed" or "mediate" the user and the health professional, but also connecting professionals with professionals, and professionals with health institutions.



## 2. Framework

### 1.2. ICT in Health

Technological progress and innovation processes are an integral part of the evolution in medicine and public health emergency, "an idea whose time has come, the new combination of existing ideas and production processes"

(Plamping, Platt and Gordon, 2009)

1. Objectives

2. Framework

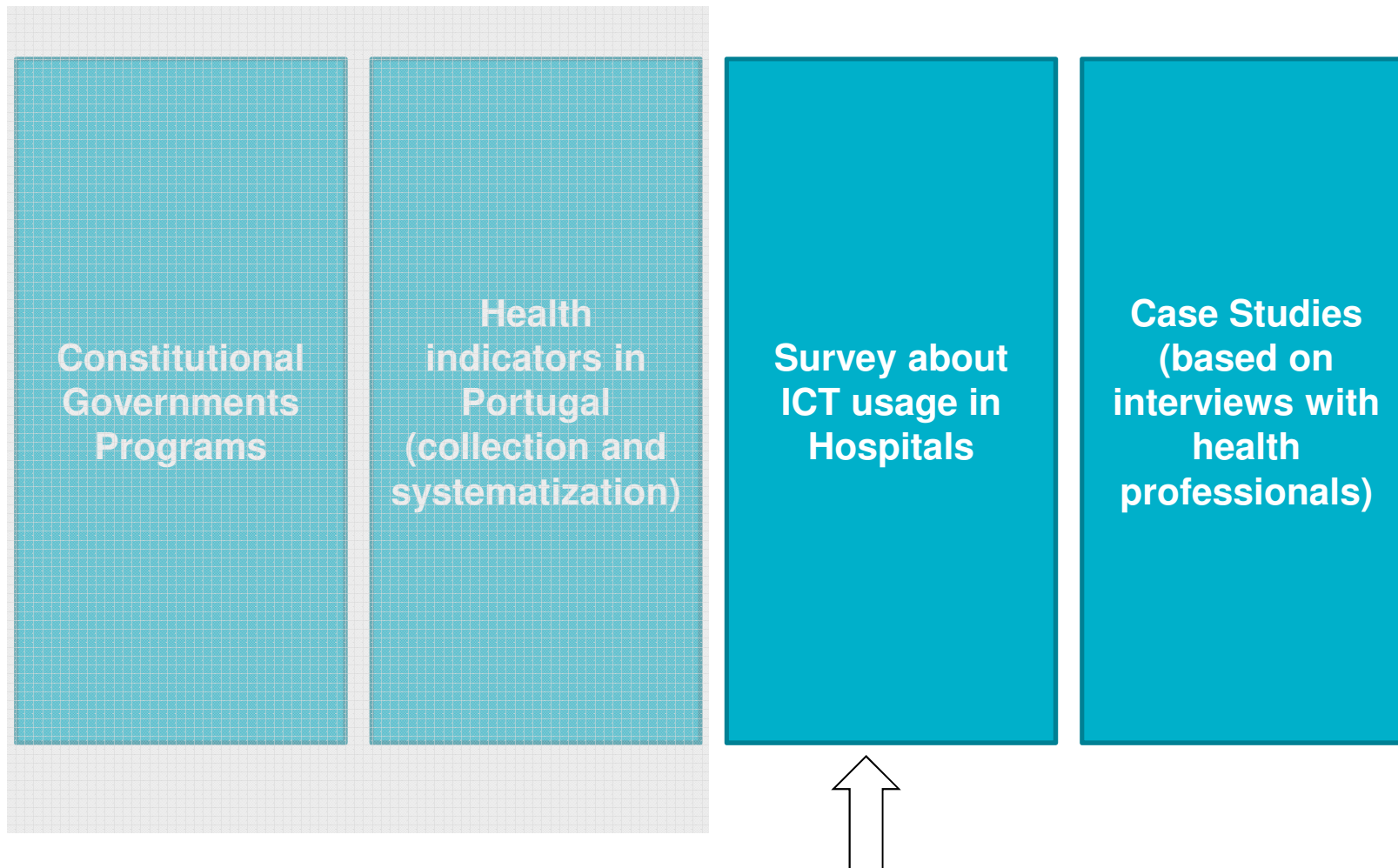
3. Information collection

4. Important Ideas

5. Acting Lines

# 3. Information collection

**Collection of four types of information:**



# 3. Information collection

## 3.1. Survey about ICT usage in Hospitals

### Survey about ICT usage in Hospitals

- **Source:** IUTICH, INE (2004, 2006 and 2008 – *only the comparable questions*).
