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The role of appropriateness criteria in the planning of health services: the case of FDG-PET in oncology

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 **Regione Emilia-Romagna**



SERVIZIO SANITARIO REGIONALE
EMILIA-ROMAGNA



Agenzia
sanitaria
e sociale
regionale

Where the study took place...



 Regione Emilia-Romagna



**PARMIGIANO
REGGIANO**

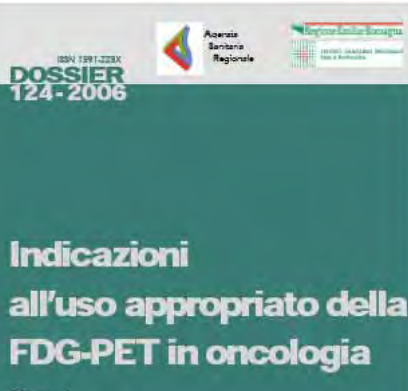


- **POPULATION: 4.2 MILLION**
- **11 LOCAL HEALTH UNITS (LHUs)**
- **5 HOSPITAL TRUSTS**

PET: Appropriateness criteria

- 1. Institution of multidisciplinary regional panel**
- 2. Systematic research of scientific literature**
- 3. Panelists's evaluation of clinical scenarios using RAND method**

<http://asr.regione.emilia-romagna.it>



Using evidence from clinical research to guide policymaking

Policy questions

- 1 Appropriate use of PET in oncology and target population
- 2 Proportion of appropriate use in our Region
- 3 Numbers of PET scans / exams required
- 4 Adequate geographical distribution of PET scans
- 5 Adequate organization of PET services
- 6 Relevant clinical research questions

Target population

65 scenarios covering 22 types of cancer

Type of cancer	N° of scenarios
Lung	8
Lymphoma Hodgkin e non Hodgkin	6
Breast, Colon-rectal, Lymphoma, Ovary	4
Head-neck, Pancreas, Stomach, Prostate, Kidney	3
Melanoma, Esophagus, Uterin cervix, Thyroid, Germinal cell, Gist, Brain tumours, Carcinoid, Neuroendocrine tumors	2
Unknown primary tumour , Osteo-Sarcoma	1

Appropriate use of PET in Emilia-Romagna Region

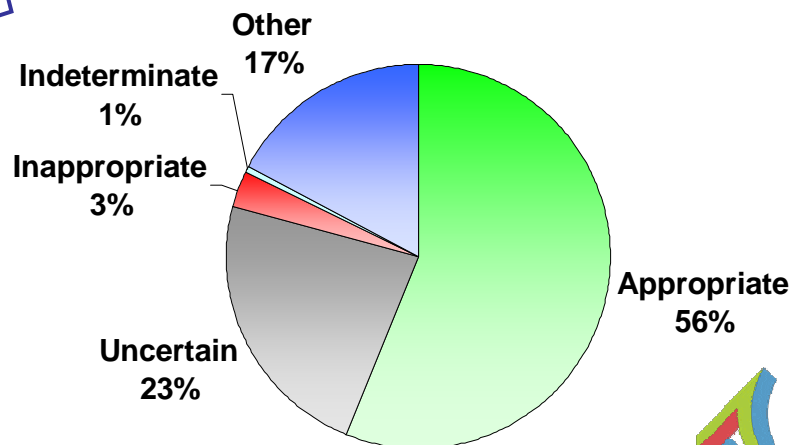
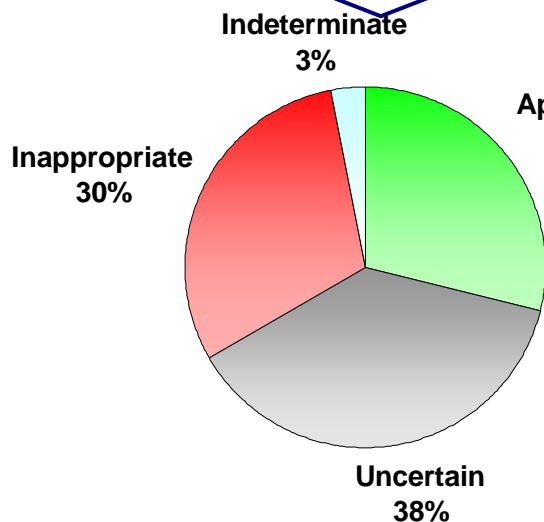
600 consecutive patients
undergoing PET
in 6 Local Health Units



REQUESTED DATA

- demographic data
- site of cancer
- clinical scenarios
- prior exams
- clinical management

