



# Referral in the General Practice setting in the centre of Portugal:

Electronic data from two groups of Health Centres

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# Introduction

✓ European study of Referrals in Primary Care (1992)<sup>1</sup>

RR Norway 8.05%

RR Portugal 5.56 %

RR France 2.44%



# Introduction



- ✓ At 2012's WONCA Europe , we introduced a standardized population indicator:

Adjusted Referral Calculation  
(ARC)



# Objectives

Following previous research:

- To characterize the informatics generated data of referral, in two GHC in the centre of Portugal, between 2009 and 2011.

Population indicator



# Methods

Descriptive  
cross-sectional  
study



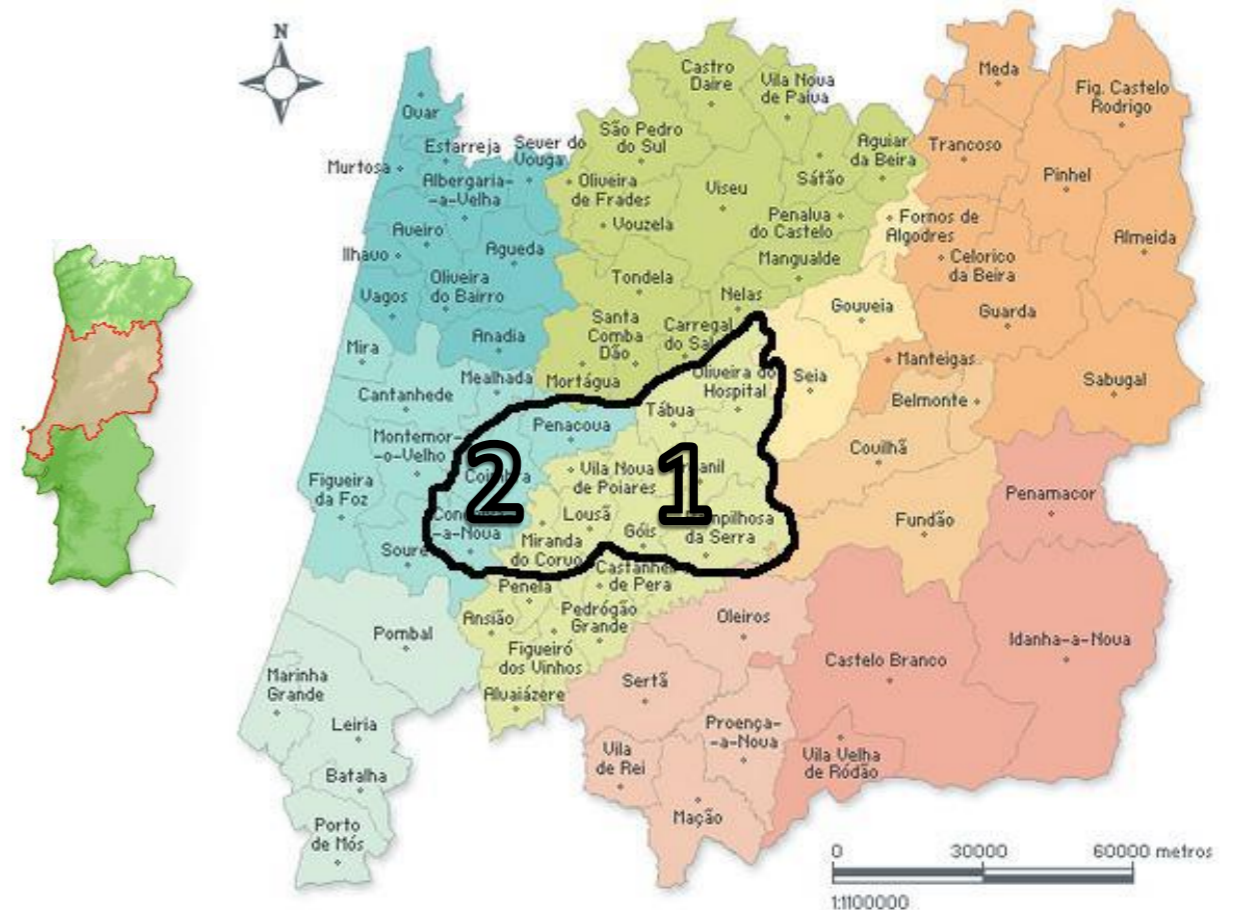
2 GHC



Referral  
database  
(SAM-ESTAT)



January/2009  
–  
December/2011





# Methods

✓ For each HC:

RR -  $(n \text{ referrals}/n \text{ consultations}) * 100$

ARC -  $(n \text{ referrals} * 1000 / \text{population in the middle of the period} * 365)$

Indicators were determined for each year



# Methods

- ✓ We analyzed statistical differences in RR and ARC between the two GHC using the Student t test for independent samples.





