

Stroke in Toscana

- 10.000 admissions (DRG 14)
- Hospitalization rate: 300 /100.000 per year
- Costs (3 m.): 50.000.000 euros/year
- Mean lenght of stay: 11,5 days
- Intra-hospital deaths:14,9 %



Stroke Unit and stroke care State - Regions Consortium 2005

CONF. STATO REGIONI del 3.2.2005

"linee di indirizzo per la definizione del percorso assistenziale ai pazienti con ictus cerebrale"

DEFINIZIONE

- **Stroke Unit**
- *Multidisciplinary*
- *Early rehabilitation*
- *Expert procedures for prevention of complications;*
- *Regular auditing*
- *Continuous education*
- **Stroke Care**
- a) *Integrated system of care*
- b) *Training and acquisition of both multidisciplinary and specific competences by professionals*
- c) *Standards definition*



Tuscany organization guidelines for stroke management: 1st level hospitals

- - CT 24 hours;
- - Stroke Team expert in diagnosis and treatment of acute stroke

“hospitals with stroke team should perform only diagnosis and basic treatment aimed at patient stabilization. Acute treatments should be possible only through telemedicine connections with II level hospitals, or assuring rapid transportation of patients to II level hospitals”



Tuscany organization guidelines for stroke management: IInd level hospitals

Presence of services:

- - Cardiology;
- - Neurology;
- - Radiology;
- - Laboratory able to perform reliably urgent tests
- - Doppler studies 24 hours
- - Rehabilitation
- - Rapid transportation to a neurosurgery service



Tuscany organization guidelines for stroke management: Stroke Unit

Ospedali di II° livello

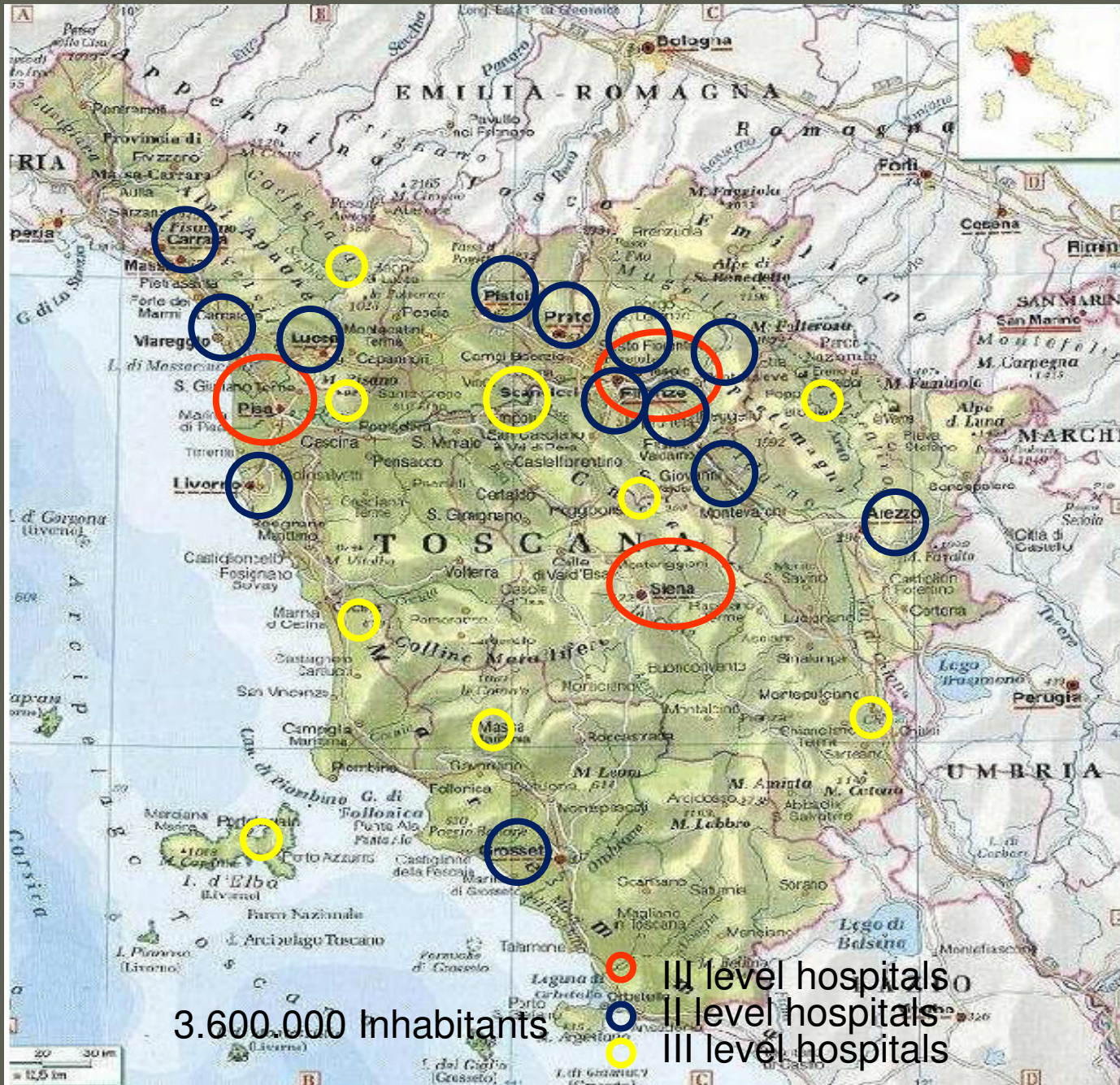
In such hospitals a dedicated structure called **STROKE UNIT** should be organized

