

The European Commission's science and knowledge service

Joint Research Centre



Challenges for a common European approach to estimate national incidence in countries with partial population coverage

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GRELL – Ascension meeting 2019 - Lisbon, 30 May 2019

ECIS web application and future steps



European Commission > EU Science Hub >

ECIS - European Cancer Information System

Measuring cancer burden and its time trends across Europe



Incidence and mortality estimates 2018

National estimates of cancer incidence and mortality in 2018, for the major cancer sites in 40 European countries.



Incidence and mortality historical data

Incidence and mortality statistics over time by cancer site and demographic variables, in European cancer registration areas.



Survival estimates

Estimated indicators of survival, by cancer sites and sex, across European countries and regions.

<https://ecis.jrc.ec.europa.eu>

How to get a COUNTRY LEVEL for countries with regional cancer registries only?

JRC-ENCR WORKSHOP ON NATIONAL ESTIMATES 25 October 2018

Participants from

- Countries involved in the analyses
- International studies (IARC, EUROCARE, RARECARE, Danish Cancer Society)



Objective of the study

Country – National Association

- Bosnia Herzegovina
- France – FRANCIM
- Germany – GEKID
- Italy – AIRTUM
- Portugal
- Romania
- Serbia
- Spain – REDECAN
- Switzerland – NICER
- UK

	Local data (Ld)	Mortality to Incidence ratio (M:I)
Assumption	Age-specific crude incidence rate at regional and national level are equal	M:I ratios at regional and national level are equal

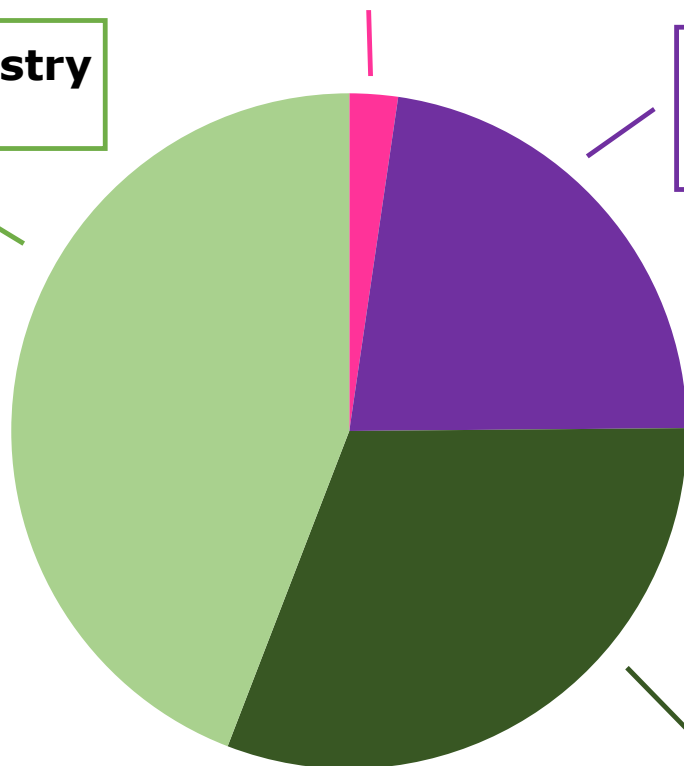
Objective of this study is to estimate national incidence for Portugal and compare it with the observed one (**GOLD standard**)

Cancer registration in Portugal

Azores Cancer Registry
Pop. 246,776 (2%)

South Region Cancer Registry
Pop. 4.7 million (44%)

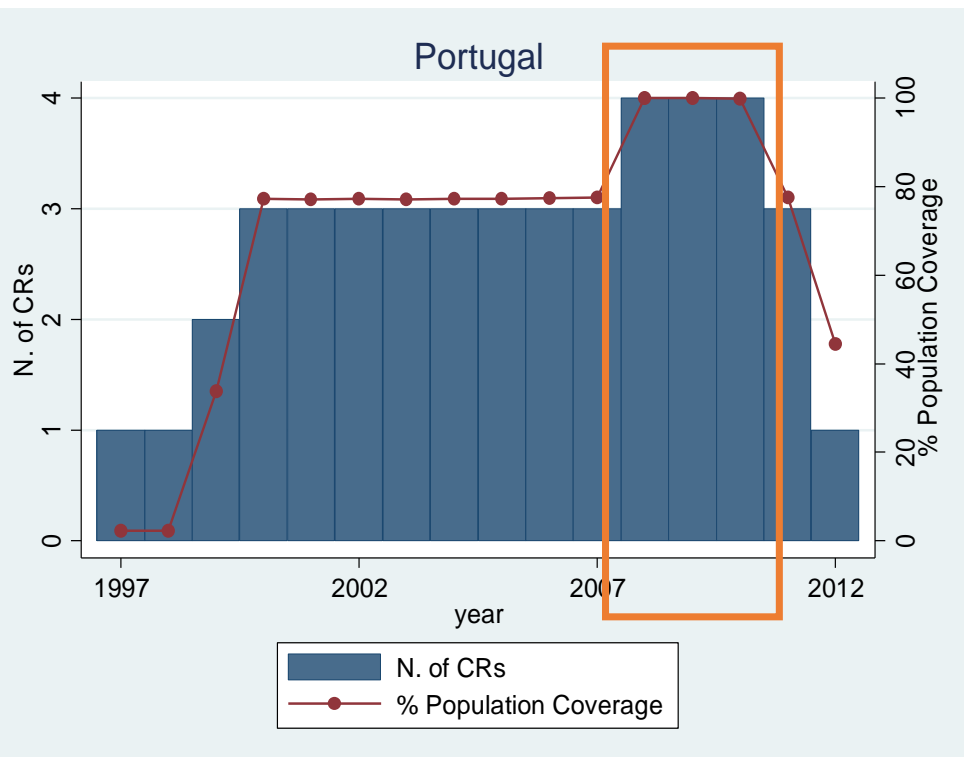
Central Region Cancer Registry
Pop. 2.4 million (23%)