# Results

HC	RR2009 (%)	RR2010 (%)	RR2011 (%)	GHC
Arganil	2.04	2.27	2.93	1
Góis	4.62	3.06	2.70	1
M.do Corvo	4.45	4.15	4.41	1
O.Hospital	1.54	1.48	(*)	1
P.Serra	2.85	2.88	2.66	1
Tábua	5.20	5.80	5.20	1
VN Poiares	4.19	4.85	4.86	1
Condeixa	4.00	4.12	4.88	2
Eiras	5.51	5.64	5.76	2
F.Magalhães	5.02	5.43	5.09	2
N.Matos	4.05	4.57	5.05	2
Penacova	4.35	4.11	4.22	2
Sta Clara	5.60	4.70	4.70	2
S.Martinho	4.83	4.62	5.60	2

✓ RR ranged between 1.48%-5.80%

✓ Lowest and highest values in the same GHC



# Results

HC	ARC2009(‰)	ARC2010(‰)	ARC2011(‰)	GHC
Arganil	0.25	0.28	0.37	1
Góis	0.71	0.48	0.41	1
M.do Corvo	0.53	0.48	0.45	1
O.Hospital	0.18	0.17	0.16	1
P.Serra	0.44	0.47	0.41	1
Tábua	0.68	0.75	0.59	1
VN Poiares	0.60	0.69	0.67	1
Condeixa	0.50	0.48	0.50	2
Eiras	0.48	0.48	0.49	2
F.Magalhães	0.49	0.51	0.38	2
N.Matos	0.41	0.46	0.48	2
Penacova	0.50	0.46	0.45	2
Sta Clara	0.53	0.46	0.50	2
S.Martinho	0.36	0.36	0.44	2

✓ RR ranged between 0.16‰-0.75‰

✓ Lowest and highest values in the same GHC



# Results

	GHC	n	Mean	Dp	p	IC 95%	
RR2009	1	7	3.56	1.41	0.062	2.25	4.86
	2	7	4.77	0.66		4.16	5.37
RR2010	1	7	3.50	1.51	0.066	2.10	4.90
	2	7	4.74	0.59		4.19	5.29
RR2011	1	6	3.79	1.16	<b><u>0.026</u></b>	2.58	5.01
	2	7	5.04	0.52		4.56	5.53
ARC2009	1	7	0.48	0.21	0.836	0.30	0.68
	2	7	0.47	0.06		0.41	0.52
ARC2010	1	7	0.47	0.21	0.847	0.28	0.66
	2	7	0.46	0.05		0.42	0.50
ARC2011	1	7	0.44	0.16	0.695	0.29	0.59
	2	7	0.46	0.04		0.42	0.50

✓ Mean RR higher to GHC 2

✓ Mean ARC were similar



## Discussion

- The results of mean RR for each GHC are lower than was estimated to Portugal in the European study from 1992.<sup>1</sup>

**5.56 %**

- This results are also lower than was found in a study in Northern Portugal.<sup>2</sup>

**10.11 %**

1. Occas Pap R Coll Gen Pract.1992 Apr;(56):1-75

2. Referenciação aos cuidados de saúde secundários. Rev Port Clin Geral 2006; 22:555-68



## Discussion

- The objective of this research was to characterize the informatics generated data of referral so...

The methodology didn't consider referral data which wasn't registered in the program used however...

We believe that most referrals were made using this tool.



## Discussion

- Lowest and highest values of RR and ARC were recorded in 2 HC geographically near to each other.
- Factors that influence the referral process?





## Discussion

- ARC allows a more complete analysis between contexts and complements the information from RR.
- Useful indicator in future research.



## Conclusion

- **Objective:** To characterize the informatics generated data of referral, in two GHC in the centre of Portugal, between 2009 and 2011.
- Considering each HC, the RR ranged between 1.48%-5.80% and the ARC between 0.16‰-0.75‰.
- Lowest and highest values of RR and ARC were recorded in 2 HC of the same GHC (number 1).
- Mean RR were higher in the GHC number 2.
- Values of mean ARC were similar between GHC.