

Résistances – Consommations antibiotiques Plan Antibiotiques

Plan national d'action pour préserver
l'efficacité des antibiotiques

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Résistances – Consommation antibiotiques Plan Antibiotique

Plan national d'antibiotiques
l'efficacité des antibiotiques

**Les antibiotiques
c'est pas automatique...!!**

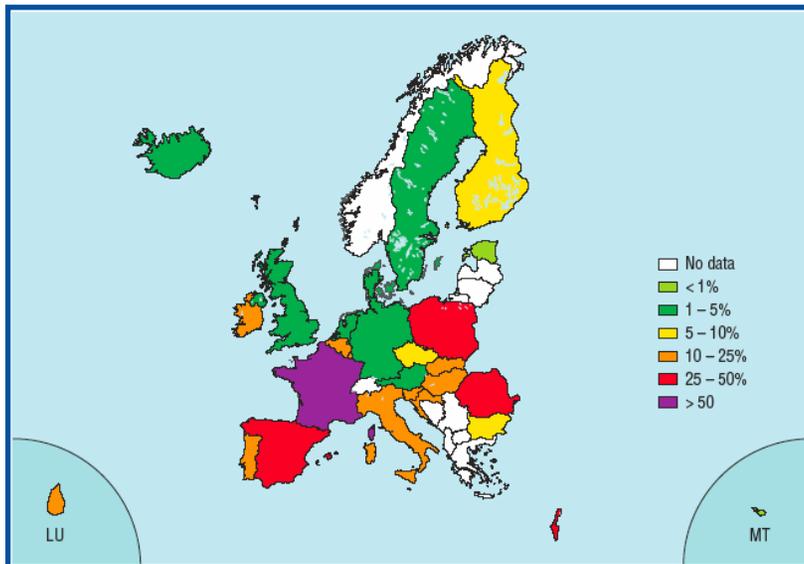
enlemmer

Paris - Université Paris-Diderot

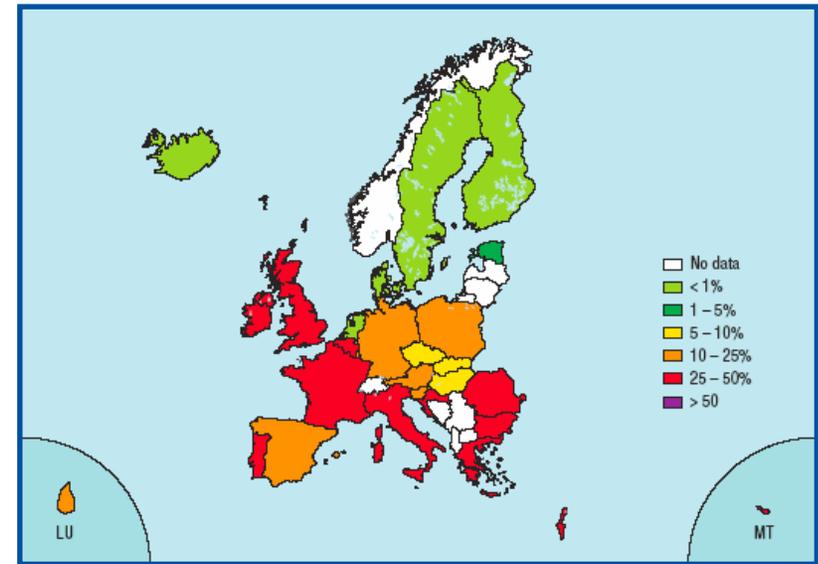
Comité National de suivi du Plan Antibiotiques