- **SUs should:**
- Admit moderate-severe patients
- Follow detailed and updated guidelines
- 8 beds module/200.000 inhabitants
- Semi-intensive organization
- Length of stay 8 - 10 days.

Organizative standard for IIIrd level Hospitals

III level hospital should have the following services

- ✓ Neurosurgery
- ✓ Neuroradiology
- ✓ Vascular surgery
- ✓ Interventional cardiology
- ✓ Interventional neuroradiology

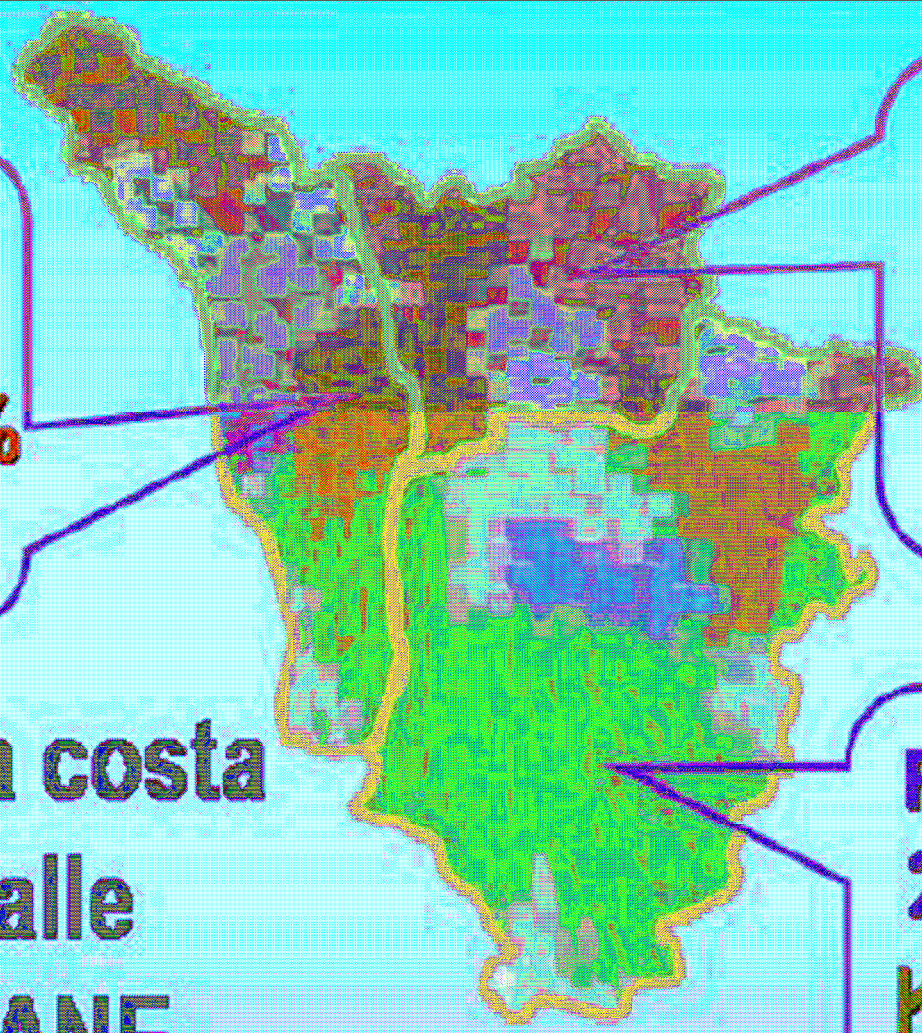


POP
