

# Consumo de Antimicrobianos em Portugal

## Dia Europeu dos Antibióticos

**Inês Teixeira, MSc**

**Observatório do Medicamento e Produtos de Saúde**

**INFARMED, I.P. - Autoridade Nacional do Medicamento e Produtos de Saúde**

**Lisboa, 18 de Novembro de 2008**

# Consumo de Antimicrobianos em Portugal

O INFARMED através do Observatório do Medicamento e  
Produtos de Saúde:

- ✓ integra a **Comissão Técnica para a Prevenção das Resistências aos Antimicrobianos**

*(Despacho n.º 20729/2008, de 29 de Julho)*

- ✓ e participa no projecto internacional

**ESAC - *European Surveillance of Antimicrobial***

# Comissão Técnica para a Prevenção das Resistências aos Antimicrobianos (CTPRA)

**Estratégias (Despacho n.º 20729/2008, de 29/07):**

- a) **Vigilância epidemiológica das resistências aos antimicrobianos**
- b) Monitorização dos consumos de antimicrobianos**
- c) **Emissão de orientações técnico-normativas**
- d) **Promoção da formação dos profissionais de saúde e da educação e informação do público**

# ESAC - *European Surveillance of Antimicrobial Consumption*



## O que é o ESAC?

- **Projecto Europeu** coordenado pela **Universidade de Antuérpia (Bélgica)** [Equipa Multidisciplinar: Médicos, Microbiologistas, Epidemiologistas, Farmacologistas, Economistas da Saúde, Farmacêuticos...]
- **Rede de 34 países** participantes (entre os quais todos os **27 Estados Membros da UE**)
- Cada país tem a sua própria rede nacional de **peritos**
- **Financiado pelo ECDC - *European Centre for Disease Prevention and Control***

## ESAC - *European Surveillance of Antimicrobial Consumption*

### Porquê o ESAC?

- Recolha de **dados de utilização** de antibióticos e construção de uma base de dados **contínua e comparável** entre os vários países,
- Construção de **indicadores** harmonizados sobre uso de antibióticos
- E **relação** com padrões de **resistências aos antimicrobianos** (dados recolhidos paralelamente pelo projecto **EARSS** *European Antimicrobial Resistance Surveillance System*)

Juntos, o **ESAC** e o **EARSS** proporcionam uma imagem das tendências actuais emergentes da utilização e da resistência antimicrobianas, na Europa.

## ESAC - *European Surveillance of Antimicrobial Consumption*

### Quatro subprojectos:

- 1) **Ambulatório** - através da cedência de informação trimestral sobre dispensa de antibióticos em DDD´s;
- 2) **Hospitalar** - através da coordenação de hospitais portugueses em 2 *Point Prevalence Surveys* (2008, 2009) e 1 *Longitudinal Survey* (2009) [Hosp. S. Francisco Xavier/Hosp. Infante D.Pedro, Aveiro - participaram no 1º PPS]
- 3) **Determinantes Sócio-Económicos** - do consumo de antibióticos (ainda em implementação);
- 4) **Cuidados continuados** - recolha sobre a utilização de antibióticos (Portugal ainda não participa)

http://www.esac.ua.ac.be/



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## UPCOMING EVENTS

**November 13, 2008**

Annual Meeting  
ESAC-EARSS

Athens, Greece

## IMPORTANT NEWS

Pages for the general public / press can be found by clicking on the flag of your country.

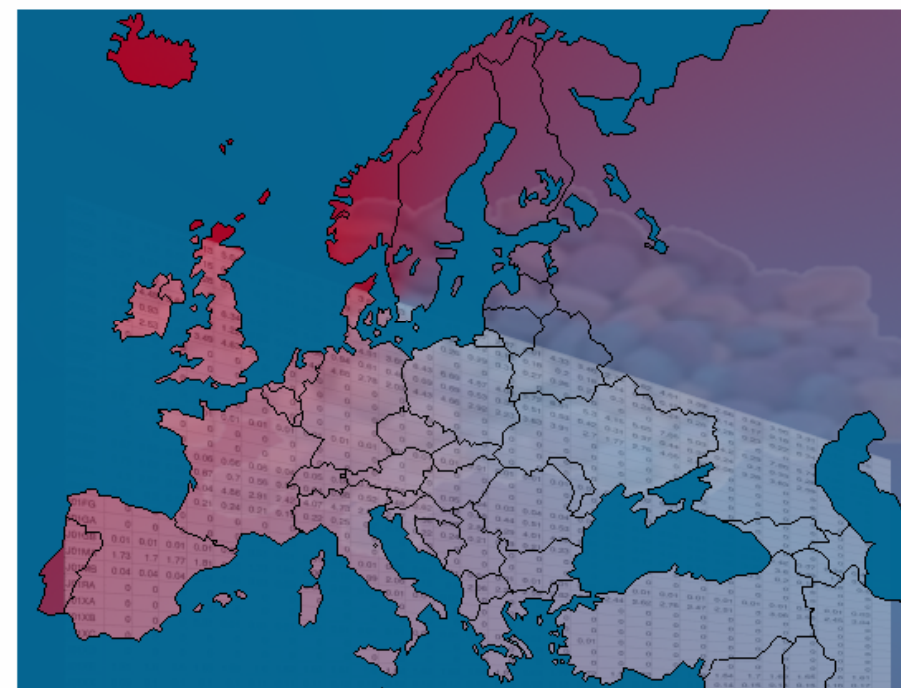
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# EUROPEAN SURVEILLANCE OF ANTIMICROBIAL CONSUMPTION

On this website, you will find information on antimicrobial (antibiotic, antiviral and antimycotic) consumption in European countries. These data are publicly available.

