Ministère des Affaires sociales, de la Santé et des Droits des femmes - Salle Pierre Laroque

Colloque international

" L'ÉVALUATION ÉCONOMIQUE et la RECHERCHE sur les SERVICES de SANTÉ "

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The performance evaluation system adopted in Tuscany: process and impacts

Le Système d'Evaluation de la Performance de la région Toscane : processus et résultats

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The Italian healthcare system

It 's a *Beveridge-like model*: universal, comprehensive (almost), free, financed by general taxation

It is organized in three levels :

- The national level is responsible for national health planning, including general aims and annual financial resources and for ensuring a uniform level of services, care and assistance (LEA).
- The regional level has the responsibility for planning, organizing and managing its health care system through LHA's activities in order to meet the needs of their population.
- The local level (Local Health Authorities): provides care through public and/or private hospitals, primary care and prevention services.

About Tuscany

Tuscany is the 10th Italian Region by population, and the 8th by GDP per capita

Total Population in Italy: 60,7 mln.
Total Population in Tuscany: 3.7 mln

Key Facts

- ✓ 3.700.000 inhabitants, Public Healthcare System Beveridge Model Universal coverage, 51.000 employees, 6.400 ml of euros.
- ✓ 12 Local Health Authorities (ASL) in Tuscany; **ASL** generally act at a "province level", with an average population between 300.000 and 400.000 inhabitants
- ✓ 3 university teaching hospitals in Pisa, Florence and Siena and two focused Hospitals
- ✓ ASL include:
  - ✓ Department of public health
  - ✓ Districts and Primary care
  - ✓ Hospital Facilities
- ✓ The private providers are in Tuscany a very small number and are under contract with the Region (Hospital beds are 95% public)

Sources: Istat, Irpet, Regione Toscana, A.T. Kearney Analysis, Ministero dell'Economia e delle Finanze

The history of the system

2002: Mandate to Scuola Superiore Sant'Anna

→

2003: Feasibility analysis: what and how to measure

→

2004: Pilot study in 3 LHAs and 1 TH

→

2005: **Implementation** in all **LHAs** and pilot study in all **THs**

→

2006: **Implementation** in all **HAs**

→

The history of the system

July 2007:
Issue of
2006 Report

Dec 2007:
Web-site with access to Tuscany Region and all HAs

May 2008:
Pilot study at **District level**

July 2008:
Issue of 2007 Report
Web-site accessible by **all citizens**

2008 – 2009
Collaboration with other Regions:
Liguria,
Umbria,
Piemonte

The history of the system

2010:
Aosta V.,
A.P. Bolzano
A.P. Trento
enter the network

2011:
Basilicata
adheres to the network
First NTW Report
is issued

2012:
Veneto
adheres to the network

2013:
Emilia-Romagna
adheres to the network

2014:
Friuli-Venezia Giulia
adheres to the network

Regions involved in the performance evaluation system (2014):

- Veneto
- Toscana
- Liguria
- Umbria
- PA Trento
- PA Bolzano
- Marche
- Basilicata
- Emilia Romagna
- Friuli Venezia Giulia

NATIONAL LEVEL

Ministry of Health

SIVeAS Project
The performance evaluation system of regional healthcare systems

Transparency and accountability to ensure essential levels of care (LEA) at national level

34 indicators, of which 23 concern performance evaluation.

Data is available on the Italian Ministry of Health's website since 2010 in the SIVeAS section: www.salute.gov.it

REGIONAL LEVEL

Network of Regions

The performance evaluation system at regional level

It aims to support governance system at regional level

130 indicators, of which 80 concern performance evaluation.

Data is available since 2008 at the following website: www.performance.sssup.it/network

REGIONAL LEVEL

Tuscany Region

The performance evaluation system at regional level

It aims to support governance system at regional level

250 indicators, of which 130 concern performance evaluation.

Data is available since 2006 at the following website: www.performance.sssup.it/toscana

The different roles

Adhering **regions** agree about the process: each region is responsible for retrieving, computing and uploading data.

Scuola Superiore Sant'Anna is a public university: its mission is developing culture, scientific research, innovation and supporting knowledge and technology transfer

MeS Lab assures scientific rigour and encourages research about healthcare management. As a third party, MeS Lab works as a «benchmarking agency»: it leads the process by cohordinating the information sharing procedures, through a common open access web-platform.

(http://performance.sssup.it/network)

performance.sssup.it/network/lib/index.php

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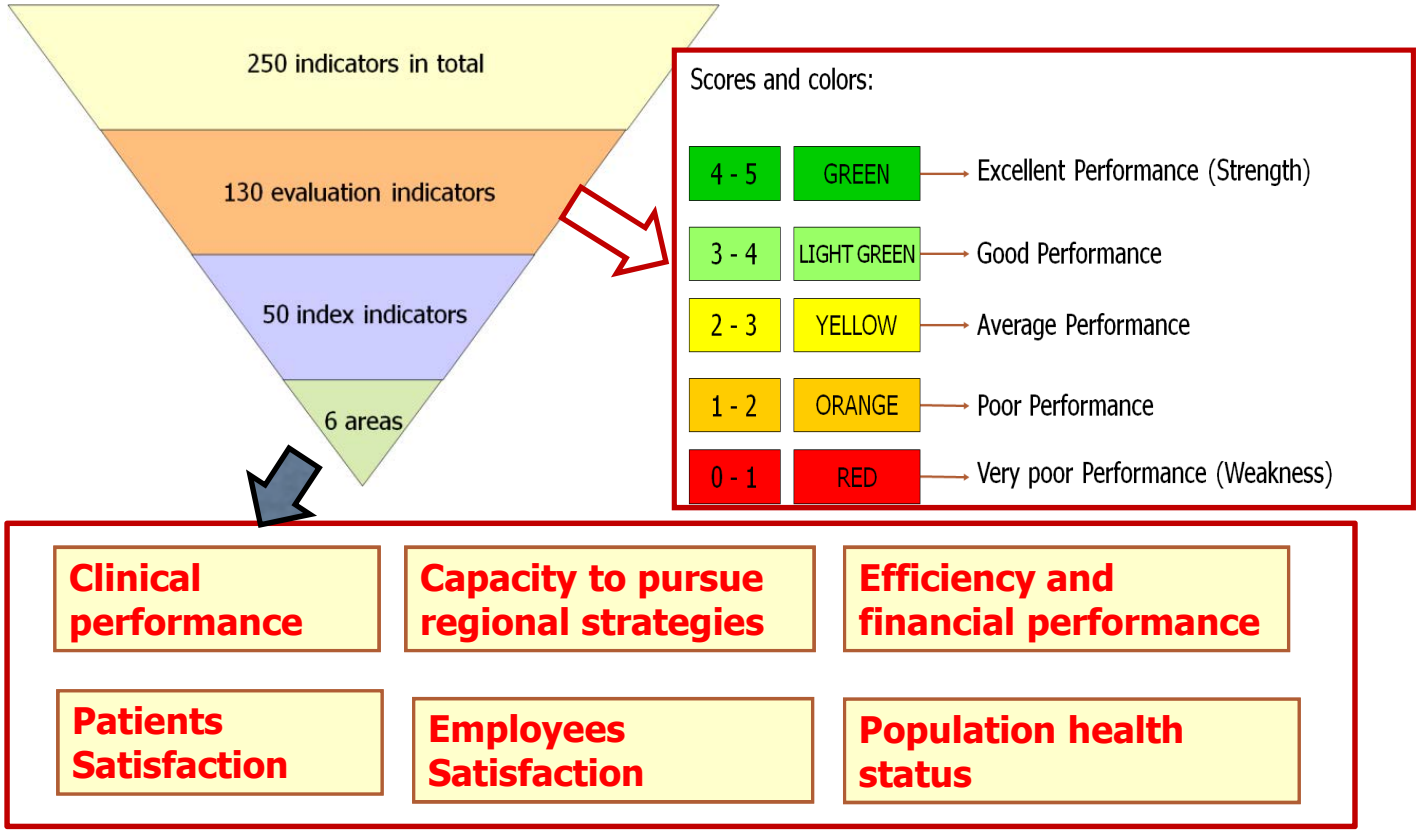
Il sistema di valutazione della performance dei sistemi sanitari regionali è stato attivato nel 2008 con la collaborazione di quattro regioni: **Toscana**, **Liguria**, **Piemonte** ed **Umbria**. Nell'anno 2010 si sono aggiunte **Valle d'Aosta**, **P.A. Trento**, **P.A. Bolzano** e **Marche**, nel 2011 la regione **Basilicata**, nel 2012 la regione **Veneto** e nel 2014 le regioni **Emilia Romagna** e **Friuli Venezia Giulia**.
Attualmente le Regioni che partecipano al network sono: **Basilicata**, **Emilia Romagna**, **Liguria**, **Marche**, **P.A. Trento**, **P.A. Bolzano**, **Toscana**, **Umbria**, **Veneto** e **Friuli Venezia Giulia**.
Il Sistema di valutazione delle performance, progettato dal Laboratorio Management e Sanità della Scuola Superiore Sant'Anna di Pisa e adottato già dal 2004 dalla Regione Toscana, risponde all'obiettivo di fornire a ciascuna regione una modalità di misurazione, confronto e rappresentazione della performance delle aziende sanitarie tra regioni differenti.
Un processo di condivisione interregionale ha portato alla selezione di 130 indicatori, di cui 80 di valutazione e 50 di osservazione volti a descrivere e confrontare, tramite un processo di benchmarking, varie dimensioni della performance del sistema sanitario: lo stato di salute della popolazione, la capacità di perseguire le strategie regionali, la valutazione sanitaria, la valutazione dell'esperienza dei cittadini e dei dipendenti, ed infine la valutazione della dinamica economico-finanziaria e dell'efficienza operativa.
I risultati sono rappresentati tramite uno schema a bersaglio, che offre un immediato quadro di sintesi sulla performance ottenuta dalla regione/azienda sulle dimensioni del sistema ed in particolare sui punti di forza e di debolezza. Il confronto avviene sia a livello regionale che delle aziende territoriali, ospedaliere e ospedaliero-universitarie. Dal 2008 viene predisposto un report annuale con i risultati delle Regioni sugli indicatori identificati. Nei primi due anni il report è stato utilizzato dalle Regioni aderenti al network con una diffusione interna al sistema per facilitare il processo di conoscenza e condivisione tra gli attori del sistema, ossia il management, i professionisti sanitari e i policy makers, facilitando la diffusione della cultura della valutazione. Dal 2010 il report viene reso pubblico, fruibile da tutti gli stakeholders, cittadini compresi.
Le Regioni aderenti al network considerano un valore la trasparenza e l'accountability del proprio operato e rendono pubblici i propri risultati.

Per saperne di più

E' possibile scaricare il Report Network 2013 in formato pdf al link seguente:download

The regional Performance Evaluation System



Code	Indicators and Sub-Indicators Target 2010 Tuscany Regional Government	Value 2005 2007	Value 2006 2008	
	POPULATION'S HEALTH STATUS (A)			
A1	**Infant Mortality**			
A1.1	Infant Mortality in the first year of life	2,77	2,70	
A1.2	*Early neonatal mortality (in the first 6 days of life)*	1,24	1,20	
A1.3	*Neonatal mortality (in the first 28 days of life)*	1,98	1,94	
A2	**Cancer mortality**	168,97	166,01	
A3	**Circulatory disease mortality**	172,11	166,40	
A4	**Suicide mortality**	5,19	5,28	
A5	**Potential Years of Life Lost (PYLL)**	3614,50	3557,30	
Code	**Indicators and Sub-Indicators Target 2010 Tuscany Regional Government**	**Value 2008**	**Value 2009**	**Value 2010**
	ABILITY TO PURSUE REGIONAL STRATEGIES (B)			
B2	**Lifestyles (PASSI)**			
B2.1	**Physical activity**			
B2.1.1	Percentage of sedentary people	26,03		28,67
B2.1.2	Percentage of sedentary people advised by the doctor to exercise	30,44		31,80
B2.2	**Nutritional situation**			
B2.2.1	Percentage of obese people	9,84		8,05
B2.2.2	Percentage of overweight or obese people advised by the doctor to lose or maintain weight	55,26		47,99
B2.2.3	Percentage of overweight or obese people advised by the doctor to exercise	41,72		39,20
B2.3	**Alcohol consumption**			
B2.3.1	Percentage of people binge drinking and/or drinking between meals	10,79		
B2.3.2	Percentage of people binge drinking and/or drinking between meals advised by the doctor to drink less	5,42		
B2.4	**Smoking**			
B2.4.1	Percentage of smokers	29,20		30,38
B2.4.2	Percentage of smokers advised by the doctor to quit smoking	54,93		28,93
B4	**Pain Management Strategies**			
B4.1	**Pain-related medicine consumption**			
B4.1.1	Opioid consumption			1,59
B4.1.3	Morphine consumption		2,38	2,26
B4.1.4	*Hospital morphine consumption*		0,75	
B5	**Extension and participation in cancer screenings**			
B5.1	**Mammography Screening**			
B5.1.1	Adjusted extension of mammography screening			96,15
B5.1.2	Adjusted participation in mammography screening	69,10	70,50	72,65
B5.2	**Cervical Screening**			
B5.2.1	Adjusted extension of cervical screening	99,38	97,92	99,66
B5.2.2	Adjusted participation in cervical screening	54,40	54,90	54,71
B5.3	**Colorectal Screening**			
B5.3.1	Adjusted extension of colorectal screening	69,38	69,38	81,88
B5.3.2	Adjusted participation in colorectal screening	50,90	53,00	51,18
B6	**Donations**			
B6.1	**Organ donations**			
B6.1.1	Percentage of detected encephalic deaths	48,52	53,59	55,10
B6.1.2	Percentage of actual donors	53,99	56,21	53,74
B6.1.3	*Brain injury death rate per million residents*	147,40	154,00	136,72
B6.2	**Blood donations**			
B6.2.1	*Plasma non-compliance index for the Industry*		0,51	0,50
B6.2.2	Blood, plasma and blood platelets donation rates per 1,000 residents	98,00	102,00	103,00

Code	Indicators and Sub-indicators Target 2010 Tuscany Regional Government	Value 2008	Value 2009	Value 2010
B7	**Vaccine coverage**			
B7.1	MMR vaccine coverage	92,36	92,56	92,04
B7.2	Influenza vaccine coverage for residents over 65	69,47	71,11	68,76
B7.3	*Papillomavirus (HPV) vaccine coverage*			25,08
B8	**Data Management**			
B8.1	Timeliness of data transfer to the Regional Information System		67,56	69,01
B8.2	**Timeliness and compliance of services delivered with regard to prevention**			
B8.2.1	Timeliness of services delivered with reference to prevention		92,00	92,00
B8.2.2	Compliance of services delivered with reference to prevention		92,00	91,67
B8.3	Timeliness of data transmission with respect to public health			7,42
B9	**Equity and Access**			
B9.5	**Hospitalization of patients with chronic diseases by education**			
B9.5.1	Hospitalization for heart failure rates ratio by education		1,53	1,24
B9.5.2	Hospitalization for diabetes rates ratio by education		1,73	1,34
B9.5.3	Hospitalization for COPD rates ratio by education		2,06	1,62
B9.5.4	Hospitalization for pneumonia rates ratio by education		1,64	1,41
B9.6	Urgent hospitaltzation rates ratio by education	1,41	1,73	1,52
B9.7	NTSV cesarean birth rates ratio by education		0,99	0,94
B9.8	*VPI hospitalization rates ratio by citizenship*		6,71	7,33
B11	***Complexity (Teaching Hospitals)***			
B11.1	*Average DRG weights*	1,70	1,64	1,65
B11.1.1	*Average medical DRG weights*	1,01	1,03	1,04
B11.1.2	*Average surgical DRG weights*	2,61	2,30	2,29
B11.1.2.1	*Percentage of high-complexity surgical DRGs*	41,14	33,92	34,18
B11.1.2.2	*Average weight of high-complexity surgical DRGs*	4,61	4,63	4,62
B12	**Mobility (Teaching Hospitals)**			
B12.1	**Outflow (Teaching Hospitals)**			
B12.1.1	**Outflow outside the Area Vasta territory**			
B12.1.1.1	Outflow rate outside the Area Vasta territory	7,60	7,85	8,85
B12.1.1.2	Outflow rate outside the Area Vasta territory per high-complexity DRG	9,73	9,78	11,79
B12.1.2	**Extra-regional outflow**			
B12.1.2.1	Overall extra-regional outflow rate	6,45	5,99	4,84
B12.1.2.2	Extra-regional outflow rate per high-complexity DRG	7,46	6,75	5,01
B12.2	**Inflows**			
B12.2.1	*Inflow outside the Area Vasta territory per high-complexity DRG*	10,49	11,02	10,29
B12.2.2	**Extra Region inflow**			
B12.2.2.1	Extra-regional inflow	17,63	17,44	17,25
B12.2.2.2	Extra-regional inflow per high-complexity DRG	12,98	14,11	14,19
B13	**Continuity of care: maternal and child path**			31,44
B15	**Research Productivity (Teaching Hospitals)**			
B16	**Communication and citizen participation**			
B16.1	**Service Charter System**			
B16.1.1	Percentage of achieved commitments according to the Service Charter	71,99	78,40	81,14
B16.1.2	Participation Committee	50,00	53,12	51,47
B16.2	Front-office	75,63	79,69	79,78
B16.3	Citizen satisfaction with communication	14,33		23,60
B17	**Strategies for surgical activity**			
B17.1	Volume trend for planned surgery			2,34
B17.1.1	*Volume trend for planned surgery – inpatient*			4,06