37% **PIL**
34%
KMQ
29%

POP
41% **PIL**
45%
KMQ
21%

POP
22% **PIL**
21%
KMQ
50%

**L'area vasta costa
rispetto alle
tre TOSCANE
del PRS**



AMMISSIONI FOR STROKE 2005

analysis SDO from hospitals of Regione Toscana

Totale	ricoveri	9745	dm	10,7
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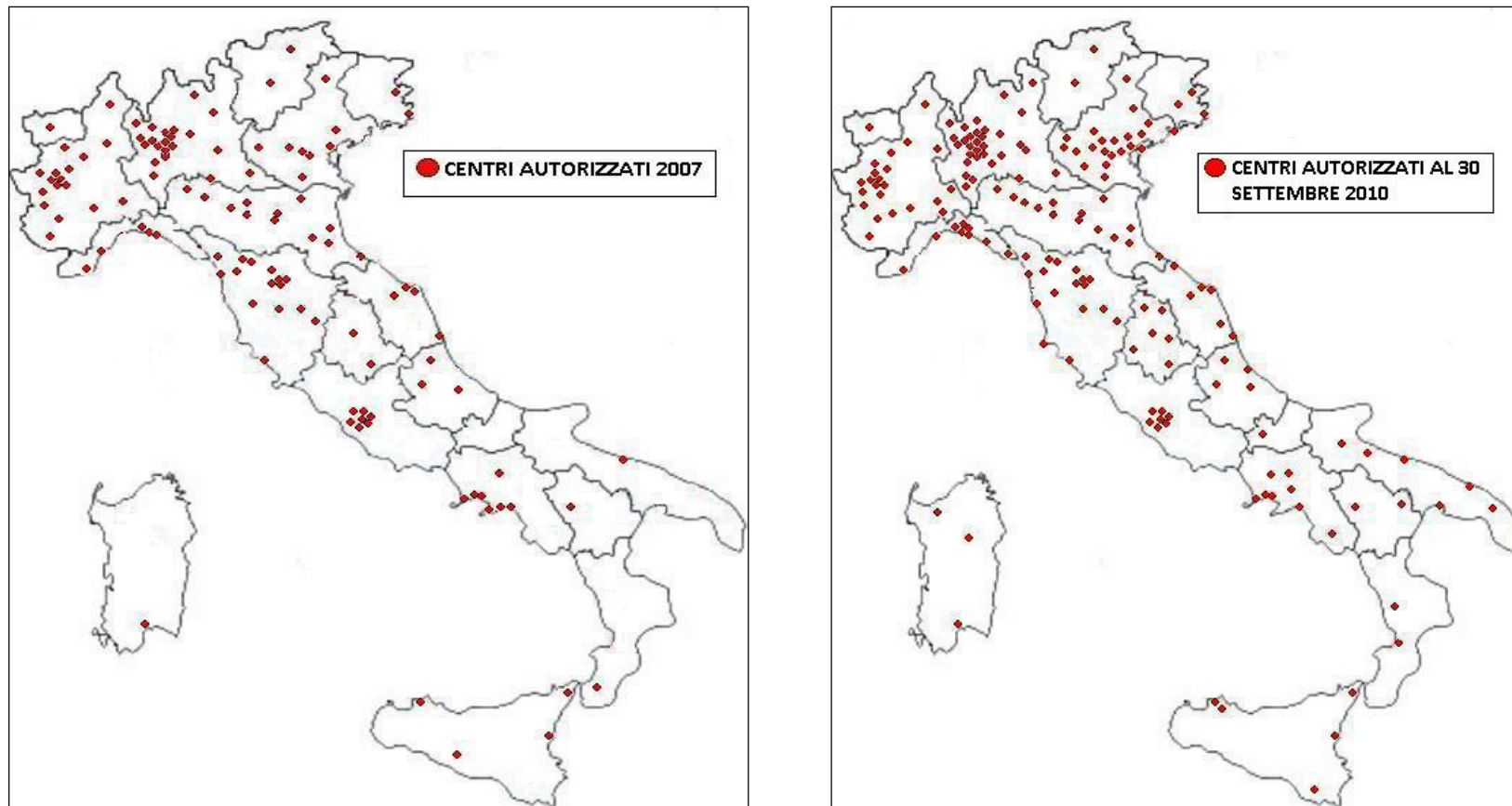
	ricoveri		dm
Area vasta NORD - OVEST	3494	39132	11,19
Area Vasta SUD - EST	2546	30086	11,81
Area Vasta CENTRO	3705	35423	9,56