ESAC is a project funded by the European Centre for Disease Prevention and Control (ECDC).



## European Surveillance of Antimicrobial Consumption (ESAC): Data Collection Performance and Methodological Approach

R. H. Vander Stichele, M. M. Elseviers, M. Ferech, S. Blot, H. Goossens & the ESAC Project Group<sup>1,\*</sup>

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### Keywords

Anti-bacterial agents, Data collection, Drug utilization, Europe, Factual databases, Microbial drug resistance

### Received

27 November 2003

### Accepted

29 March 2004

\*For details of ESAC Project Group please see appendix.

### Background

Europe is a continent with strong public healthcare systems, but diverging antibiotic policies and resistance patterns.

### Aims

To describe the performance and methodological approach in a retrospective data collection effort (1997–2001), through an international network of surveillance systems, aiming to collect publicly available, comparable and reliable data on antibiotic use in Europe.

### Methods

A central multidisciplinary management team co-ordinated a network of national representatives, liaising with national data providers and bodies responsible for antibiotic policy. The data collected were screened for bias, using a checklist. We focused on detection bias in sample and census data; errors in assigning medicinal product packages to the Anatomical Therapeutic Chemical Classification (ATC); errors in calculations of defined daily doses (DDD) per package; bias by over-the-counter sales and parallel trade; and bias in ambulatory care (AC)/hospital care (HC) mix. Datasets were corrected after national feedback, and classified as valid; valid but with minor bias; not valid.

### Results

Of the 31 participating countries, 21 countries delivered AC data suitable for cross-national comparison (14 for all 5 years). Of these, 17 countries provided data on a quarterly basis for at least 1 year. For HC, 14 countries were able to deliver valid data (nine for all 5 years). A valid estimate of the total exposure of national populations to human antibiotic consumption could be made in 17 countries.

### Conclusion

In cross-national comparisons of antibiotic consumption in Europe, methodological rigour in correcting for various sources of bias and checking the validity of ATC/DDD assignment is needed.

## Outpatient antibiotic use in Europe and association with resistance: a cross-national database study

Herman Goossens, Matus Ferech, Robert Vander Stichele, Monique Elseviers for the ESAC Project Group\*

### Summary

**Background** Resistance to antibiotics is a major public-health problem and antibiotic use is being increasingly recognised as the main selective pressure driving this resistance. Our aim was to assess outpatient use of antibiotics and the association with resistance.

**Methods** We investigated outpatient antibiotic use in 26 countries in Europe that provided internationally comparable distribution or reimbursement data, between Jan 1, 1997, and Dec 31, 2002, by calculating the number of defined daily doses (DDD) per 1000 inhabitants per day, according to WHO anatomic therapeutic chemical classification and DDD measurement methodology. We assessed the ecological association between antibiotic use and antibiotic resistance rates using Spearman's correlation coefficients.

**Findings** Prescription of antibiotics in primary care in Europe varied greatly; the highest rate was in France (32.2 DDD per 1000 inhabitants daily) and the lowest was in the Netherlands (10.0 DDD per 1000 inhabitants daily). We noted a shift from the old narrow-spectrum antibiotics to the new broad-spectrum antibiotics. We also recorded striking seasonal fluctuations with heightened winter peaks in countries with high yearly use of antibiotics. We showed higher rates of antibiotic resistance in high consuming countries, probably related to the higher consumption in southern and eastern Europe than in northern Europe.

**Interpretation** These data might provide a useful method for assessing public-health strategies that aim to reduce antibiotic use and resistance levels.

### Introduction

Antibiotic resistance is a major public-health problem worldwide, and international efforts are needed to counteract its emergence. There is much information on the prevalence of resistance in human pathogens, and these data show that there are substantial geographic differences in the proportion of resistance to various classes of antibiotics in Europe.<sup>1</sup> Although rates of antibiotic resistance remain low in northern European countries, these rates are reaching alarming levels in southern and central Europe. Antibiotic consumption is increasingly being recognised as the main cause of this emerging resistance, and differential selection pressure of antibiotics could be responsible for some of these differences.<sup>2</sup>

The highest rates of antibiotic prescriptions for systemic use are in primary care, and respiratory tract infection is the most common indication. Monitoring antibiotic use should accompany surveillance programmes on antibiotic resistance. However, data for their use are scarce and not freely available, and the factors that determine differences in use are not fully understood. Moreover, national databases use different methods for drug classification and for measuring antibiotic use. However, temporal trends and regional differences are important triggers for action and investigation, and benchmarking by comparisons between countries should be an important stimulus to quality improvement. Additionally, development, implementation, and assessment of guidelines need

information about practice of antibiotic prescribing, which will inform local or national prescribing policies.

On Nov 15, 2001, a European Union (EU) Council recommendation<sup>3</sup> stated that specific strategies should continue to gather data for antibiotic use. The European Surveillance of Antimicrobial Consumption (ESAC) project, granted by the European Commission, is an international network of surveillance systems aiming to obtain comparable and reliable data about antibiotic use in Europe. Here, we present the first results of the ESAC project for outpatient antibiotic use and we relate these consumption data to existing resistance data.