Taux de résistance de deux pathogènes majeurs, en Europe

S. pneumoniae et penicilline G



S. aureus et méticilline

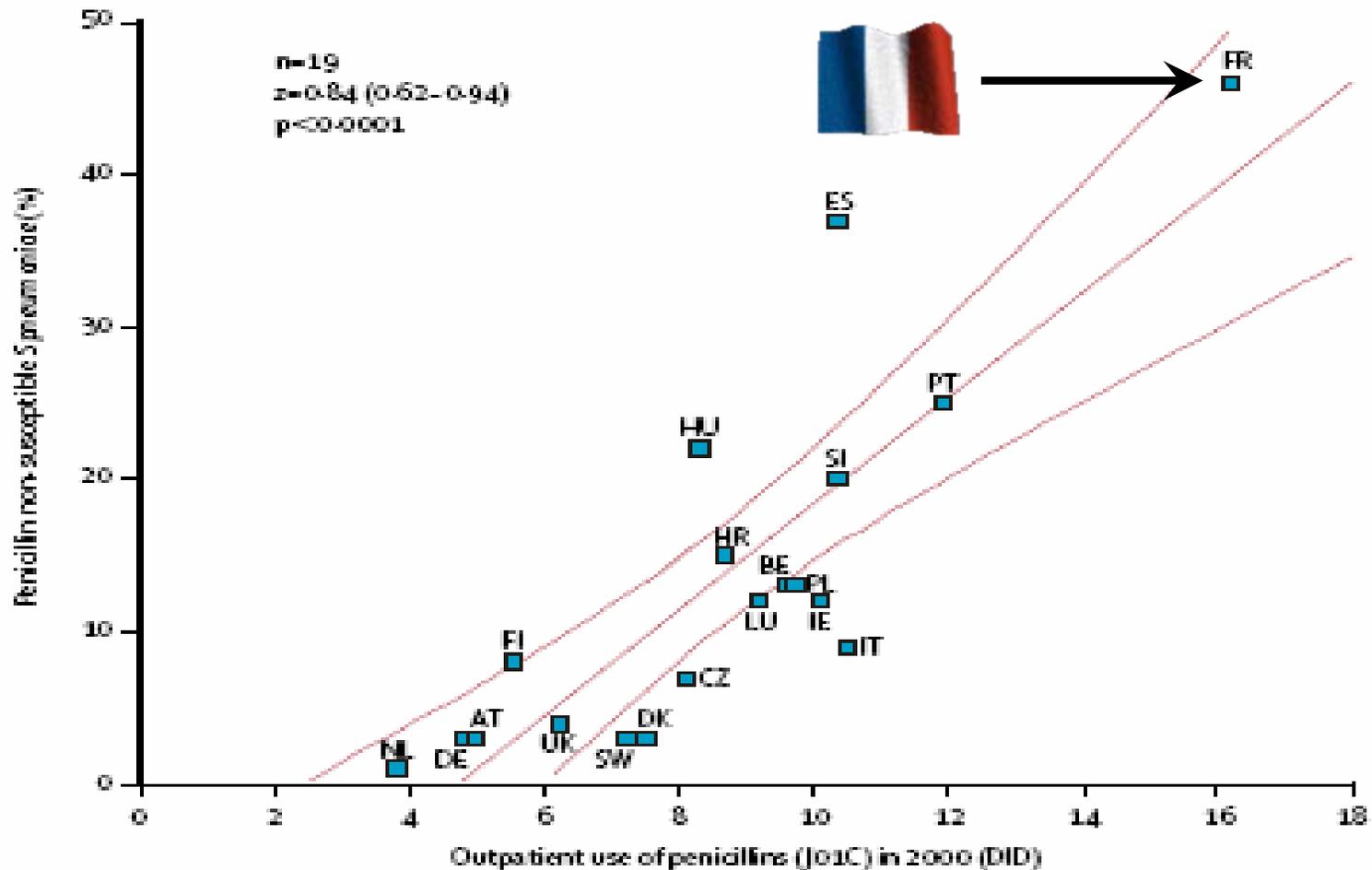


La DISSEMINATION de la résistance bactérienne aux antibiotiques

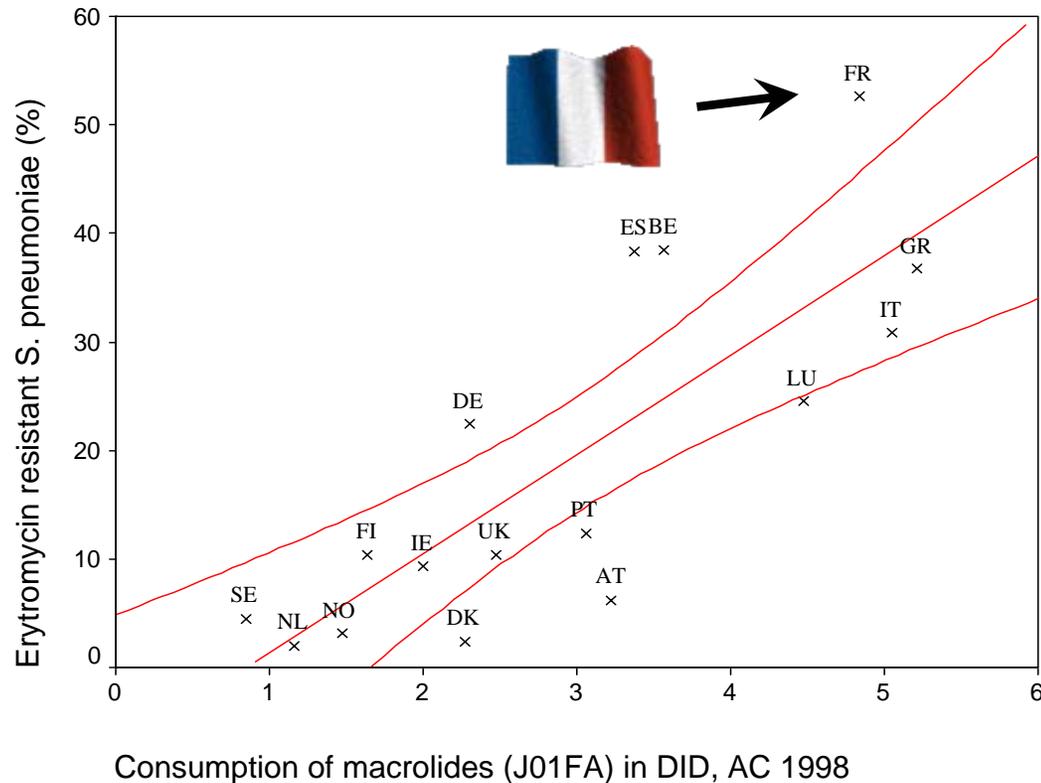
- Est facilitée par la **TRANSMISSION** de bactéries résistantes à des sujets qui ne les hébergaient pas (ILS, prévention par hygiène +++, mais aussi les contacts...!)
- Est amplifiée par **l'USAGE des antibiotiques** :
 - « pression de sélection »
 - EXPOSITION individuelle ET collective
 - Action sur les FLORES ENDOGENES (TD +++)
- Transmission et sélection s'exercent particulièrement **en milieu fermé** +++, i.e. crèches, hôpitaux, SLD...

PSDP et usage des pénicillines - ESAC

Goossens et al., Lancet 2005

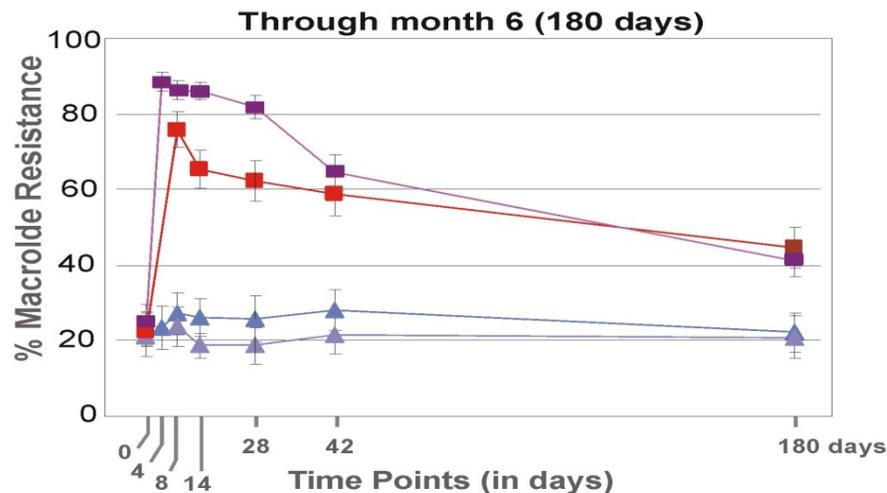
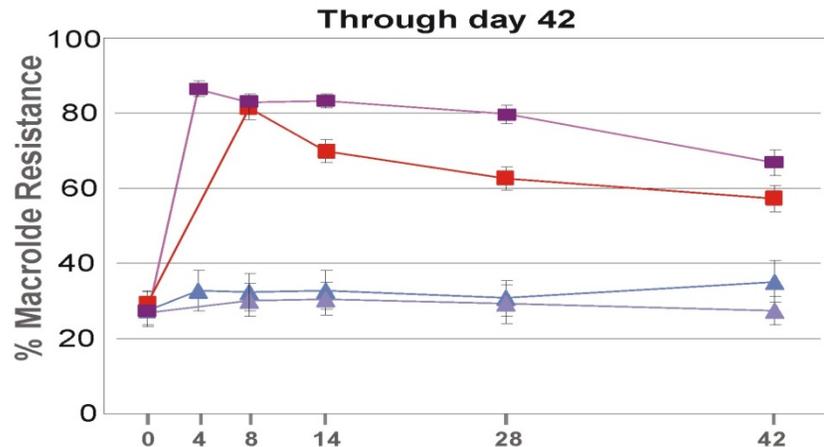


Correlation Between Macrolide Use and Macrolide-Resistant *Strept. pneumoniae*



Organism year of isolation [source of information]	Antibiotic resistance	Antibiotic use - ATC group (year of data)	No. of countries	Spearman correlation (r) (confidence interval)	P-value
<i>S. pneumoniae</i> 1999/2000 [8]	Erythromycin	Macrolides - J01FA (1998)	16	0.83 (0.67-0.94)	< 0.001

Effect of Macrolide versus Placebo Use on Temporal Changes of Proportion of Macrolide-Resistant Oral Streptococci



- Mean preantibiotic carriage of Mac-R streptococci was 28%
- Use of both Clar and Azi resulted in a huge increase in resistant streptococci which persisted for at least 6 months ($P \leq 0.01$)
- Macrolide use is the single most important driver for the emergence of macrolide resistance