Stroke pts. admissions by specialty in Toscana Year 2001

Ricoveri DRG 14

General medicine	6.510	(64%)
Neurology	1.842	(18%)
Geriatrics	422	(4%)
Neurosurgery	369	(3%)
Other	1.080	(11%)
TOTAL	10.223	(100%)

HOSPITALS AUTHORIZED TO PERFORM THROMBOLYSIS 2007 VS 2010



Guidetti D. et al. Center For Diseases Control Stroke Implementation Project

HOSPITALS AUTHORIZED TO PERFORM THROMBOLYSIS: ACTIVE VS. INACTIVE 2010



Stroke Units in Italy: 2009

Stroke Units needed : N = 220 (standard
1/250.000 inhabitants)

Stroke Units identified:

N = 126 (1/475.000 inhabitants)

	SU	Population	Ratio
North:	85	25.500.000	1/300.000
Centre:	28	12.120.000	1/433.000
South:	19	16.380.000	1/862.000

STROKE CARE IN ITALY: WHAT'S GOING ON:

- Scientific societies guidelines (SPREAD) since 1998 – updated every 2 years - large dissemination
- Public national guidelines on stroke unit organization and pathways in progress
- Shared inter-regional framework (Conferenza Stato Regioni) since 2005
- Healthcare plans in almost every region
- Nonsystematic implementation in many regions
- Striking geographical disparities