### Methods

#### Data collection

32 countries joined the ESAC project, including all 15 original EU countries, nine of the ten most recent member states (but not Cyprus), four applicant countries (Bulgaria, Croatia, Romania, and Turkey), two of the three European free trade association/European economic area countries (Iceland and Norway, but not Liechtenstein), Russia, and Switzerland. We obtained data for use of systemic antibiotics in ambulatory care grouped according to active substance in the drug, for 1997–2002, in accordance with the anatomic therapeutic chemical (ATC) classification and defined daily dose (DDD) measurement unit (WHO, version 2003).<sup>4</sup> Antibiotic use for ATC class J01 (i.e. antibacterials for systemic use, excluding antifungals; antibacterials for

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See Comment

\*Members listed at end of report

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ESAC – European Surveillance of  
Antimicrobial Consumption

**ESAC YEARBOOK 2006**



**Última Publicação (2007):**

**Relatório Anual com  
dados de utilização de  
antimicrobianos  
dos países participantes  
de 1999 a 2006**

**Disponível em:**

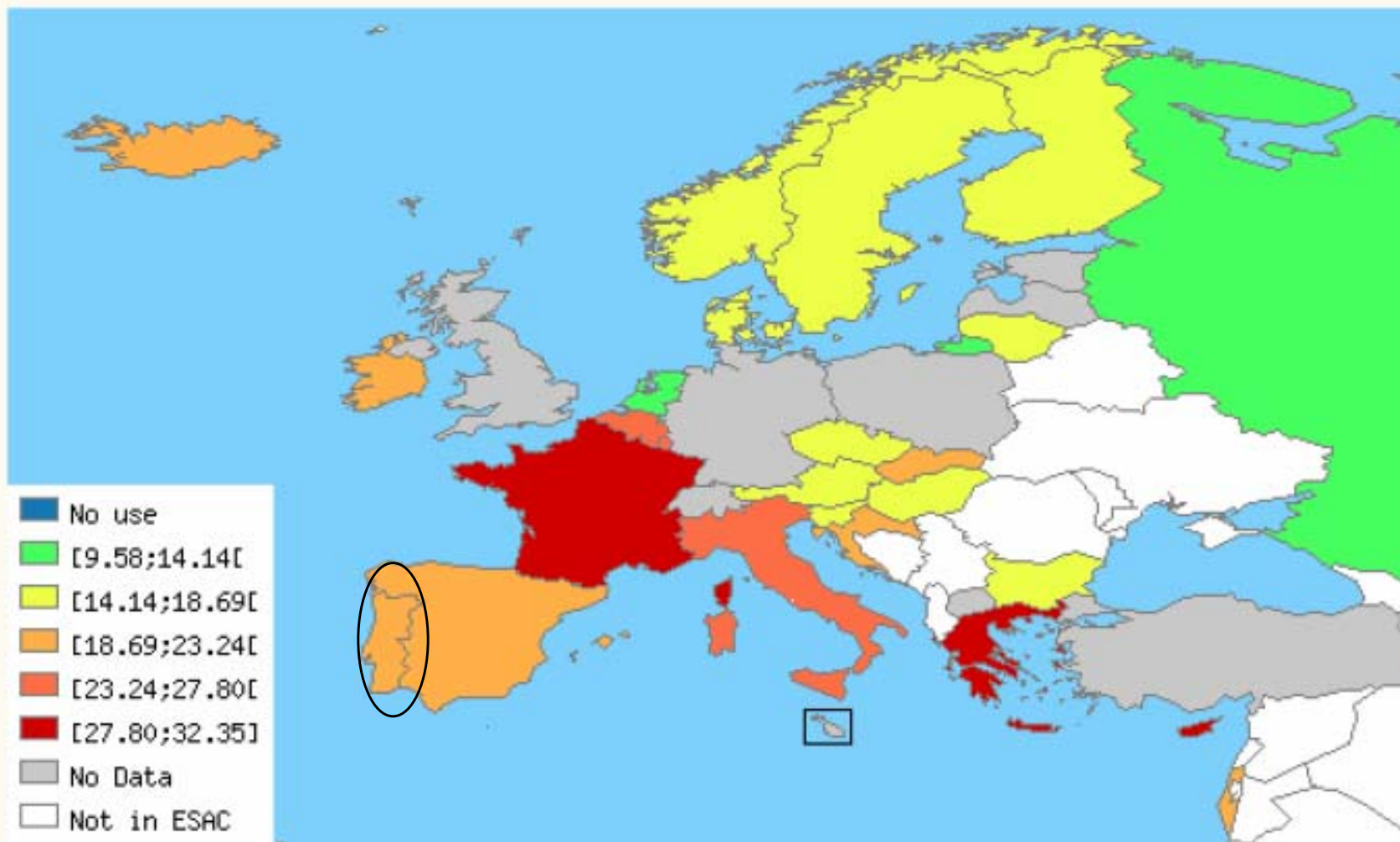
**[http://www.esac.ua.ac.be/main.aspx?c=\\*ESAC2&n=50036](http://www.esac.ua.ac.be/main.aspx?c=*ESAC2&n=50036)**

## Dados recolhidos

- ✓ **Periodicidade:** Trimestral
- ✓ **Sector:** Ambulatório e/ou Hospitalar (em implementação em PT)
- ✓ **Classificação ATC (OMS)** - nível 5 (substância activa)
- ✓ **Volume:** N.º de embalagens, Doses Diárias Definidas (DDD) e DDD/1000 habitantes/dia
- ✓ **N.º registo, Código ATC, Substância Activa, Nome Comercial, Via de administração, Forma Farmacêutica, Dosagem, Apresentação (quantidade) e N.º DDD por apresentação**
- ✓ **Antibacterianos (J01) + Antifúngicos (J02) + SA adicionais**
- ✓ **Alargamento:** Antivíricos, Antiparasitários, Antituberculosos