- **Operationalization:** descriptive statistics (univariate and multivariate) comparative analysis of hospitals ICT use from 2004 to 2008.
- **Results:** identify trends in the use of ICT in hospitals

# 3. Information collection

## 3.1. Survey about ICT usage in Hospitals



### Survey about ICT usage in Hospitals

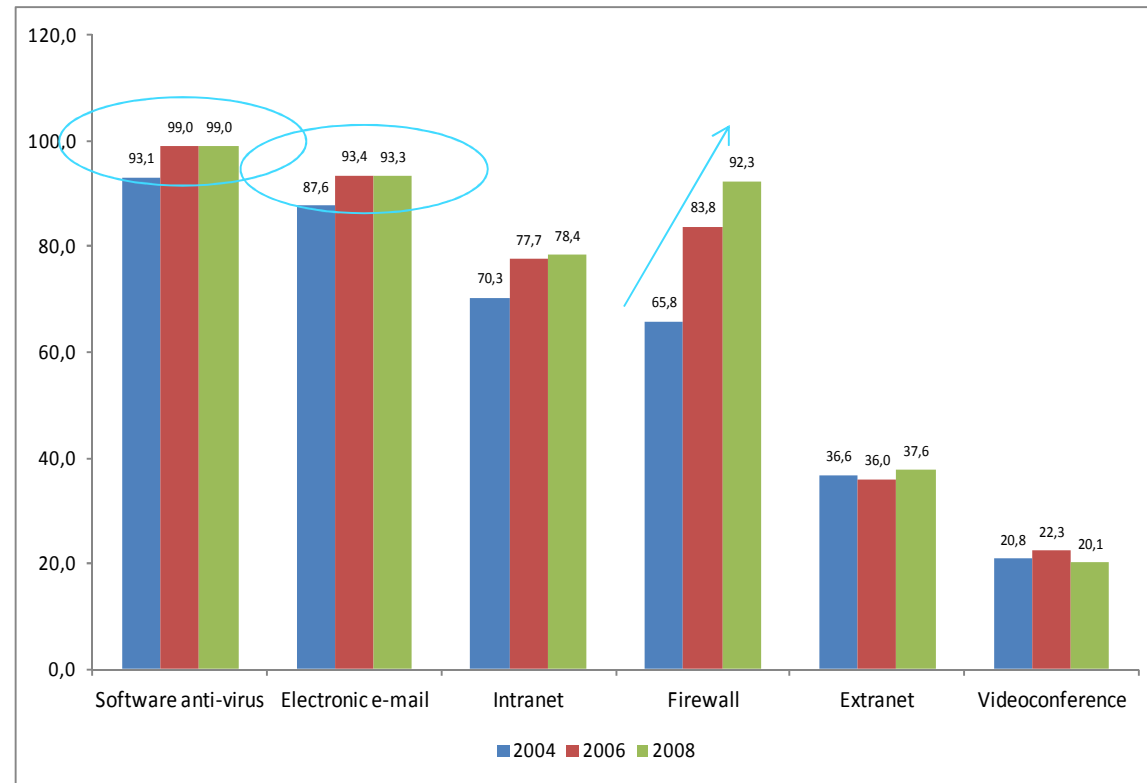
years	(average nr workers with informatics needs) - (average of workplaces with computers)	(average nr workers with internet needs) - (average of workplaces with internet)
2004	-105,6	-17,8
2006	-134,1	-50,7
2008	-163,7	-65,4

- 2004-2008: > computers number (computers vs users shows > computers famine; similar trend to computers with Internet access)