Interview to prescribers



1

2

Over-Use

Appropriateness Criteria

Applied retrospectively to quantify
the potential over-use of PET

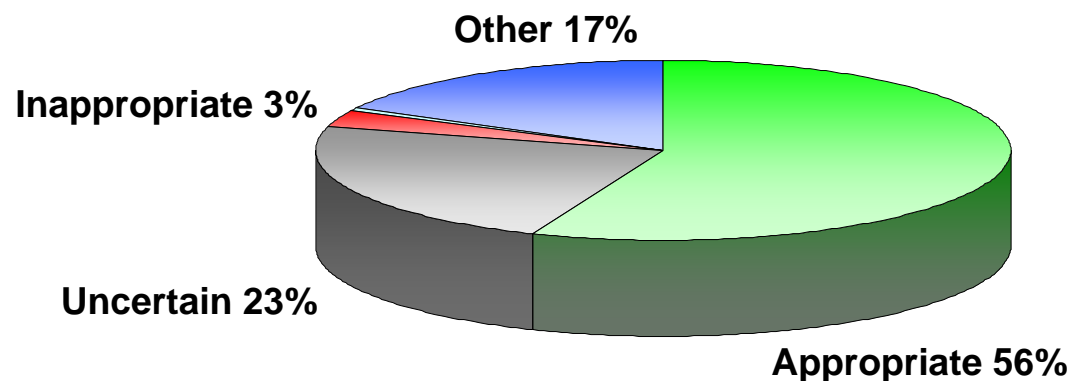
N° patients with inappropriate indications