USAGE DES ANTIBIOTIQUES EN VILLE

Europe – 2002 – ESAC

Goossens et al., Lancet, 2005, 365 : 579-87

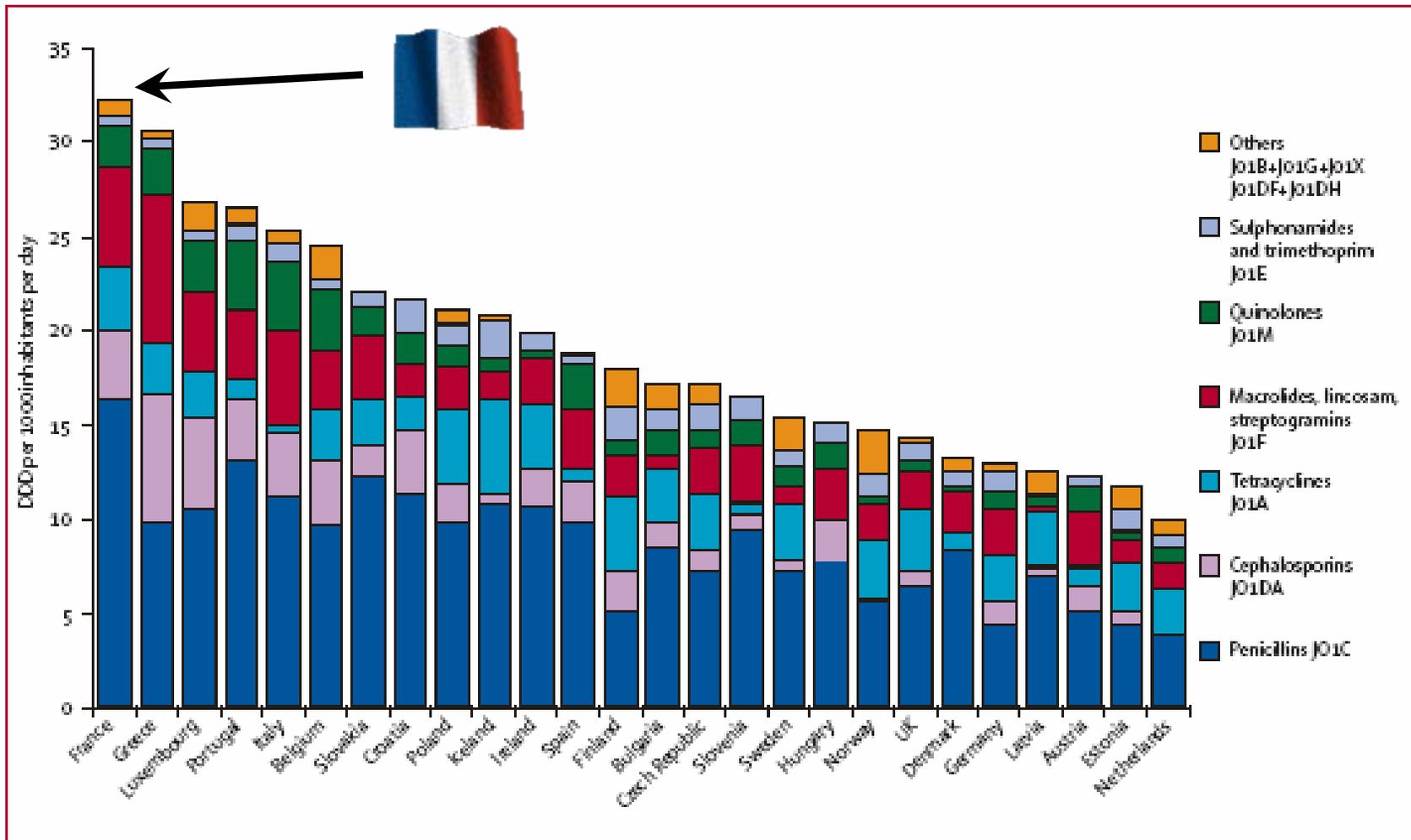
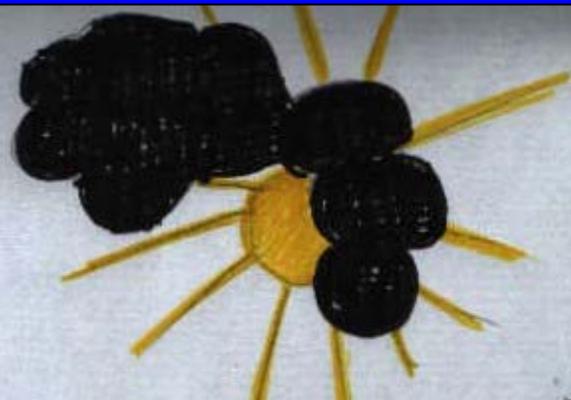


Figure 1: Total outpatient antibiotic use in 26 European countries in 2002

Natacha P.



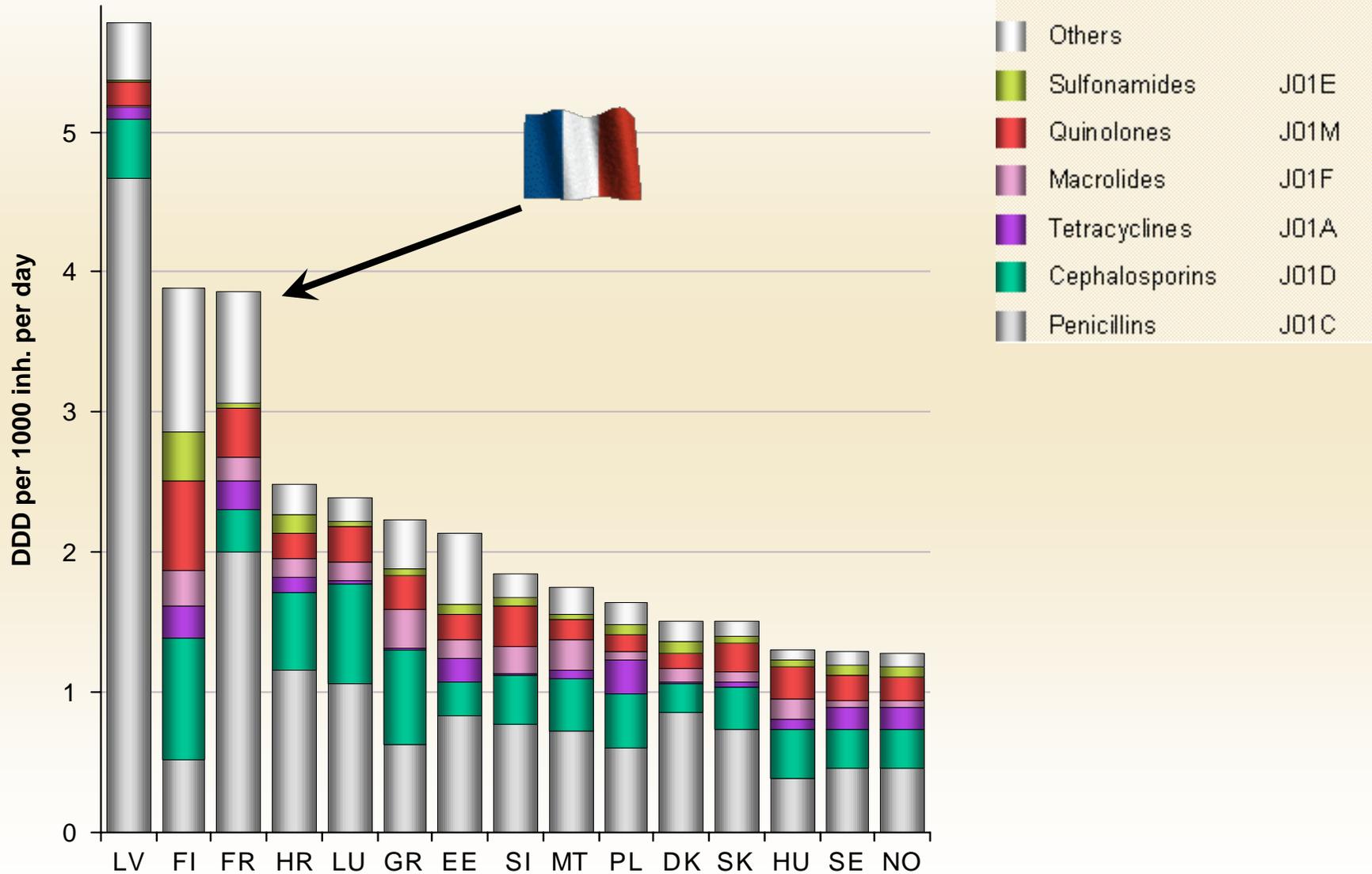
RESISTANCES



A L'HÔPITAL...