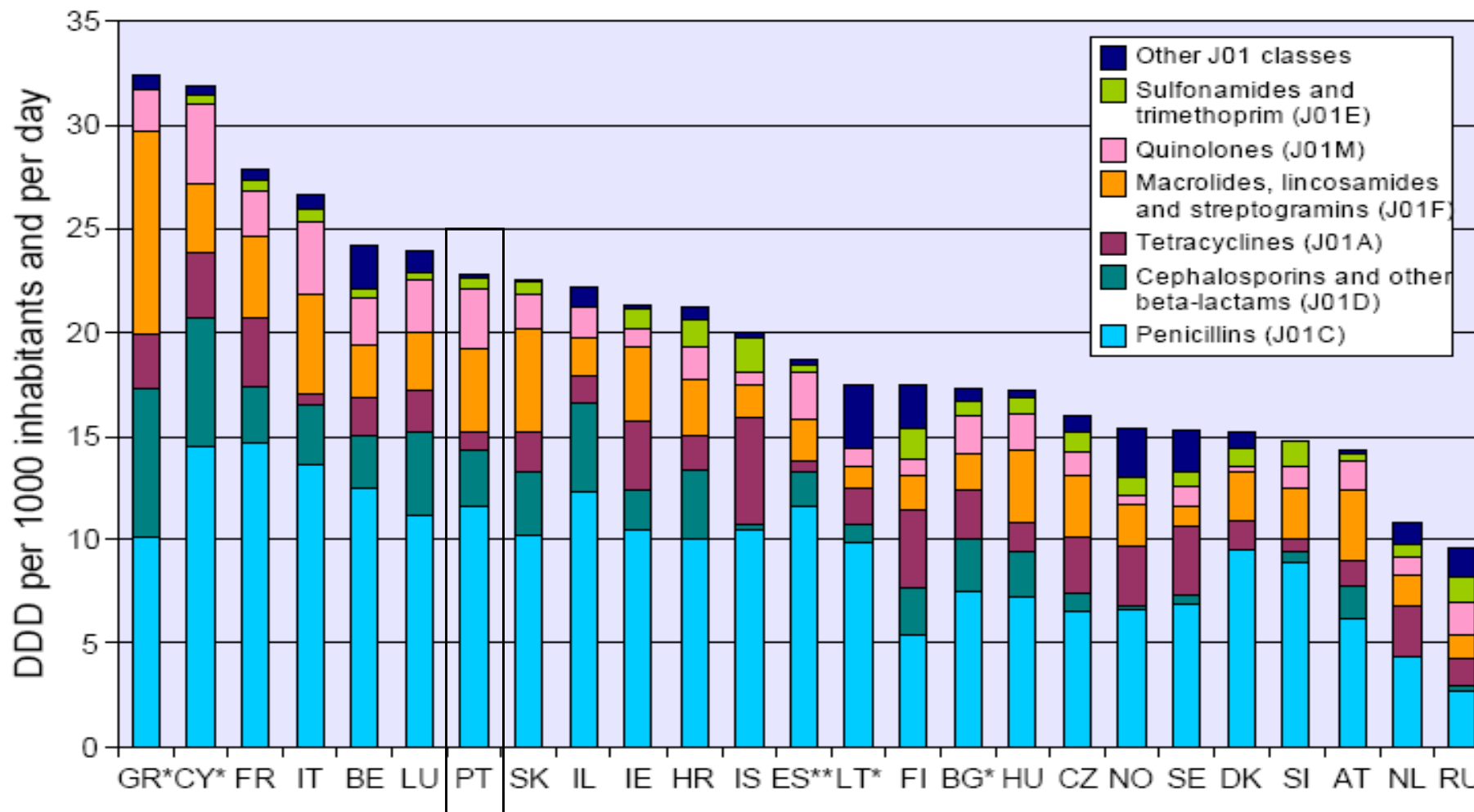
## Resultados Internacionais

Mapa da Europa com a Utilização de Antibióticos em ambulatório - DDD/1000 habitantes/dia (2006)