N° patients undergoing PET

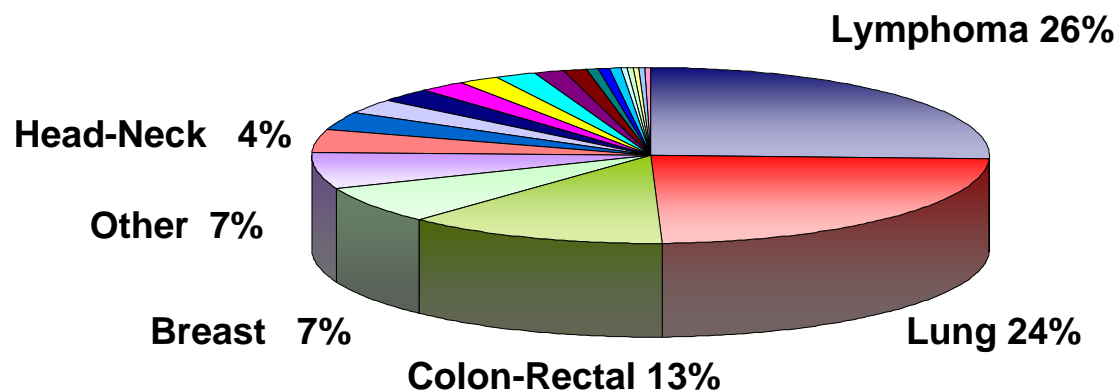
3%

Clinical Audit

Rate of appropriate use

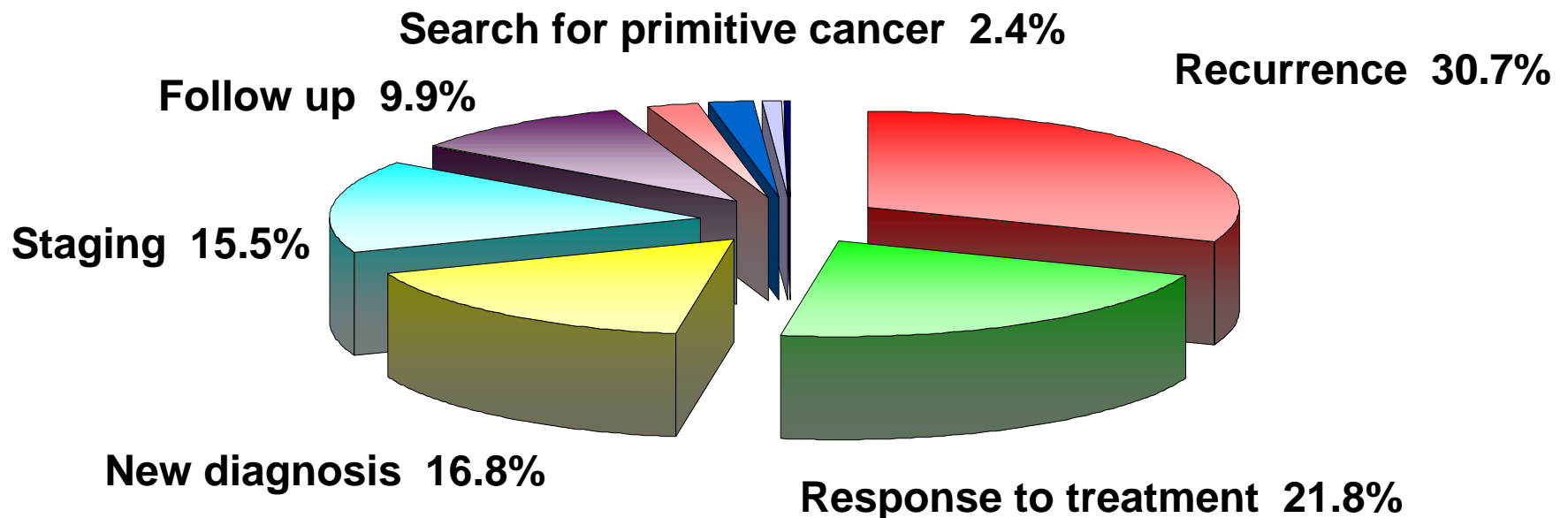


Type of cancer