Antibiotic Consumption in Hospital Care in 2002

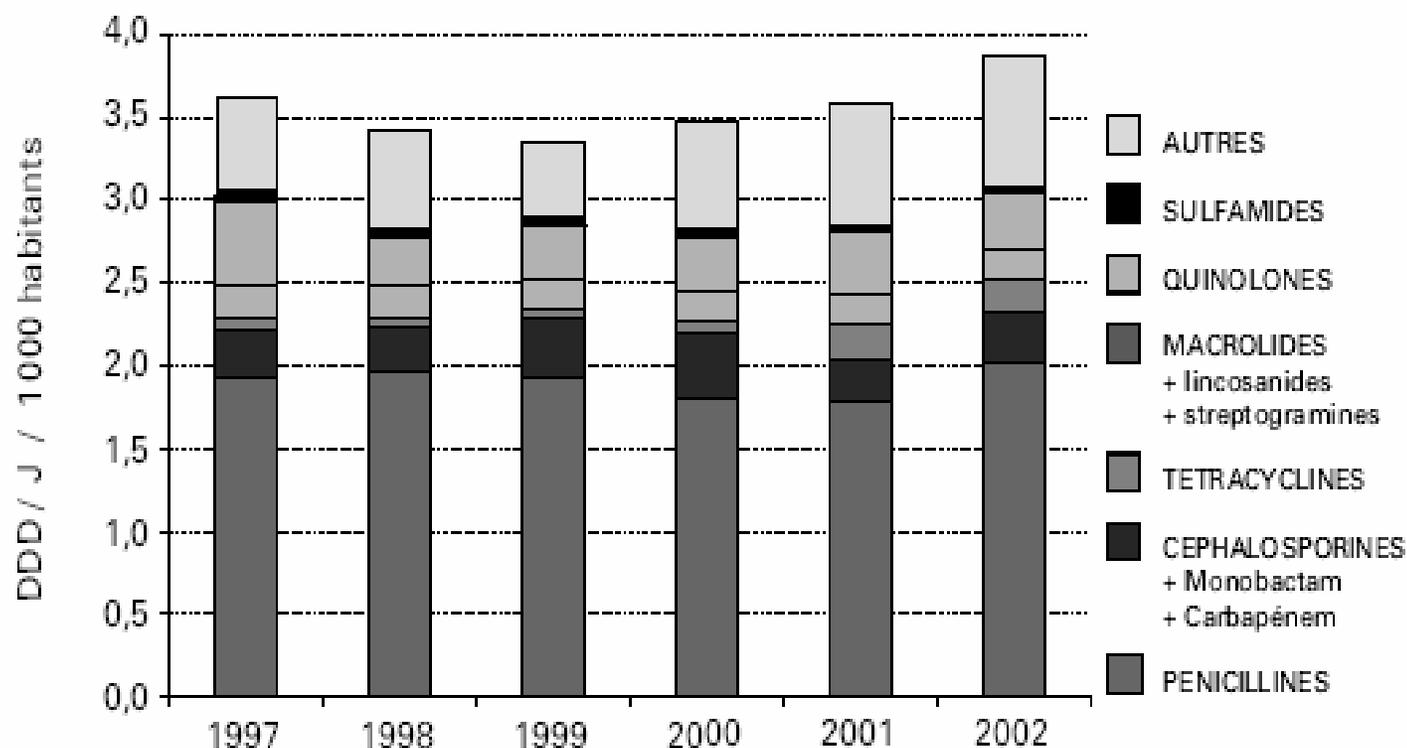
Absolute numbers in 15 countries



Consommation des antibiotiques en France

Didier Guillemot¹, Philippe Maugendre², Claire Chauvin³, Catherine Sermet⁴

Évolution des ventes des antibiotiques à l'hôpital, en France entre 1997 et 2002



Nouveaux antibiotiques

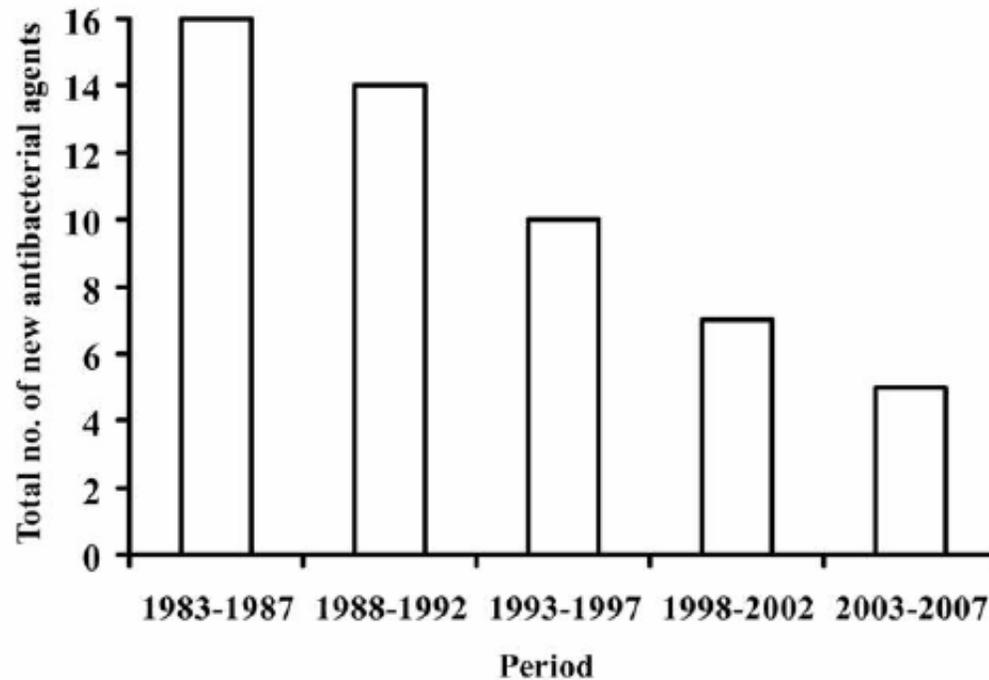


Figure 1. Systemic (i.e., nontopical) antibacterial new molecular entities approved by the US Food and Drug Administration, per 5-year period.