Code	Indicators and Sub-Indicators Target 2010 Tuscany Regional Government	Value 2008	Value 2009	Value 2010
B17.1.2	*Volume trend for planned surgery – outpatient*			–2,83
B17.2	Extra Region outflow trend for basic surgical specialties (Local Health Authorities)		7,82	
B17.3	Extra-regional outflow rate for highly specialised surgery (Teaching Hospitals)		2,04	
B17.4	*Surgical activity weightage trend for planned inpatient hospitalization*			–0,55
B20	**Percentage of first outpatient specialist visits booked within 15 days**			36,00
B20.1	*Percentage of first cardiac visits booked within 15 days*			36,34
B20.2	*Percentage of first gynaecological visits booked within 15 days*			34,10
B20.3	*Percentage of first neurological visits booked within 15 days*			38,20
B20.4	*Percentage of first orthopaedic visits booked within 15 days*			32,50
B20.5	*Percentage of first ENT visits booked within 15 days*			57,50
B20.6	*Percentage of first ophthalmological visits booked within 15 days*			24,50
B20.7	*Percentage of first dermatological visits booked within 15 days*			36,96
B20.8	*Percentage of first urological visits booked within 15 days*			35,50
B20.9	*Percentage of first general surgery visits booked within 15 days*			61,10
B21	**Percentage of diagnostic tests booked within 30 days**			61,00
B21.1	*Percentage of CT without contrast booked within 30 days*			62,90
B21.2	*Percentage of CT with contrast booked within 30 days*			57,88
B21.3	*Percentage of MRI without contrast booked within 30 days*			54,00
B21.4	*Percentage of MRI with contrast booked within 30 days*			52,00
B21.5	*Percentage of ultrasound scans booked within 30 days*			66,84
B21.6	*Percentage of obstetrical and gynaecological ultrasound scans booked within 30 days*			78,03
B21.7	*Percentage of Echo Colour Doppler booked within 30 days*			49,70
B22	**Adapted Physical Activity (APA)**			
B22.1	No. of APA low disability programmes per 1,000 residents aged ≥ 65 years			1,24
B22.2	No. of APA high disability programmes per 15,000 residents aged ≥ 65 years			1,35
	CLINICAL EVALUATION (C)			
C1	**Ability to manage demand**			
C1.1	Standardized hospitalization rate per 1,000 residents	151,18	147,43	143,50
C1.1.1.1	*Standardized hospitalization rate of acute medical DRG 0-64 years per 1,000 residents*	43,76	41,64	40,34
C1.1.1	*Standardized hospitalization rate for acute inpatient admissions per 1,000 residents*		103,50	102,31
C1.1.1.2	*Standardized hospitalization rate for emergency acute inpatient admissions per 1,000 residents*		49,75	50,08
C1.1.1.3	*Standardized hospitalization rate for planned acute inpatient admissions per 1,000 residents*		51,14	49,74
C1.1.1.3.1	*Standardized hospitalization rate for planned acute inpatient admissions with medical DRG per 1,000 residents*		18,11	16,00
C1.1.2	*Standardized hospitalization rate for acute outpatient admissions per 1,000 residents*		40,32	37,67
C1.1.2.1	*Standardized hospitalization rate for acute medical outpatient admissions per 1,000 residents*	17,82	16,60	16,50
C1.1.2.2	*Standardized hospitalization rate for acute surgical outpatient admissions per 1,000 residents*		19,95	17,35
C2a	**Performance index for average hospital stay**		0,00	–0,12
C3	**Preoperative average hospital stay**	1,14	0,91	0,79
C3.1	*Preoperative average hospital stay for more than 1 day*		1,32	1,19
C14	**Medical Appropriateness**			
C4.8	Medical LEA DRG hospitalization rate per 10,000 residents (Health Care Agreement 2010)		255,68	245,88
C14.2	Percentage of medical outpatient admissions for diagnostic purposes (Health Care Agreement 2010)	43,25	43,58	44,33
C14.2.1	*Percentage of medical outpatient admissions for diagnostic purposes – adults*		36,11	34,18
C14.2.2	*Percentage of medical outpatient admissions for diagnostic purposes – paediatrics*		76,96	77,89
C14.3	Percentage of short medical inpatient admissions (Health Care Agreement 2010)		19,93	20,20
C14.3.1	*Percentage of short medical inpatient admissions – adults*		18,81	19,00
C14.3.2	*Percentage of short medical inpatient admissions – paediatrics*		29,16	29,34
C14.3.3	*Percentage of short medical planned inpatient admissions*		28,38	29,82
C14.4	Percentage of medical admissions over the threshold for patients ≥ 65 years (Health Care Agreement 2010)		3,33	3,14

Code	Indicators and Sub-Indicators Target 2010 Tuscany Regional Government	Value 2008	Value 2009	Value 2010
C14.4.1	*Percentage of medical admissions over the global threshold*		3,49	3,29
C4	**Surgical Appropriateness**			
C4.1	***Percentage of medical DRGs discharges from surgical wards (Health Care Agreement 2010)***			
C4.1.1	Percentage of medical DRGs discharges from surgical wards: inpatient admissions	22,69	17,43	16,02
C4.1.1.1	*Percentage of medical DRGs discharges from surgical wards: planned inpatient admissions*	12,46	8,67	8,02
C4.1.1.2	*Percentage of medical DRGs discharges from surgical wards: urgent inpatient admissions*		37,14	34,80
C4.1.2	Percentage of medical DRGs discharges from surgical wards: outpatient admissions	15,95	15,90	15,88
C4.4	Percentage of laparoscopic cholecystectomies in Day Surgery 0-1 day	51,39	53,21	55,48
C4.12	Surgical Essential Levels of Care (LEA) DRG: percentage of achieved standards per percentage of outpatient surgery (Health Care Agreement 2010)		58,90	54,87
C5a	**Process Quality**			
C5.2	Percentage of femur fractures operated within 2 days from admission (Health Care Agreement 2010)	44,82	51,65	55,08
C5.12	*Percentage of femur fractures operated per fractures diagnosed*		88,76	90,08
C5.3	Percentage of transurethral prostatectomies	55,92	57,03	61,73
C5.7	Percentage of mitral valve repair (Teaching Hospitals)	65,93	62,47	64,20
C5.8	Percentage of non-invasive mechanical ventilation		27,78	33,84
C5.10	*Percentage of planned laparoscopic colon resections*		29,30	32,03
C5.11	Percentage of urgent laparoscopic appendectomies for women between 15 and 49 years	67,71	72,46	82,11
C5b	**Outcome Quality**			
C5.1	Percentage of readmissions within 30 days with the same MDC	5,79	5,41	5,14
C5.1.1	*Percentage of medical readmissions within 30 days with the same MDC*	8,03	7,28	7,04
C5.1.2	*Percentage of surgical readmissions within 30 days with the same MDC*	3,13	2,72	2,56
C6	**Clinical Risk and Patient Safety**			
C6.1	Index of Claims		8,85	7,31
C6.1.1	*Index of Claims – events in hospitals*			5,12
C6.1.2	*Index of Claims – events in local facilities*			0,05
C6.1.3	*Index of administrative efficiency*			69,80
C6.2	Incident Reporting system development			
C6.2.1	Index of audit diffusion			2,49
C6.2.2	Index of Mortality and Morbidity report diffusion			4,13
C6.4	***Patient Safety***			
C6.4.1	*Postoperative sepsis in elective surgery*	2,63	2,86	2,95
C6.4.2	*Intrahospital mortality of patients discharged with low mortality DRGs*	1,02	0,57	0,59
C6.4.3	*Vein thrombosis or pulmonary embolism following surgery*	2,17	1,96	2,28
C6.5	Level of best practices diffusion			1,68
C6.6	Patient fall control capability		7,52	10,78
C7	**Maternal and Child Care**			
C7.1	Percentage of caesarean births (NTSV)	20,59	20,33	20,34
C7.1.1	*Raw percentage of caesarean births*	28,04	28,08	26,21
C7.2	Percentage of induced labour	16,71	18,24	18,32
C7.3	Percentage of episiotomy (NTSV)	37,96	35,01	33,51
C7.5	Outflow rate for childbirth	17,34	17,11	17,02
C7.6	*Percentage of operative vaginal deliveries (forceps or vacuum)*	5,26	5,85	6,86
C7.7	*Paediatric hospitalization rate per 100 residents (0-14 years)*		10,52	11,38
C7.8	Percentage of eye screening on healthy infants			85,75
C7.9	Percentage of audiology screening on healthy infants			84,79
C7.10	*Voluntary Pregnancy Interruption (VPI) rates per 1,000 residents*		7,78	7,34
C7.12	*Percentage of breastfeeding within 2 hours*			75,37
C8a	**Area-Hospital Integration**			
C8a.1	Percentage of admissions with > 30 days stay per area of residence		0,96	0,93

Code	Indicators and Sub-Indicators Target 2010 Tuscany Regional Government	Value 2008	Value 2009	Value 2010
C8a.3	*Underage conception rate per 1,000 resident women (12-17 years)*	3,56		
C8a.11	*Index of Retention to Drug Addiction Services*			
C8a.12	*Discharge rate with activation of integrated home care per 100,000 residents*		18,83	23,19
C11a.4.1	Pneumonia hospitalization rate per 100,000 residents (20-74 years)		97,24	94,82
C8a.19	**Basic Paediatrics**			
C8a.19.1	*Hospitalization rate for paediatric asthma per 100,000 residents (2-17 years)*	52,98	38,96	44,41
C8a.19.2	Paediatric hospitalization rate for gastroenteritis per 100,000 residents aged (≤ 17 years)	210,29	170,36	183,01
C9	**Appropriateness of Drug Prescription**			
C9.6.1	**Statins (Lipid Lowering)**			
C9.6.1.2	Percentage of statin-treated patients		37,99	40,16
C9.6.1.3	Statin consumption in combination with other drugs		70,10	83,62
C9.2	Percentage of statin-treated patients abandoning drug therapy	21,29	16,28	15,29
C9.6.2	**Antihypertensives**			
C9.3	Incidence of sartans (Antihypertensive)			41,87
C9.7	**Gastrointestinal**			
C9.1	Consumption of Proton Pump Inhibitors (Antacid)			24,29
C9.8	**Antimicrobials**			
C9.8.1.1	Consumption of antibiotics		23,43	22,89
C9.8.1.2	Incidence of injectable antibiotics		27,18	27,56
C9.9	**Nervous System**			
C9.4	Consumption of selective serotonin reuptake inhibitors (antidepressants)			48,27
C9.9.1.1	Percentage of antidepressant-treated patients abandoning drug therapy		29,20	27,92
C9.11	*Percentage of antidepressant-treated patients*			27,57
C9.5	Consumption of other antidepressants (Antidepressants)			11,63
C20	**Appropriateness of Drug Prescription in the Hospital**			
C9.12	Consumption of antibiotics within the ward		1,14	1,28
C9.13	Incidence of injectable antibiotics within the ward		61,51	47,25
C11a	**Effectiveness of Chronic Care management**			
C11a.1	***Cardiac insufficiency***			
C11a.1.1	Hospitalization rate for cardiac insufficiency per 100,000 residents (50-74 years)		193,95	188,95
C11a.1.2	Percentage of residents with heart failure with at least one measurement of creatinine, sodium and potassium	51,60	53,60	56,00
C11a.1.3	Percentage of residents with heart failure treated with ACE inhibitor – sartans	58,90	58,00	58,40
C11a.1.4	Percentage of residents with heart failure treated with beta blocker	34,80	36,80	39,60
C11a.2	***Diabetes***			
C11a.2.1	Overall hospitalization rate for diabetes per 100,000 residents (20-74 years)		21,11	21,44
C11a.2.2	Percentage of residents with diabetes with at least one measurement of glycosylated haemoglobin	60,30	62,80	66,80
C11a.2.3	Percentage of residents with diabetes with at least one Retina examination	29,90	31,00	31,30
C11a.2.4	Major amputation rate for diabetes per million residents		36,95	41,29
C11a.2.4.1	*Revascularisation rate in patients with diabetes per 100,000 residents*		844,11	879,89
C11a.2.4.2	*Percentage of revascularisation in patients with diabetes*		63,15	66,16
C11a.3	***COPD***			
C11a.3.1	Hospitalization rate for COPD per 100,000 residents (50-74 years)		59,37	50,90
C11a.5	***Ictus***			
C11a.5.1	Percentage of residents with ictus receiving antithrombotic therapy – DDD > 50% days of observation	60,20	60,00	61,70
C11a.6	***Hypertension***			
C11a.6.1	Percentage of residents with hypertension with at least one measurement of Lipid Profile	48,20	49,70	51,70
C13	**Ambulatory and Diagnostic service rate**			
C13.1	*Ambulatory service rate per 1,000 residents*	2876,51	2902,69	2982,02
C13.2	**Diagnostic imaging service rate**			

Code	Indicators and Sub-Indicators Target 2010 Tuscany Regional Government	Value 2008	Value 2009	Value 2010
C13.2.1	Standardized CT performance rate per 1,000 residents	56,94	55,96	59,61
C13.2.2	Standardized MRI performance rate per 1,000 residents	59,61	60,32	71,35
C13.2.2.1	*Musculoskeletal MRI performance rate for 1,000 residents (≥ 65 years)*			23,71
C13.2.3	Standardized Echo Colour Doppler performance rate per 1,000 residents	61,98	62,22	63,85
C13.2.4	Ultrasound performance raw rate per 1,000 residents	244,50	246,39	249,25
C13.2.5	Traditional X-ray performance raw rate per 1,000 residents	465,60	458,09	454,44
C15	**Mental Health**			
C8a.13	Percentage of re-admissions for adult psychiatric patients within 30 days	15,62	13,96	13,39
C8a.13.1	*Adjusted percentage of adult psychiatric patient re-admissions within 1 year*	27,16	25,98	25,35
C8a.13.2	*Percentage of adult psychiatric patient re-admissions within 7 days*	7,73	7,07	7,00
C8a.5	*Hospitalization rate for psychiatric disorders per 100,000 adult residents*	299,59	299,73	280,94
C8a.5.1	*Hospitalization rate for schizophrenia and psychotic disorders per 100,000 adult residents*		62,44	57,81
C8a.5.2	*Hospitalization rate for mood disorders per 100,000 adult residents*		73,86	72,39
C8a.5.3	*Hospitalization rate for mild to moderate depression per 100,000 adult residents*		28,03	24,36
C8a.5.4	*Hospitalization rate for anxiety and adjustment disorders per 100,000 adult residents*		13,79	13,10
C8a.5.5	*Hospitalization rate for personality disorders per 100,000 adult residents*		22,36	19,94
C8a.5.6	*Hospitalization rate for other mental health diagnoses per 100,000 adult residents*		31,58	30,04
C8a.6	*Percentage of CHT hospitalizations for psychiatric disorders*	2,60	2,81	2,85
C8a.7	*Hospitalization rate for psychiatric disorders per 100,000 underage residents*	101,94	111,31	124,03
C16	**Emergency Department**			
C16.1	*Percentage of yellow code patients visited within 30 minutes*			69,62
C16.2	*Percentage of green code patients visited within 1 hour*			76,20
C16.3	*Percentage of green code patients not referred to hospital with lenght of stay ≤ 4h*			82,11
C16.4	*Percentage of patients referred to hospital with lenght of stay ≤ 8h*			91,19
D9	Percentage of people leaving the ED without being treated			3,86
	PATIENT SATISFACTION (D)			
D15a	**Citizen Experience with District Services**	67,63		64,33
D17	**Women's experience with maternal and child path**			58,39
D18	**Percentage of hospitalized patients leaving AMA (Against Medical Advice)**		0,89	0,94
	WORKING CLIMATE SURVEY (E)			
E1	**Participation rate in the Working Climate Survey**	43,64		41,97
E2	**Employee absence rate**	5,94	5,69	6,35
E3	**Employee accident rate**	4,93	4,89	4,61
E9	**Training activities**	2,94		2,97
E10	**Evaluation of management according to employees**	3,01		3,16
E12	*Evaluation of management according to executives*	3,22		3,17
E11	**Evaluation of Communication and Information according to employees**	2,60		2,78
E13	*Evaluation of Communication and Information according to executives*	3,46		3,41
	THE EVALUATION OF OPERATING EFFICIENCY AND FINANCIAL PERFORMANCE(F)			
F1	**Financial Performance**			
F1.1	Overall Financial Performance	−1,18	−0,68	
F1.2	Return on Sales	0,73	1,01	
F1.3	Return on Investment (Teaching Hospital)	0,73	1,00	
F3	**Assets and Liability Performance**			
F3.1	Current ratio	0,74	0,69	
F3.2	***Investment Policies***			
F3.2.1	*Incidence of lease payments*	6,70	5,96	
F3.2.2	*Percentage of technical obsolescence*	70,38	59,03	
F3.2.3	*Percentage of new investments*	10,28	11,47	