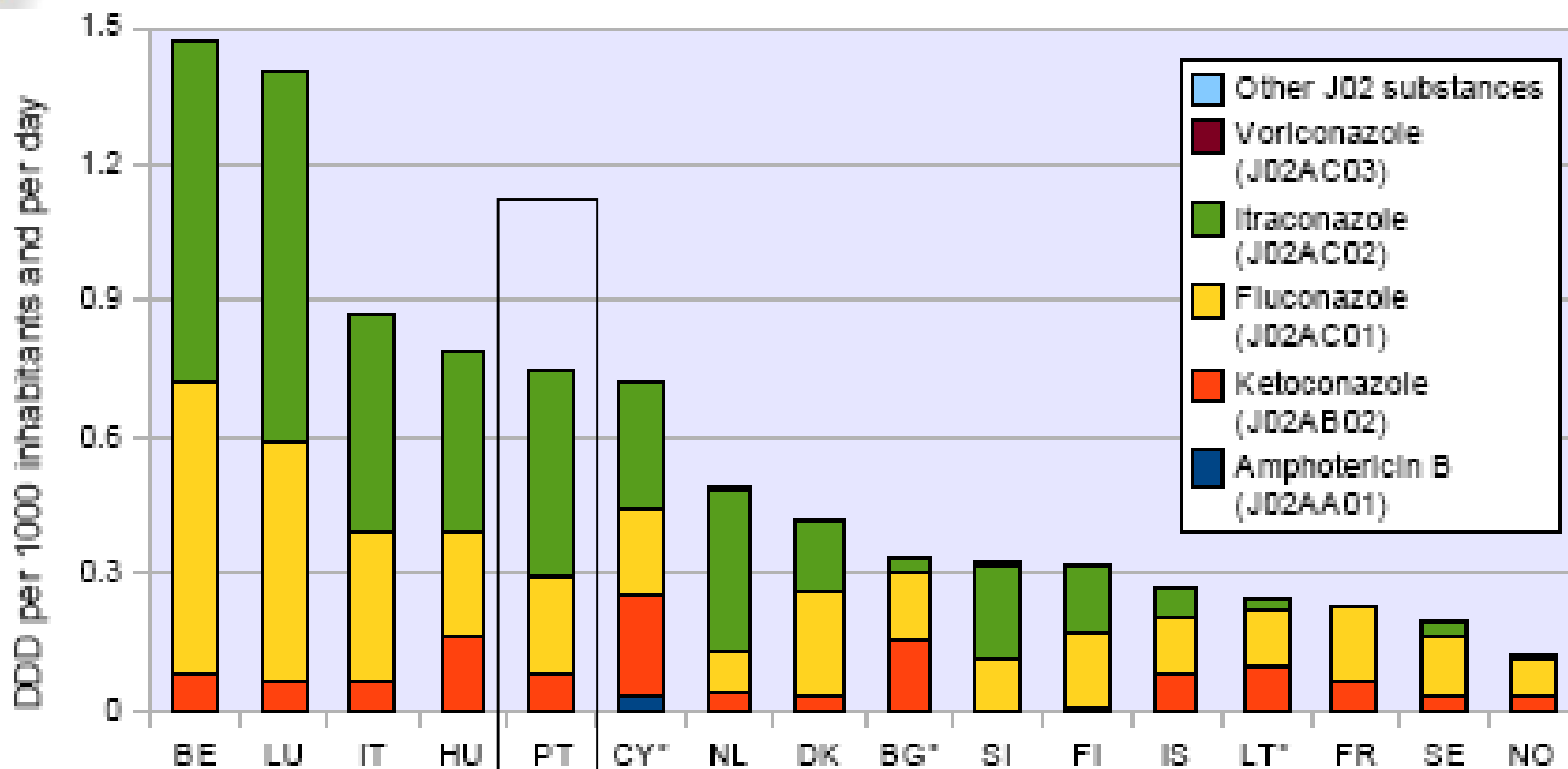
# Resultados Internacionais

## Utilização de Antibióticos (J01) em ambulatório (2006) por Classes Terapêuticas (Classificação ATC)



## Resultados Internacionais

### Utilização de Antifúngicos (J02) em ambulatório (2006) por Substância Activa (Classificação ATC)

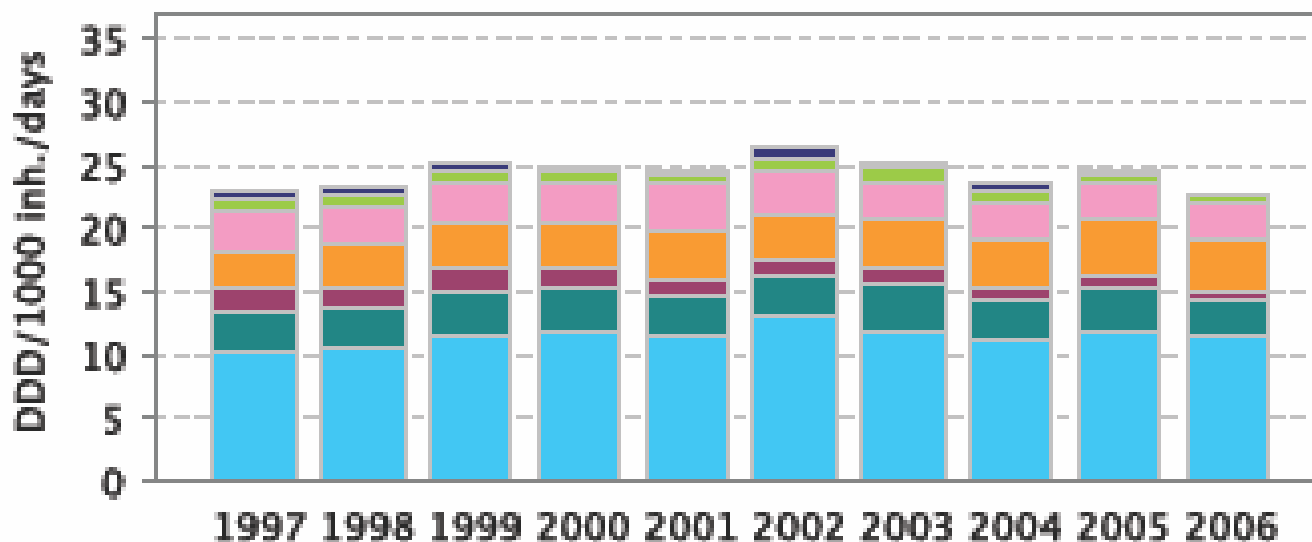


\* BG, CY and LT: total use, ie including the hospital sector