- **La maîtrise de l 'usage des antibiotiques est une des clefs de la lutte contre l 'expansion des résistances bactériennes aux antibiotiques**
- **Elle implique :**
 - **une maîtrise des VOLUMES :**
 - indications
 - durée des traitements
 - **une amélioration de la QUALITE des traitements**
 - plus de 40 % de traitements « inappropriés »
 - **La participation de TOUS les acteurs**

Pré-requis

- **Une mobilisation politico-scientifique**
- **Aller vers les professionnels et les usagers**



Ministry of Health
Ministry of Food,
Agriculture and Fisheries
Denmark



The Copenhagen Recommendations

*Report
from the Invitational EU Conference on*

The Microbial Threat

*Copenhagen, Denmark
September 1998*

*Health of the population:
Strategies to prevent and control the emergence and
spread of antimicrobial-resistant micro-organisms*

EU Conference on the Microbial Threat, Copenhagen

September 1998

Saturday 5 September 1998

BMJ

Antimicrobial resistance

Is a major threat to public health

Use of antibiotics²

Where antibiotics are used	Types of use	Questionable use
Human use (80%)	20% Hospital	20-80% Unnecessary
	80% Community	
Agricultural use (20%)	20% Therapeutic	40-80% Highly questionable
	80% Prophylactic/growth promotion	

Control of antimicrobial resistance: time for action

The essentials of control are already well known

Huovinen & Cars, BMJ 1998; 317:613-14

« To reduce antibiotic consumption we need a multifaceted approach that includes education of doctors; widely accepted recommendations for good clinical diagnosis and treatment; and follow-up of compliance with such guidelines... restriction policies such as the requirement for written justification or automatic stop orders may be useful in hospital settings. »



European Conference on Antibiotic Use in Europe

Brussels
November 15-17, 2001

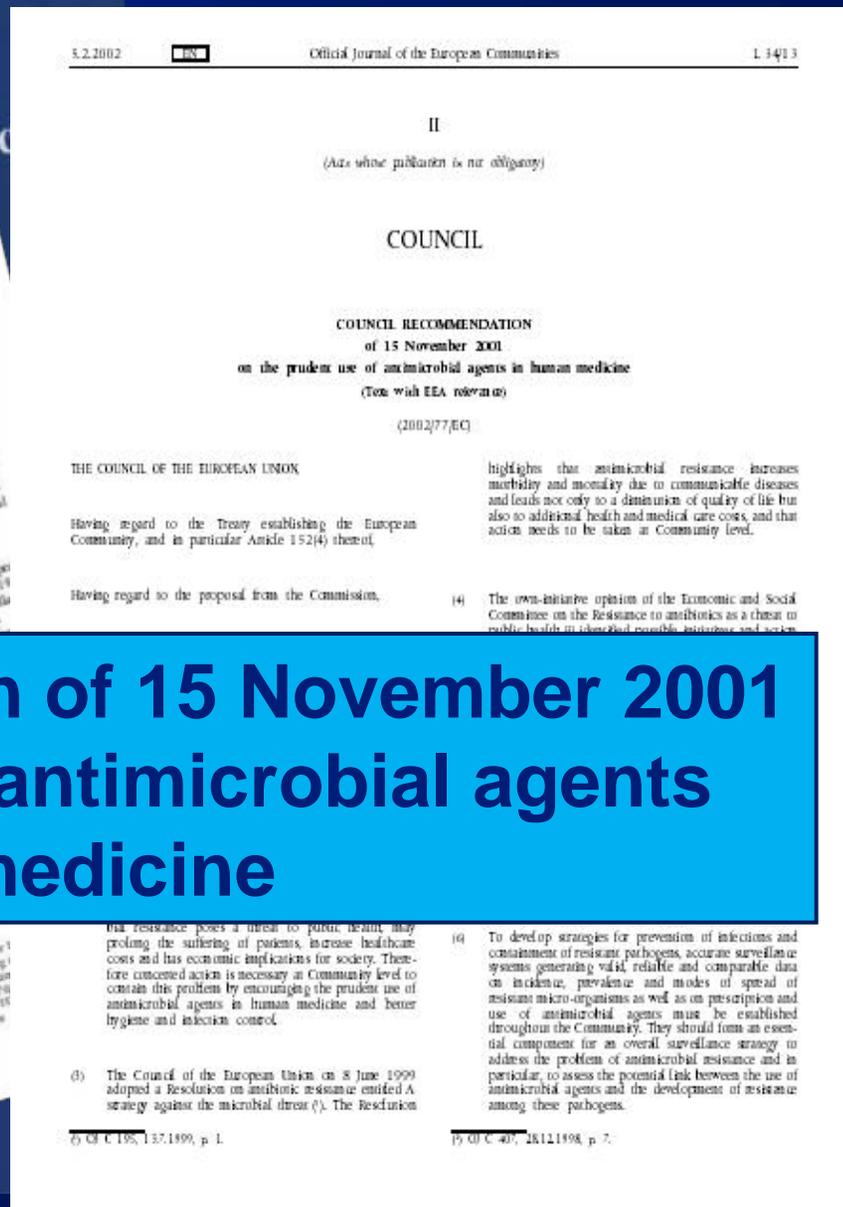
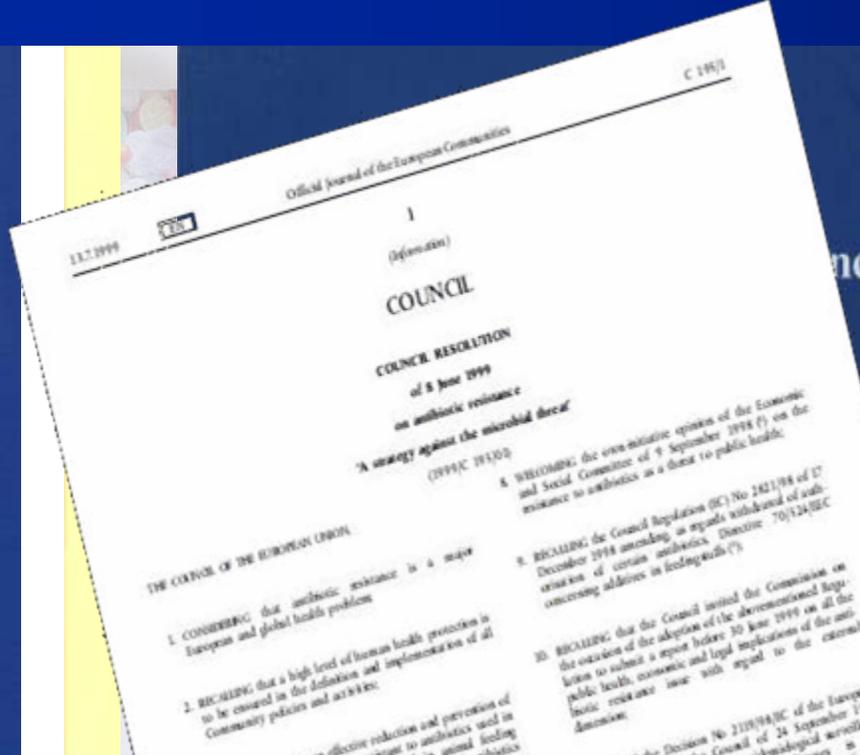
FINAL REPORT



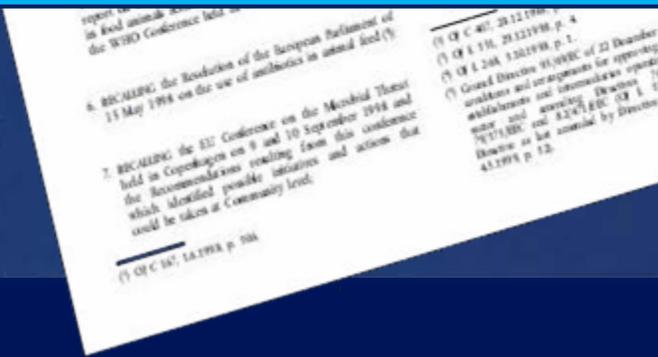
ESAC European
Surveillance of
Antimicrobial
Consumption

European Conference on Antibiotic Use in Europe, Brussels

November 2001



Council recommendation of 15 November 2001 on the prudent use of antimicrobial agents in human medicine



that resistance poses a threat to public health, may prolong the suffering of patients, increase healthcare costs and has economic implications for society. Therefore concerted action is necessary at Community level to contain this problem by encouraging the prudent use of antimicrobial agents in human medicine and better hygiene and infection control.