Code	Indicators and Sub-Indicators Target 2010 Tuscany Regional Government	Value 2008	Value 2009	Value 2010
F3.3	*Net working capitalratio*	−0,12	−0,17	
F3.4	***Financing costs***			
F3.4.1	*Return on Debt (ROD)*	−4,73	−3,01	
F3.4.2	*Trade Payables Days*	167,56	206,90	
F7	**Internal Services**	2,83		3,13
F8	**Budget's knowledge by executives**	3,22		3,42
F9	**Budget's knowledge by employees**	66,61		64,50
F10a	**Pharmaceutical Expenditure**			
F10	Pharmaceutical expense per capita	219,15	214,09	214,12
F10.2	*Hospital pharmaceutical expense*		42,08	54,83
F11	**Extra-regional compensation Index**		0,90	
F12a	**Efficiency of Drug Prescription**			
F12a.14	Percentage of off-patent molecules		56,09	59,68
F12a.15.1	**Statins (Lipid Lowering)**			
F12a.2	Percentage of statins off patents	47,08	48,08	50,92
F12a.15.2	**Antihypertensives**			
F12a.3	Percentage of off-patent ACE inhibitors (Antihypertensive)	81,76	94,72	94,72
F12a.6	Percentage of off-patent dihydropyridine derivatives (Antihypertensive)	58,10	65,87	80,59
F12a.7	Percentage of ACE inhibitors (Antihypertensive), combined with other drugs, off-patent	54,09	85,22	84,33
F12a.11	Percentage of Losartan on sartans		17,03	18,40
F12a.12	Percentage of Losartan on sartans in combination with other drugs		16,93	16,92
F12a.16	**Gastrointestinal**			
F12a.1	Percentage of off-patent proton pump inhibitors (Antacid)	79,76	82,30	84,06
F12a.17	**Antimicrobials**			
F12a.9	Percentage of off-patent fluoroquinolone (Antibiotics)	32,13	33,48	34,64
F12a.13	Antibiotics: average cost per box		8,92	8,28
F12a.18	**Nervous System**			
F12a.5	Percentage of off-patent selective serotonin reuptake inhibitors (Antidepressants)	87,00	85,58	84,32
F12a.10	Percentage of other off-patent antidepressants (Anti-hypertension)		84,99	79,95
F20	**Efficiency of Hospital Drug Prescription**			
F20.1	*Biological cancer drugs: incidence on expenses*		45,14	45,45
F20.2	*Biological Immunosuppressive drugs: Incidence on expenses*		41,00	43,02
F20.3	Percentage of erythropoietin off patent		0,11	1,76
F20.4	Percentage of somatotropin off patent		3,23	3,94
F20.5	Percentage of Filgrastim off patent		0,86	20,24
F15	**Efficiency and Effectiveness of Prevention Hygiene and Safety on Workplace Services (PISLL)**			
F15.1	**Territory coverage**			
F15.1.4	*Territory Coverage with respect to training activity per 1,000 workers*	6,14	4,62	4,75
F15.1.6	Territory Coverage with respect to the various construction sites inspected	119,90	114,78	111,17
F15.1.7	*Territory Coverage with respect to services delivered n. 25-26-72*			1,08
F15.1.8	Territory Coverage with respect to the number of farms checked			150,14
F15.2	***Efficiency***			
F15.2.2	*Efficiency with respect to the training period for external users*	19,30	13,75	14,81
F15.2.4	Efficiency with respect to services delivered n. 25-26-27-72			44,03
F15.2.5	*Efficiency with respect to the number of prescriptions*			11,19
F15.3	***Results***			
F15.3.1	Standardized rate of accidents			32,17
F15.3.3	*Results with respect to the number of prescriptions*			29,88
F15.4	***Flows***			

Code	Indicators and Sub-Indicators Target 2010 Tuscany Regional Government	Value 2008	Value 2009	Value 2010
F15.4.1	Punctuality with regard to flows		8,33	2,78
F15.4.2	Data quality with regard to flows			
F16	**Efficiency and Effectiveness in Food Safety and Nutrition Services (SPV-IAN)**			
F16.1	***Information flows***			
F16.1.1	Information flows delayed with respect to due date	4,44	0,37	4,82
F16.1.2	Information flows with non-compliant forms	0,11		2,01
F16.1.3	Data quality with regard to flows	0,05	1,82	3,70
F16.2	***Nutrition***			95,54
F16.2.1	*Percentage of completed nutritional plans of the total planned*			94,24
F16.2.2	*Percentage of completed checklists of validated national plans*			96,84
F16.3	***Food Safety and Plans for Residuals***			
F16.3.1	Samples analysed for the National Plan for Animal Feeding (PNAA) and the National Plan for Residuals (PNR)	103,01	101,53	103,47
F16.3.2	Adherence to quarterly programming plans for PNAA and PNR		91,50	96,09
F16.4	***Categorisation (Territory coverage)***			
F16.4.1	Categorisation – No. of companies in risk group 1			100,00
F16.4.2	Categorisation – No. of companies in risk group 2			24,30
F16.5	***Production efficiency***			
F16.5.1	Production efficiency for services delivered n. 49		39,16	38,81
F16.5.2	Production efficiency for services delivered n. 4		5,67	7,07
F16.5.3	Production efficiency for services delivered n. 43		19,38	21,60
F16.6	***Organisational efficiency***			
F16.6.1	Non-compliance certificate ISO 9001: 2000			100,00
F16.6.2	Quality Management System (SGQ) Internal Control Performance			95,83
F16.7	***Checklist National Database (NDB) Teramo***			
F16.7.1	Checklist for cattle			8,05
F16.7.2	Checklist for ovine and caprine			3,80
F16.7.3	Checklist for swine			1,56
F16.8	***Pharmacovigilance***			
F16.8.1	Pharmacovigilance – Wholesale			96,15
F16.8.2	Pharmacovigilance – Pharmacies		31,00	32,79
F17	**Health expenditure per capita**			
F19	***Expenditure per DRG fee***	1,53	1,56	
F19.1	*Expenditure per DRG value (Hospital Care)*	1,52	1,56	
F19.2	*Expenditure per fee with reference to outpatient care*	1,56	1,54	
Indicators in italics are not for evaluation				

The reference criteria for assessment bands

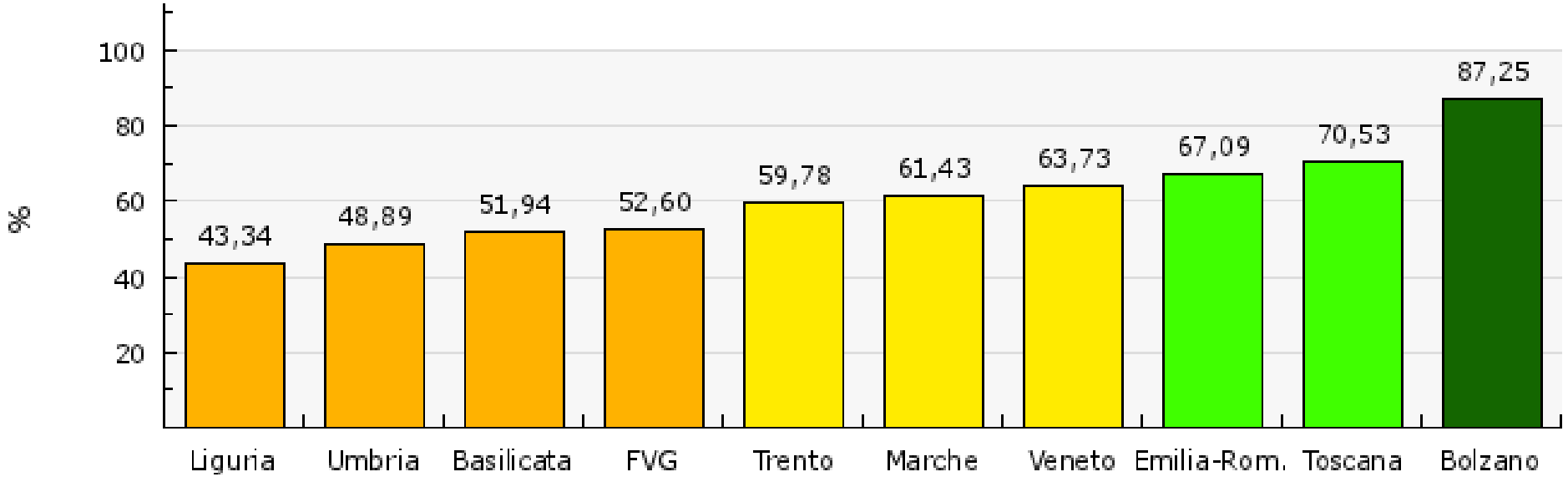
1. **International standards**, if existing (i.e.: Caesarean rate by WHO);
2. **Regional standards** set out by the Regional Government;
3. **The regional mean**, standardized by several factors to allow comparisons across Health Authorities.

Level:
Healthcare Provider

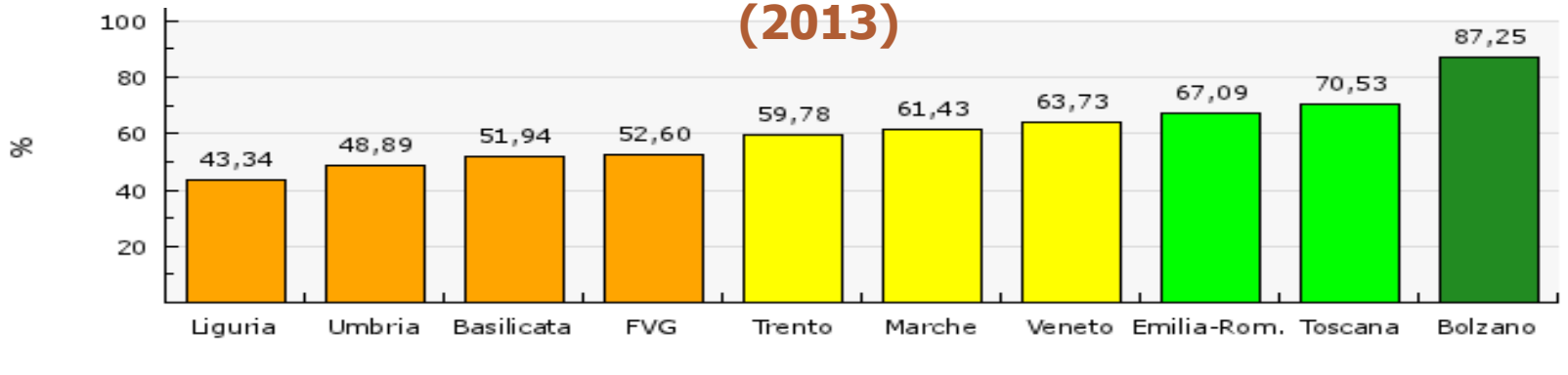
C5.2 Percentage of femoral fractures operated within 2 days of admission

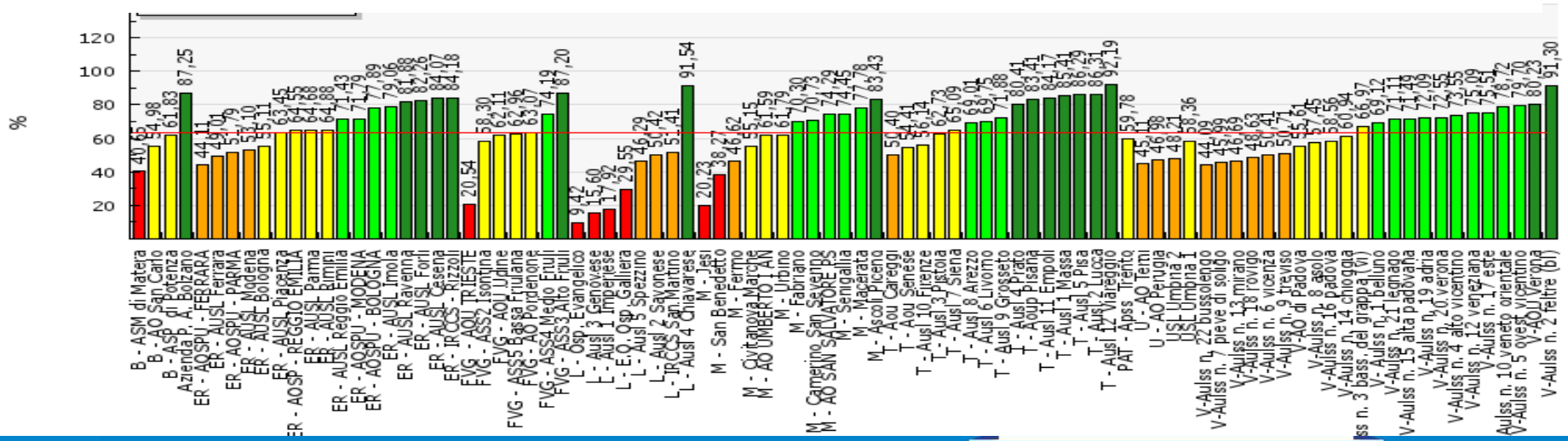
Definition:	Percentage of interventions for femoral fracture with length of stay between admission and intervention ≤ 2 days
Numerator:	No. of interventions for femoral fracture with length of stay between admission and intervention ≤ 2 days
Denominator:	No. of interventions for femoral fracture
Mathematical formula:	$\frac{\text{No. of femoral fracture interventions with length of stay between admission and intervention} \leq 2 \text{ days}}{\text{No. of interventions for femoral fracture}} \times 100$
Notes:	Only inpatients admissions are considered. ICD9-CM Codes for principal diagnosis: Fracture of the femur neck 820.xx AND ICD9-CM codes for principal or secondary intervention: 79.15 Closed reduction of femur fracture, with internal fixation 79.35 Open reduction of femur fracture, with internal fixation 81.51 Total hip replacement 81.52 Partial hip replacement 78.55 Internal fixation of the femur without fracture reduction
Source:	Regional Reporting System – SDO
Reference parameter:	Regional objective: ≥ 80%

C5.2 - Percentage of femur fractures operated within 2 days from admission (2013)

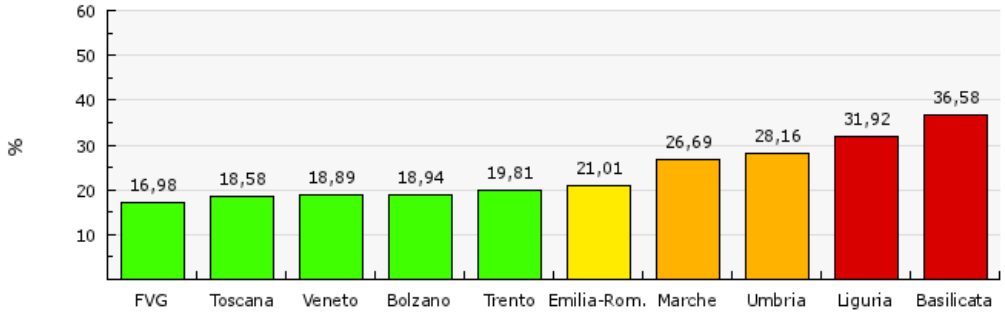


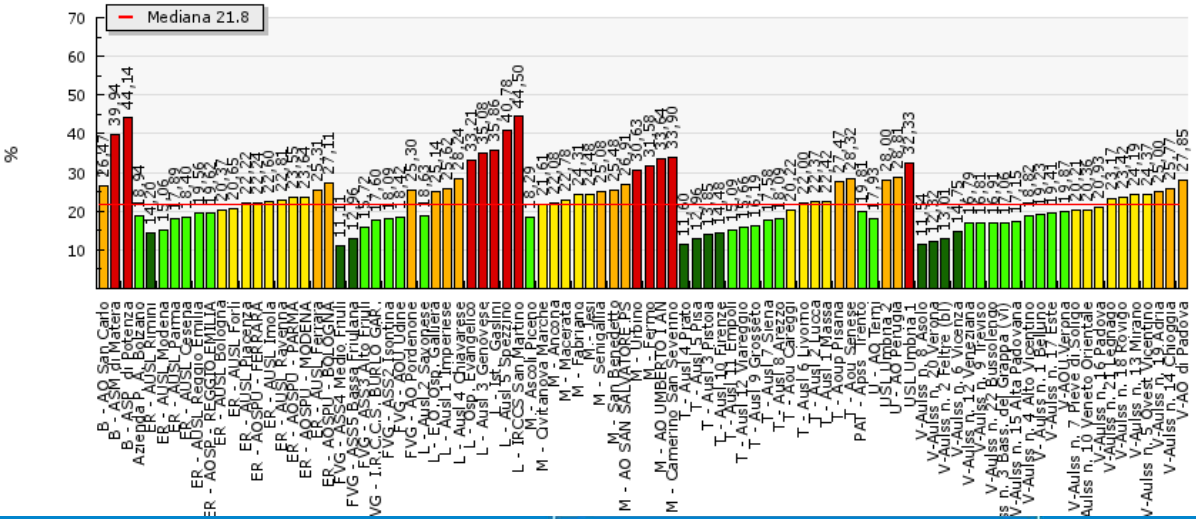
C5.2 - Percentage of femur fractures operated within 2 days from admission (2013)