# Resultados Portugal (ambulatório)

## Utilização de Antibióticos: Evolução (1997-2006) por Classes Terapêuticas

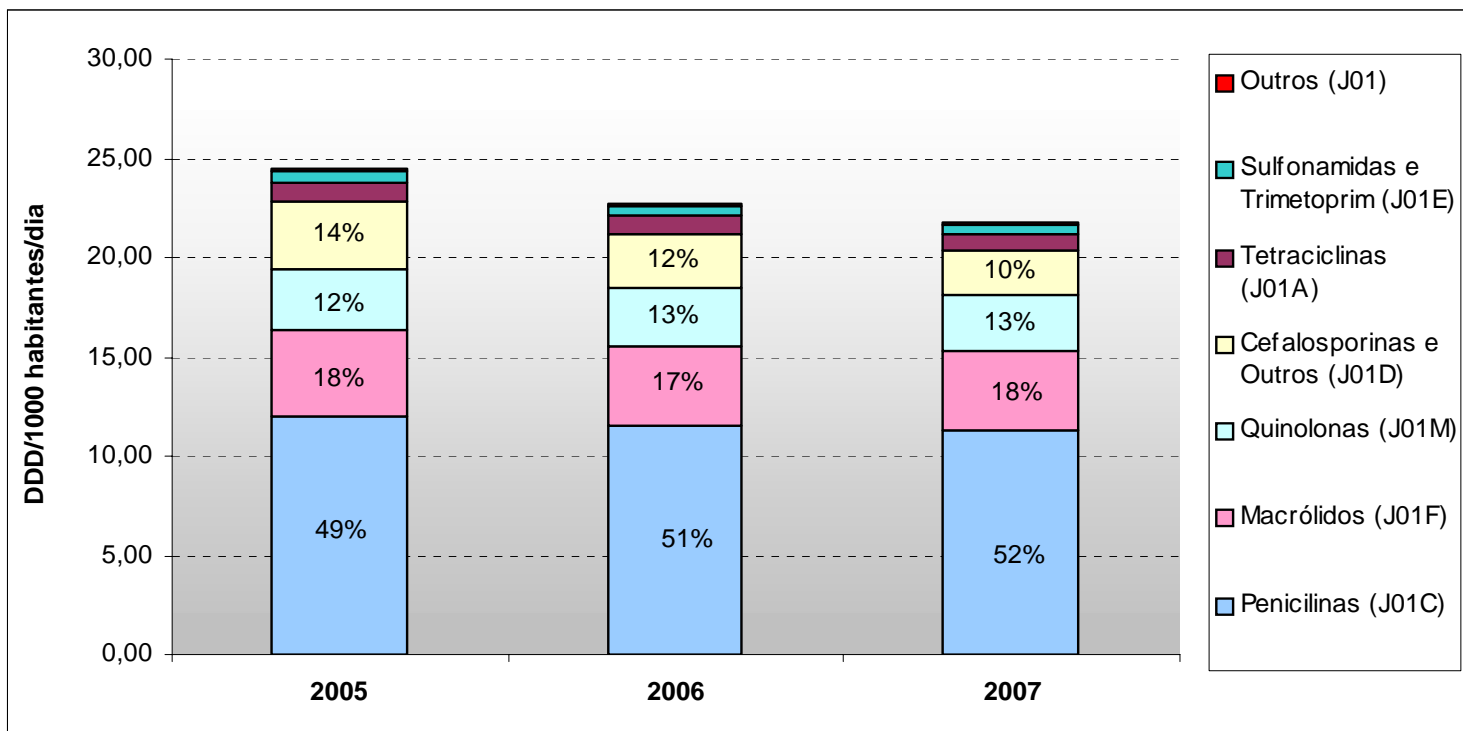
Trends of use of J01 in ambulatory care sector



- Beta-lactam antibacterials, penicillins (J01C)
- Other beta-lactam antibacterials (J01D) ■ Tetracyclines (J01A)
- Macrolides, lincosamides and streptogramins (J01F)
- Quinolone antibacterials (J01M)
- Sulfonamides and trimethoprim (J01E) ■ Other J01 classes