- (d) The Council of the European Union on 8 June 1999 adopted a Resolution on antibiotic resistance entitled 'A strategy against the microbial threat' (1). The Resolution

(1) OJ C 198, 13.7.1999, p. 1.

- (f) To develop strategies for prevention of infections and containment of resistant pathogens, accurate surveillance systems generating valid, reliable and comparable data on incidence, prevalence and modes of spread of resistant micro-organisms as well as on prescription and use of antimicrobial agents must be established throughout the Community. They should form an essential component for an overall surveillance strategy to address the problem of antimicrobial resistance and, in particular, to assess the potential link between the use of antimicrobial agents and the development of resistance among these pathogens.

(5) OJ C 40, 28.12.1998, p. 2.

« Plan Antibiotiques » = Moins ! Mieux !

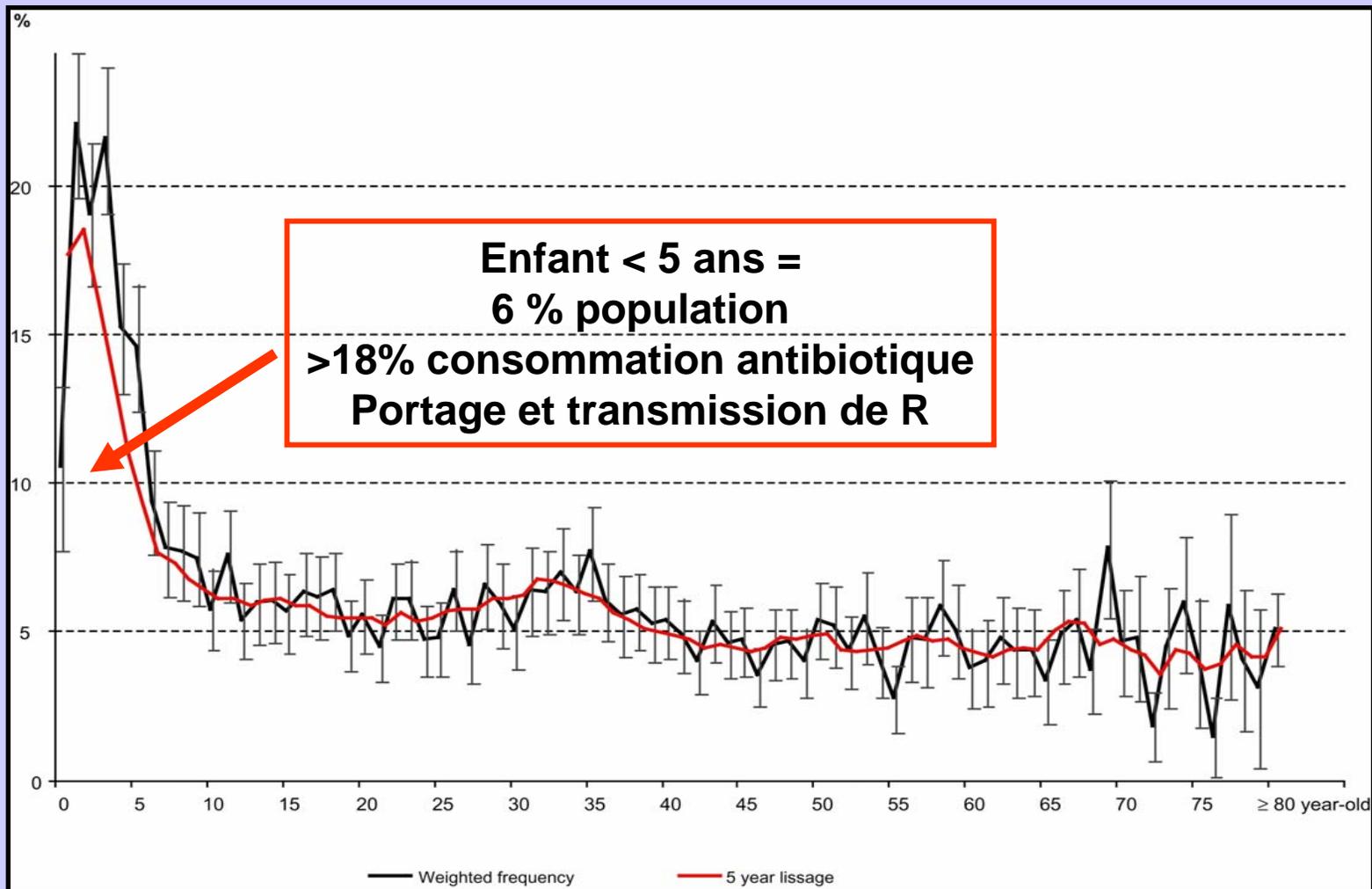
- **Campagne Assurance Maladie, depuis 2002**
 - spots grand public « *Les antibiotiques, c'est pas automatique* »
 - documents pour les praticiens
 - visites confraternelles
 - TDR streptocoque dans angines
- **Recommandations (AFSSAPS)**
- **Circulaire DGS/DHOS 2 mai 2002 : hôpital**
- **Evaluation des pratiques médicales (HAS)**
- **Données de suivi des consommations / ESAC**
 - Guide méthodologique pour hôpitaux (2005)
 - « Tableaux de bord », suivi ABT (avec inf. nosocomiales)
- **Loi de santé publique (2004)**
- **Accord cadre Assurance-Maladie / hôpitaux**
- **Site web (2007)...**

Cibles « ville »