North Region Cancer Registry
Pop. 3.3 million (31%)

**Registo Oncológico Nacional
from 1 Jan 2018**

Portuguese data in ECIS



- Full population coverage 100% for years 2008-2010 (national observed incidence - GOLD STANDARD)
- 2 regional CRs with incidence and mortality data (Azores and Central Region, population coverage 25%)

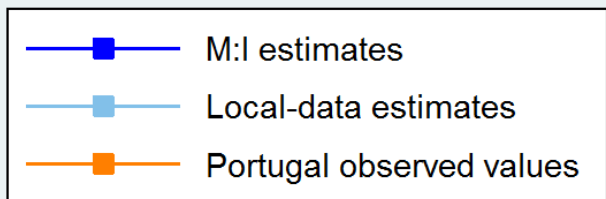


National estimates for years 2008-2010
obtained with Ld and M:I methods
for selected cancer sites

$$\text{Relative change} = \left(\frac{\text{NUMBER}_X - \text{NUMBER}_Y}{\text{NUMBER}_Y} \right) \times 100$$

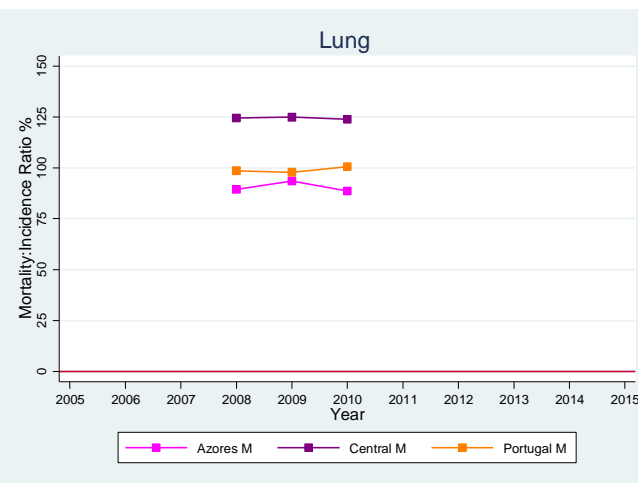
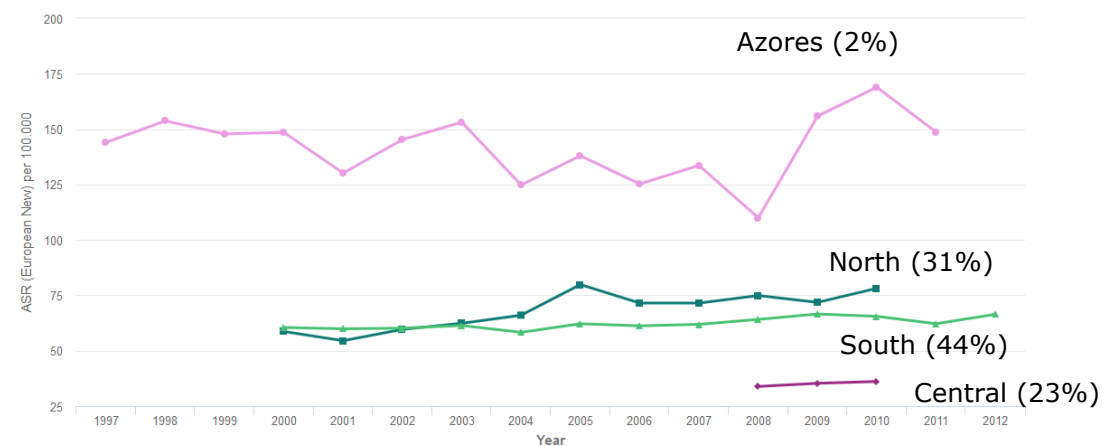
Results - Lung cancer estimates - M