# Resultados Portugal (ambulatório)

## Utilização de Antibióticos: Evolução Anual (2005-2007) e Distribuição por Classes Terapêuticas



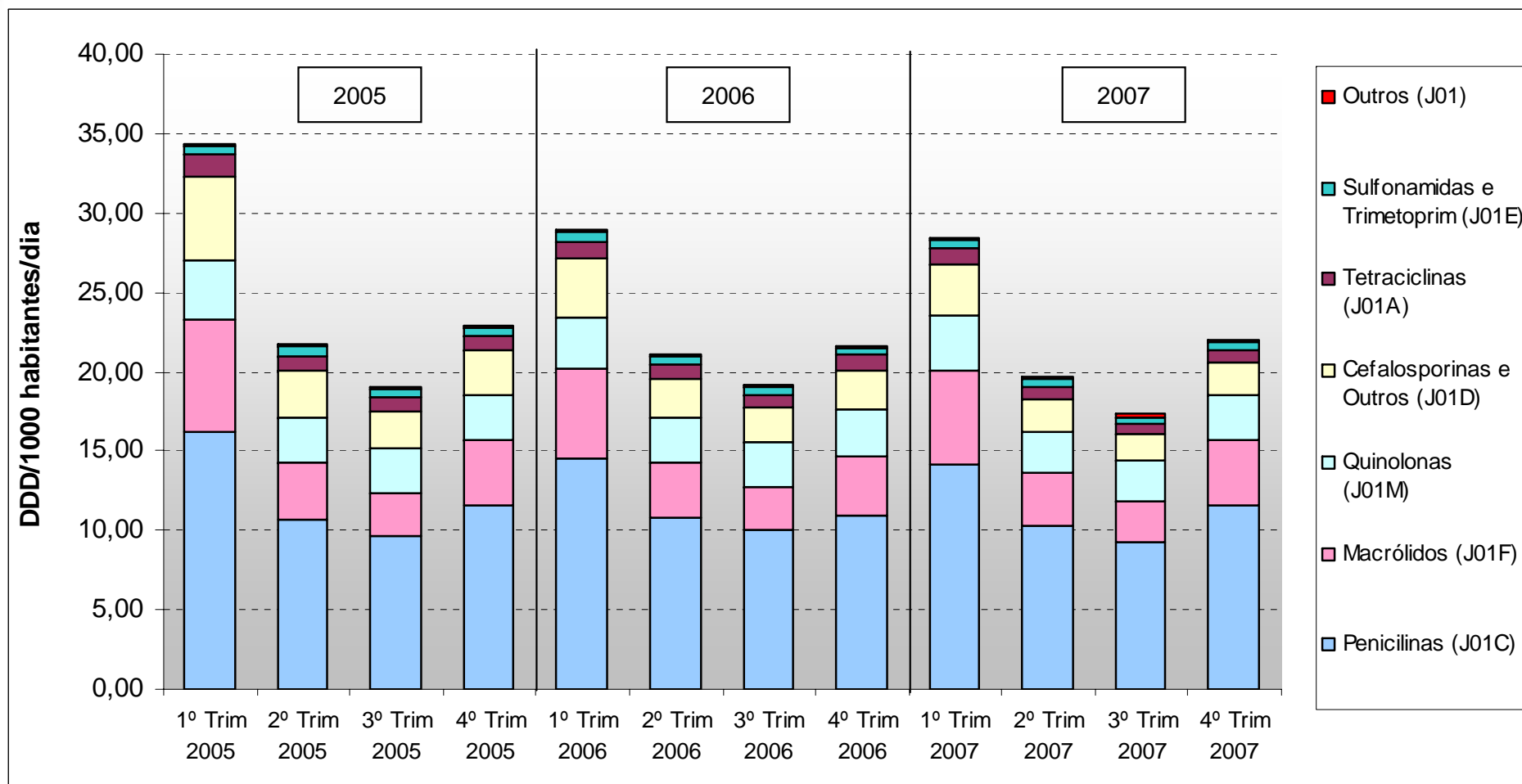
Classes	2005	2006	2007
Penicilinas (J01C)	12,00	11,58	11,30
Macrólidos (J01F)	4,38	3,98	3,98
Quinolonas (J01M)	3,04	2,92	2,87
Cefalosporinas e Outros (J01D)	3,35	2,72	2,24
Tetraciclina (J01A)	1,01	0,90	0,83
Sulfonamidas e Trimetoprim (J01E)	0,58	0,51	0,44
Outros (J01)	0,11	0,15	0,15
<b>Total J01 classes</b>	<b>24,47</b>	<b>22,75</b>	<b>21,81</b>