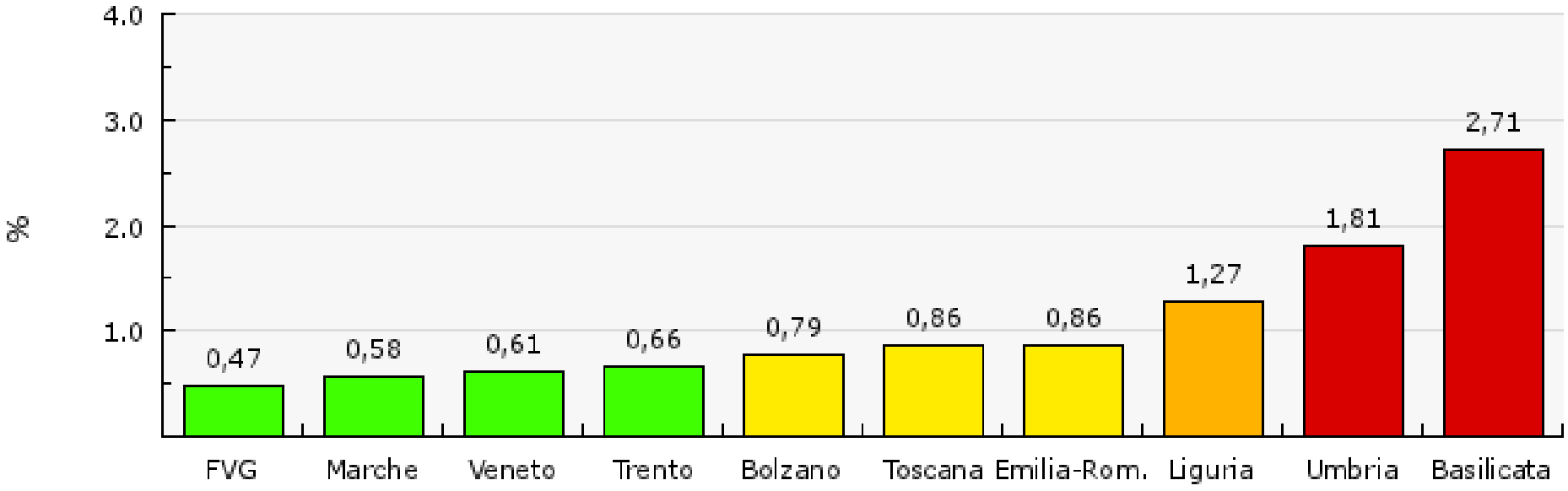


C7.1 - Percentage of caesarean births (NTSV) 2013





D18 - % of patients that leave the hospital against the medical advice (2013)



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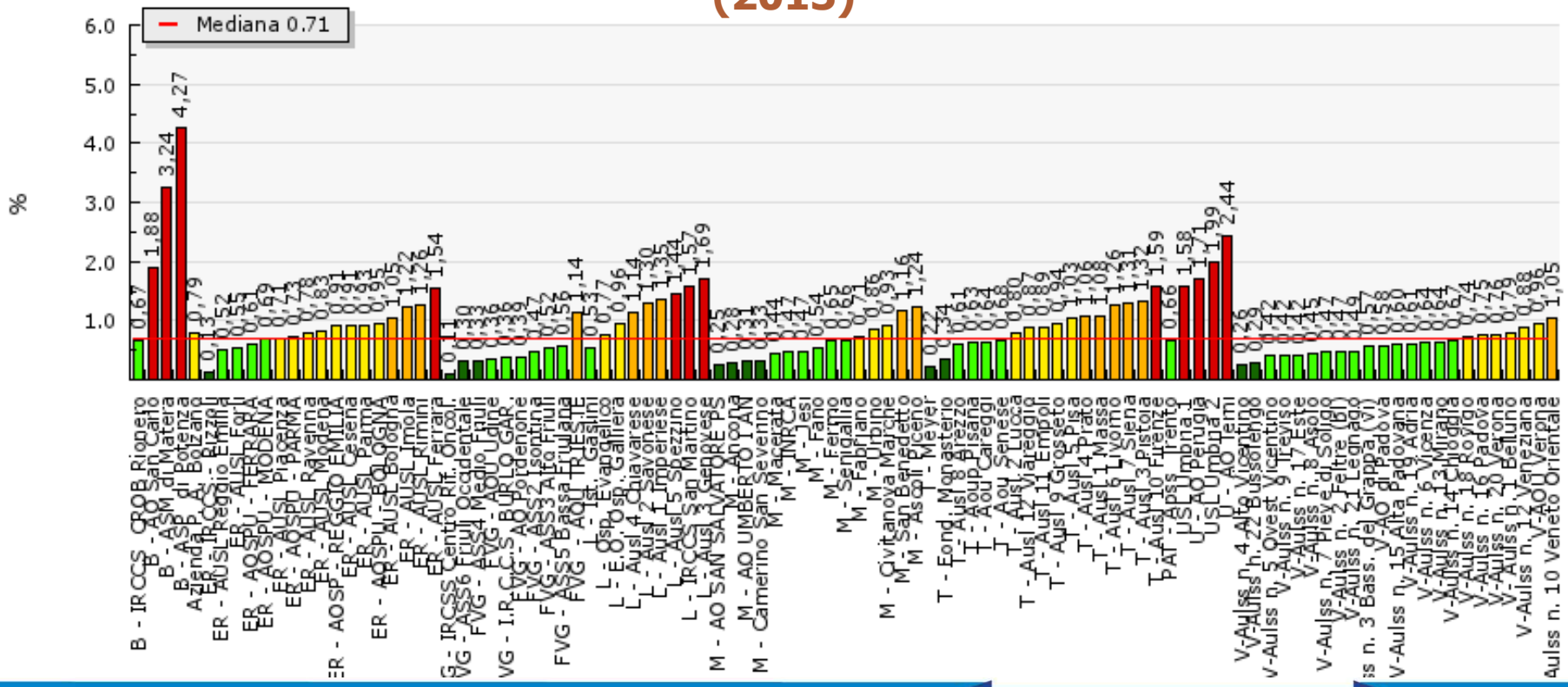
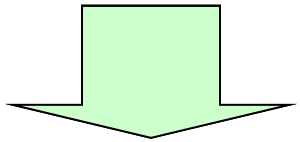


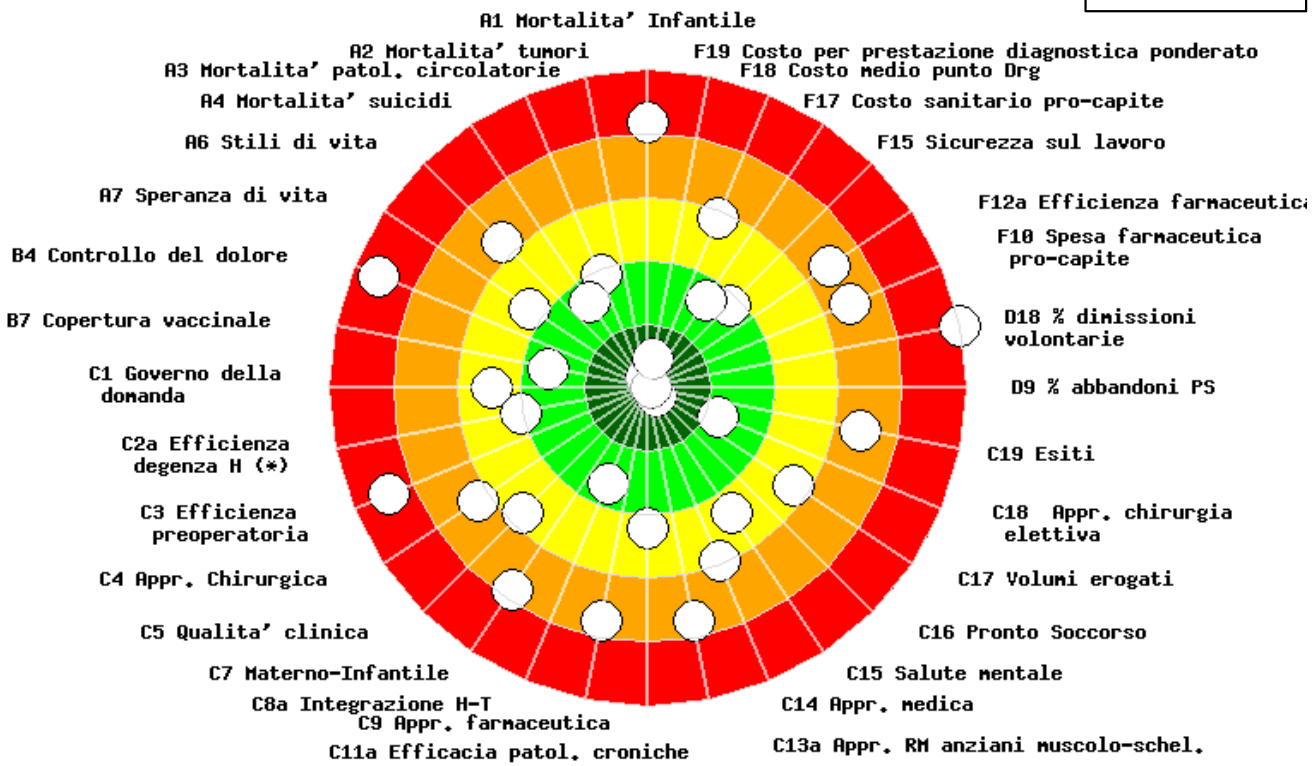
To visually represent the results of the six areas, each Region & Health Authority has a personal "target" diagram, divided in five assessment bands.

The more the Region/Health Authority is able to reach objectives and obtain good results in each of the six areas, the nearer the performance indicator is to the centre.



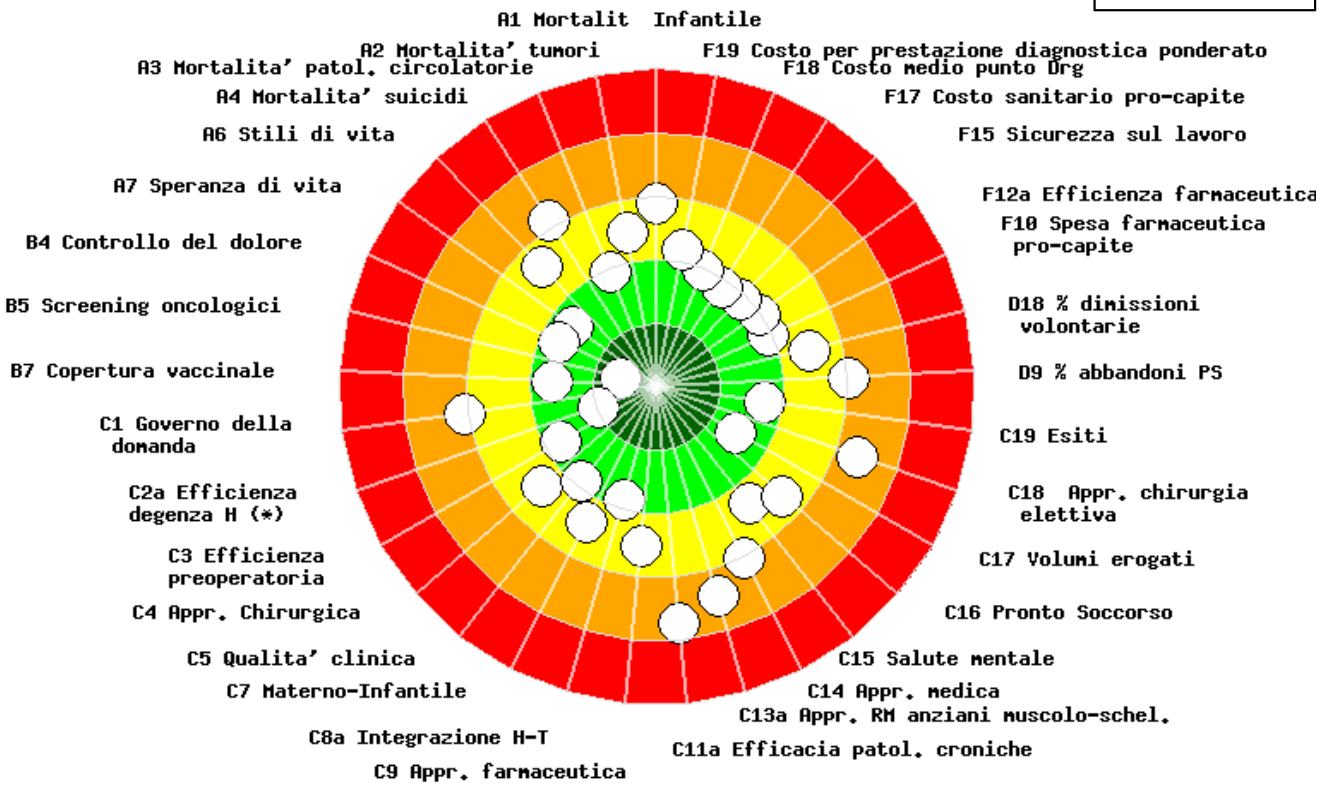
Basilicata

2013



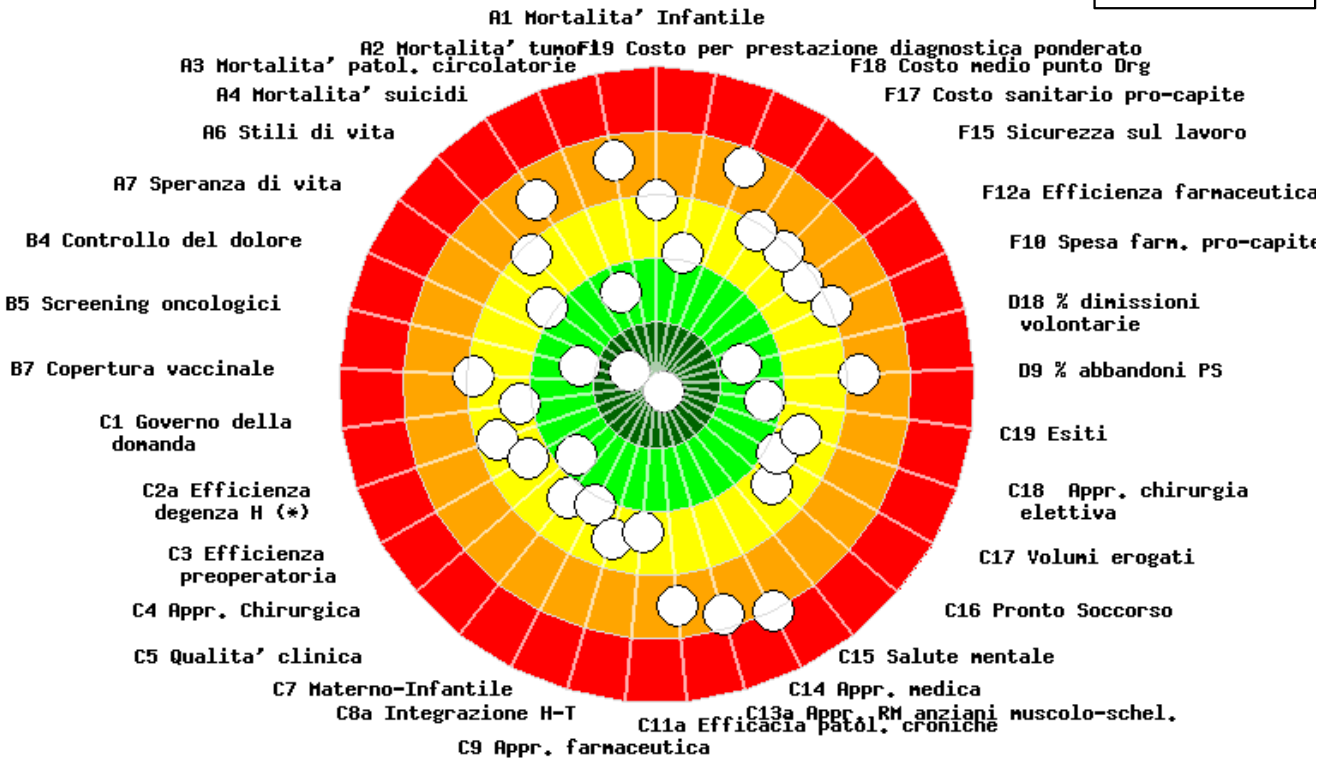
Emilia-Rom.