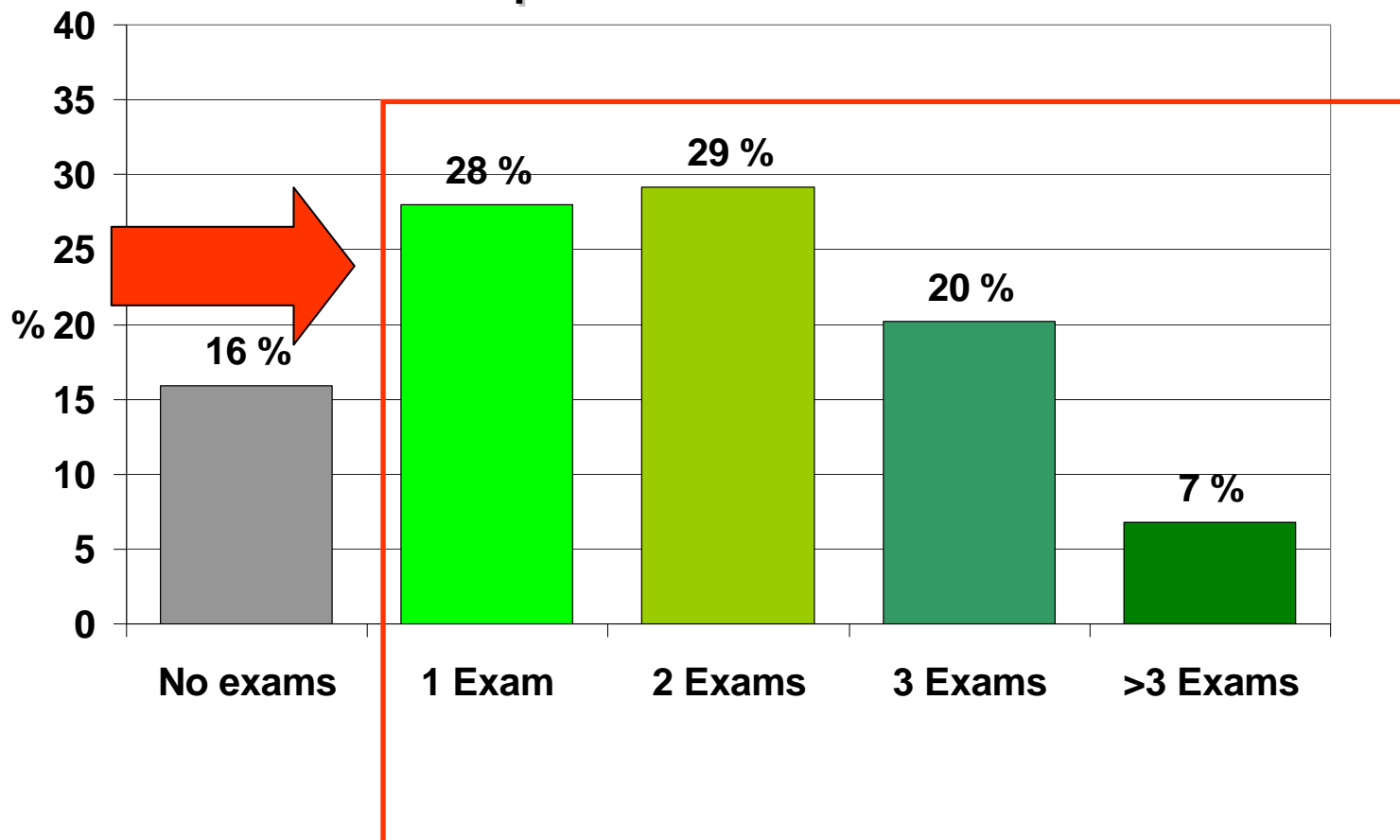
Use of PET in clinical decision making

The clinical questions



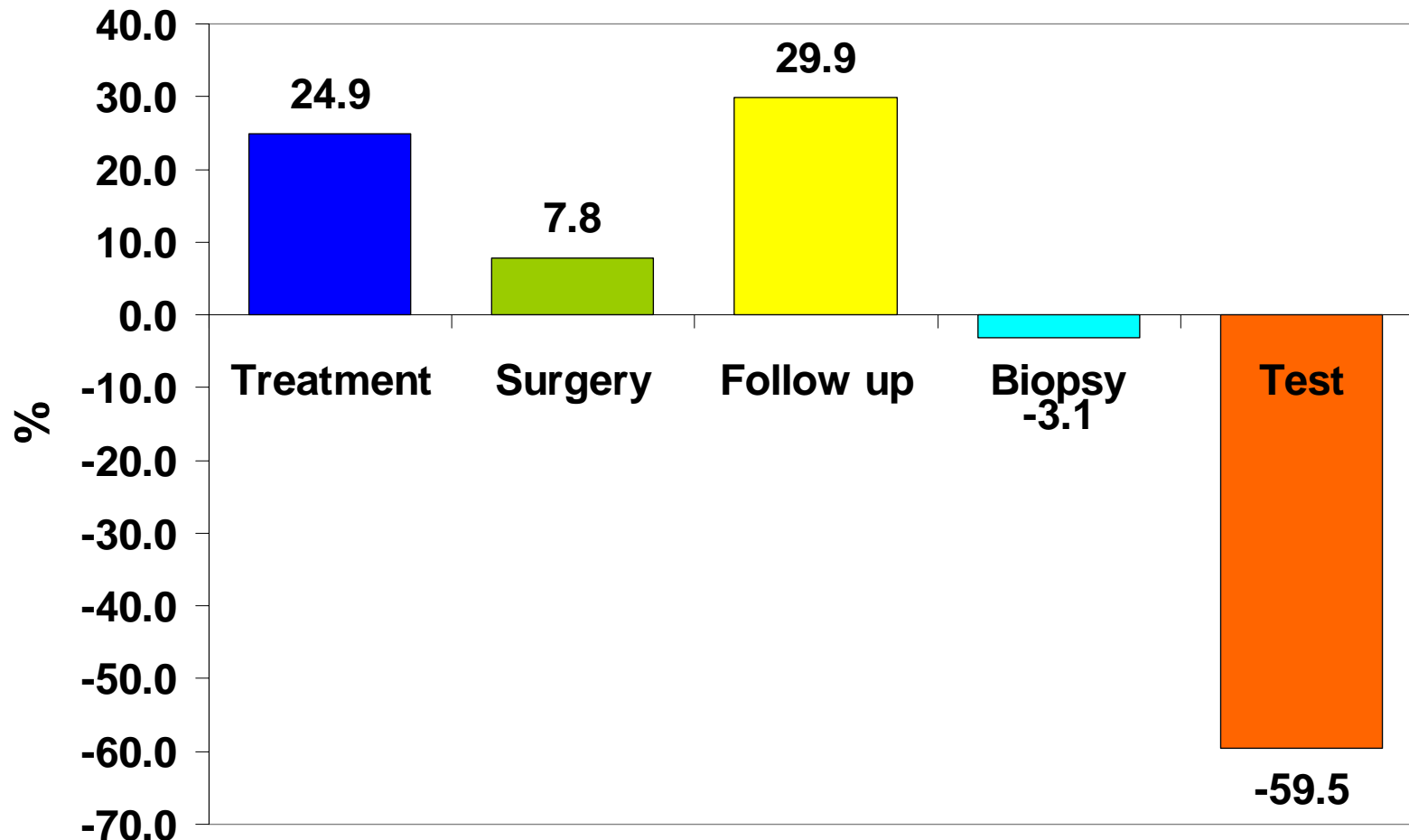
Use of PET in clinical pathway exams already performed