# 3. Information collection

## 3.1. Survey about ICT usage in Hospitals

### Survey about ICT usage in Hospitals



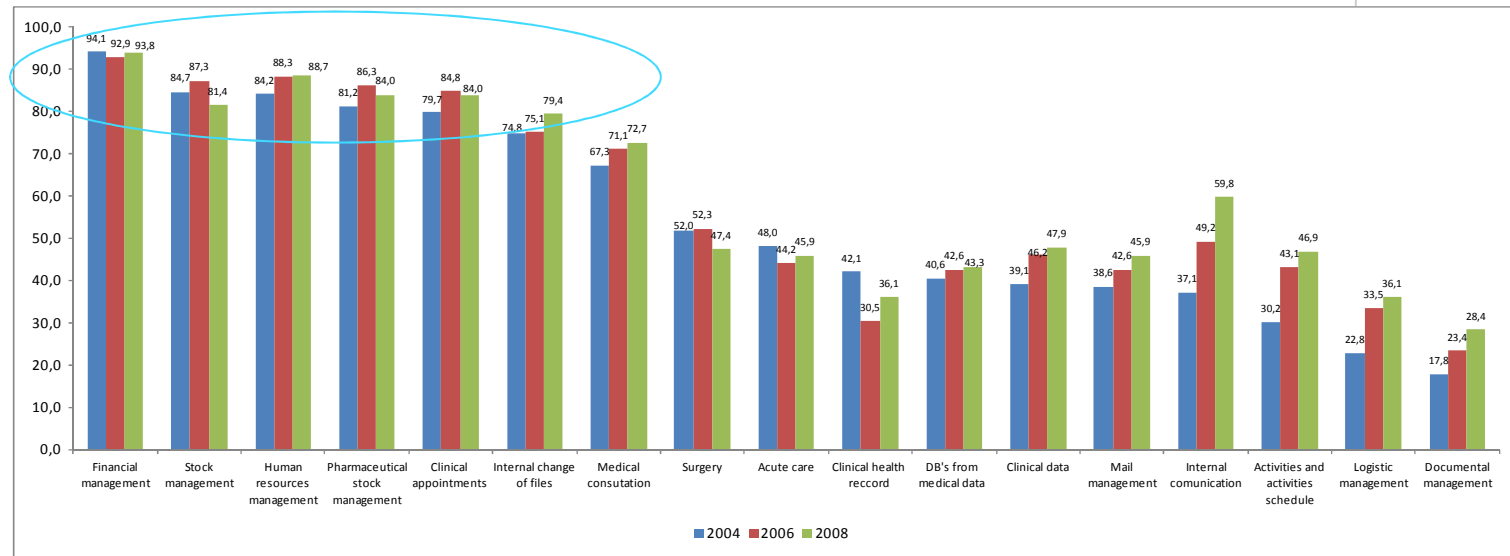
- Computer services more used: anti-virus, e-mail.



# 3. Information collection

## 3.1. Survey about ICT usage in Hospitals

### Survey about ICT usage in Hospitals



- The financial and administrative management, human resources management, stock management (pharmaceutical stocks), scheduling appointments, internal communication and internal exchange of information are the most computerized areas .