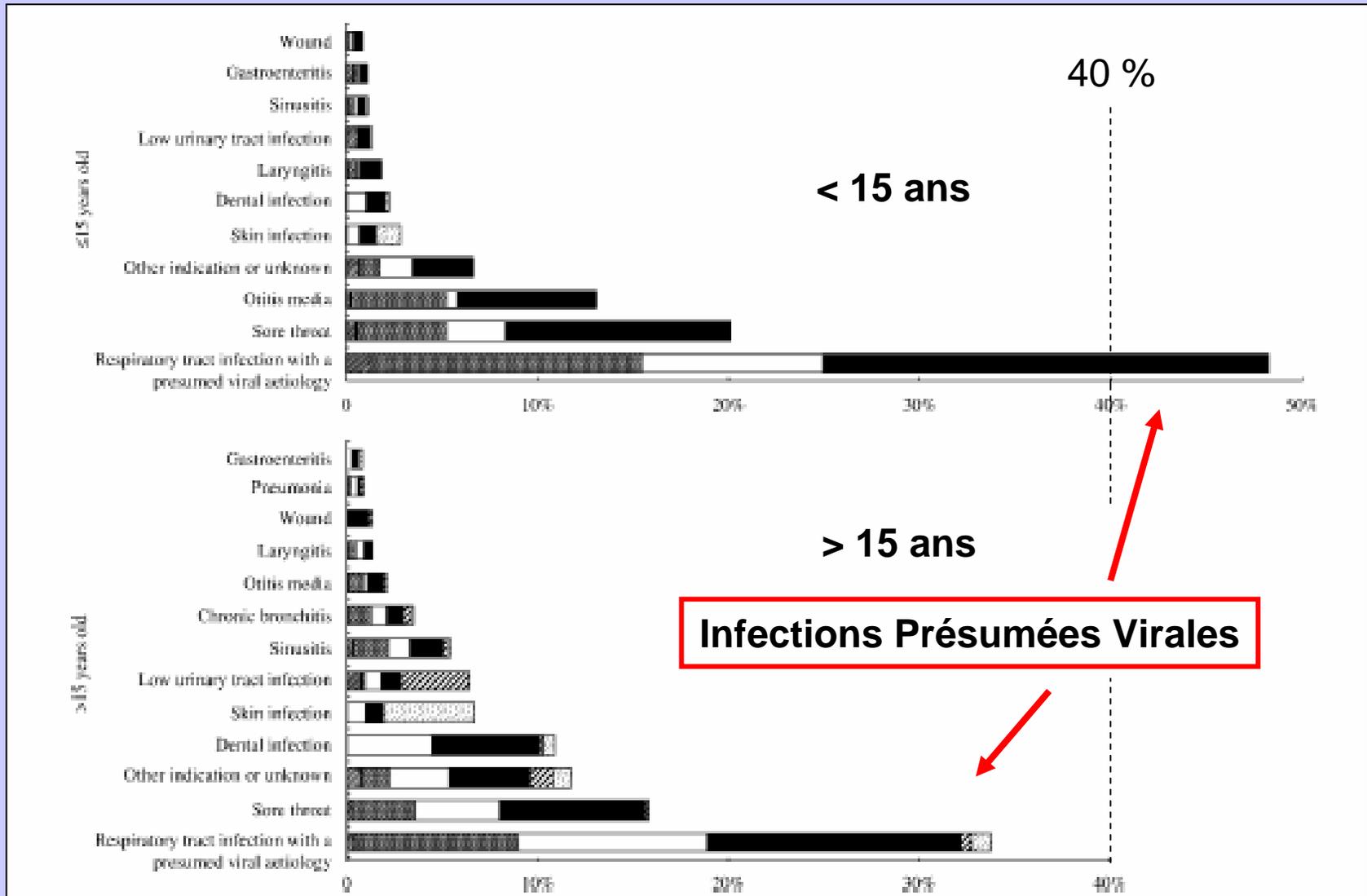
PATHOLOGIES OU L'EXCES ET LE MESUSAGE DES ANTIBIOTIQUES PREVALENT

- **Nourrissons et enfants > adultes**
- **Infections ORL et respiratoires**
- **Infections présumées virales**

Exposition aux antibiotiques de la population française en fonction de l'âge (exprimée en % / mois)



Chez qui ? Pourquoi ?

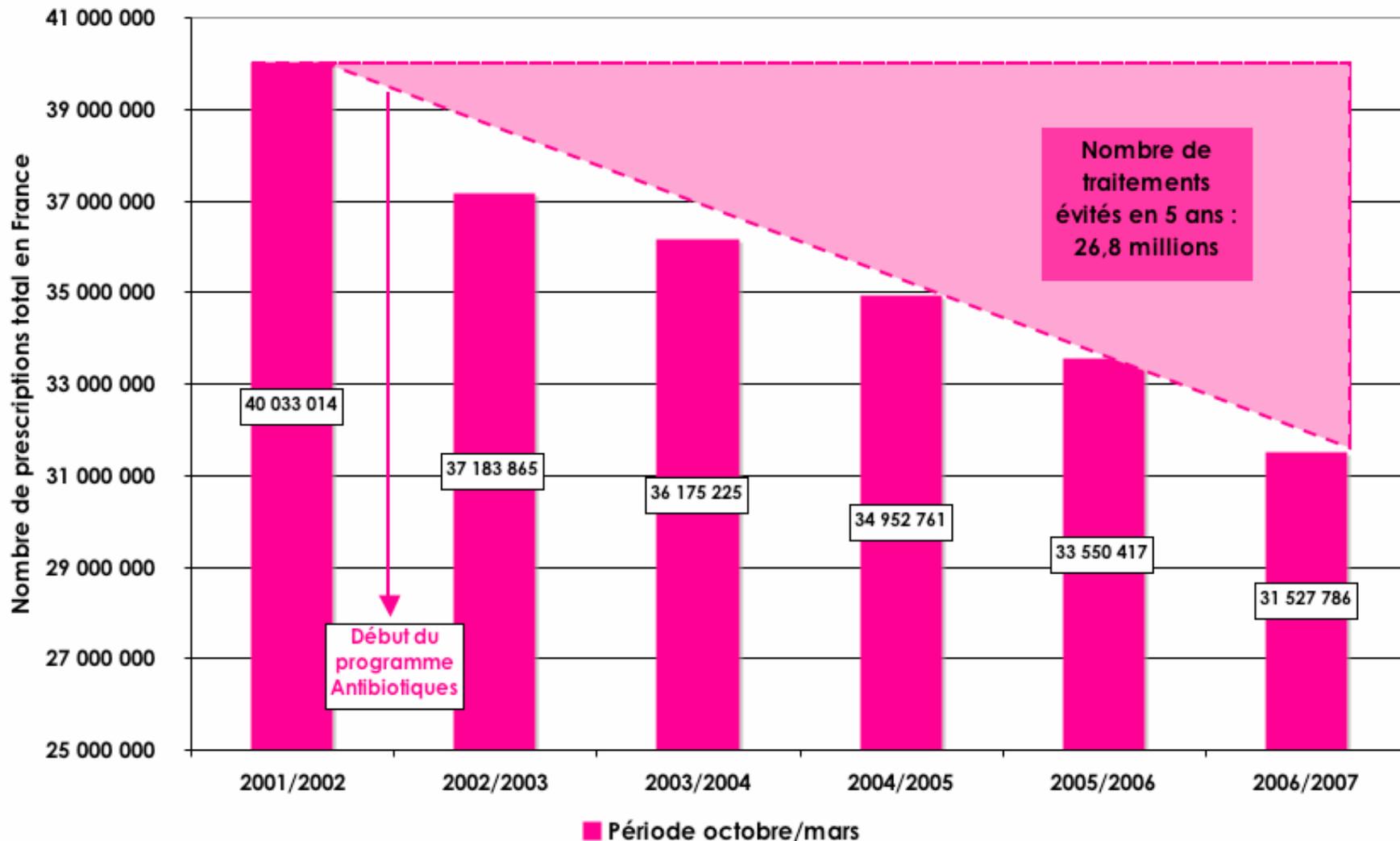


Recommandations hôpital

- ANDEM-ANAES 1996
- 100 Recommandations DGS 1999 : n° 58
- **Plan « Antibiotiques » novembre 2001**
- Circulaire DGS-DHOS 2/5/02
- 14e Conférence de consensus de la SPILF, 2002
- Plan de lutte contre les infections nosocomiales - tableau de bord BMR, SHA et consommation des antibiotiques
- Accord-cadre Assurance-Maladie / hôpitaux 2006 (loi Sécurité Sociale 2004)
- Guide méthodologique pour le suivi des consommations antibiotiques (2006)...