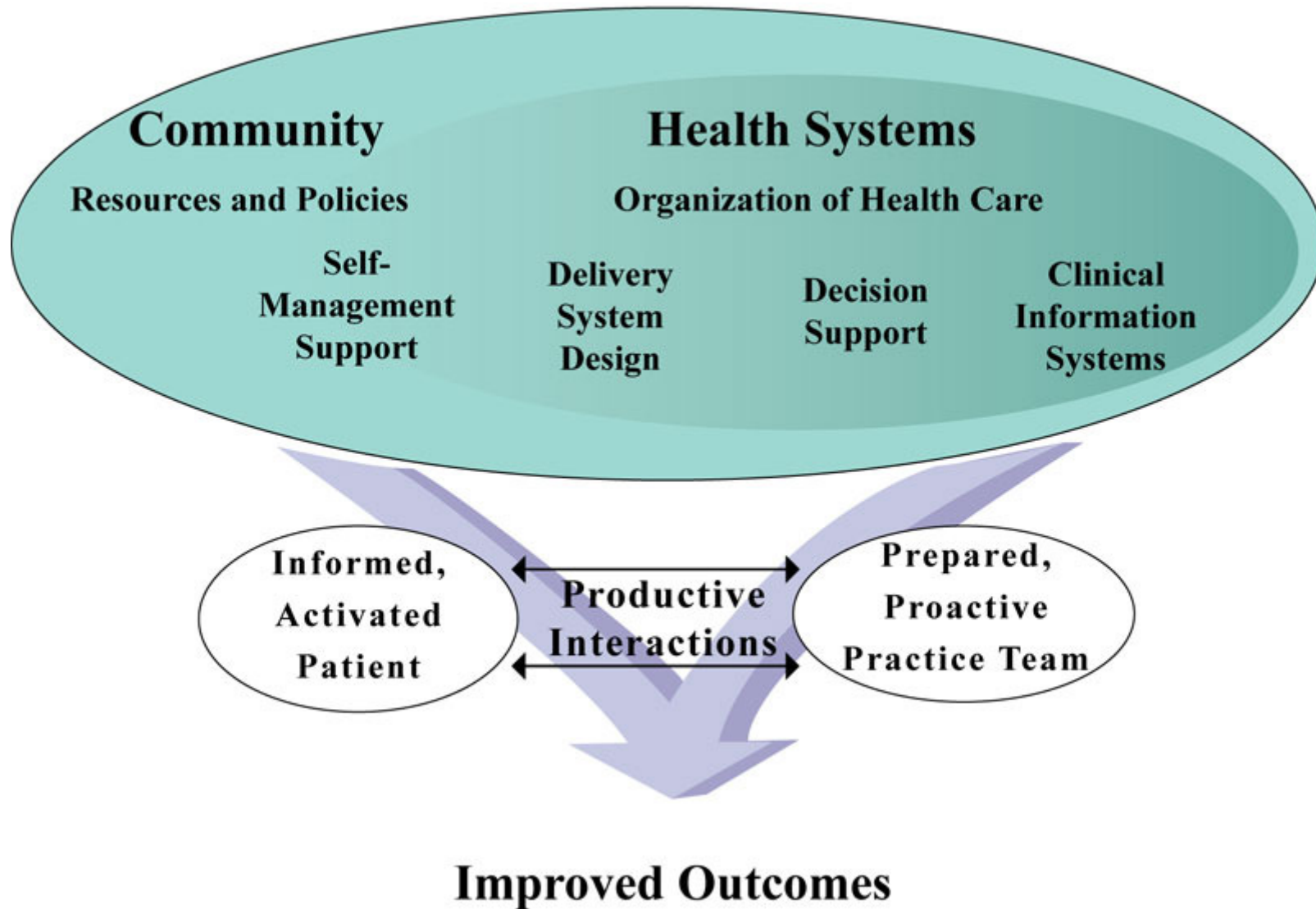


Tuscany Healthcare Plan 2008-2010

Actions Planned

- Implement in every Healthcare District an integrated system of care including and properly connecting prevention, acute phase management, rehabilitation and social care.
- Organize expert care pathways allowing rapid transport to referral hospitals for acute diagnosis and treatment
- Realize multiprofessional teams and dedicated wards following the standards indicated in 2002-2004 Healthcare Plan and regional guidelines
- Guarantee an appropriate rehabilitative pathway for 100% of patients with severe disability
- Activate in each health area a continuing education system on which accreditation of structure will depend
- Implement within 2009 in each health area a registry for performance measurement

The Chronic Care Model



THE “TUSCAN WAY” TO CHRONIC CARE MODEL

- **Five main diseases:**
 - **Stroke**
 - **Diabetes**
 - **Hypertension**
 - **Heart failure**
 - **Chronic respiratory disease**

STROKE

- Primary prevention:

Subjects at high risk of stroke

- Secondary prevention, Rehabilitation and Quality of life:

Stroke patients with different levels of disability



OPERATIONAL TOOLS

- Protocols for exchanging information with hospital specialists
- Protocol of specific activities of physicians and nurses
- Pathway of care for TIA
- Follow-up forms to be integrated and reported in the GP records



ROLL-OUT OF STROKE STRATEGY IN ITALY

- ◉ Lack of a national strategy
- ◉ Strong regionalization
- ◉ Indications for stroke care organization in all regions
- ◉ Detailed, integrated and operational resolutions (with resources identification) only in a few regions
- ◉ Substantial consistency across the models
- ◉ No guidelines or workplans for effective implementation



POLITICAL BARRIERS TO IMPLEMENTATION

- Poor awareness of stroke
- Evidence relatively recent
- Reluctance to change
- Poor proneness of the system to take decisions after estimating cost/benefit advantages on the long-term
- Inter-specialty competition for both leadership in stroke management and resources utilization
- Low interest of industry, foreseen to last until the system is not working



10223
Ricoveri DRG 14 nel 2001 in Toscana

1490 non ictus

8737 ricoveri per ictus

**STROKE
UNIT**

1456 (IC 95% 873 - 2184)
Decessi o Disabilità evitabili