2013



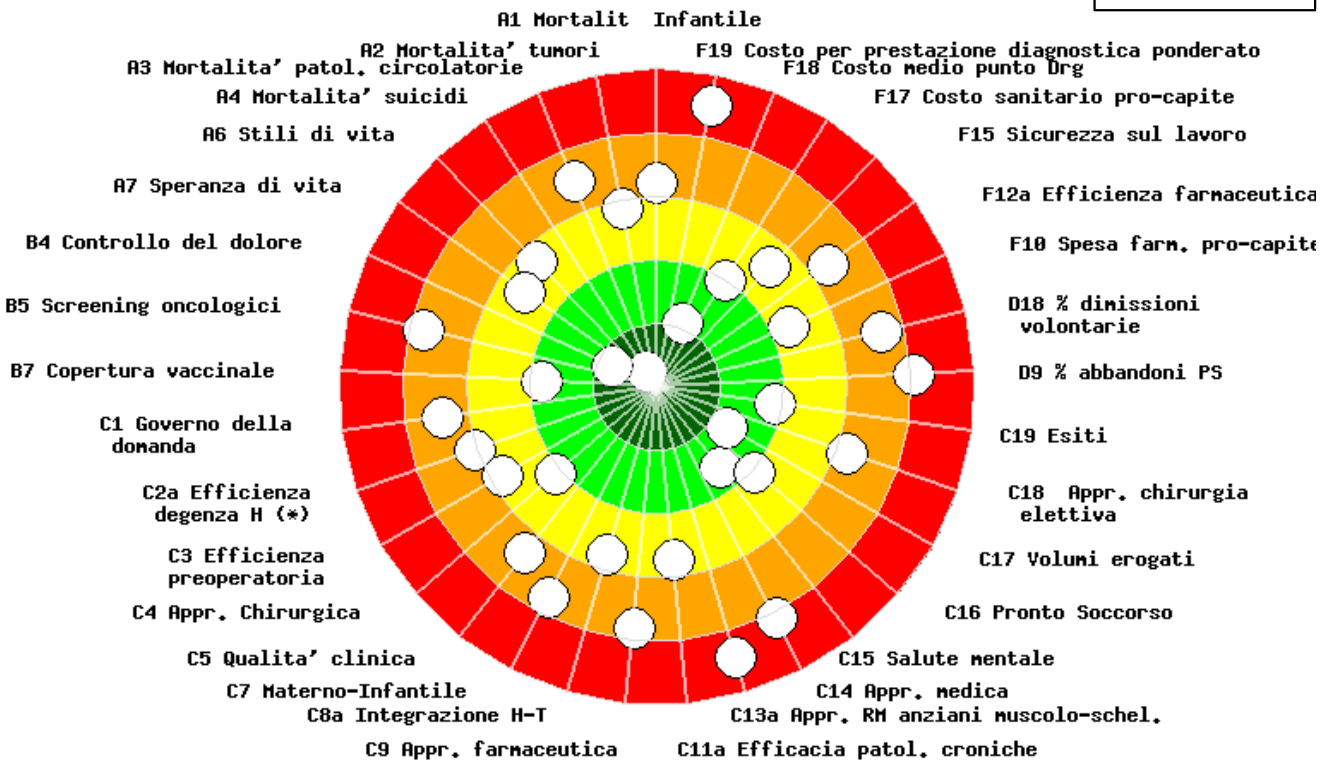
FVG

2013


A1 Mortalita' Infantile
A2 Mortalita' tumoF19 Costo per prestazione diagnostica ponderato
A3 Mortalita' patol. circolatorie
F18 Costo medio punto Drg
A4 Mortalita' suicidi
F17 Costo sanitario pro-capite
A6 Stili di vita
F15 Sicurezza sul lavoro
A7 Speranza di vita
F12a Efficienza farmaceutica
B4 Controllo del dolore
F10 Spesa farm. pro-capite
B5 Screening oncologici
D18 % dimissioni volontarie
B7 Copertura vaccinale
D9 % abbandoni PS
C1 Governo della domanda
C19 Esiti
C2a Efficienza degenza H (*)
C18 Appr. chirurgia elettiva
C3 Efficienza preoperatoria
C17 Volumi erogati
C4 Appr. Chirurgica
C16 Pronto Soccorso
C5 Qualita' clinica
C15 Salute mentale
C7 Materno-Infantile
C14 Appr. medica
C8a Integrazione H-T
C13a Appr. RM anziani muscolo-schel.
C11a Efficacia patol. croniche
C9 Appr. farmaceutica

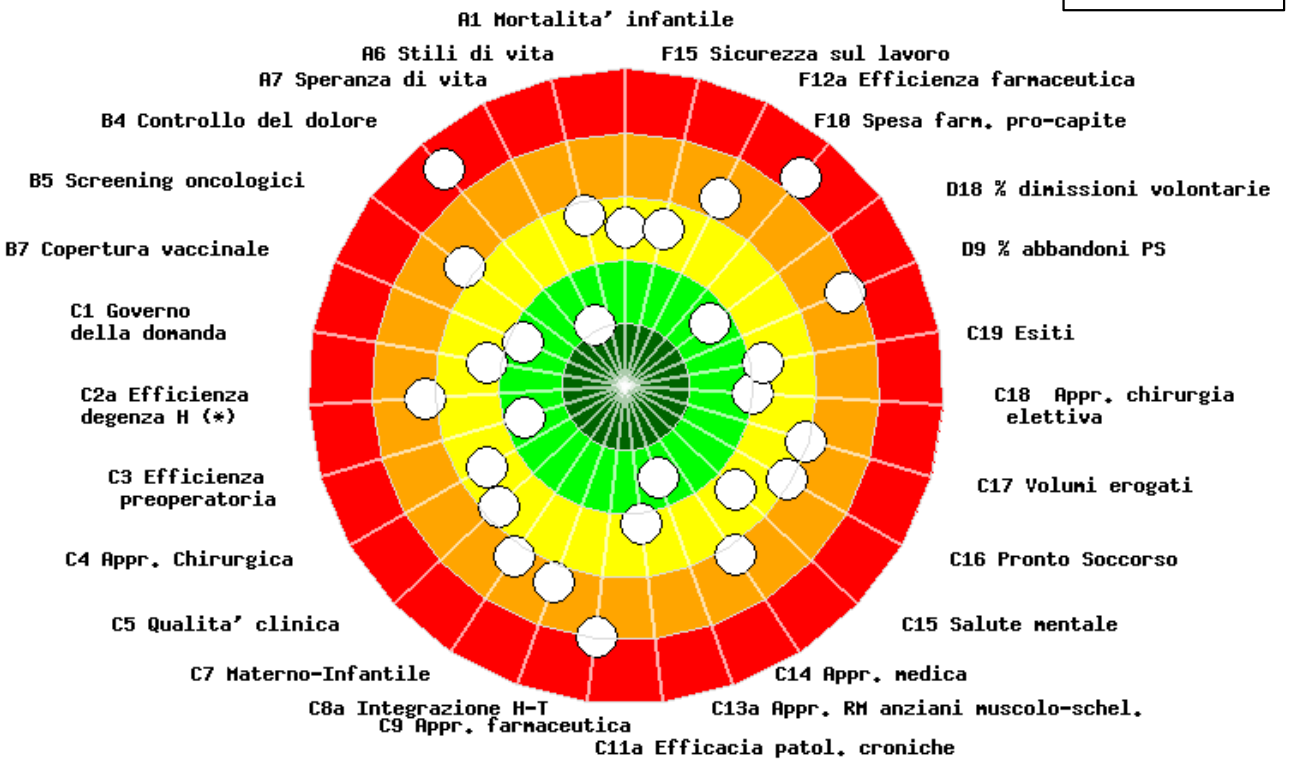
Liguria

2013



Marche

2013


A1 Mortalita' infantile
A6 Stili di vita
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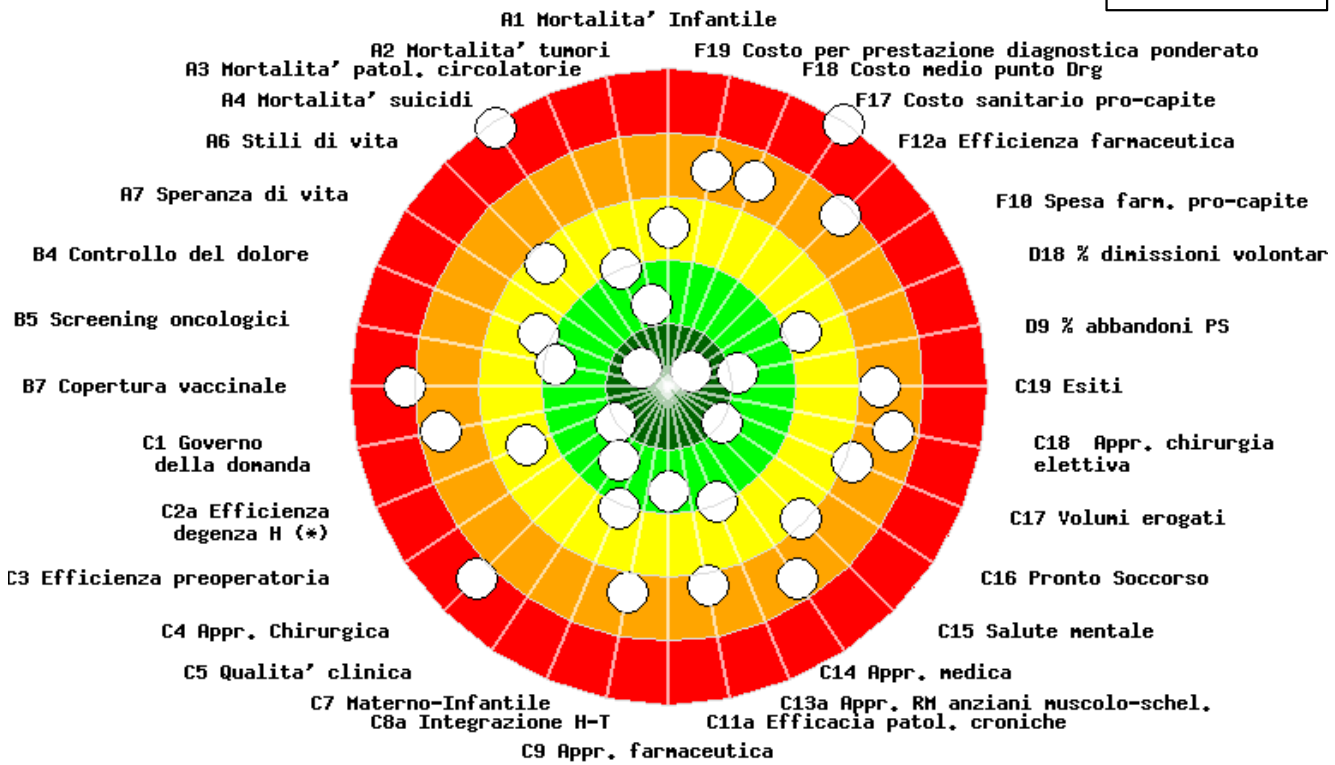
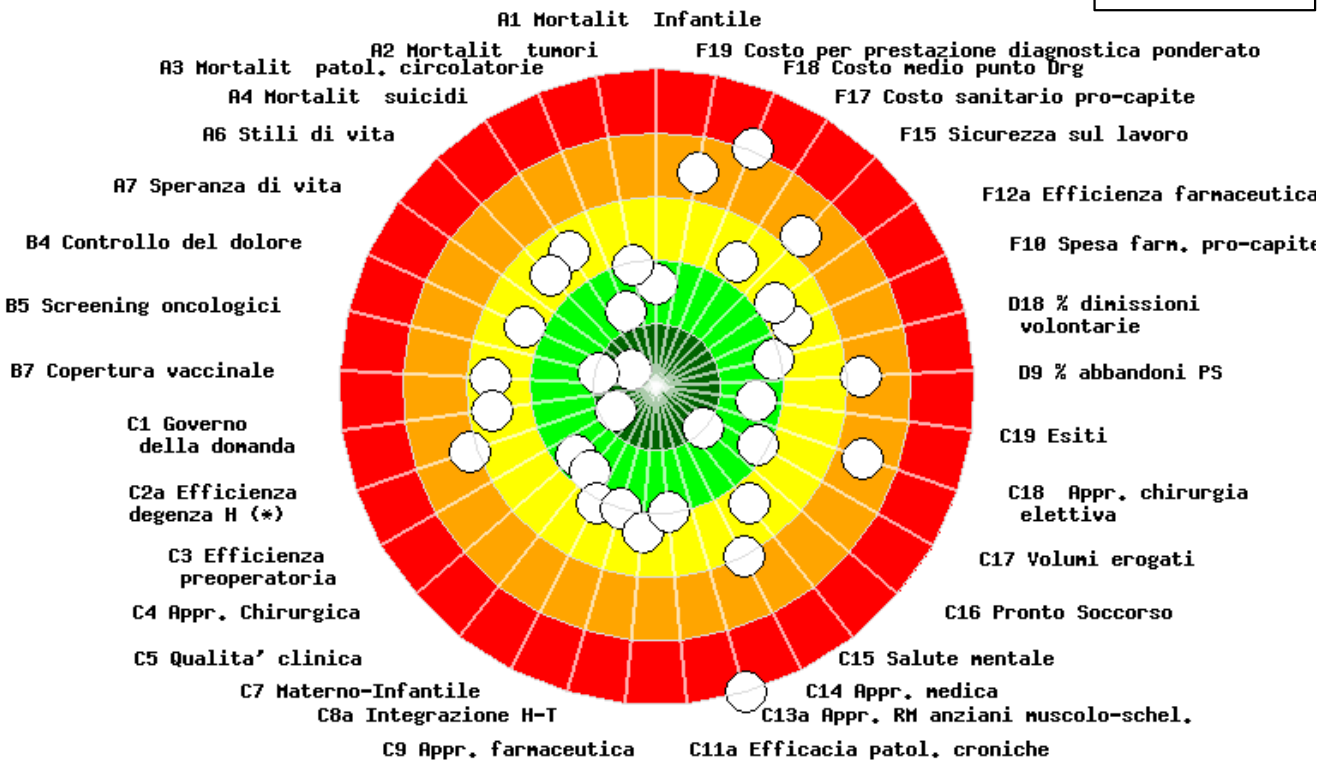
Bolzano

2013



Trento

2013


A1 Mortalit Infantile
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A4 Mortalit suicidi
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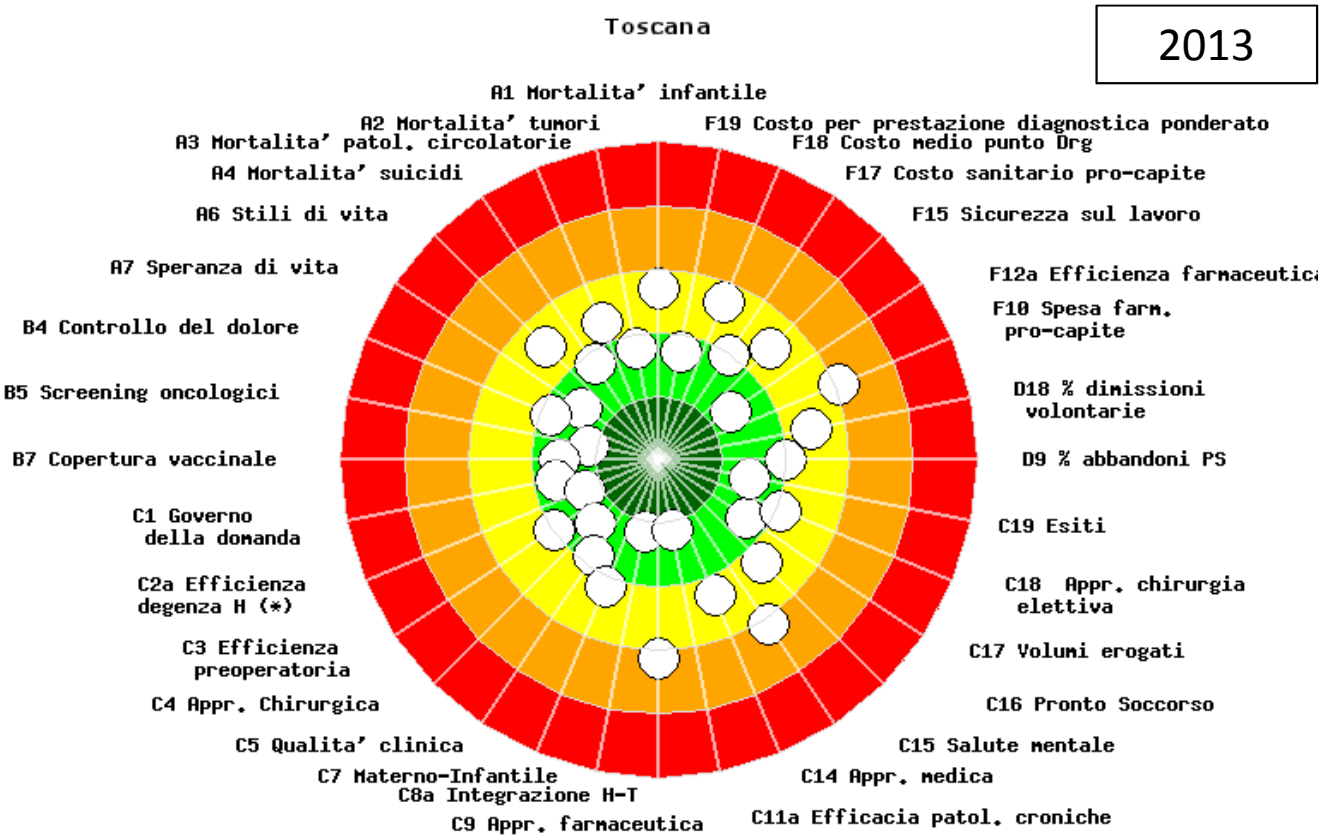
C11a Efficacia patol. croniche