# 3. Information collection

## 3.1. Survey about ICT usage in Hospitals

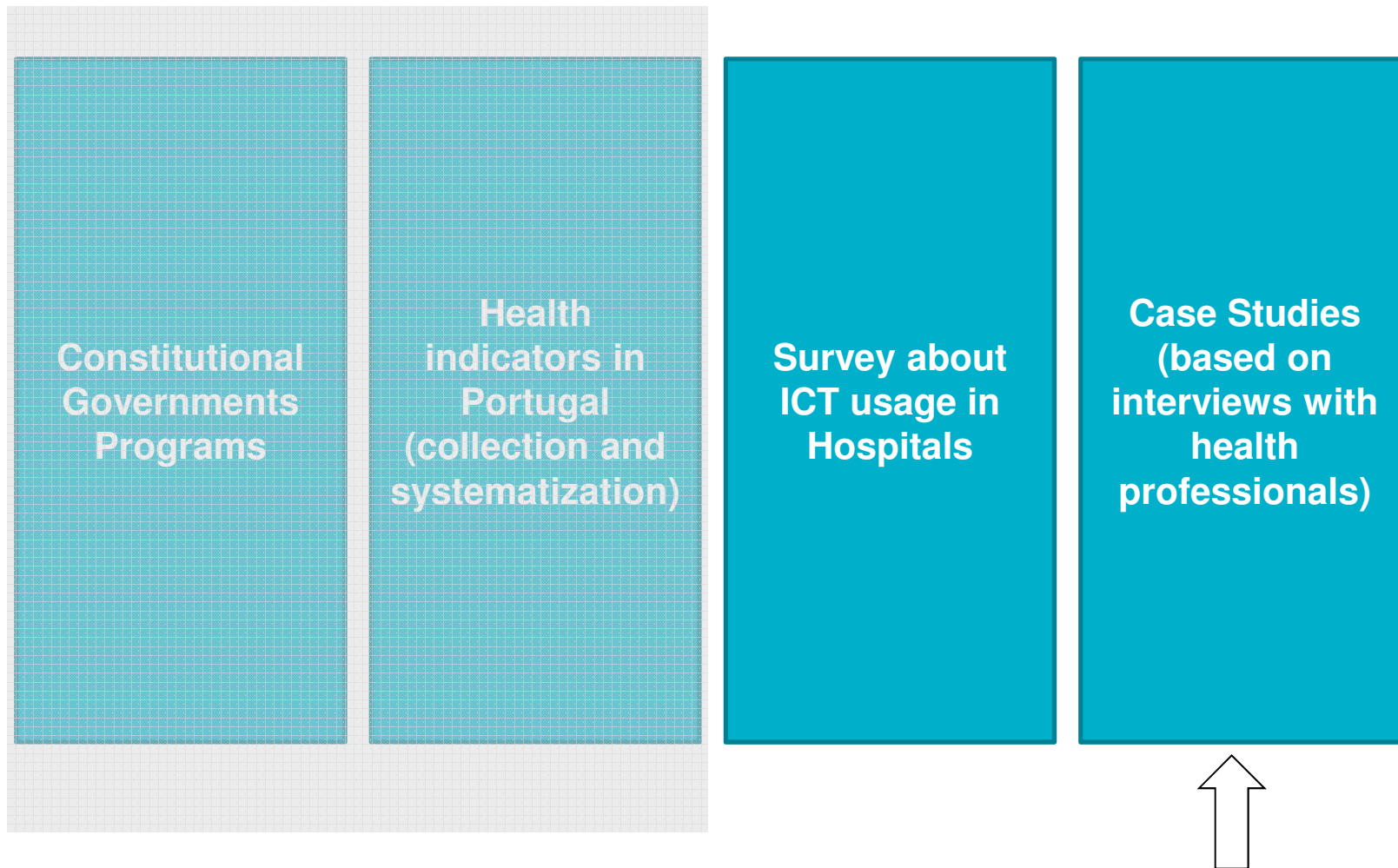


### Survey about ICT usage in Hospitals

- Increase of Telemedicine use: from 17% in 2004 passed to 71% in 2008.
- Increased realization of institutional sites mainly through external companies (outsourcing).

# 3. Information collection

**Collection of four types of information:**



# 3. Information collection

## 3.2. Case studies

### Case studies

- **Source:** 6 hospitals chosen in order of ICT implementation and adoption process (76 interviews).
- **Operacionalization:** Identification of the professionals involved in the process, interviews development (semi-structured script). Qualitative analysis of the interviews performed.
- **Results:** identification of professionals' perceptions and assessment about the use of ICT in hospitals.