Fonte: INFARMED

Unidade: DDD/ 1000 habitantes/dia

# Resultados Portugal (ambulatório)

## Utilização de Antibióticos: Evolução Trimestral e Distribuição por Classes Terapêuticas

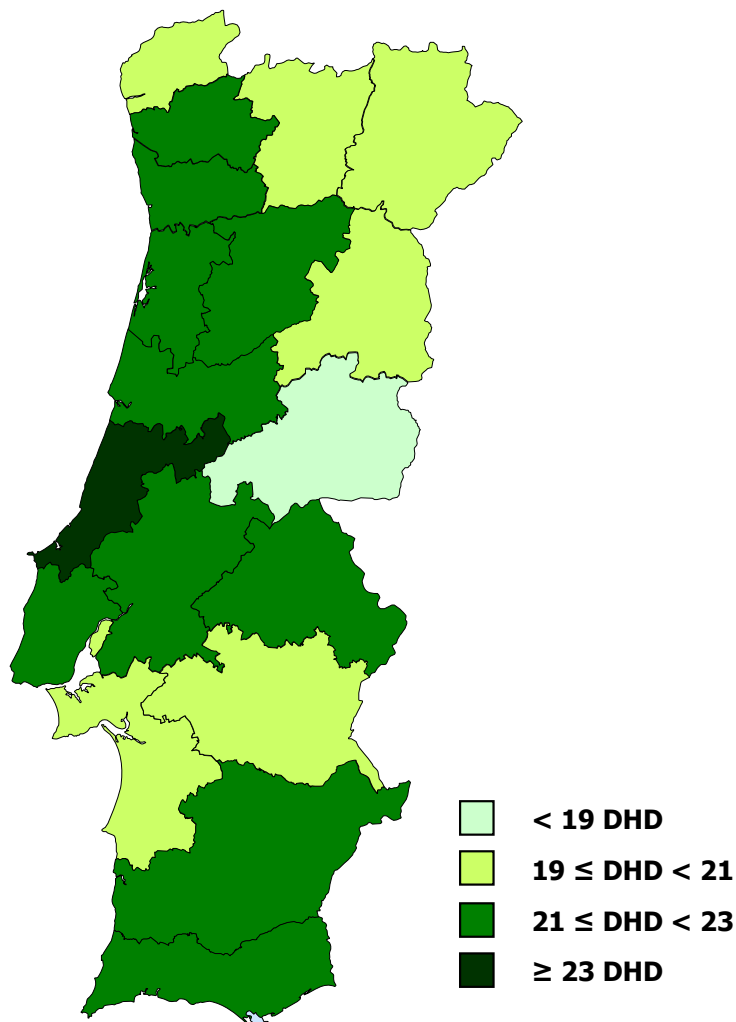


Fonte: INFARMED

Flutuações sazonais acentuadas, com picos elevados no Inverno

# Resultados Portugal (ambulatório)

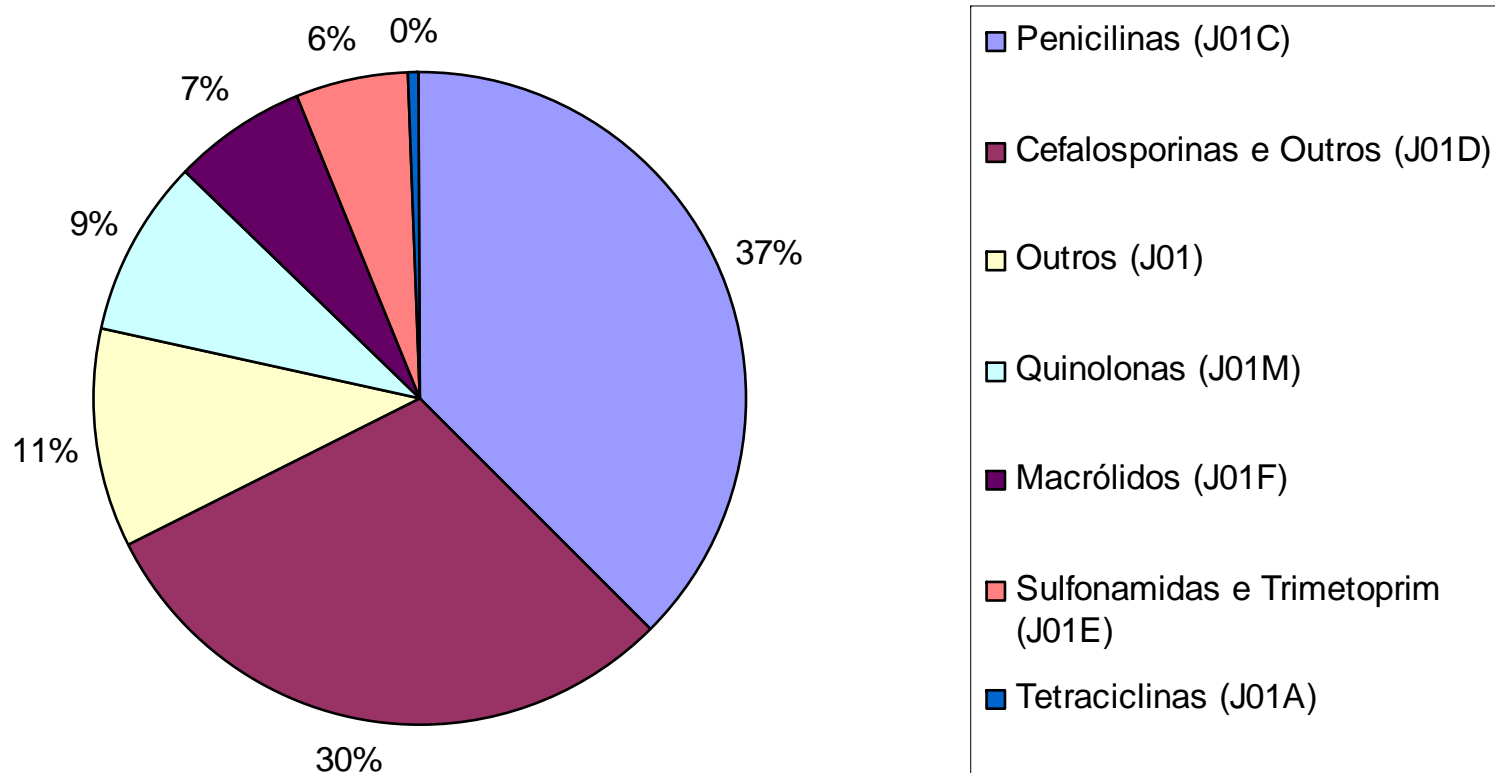
## Utilização de Antibióticos: Distribuição por distrito (2007)



Regiões/Distritos	DHD	
<b>Região Norte</b>	<b>22,12</b>	
Braga	22,10	
Bragança	19,77	-
Porto	22,65	
Viana do castelo	20,84	
Vila Real	20,85	
<b>Região Centro</b>	<b>22,04</b>	
Aveiro	22,83	+
Castelo Branco	18,69	- -
Coimbra	21,25	
Guarda	20,35	
Leiria	23,70	+ +
Viseu	21,87	
<b>Região LVT</b>	<b>21,38</b>	
Lisboa	21,78	
Santarém	21,27	
Setúbal	20,40	
<b>Região Alentejo</b>	<b>20,90</b>	
Beja	21,03	
Évora	20,33	
Portalegre	21,54	
<b>Região Algarve</b>	<b>22,57</b>	
Faro	22,57	
<b>TOTAL</b>	<b>21,81</b>	

## Resultados Portugal (hospitais do SNS)




### Utilização de Antibióticos: Distribuição por Classes Terapêuticas (1º semestre de 2008)



Fonte: INFARMED (CHNM)

Os dados de consumo referem-se aos medicamentos abrangidos pelo Código Hospitalar Nacional de Medicamentos (CHNM) que engloba: os medicamentos de uso humano com Autorização de Introdução no Mercado (AIM), Autorização de Utilização Especial (AUE) e Autorização de Utilização Excepcional (AEX).

## **Perspectivas futuras**

-  **Continuar o trabalho actualmente desenvolvido**
-  **Alargar a participação Portuguesa**
-  **Consolidar as redes de informação**

.../...

**Mais do que avaliar as quantidades dos consumos, interessa identificar os factores responsáveis por diferenças tão marcadas e determinar o impacto destas variações no aparecimento de resistências**

# Obrigada!

  
**Dia Europeu  
dos Antibióticos**

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