Toscana
2013
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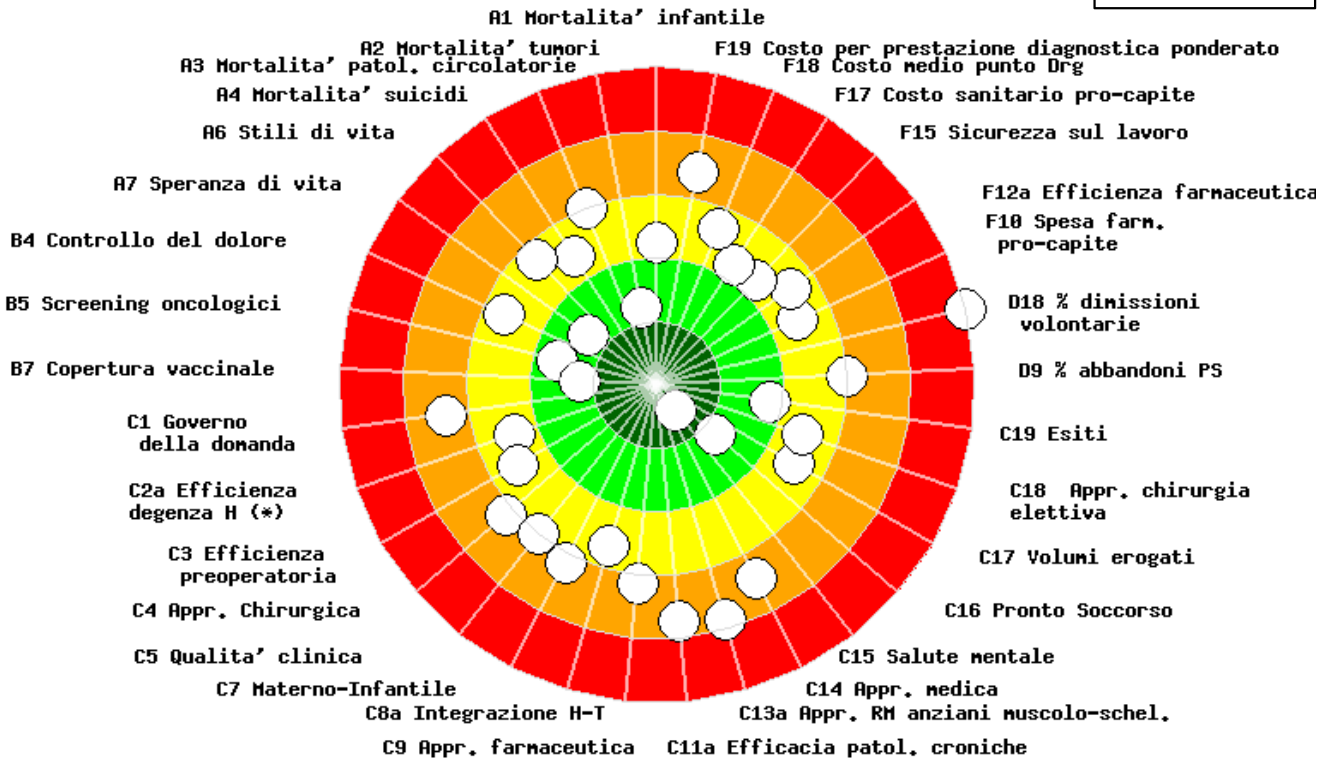
Umbria

2013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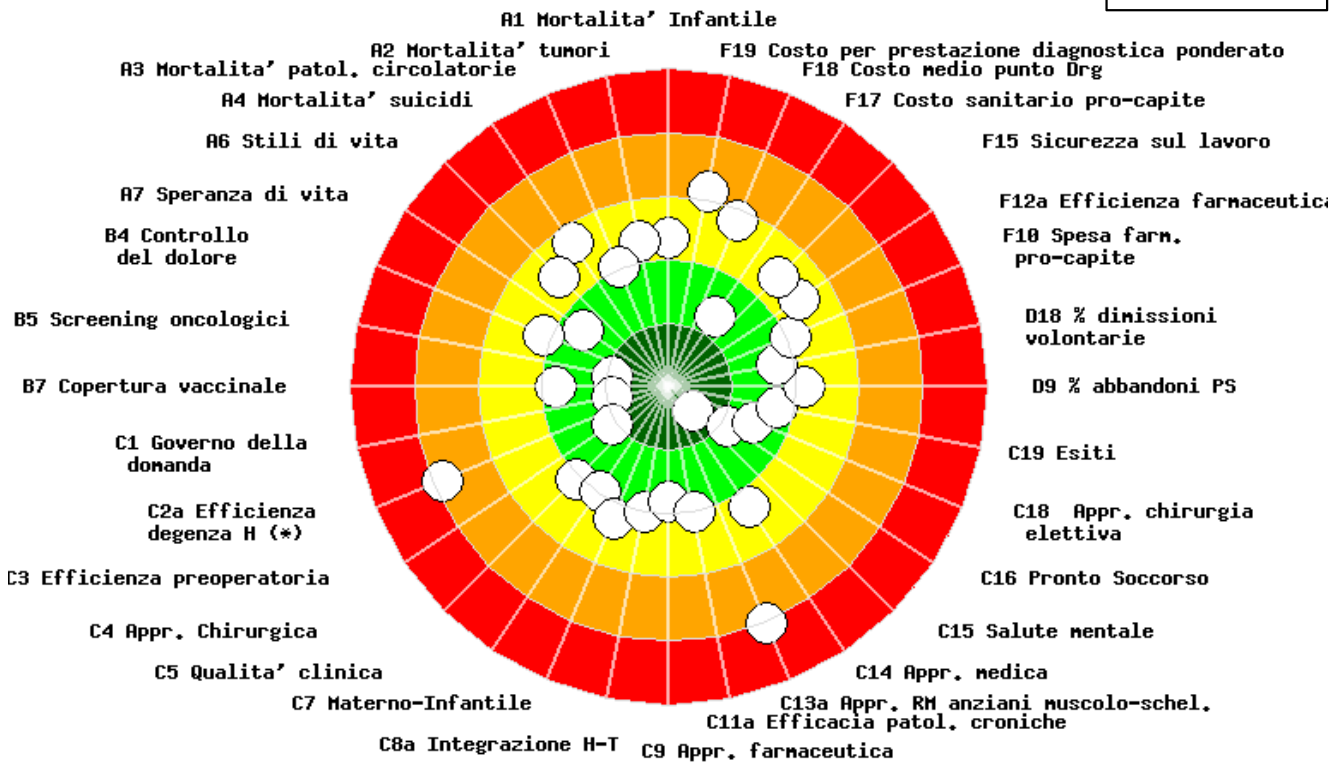
A3 Mortalita' patol. circolatorie
A4 Mortalita' suicidi
A6 Stili di vita
A7 Speranza di vita
B4 Controllo del dolore
B5 Screening oncologici
B7 Copertura vaccinale
C1 Governo della domanda
C2a Efficienza degenza H (*)
C3 Efficienza preoperatoria
C4 Appr. Chirurgica
C5 Qualita' clinica
C7 Materno-Infantile
C8a Integrazione H-T
C9 Appr. farmaceutica
F19 Costo per prestazione diagnostica ponderato
F18 Costo medio punto Drg
F17 Costo sanitario pro-capite
F15 Sicurezza sul lavoro
F12a Efficienza farmaceutica
F10 Spesa farm. pro-capite
D18 % dimissioni volontarie
D9 % abbandoni PS
C19 Esiti
C18 Appr. chirurgia elettiva
C17 Volumi erogati
C16 Pronto Soccorso
C15 Salute mentale
C14 Appr. medica
C13a Appr. RM anziani muscolo-schel.
C11a Efficacia patol. croniche

Veneto

2013


A1 Mortalita' Infantile
A2 Mortalita' tumori
A3 Mortalita' patol. circolatorie
A4 Mortalita' suicidi
A6 Stili di vita
A7 Speranza di vita
B4 Controllo del dolore
B5 Screening oncologici
B7 Copertura vaccinale
C1 Governo della domanda
C2a Efficienza degenza H (*)
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C13a Appr. RM anziani muscolo-schel.
C14 Appr. medica
C15 Salute mentale
C16 Pronto Soccorso
C18 Appr. chirurgia elettiva
C19 Esiti
D9 % abbandoni PS
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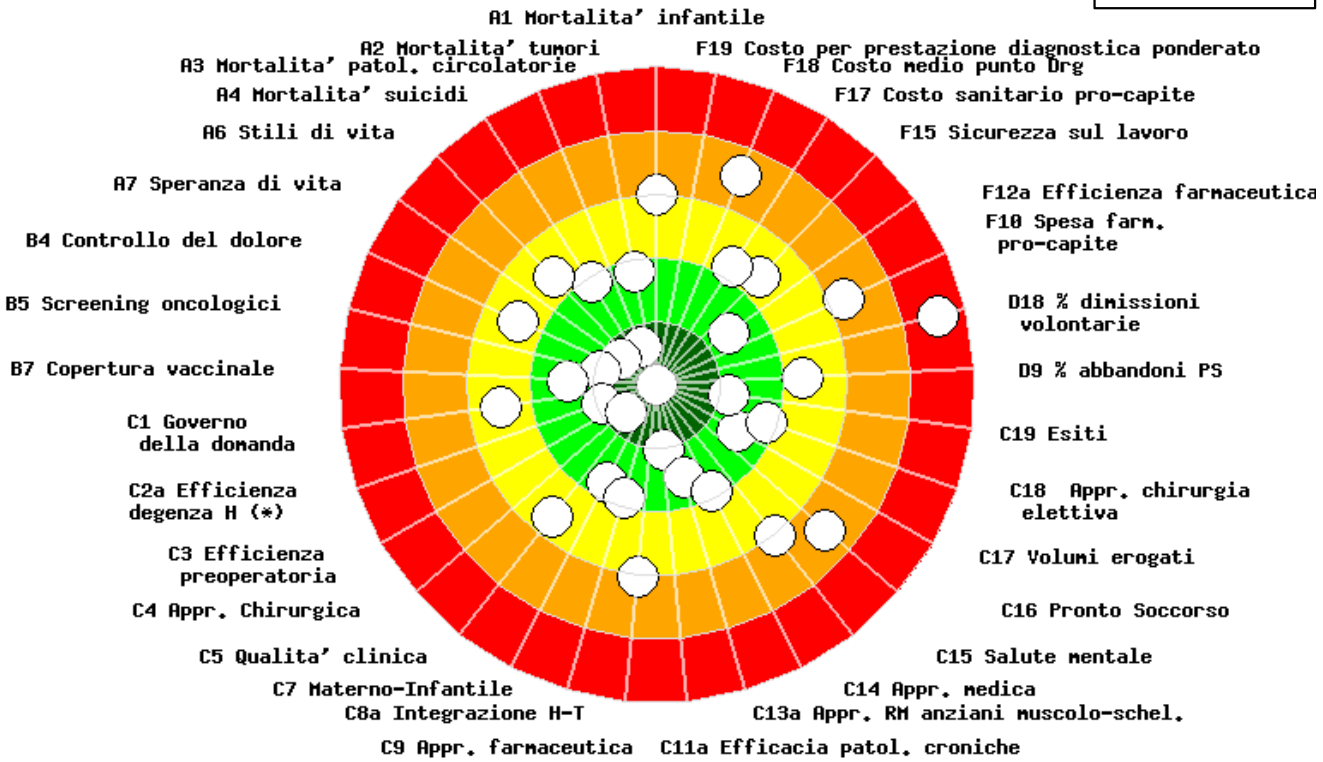
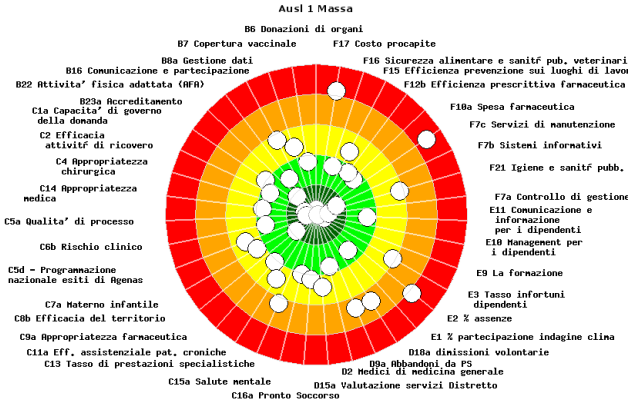
F10 Spesa farm. pro-capite
F12a Efficienza farmaceutica
F15 Sicurezza sul lavoro
F17 Costo sanitario pro-capite
F18 Costo medio punto Drg
F19 Costo per prestazione diagnostica ponderato

T - Ausl 10 Firenze

2013



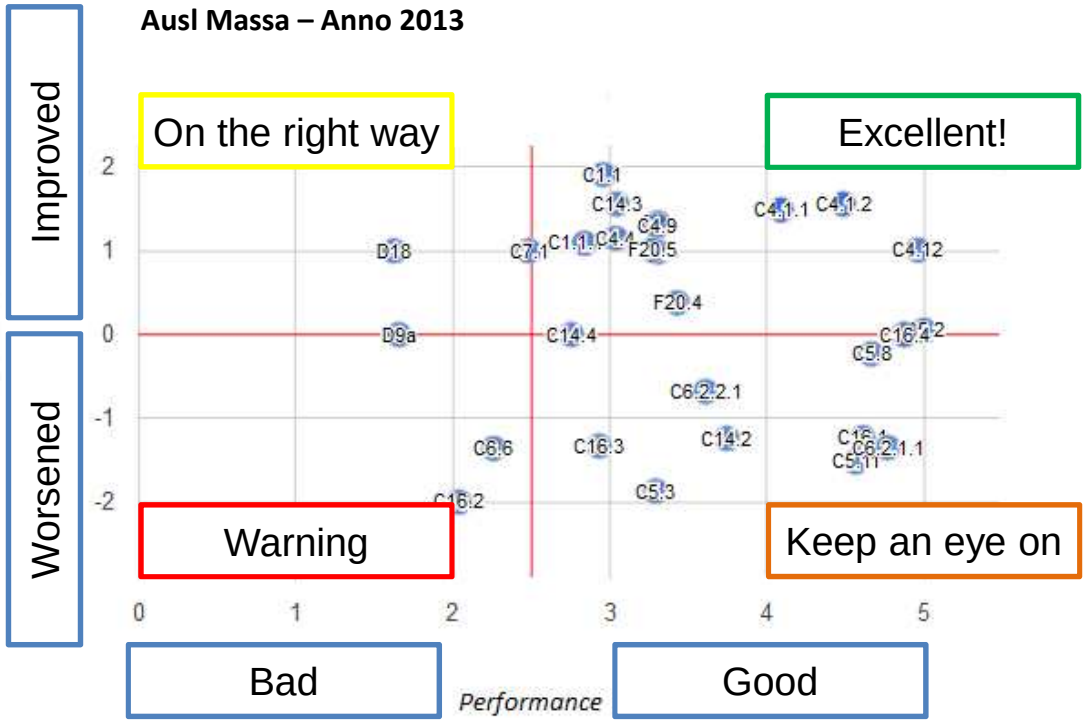
Regional tools to measure and manage performance



LHA's performance

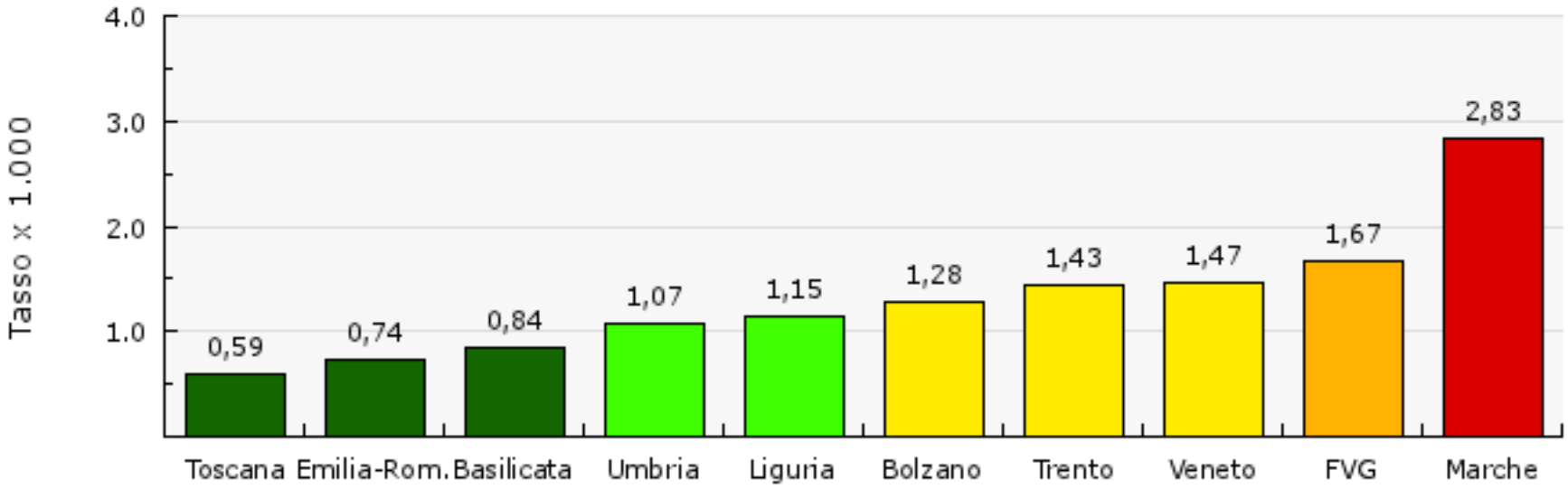
LHA's capacity to improve on the basis of the starting point