84% of PET prescribed after other exams



Change in management

**73% of patients had a change
PET gets to a decision more quickly**



Limits of appropriateness criteria regional requirement of PET scanners/exams



HTA Tomographie par Emission de Positrons en Belgique

KCE reports vol. 22 B

<http://kce.fgov.be>

N° of PET scans for million inhabitant

Country	2005	Forecast 1-2 years
Belgium	1.26	-----
France	0.96	1.25
Finland	0.96	1.34
Denmark	0.92	1.29
Holland	0.75-0.93	1.25-1.56
USA (VHA)	0.83	-----
Sweden	0.78	1.12
Canada	0.69	0.84
Australia	0.66	0.8
Spain	0.65	0.93
Israel	0.5	1
UK	0.22	-----
Scotland	0.2	0.4-0.6
Range	0.2-1.26	0.4-1.56

Methodology for calculating a country's need for positron emission tomography scanners



The higher the level of evidence required, the lower the number of PET scanners needed
Need 0.3-1 Pet scans/million inhabitants in Belgium

Cleemput I, Camberlin C, Van den Bruel A, Ramaekers D

Requirements for clinical PET: comparisons within Europe

Badford M, Maysey MN.



1.5 PET for 1 million inhabitants

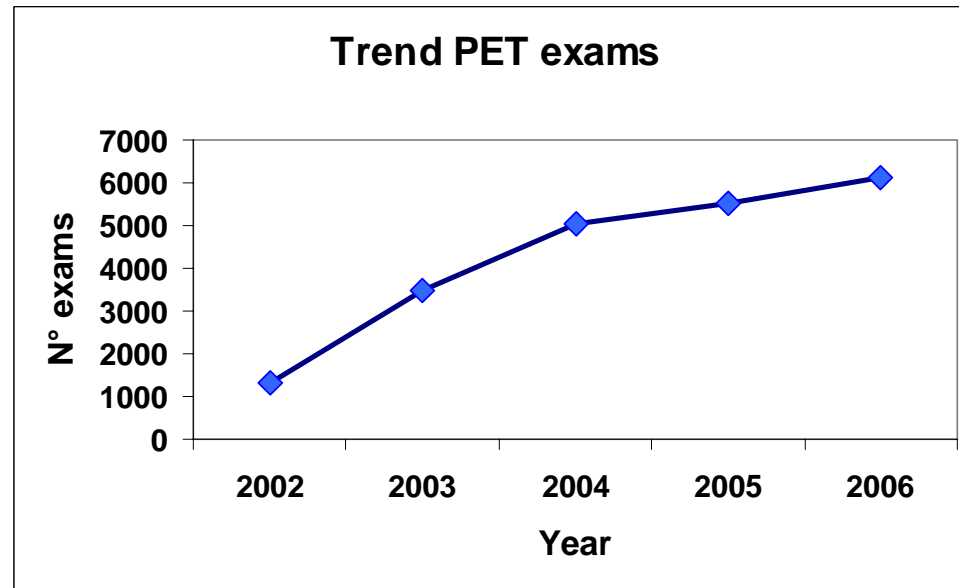
[0.78(new cases of lung cancer)] x 4 = exams/year

PET Scanners in Emilia-Romagna Region

Geographical distribution



1.75 PET for 1 million inhabitants



Adequate organization of PET services

This information was provided by our professionals

Structural implication

- The Appropriate collocation of service PET is in Nuclear Medicine Service
- The Adequate geographic distribution of cyclotron (1 for every 3 PET machines)

Organizational implication

- Interface between doers and prescribers (nuclear physicians and oncologists)
- Local programs of training and sharing of the criteria
- Network to support in case of system failure
- Protocol for the joint management of CT and PET scans

Development

Clinical research questions

- A periodical update of the indications for the use of PET in oncology
- Define a methodology to produce population based estimates of the number of PET scans needed
- Study the accuracy and the impact on clinical management of PET exams performed with new tracers for cancers not identifiable with ^{18}F FDG

Policy Making + Appropriateness criteria

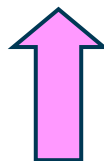
CONCLUSION

Adoption plans for a technology multidimensional issues

Appropriateness of use
clinical research



Organization
of services



Level of Diffusion
Geographical distribution
Network Provision



Appropriateness criteria





Questions
are
guaranteed in
life;
Answers aren't

Thank you!!!

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Agenzia
sanitaria
e sociale
regionale