Estimated vs. Observed Incidence



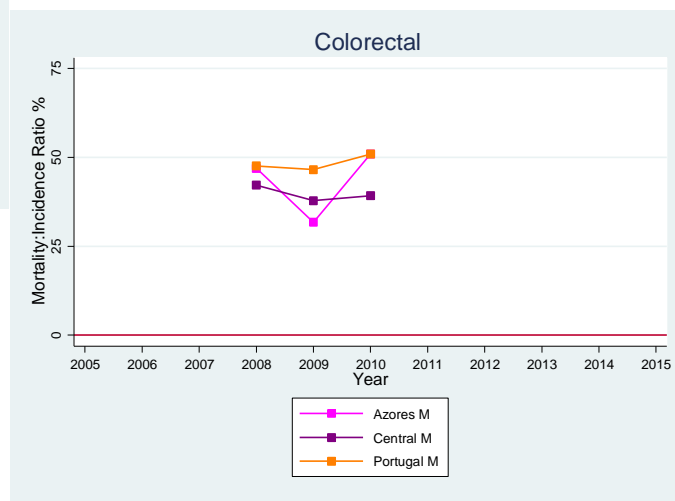
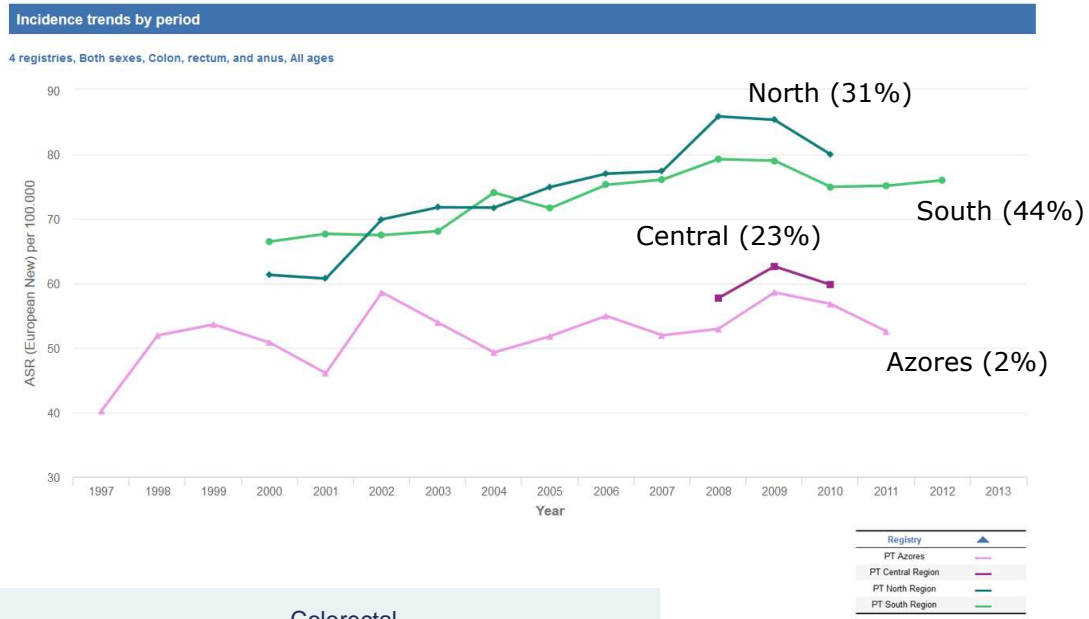
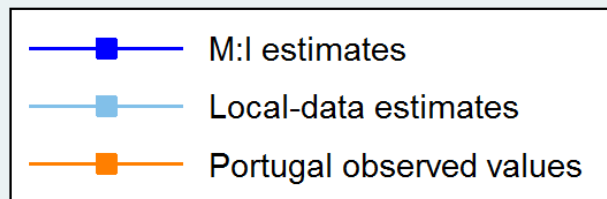
Incidence trends by period

4 registries, Male, Lung, All ages



Results - Colorectal cancer estimates - M

Estimated vs. Observed Incidence



Summary of the results

Cancer site	Sex	Central Registry (23%)		Azores Registry (2%)		Central and Azores Registries (25%)	
		M:I	Ld	M:I	Ld	M:I	Ld
Breast	F	★			★	★	
Colorectal	M		»	★		»	★
	F		»		»	»	
Corpus Uteri	F				«		
Lung	M	★	»	★	«	★	»
	F			★			
Melanoma	M		≈		«		≈
	F		»		«		»
Pancreas	M		≈			★	≈
	F		≈		«		≈
Prostate	M	★	≈	★	≈	★	≈
Thyroid	M		«	★	«		«
	F		«		«		«

M:I = M:I method; Ld=Local-data method

≈ similar estimates; » evidently bigger values; « evidently smaller values

★ |relative change| <15% as compared to observed values

Success rate of the 2 methods

Regional Cancer Registry	Coverage (%)	Success Rate M:I (%)	Success Rate Ld (%)
Azores	2	15	8
Central Region	23	23	23
Azores & Central Region	25	31	23

Conclusions/Remarks in this Portuguese exercise

- Ld less successful than M:I
- High variability between M:I and Ld estimates
- Both methods successful for Prostate cancer
- M:I highly successful for Lung cancer
- No clear pattern of success between Ld and MI method
- Same exercise to be run in other European countries with national coverage and regional information



Thank you

Questions?