Hospital strategic map

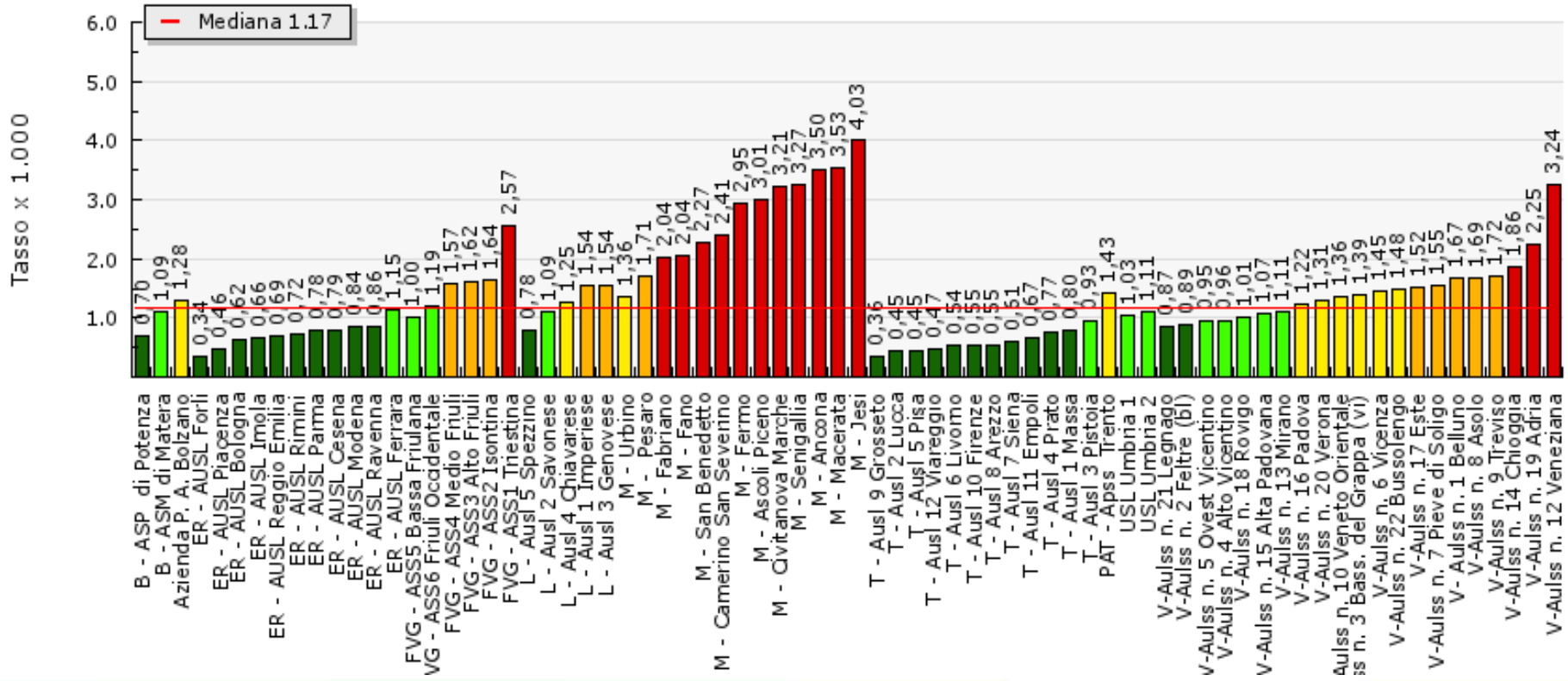


Measuring results and setting goals…

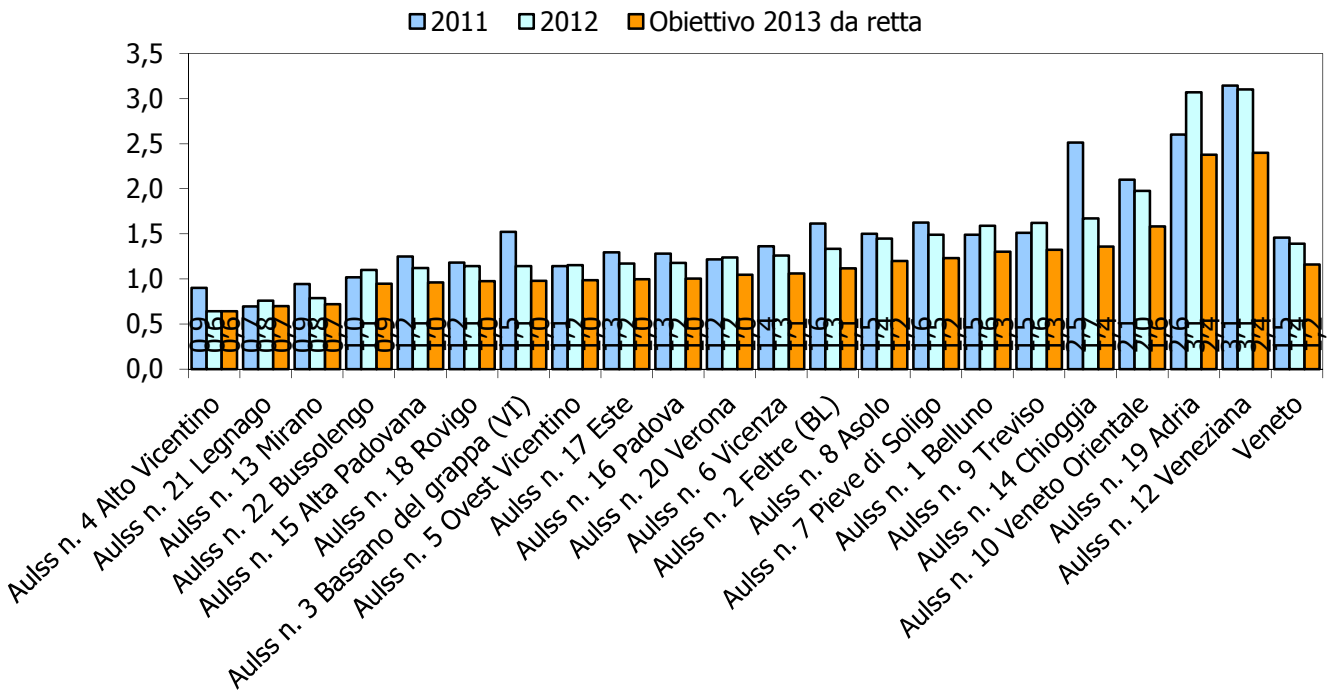
C8b.2 - Hospitalization rate over 30 days for 1000 residents (2013)



C8b.2 - Hospitalization rate over 30 days for 1000 residents (2013)



How to set the target : an example from Veneto



The reward system in the Tuscany Region

INTRINSIC
HEALTH PROFESSIONALS

Professional reputation
public disclosure of results
Enabling peer review mechanism

EXTRINSIC
CEO (managers)

Financial incentives that can achieve the 20% of the salary

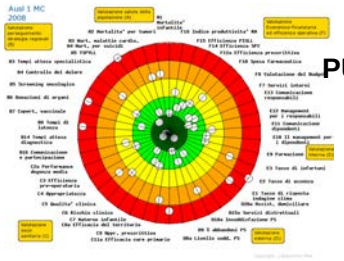
CEO's rewarding system added emphasis on the Tuscan PES: **incentivized** indicators **improve 2.7** times than other PES indicators. Moreover the results of a second model on 2008-2010 data show that incentivized indicators that keep into account the **baseline performance improve more than the others (OR 1.5)**.
Due to this empirical evidence, in 2011 every Health Authority receives personalized target for each indicator of the Tuscan PES in order to gather the financial reward related to the overall indicator.

S.Nuti, M.Vainieri: Do CEO reward system drive performance in the public health sector?Evidence from Italy., 2012, Under Review

The key elements of the Tuscan PES

VISUAL REPORTING SYSTEM

PROFESSIONALS AND MANAGERS LARGE INVOLVEMENT



PUBLIC DISCLOSURE OF RESULTS

STRONG POLITICAL COMMITTMENT

PES LINKAGE TO CEO'S REWARDING SYSTEM

Nuti S, Seghieri C, Vainieri M. Assessing the effectiveness of a performance evaluation system in the public health care sector: some novel evidence from the Tuscany Region experience. Journal of Management and Governance 2012

Which effects does the application of performance evaluation system had on the Tuscan Healthcare System?

Which results have been achieved?

Some evidences from the Performance Evaluation System (PES) adopted in the Tuscan health care system and in other 7 italian regions

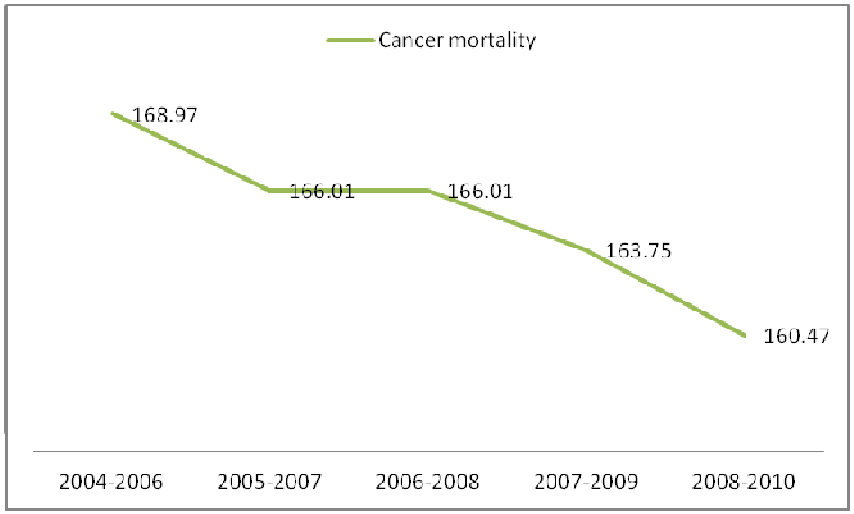
Nuti S., Seghieri C, Vainieri M. Assessing the effectiveness of a performance evaluation system in the public health care sector: some novel evidence from the Tuscany Region experience. Journal of Management and Governance online first 2012. DOI 10.1007/s10997-012-9218-5

Since 2006 every year more than 60% of performance indicators improved.

The region hold on financial sustainability even in 2012 when resources were reduced

Outcome results improved

Some examples of **outcome**



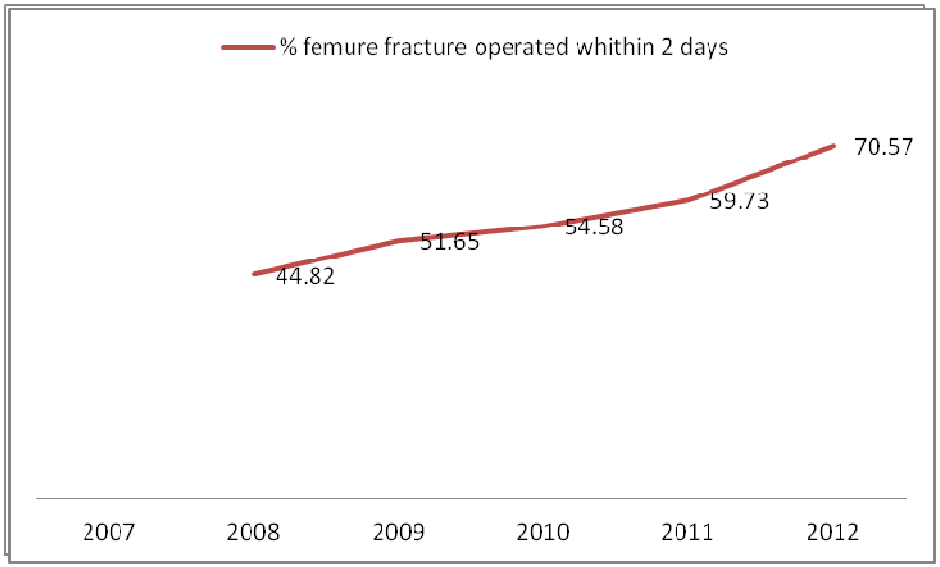
Source: Tuscan Performance evaluation system

Since 2006 more than 60% of performance indicators improved.

The region hold on financial sustainability even though resources were reduced

Outcome improved

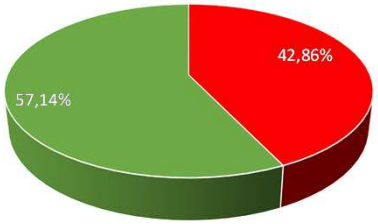
Some examples of **performance indicators**



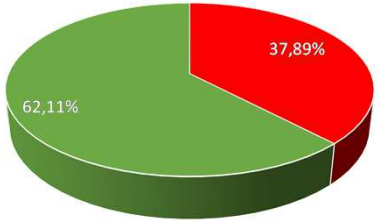
Source: Tuscan Performance evaluation system

% improved indicators (2012-2013)

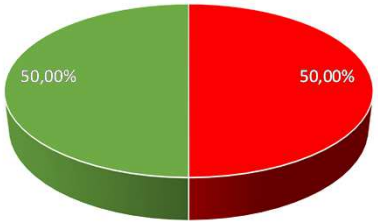
Basilicata: 84 indicators



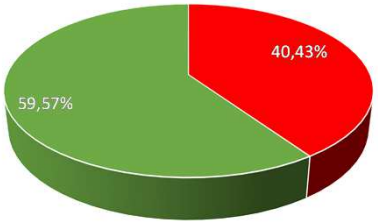
Emilia-Romagna: 95 indicators



Friuli-Venezia Giulia: 90 indicators

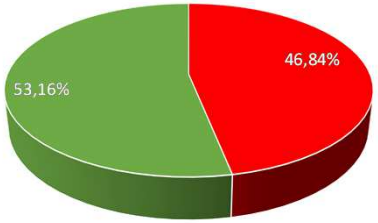


Liguria: 94 indicators

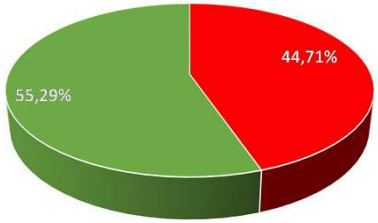


% improved indicators (2012-2013)

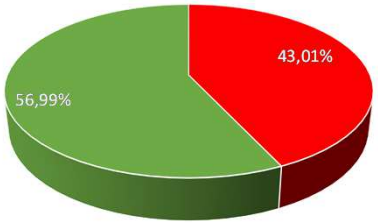
Marche: 79 indicators



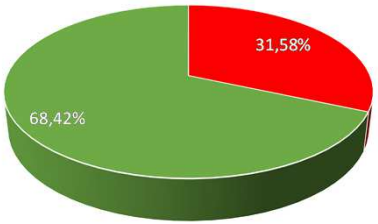
Bolzano: 85 indicators



Trento: 93 indicators

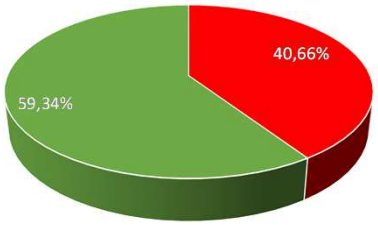


Toscana: 95 indicators

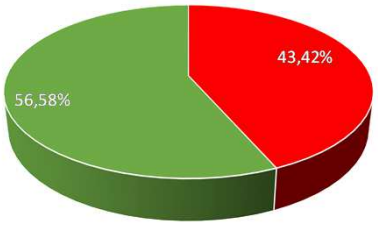


% improved indicators (2012-2013)

Umbria: 91 indicators



Veneto: 76 indicators



Strategies and results…

Table 4 Adjusted proportion of hospitalisations for hip fractures in patients aged ≥65 years in whom surgery was performed within 48 h of admission, 2006–2007 vs 2008–2009

	2006–2007		2008–2009				
Region	N	Adjusted proportion	N	Adjusted proportion	RR	p	Absolute difference
Lazio	12 585	11.8	12 469	16.7	1.42	0.000	4.9
Tuscany	11 486	30.2	11 122	45.2	1.49	0.000	15.0
Other Italian regions	113 436	29.5	112 222	28.6	0.97	0.000	−0.9

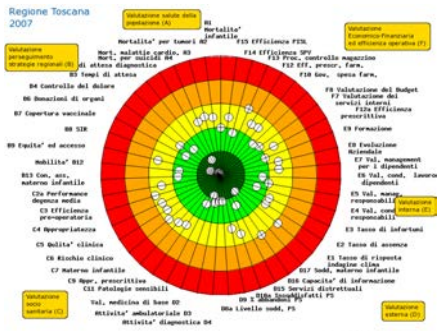
Table 5 Proportion of hip operations performed within 48 h of admission in 2008–2009 compared with 2006–2007: changes in Lazio and Tuscany hospitals

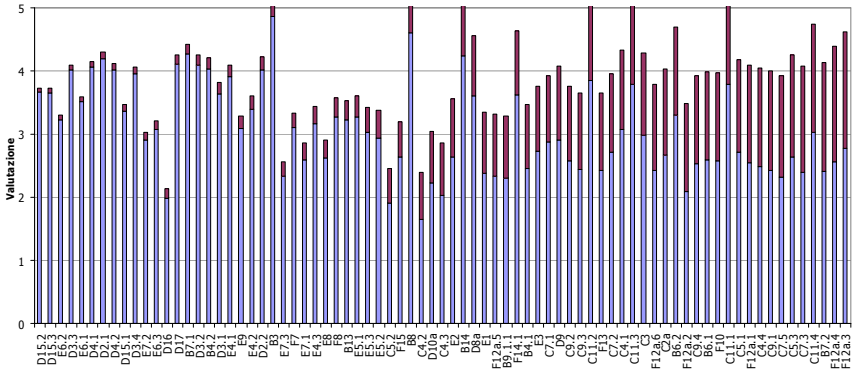
	Increased		No change		Reduced	
	N (%)	Median change (IQR)	N (%)	Median change (IQR)	N (%)	Median change (IQR)
Lazio hospitals	11 (26.2)	+10.6 (4.8)	30 (71.4)	+0.2 (2.8)	1 (2.3)	NE
Tuscany hospitals	17 (65.4)	+23.3 (14.3)	8 (30.8)	+0.4 (6.3)	1 (3.8)	NE
Other Italian hospitals	43 (11.7)	+12.2 (12.9)	260 (70.6)	−0.3 (5.4)	65 (17.7)	−11.8 (8.6)

NE, not evaluable.