# 3. Information collection

## 3.2. Case studies

	HPV	POIL	HPMG	HIDP	ULSM	HA	Total
Hospital board	1	1	1		1	1	5
Primary care board			1		1		2
Central health administration			1				1
Managers	2	1		2	3		8
Physicians	1	1	2	6	4	2	16
Nurses	2	4		3	4		13
Pharmaceuticals	2		4				6
Informatics		1	1	1		1	4
Administrative	2	7		3	2	4	18
Board assessors		2					2
ROR		1					1
Total	10	18	10	15	15	8	76

# 3. Information collection

## 3.2. Case studies

	HPV		POIL		HPMG	HIDP	ULSM			HA
	CPM	MC	intranet	website	EP	THN	Adm. Appli. Syst.	Med. Appli. Syst.	Nurs Appli. Syst.	RisPacs
<b>Initiative</b>	Board	Board	Board (old)	Board	Health Ministry	Physicians+ Aveiros's University	Board	Health Ministry	nurses	Board
<b>Institutional knowledge</b>	yes	No	yes	no	yes	weak	yes	yes	yes	weak
<b>Recognition of interest</b>	yes	yes	moderate	yes	yes	yes	yes	moderate	yes	yes
<b>Implementation : who did it?</b>	private	private	Internal computers office	n.a.	ACSS	Aveiros's University	ACSS	ACSS	ACSS	private
<b>Implementation : perception</b>	bad	weak	good	n.a.	good	weak	good	good	good	(didn't occurred at the interview moment)
<b>Adherence</b>	slow	good (experimental services)	weak	n.a.	Hospitals: bad Primary care centers: good	n.a.	moderate (with errors)	Hospitals: weak Primary care centers: good	100%	(Expected: good)
<b>Institutional communication</b>	moderate		weak		moderate	weak	good			Weak
<b>Professionals suggestions</b>	inexistent		Yes (among professionals)		Yes (among professionals)	Yes (among professionals)	Yes (at least 1 professionals)			inexistent

# 3. Information collection

## 3.2. Case studies



### Case studies

#### Mainly trends:

- Lack of organizational communication, especially vertical
- ICT adoption is mainly related with the professional's added value recognition (distrust in the network and resistance caused by several discontinued experiences background).
- Physicians are the professional group most resistant to the ICT use in their professional practice, especially the elderly. The physicians from the hospitals are more resistant to the use of ICT comparing with those in the primary care units, where there is a higher utility recognition
- Nurses are the professional group more proactive in the use of ICT (ICT adoption implied the use of ICN).
- Network obstacles in various places in Portugal (improving trend)
- Informatic services are identified with low responsiveness to problems.
- Choose / purchase of ICT without needs assessment or inclusion of professionals who will use it.

1. Objectives
2. Framework
3. Information collection
4. Important Ideas
5. Acting Lines



## 4. Important ideas

- Some important ideas about ICT use in portuguese health sector....

...are mostly used in hospitals back office activities (financial and administrative management, human resource management, management of stocks, pharmaceutical stocks).

.... can improve the health care delivery and the need for cost containment.

... the sucess of the use depends on the:

- usefulness recognized by the professionals (vs. exposure error and control);
- the professionals competence (importance of training);
- involvement of the professionals in the ICT choice and implementation  
(identification of solution strategies in the absence of collective institutional response);
- confidence in their use (networks and confidential information);
- equipment available to professionals (characteristics and quantity).

1. Objectives
2. Framework
3. Information collection
4. Important Ideas
5. Acting Lines

## 5. Acting Lines

In Portugal, the ICT use in Health sector needs:

- the definition of a national strategy for the use of ICT in the health sector in general and in hospitals in particular, reflecting institutional assessment needs, the programmatic intentions (or boards interests ), and the health professionals involvement
- the development of a national survey about the hospitals ICT use, specifically oriented to applications used and the possibility of integrating information among them. This survey should also be extended to the primary health care services.
- health professionals training , especially physicians: the academic courses should have a higher incidence in practical use of ICT, existing ICT applications and on the potential of ICT use to the institutions and central services.

I would like to leave my acknowledgment to the organization for my presence, here, today.

And to all of you, for your attention.

[Rv.mendes@ensp.unl.pt](mailto:Rv.mendes@ensp.unl.pt)

[Rita.mendes@iscte.pt](mailto:Rita.mendes@iscte.pt)