Pinnarelli L., Nuti S,Sorge C, Davoli M.Fusco D,Agabiti N, Vainieri M, Perucci CA, 2012 What drives hospital performance? The impact of comparative outcome evaluation of patients admitted for hip fracture in two Italian regions.BMJ Quality and Safety Vol.2

Objectives





The analysis based on **benchmarking** the performance of the LHAs allows the identification of the **"possible"** spaces of action with different degrees of complexity.

Estimation of the **resources** that can be re-allocated to other services in the medium-long term

Priority of intervention in each LHA

Governance through the PES: sustainability throughout re-allocation

By working on variability of quality and appropriateness indicators, Tuscan health system could re-allocate about 7% of its financial budget

Health Policy (2009)

Contents lists available at ScienceDirect

Health Policy

journal homepage: www.elsevier.com/locate/healthpol

Disinvestment for re-allocation: A process to identify priorities in healthcare

Sabina Nuti*, Milena Vainieri, Anna Bonini

Laboratorio Management e Sanità, Scuola Superiore Sant'Anna, piazza Martiri della Libertà 33, 56127 Pisa, Italy

ARTICLE INFO

Keywords:
Health priorities
Benchmarking
Efficiency
Health resources

ABSTRACT

Resource scarcity and increasing service demand lead health systems to cope with choices within constrained budgets. The aim of the paper is to describe the study carried out in the Tuscan Health System in Italy on how to set priorities in the disinvestment process for re-allocation.

The analysis was based on 2007 data benchmarking of the Tuscan Health System with an impact on the level of resources used. For each indicator, the first step was to estimate the gap between the performance of each Health Authority (HA) and the best performance or the regional average. The second step was to measure this gap in terms of financial value.

The results of the analysis demonstrated that, at the regional level, 2–7% of the healthcare budget can be re-allocated if all the institutions achieve the regional average or the best practice.

The implications of this study can be useful for policy makers and the HA top management. In the context of resource scarcity, it allows managers to identify the areas where the institutions can achieve a higher level of efficiency without negative effects on quality of care and instead re-allocate resources toward services with more value for patients.

1. Introduction

Resource scarcity and increasing demand for services require health systems to cope with difficult choices within constrained budgets. A range of concerns, ranging from ethical principles such as "accountability for reasonableness" through to economic goals of increasing productivity argue for a thoughtful approach that targets reductions as opposed to across-the-board cuts.

The typical health system approach of deriving budgets based on historical spending or political pressures can lead to sub-optimal use of limited resources [1]. Economic approaches can help decision makers by providing a systematic and explicit way to set evidence-based priorities [2,3] even if they are not the sole consideration [4,5].

In the process of resource re-allocation, different countries have followed varying approaches for setting priorities at national level [6]. Since 1970s many countries have adopted the Program budgeting and marginal analysis (PBMA) in the health sector [4,7]. PBMA has been developed as an attempt to rationalize the incremental budgeting approach, based on applications of opportunity cost and marginal analysis [8]. PBMA can be deployed at the micro-level (i.e. specific service areas or treatments) but also at the meso-level (Health Authorities) and the macro-level (Regional Health Systems or National Health Systems) [9]. Other budgeting and re-allocation techniques have used Health Technology Assessment techniques to guide disinvestment decisions in ineffective treatments (e.g. guidance on disinvestment from NICE) [10,11].

This paper describes a study carried out in the Regional Health System of Tuscany, Italy. Using 2007 performance data, the study measures the impact that performance improvement could have on the amount of resources that

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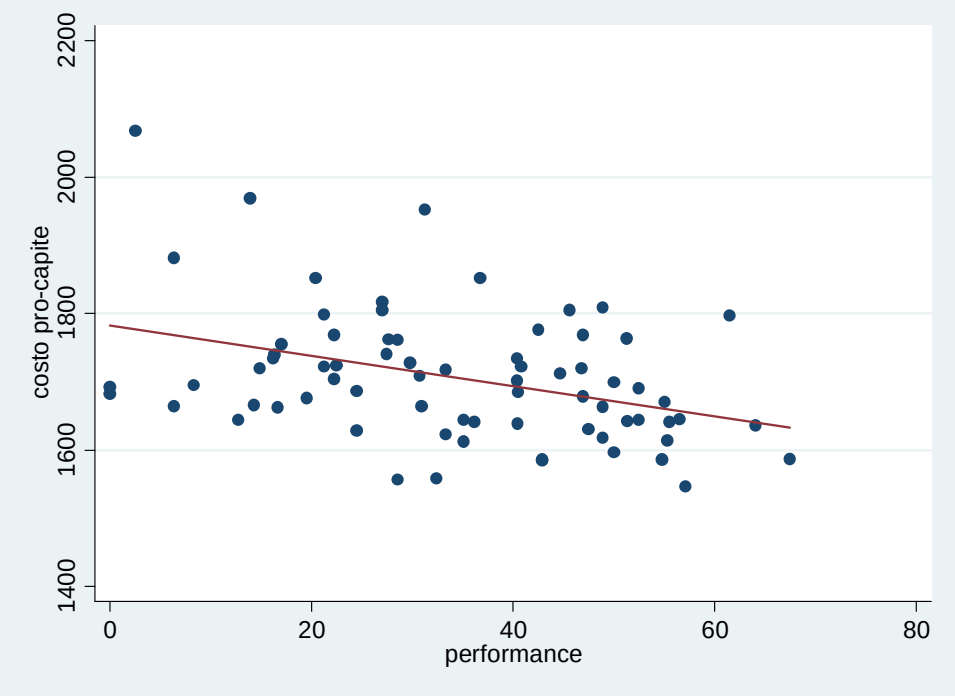
doi:10.1016/j.healthpol.2009.11.011

Plot per capita cost vs % overall performances (Tuscany, 2013)



Correlation coeff. = - 0.38

P < 0.001

Each number represents a LHA as follows: 1. Massa Carrara; 2. Lucca; 3. Pistoia; 4. Prato; 5. Pisa; 6. Livorno; 7. Siena; 8. Arezzo; 9. Grosseto; 10. Firenze; 11. Empoli; 12. Viareggio

The performance evaluation system is able to drive improvement… but is it also a tool to achieve equity?

The Pes shows that there is large variation not only between north and south but also in each region.

Variation management across and within the regions should be included in the governance system as a strategic tool at each level.

The Performance evaluation system is able to drive improvement... But is it also able to achieve equity?

Vertical: "not equal parts among unequals"

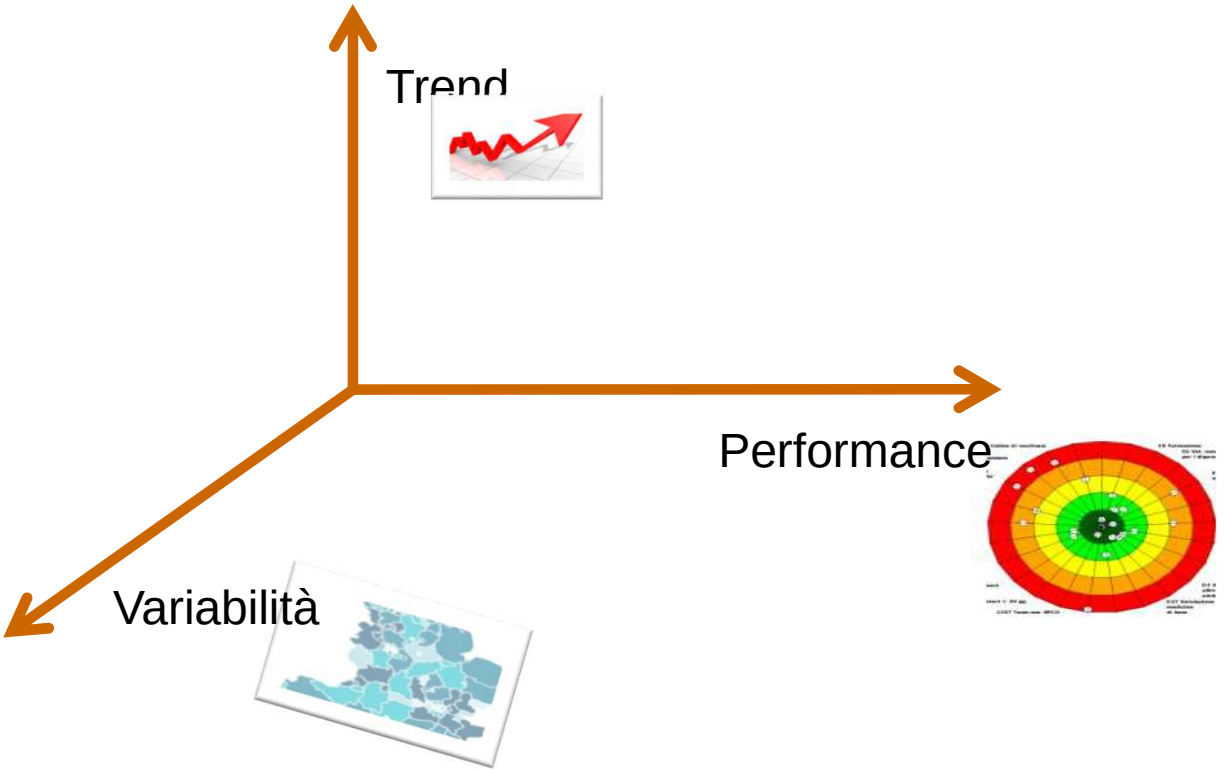
Horizontal: citizens with same n… …vel of answer

Intergeneratio… …ould have the right to the same life and he… …e old persons

…riation management within the regions should be included in …ional governance system

Is there more room to reduce waste, and have more savings and value for money?

The identification of areas. Towards a multidimensional evaluation



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HEAP-3096; No. of Pages 8
ARTICLE IN PRESS
Health Policy xxx (2013) xxx–xxx
Contents lists available at ScienceDirect
Health Policy
journal homepage: www.elsevier.com/locate/healthpol

Is variation management included in regional healthcare governance systems? Some proposals from Italy☆

Sabina Nuti, Chiara Seghieri*

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Performance evaluation system
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Variation

ABSTRACT

The Italian National Health System, which follows a Beveridge model, provides universal healthcare coverage through general taxation. Universal coverage provides uniform healthcare access to citizens and is the characteristic usually considered the added value of a welfare system financed by tax revenues.

Nonetheless, wide differences in practice patterns, health outcomes and regional usages of resources that cannot be justified by differences in patient needs have been demonstrated to exist. Beginning with the experience of the health care system of the Tuscany region (Italy), this study describes the first steps of a long-term approach to proactively address the issue of geographic variation in healthcare. In particular, the study highlights how the unwarranted variation management has been addressed in a region with a high degree of managerial control over the delivery of health care and a consolidated performance evaluation system, by first, considering it a high priority objective and then by actively integrating it into the regional planning and control mechanism. The implications of this study can be useful to policy makers, professionals and managers, and will contribute to the understanding of how the management of variation can be implemented with performance measurements and financial incentives.

1. Introduction

Geographic variation in health care among both large (countries and regions) and small areas (hospital service areas) has been extensively confirmed and found to occur across all dimensions of performance, including quality, access, utilization and health behavior. Moreover, it has been found to be common across different healthcare systems and, in general, to have a relevant impact on the wealth of nations and the health of their populations [1–3].

The Italian National Health Care System (NHS), which follows the Beveridge model [4,5], is a public health system and provides universal coverage for comprehensive and essential health services through general taxation. Universal cover should be the premise for a uniform capacity of response for citizens. This characteristic is usually considered the added value of a welfare system financed by tax revenues, with centralized structures in charge of the healthcare system's governance. A true Beveridge-model public system should ensure the achievement of equitable access to health care regardless of individual ability to pay or other characteristics such as income and region of residence. To achieve equity, similar cases must be dealt with in similar ways and different cases must be dealt with in different ways. When describing an equitable situation, distinctions must be made between horizontal and vertical equity, in order to understand which one may constitute "even-handed treatment" depending on the situation [6]. Horizontal equity is the allocation of equal or equivalent

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E-mail address: c.seghieri@sssup.it (C. Seghieri).

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http://dx.doi.org/10.1016/j.healthpol.2013.08.003

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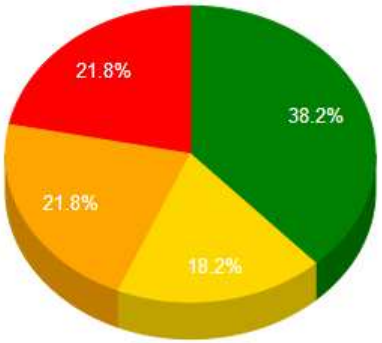
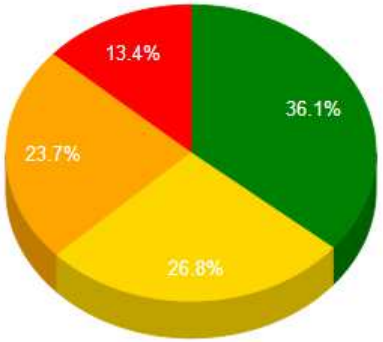
Trend and Variability 2013

Basilicata: 55 indicators

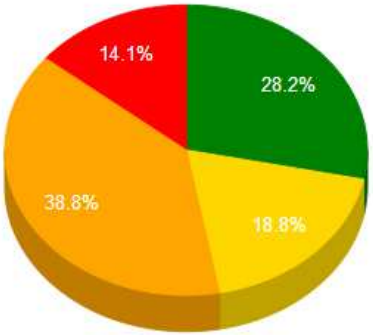


- Improved indicators: improved trend and reduced variability
- On the right way: improved trend and increased variability
- Warning: worsened trend and increased variability
- Worsened indicators: worsened trend and decreased variability

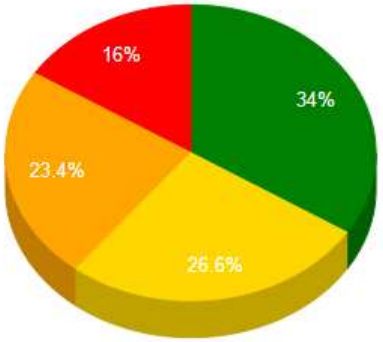
Emilia Romagna: 97 indicators



Friuli Venezia Giulia: 85 indicators

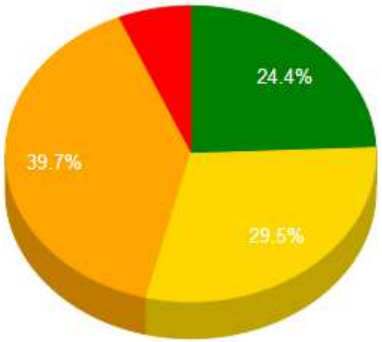


Liguria: 94 indicators



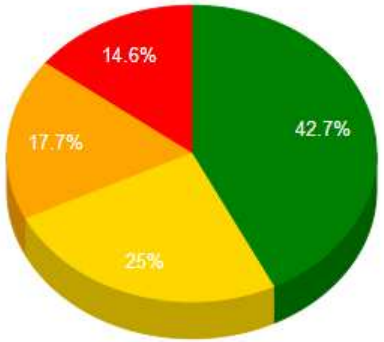
Trend and Variability 2013

Marche: 78 indicators

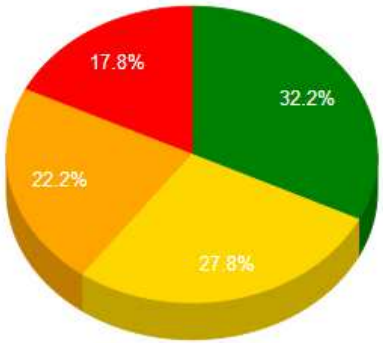


- Improved indicators: improved trend and reduced variability
- On the right way: improved trend and increased variability
- Warning: worsened trend and increased variability
- Worsened indicators: worsened trend and decreased variability

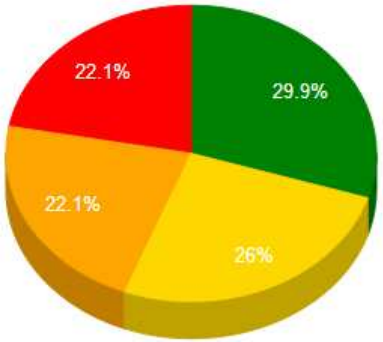
Toscana: 96 indicators



Umbria: 90 indicators



Veneto: 77 indicators



In conclusion, to improve governance systems in regional health systems the following phases are essential:

GOVERNANCE SYSTEMS TO IMPROVE PERFORMANCE

TRANSPARENCY OF OBJECTIVES AND RESULTS

INTEGRATION WITHIN SYSTEM LEVELS

INCREASED INVOLVEMENT AND ACCOUNTABILITY OF **CLINICIANS** WITH A **INTERDISCIPLINACY APPROACH** TO MANAGE VARIABILITY, GARANTEE MORE EQUITY AND VALUE FOR MONEY

IT IS DIFFICULT TO GET MORE RESOURCES FOR HEALTHCARE BUT THERE IS ROOM FOR ACHIEVING MORE AND BETTER RESULTS.

COURAGE IS FUNDAMENTAL IN THE PROCESS OF RESOURCE RE-ALLOCATION. RESOURCES MUST BE RE-ALLOCATED TOWARDS THOSE SERVICES ENSURING HIGHER "VALUE" AND EFFECTIVENESS TO CITIZENS.

Avoiding unwarrented variation will be reached only if policy makers, physicians and patients collectively engage in a joint effort to reduce it.

This is even truer in today's era of rising costs, when taking actions to reduce variation may not only benefit citizens in terms of healthcare quality but also assure the economic sustainability of the whole healthcare system.

Thanks!

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