**POUR QUELS
RESULTATS ?**

ABT prescriptions from 2001-02 to 2006-07 (Oct-March periods)



Des progrès encore plus nets chez les enfants

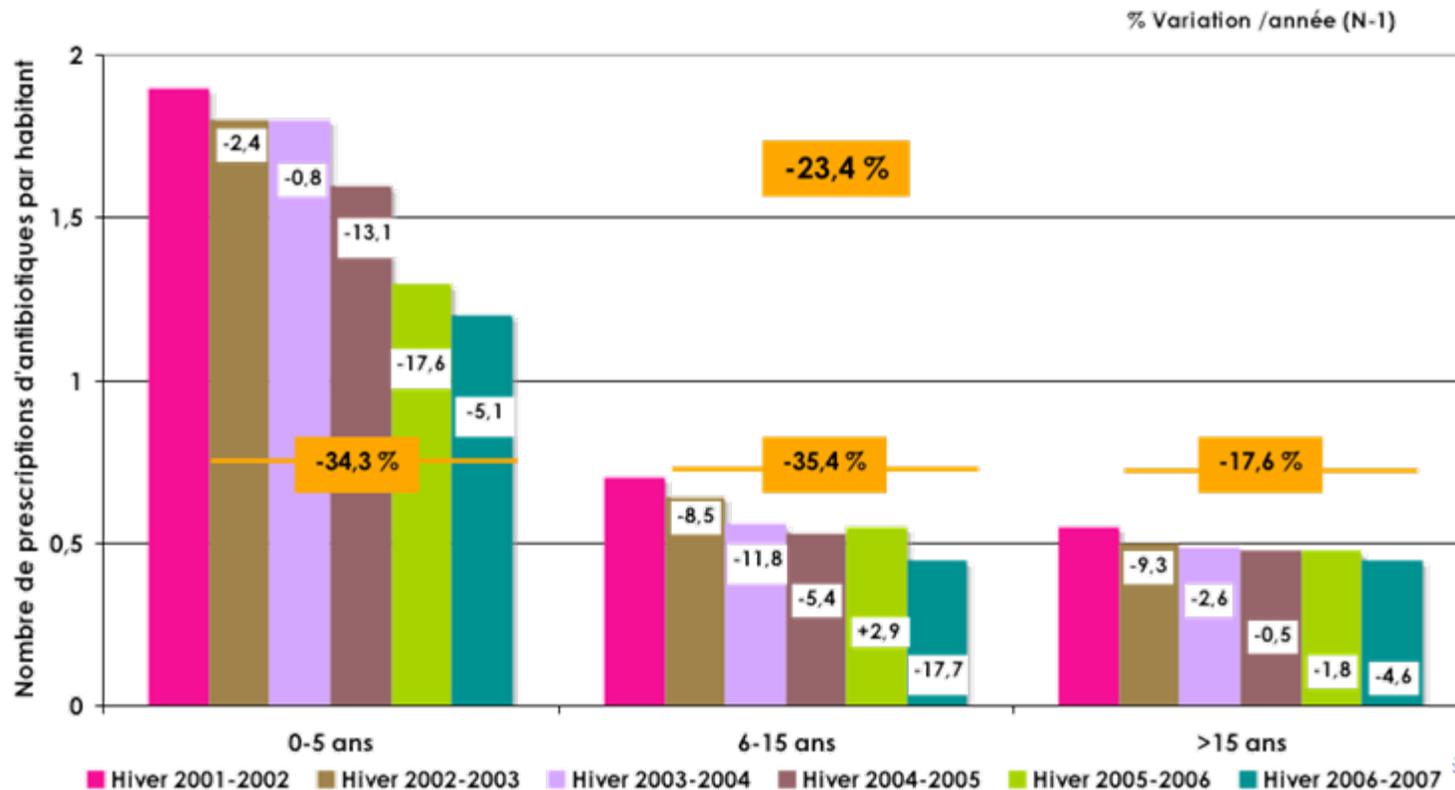
☒ Consommation corrigée 2006-2007 vs 2001-2002

☒ 0 - 5 ans : - 34,3 %, soit - 6,4 millions de traitements évités

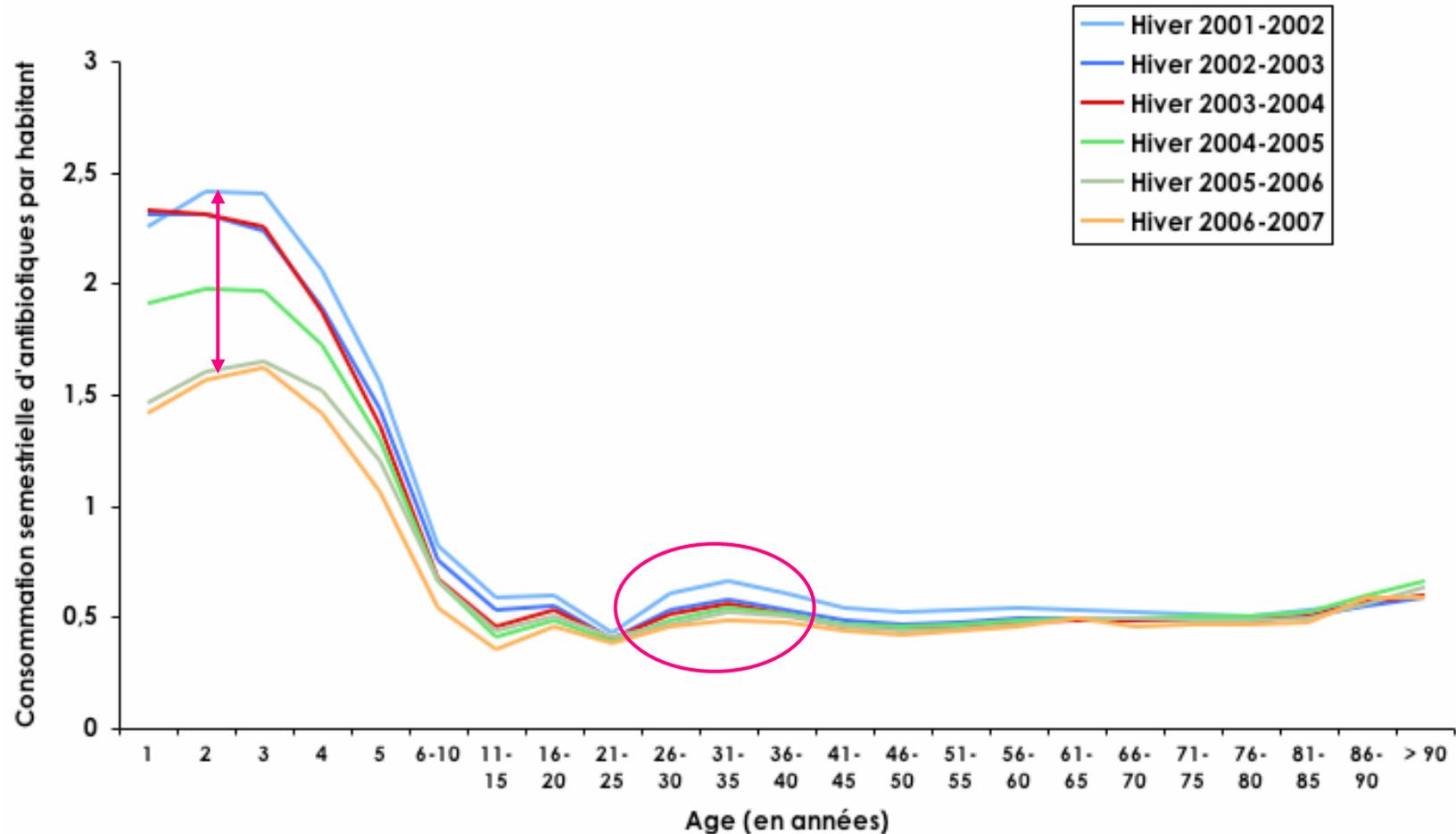
☒ 6 - 15 ans : - 35,4 %, soit - 5,8 millions

☒ > 15 ans : - 17,6 %, soit - 14,5 millions

Evolution de la consommation semestrielle d'antibiotiques par classe d'âge et par habitant



Antibiotic consumption by age and year 2001-2007 (Yearly October/March periods)



Pour les moins de 2 ans, la baisse équivaut à un traitement en moins par hiver
Pour les jeunes actifs (26/35 ans) : une baisse qui se maintient (- 5,7 % en moyenne)

Prescriptions antibiotiques régionalisées (periodes octobre-mars, données ajustées)

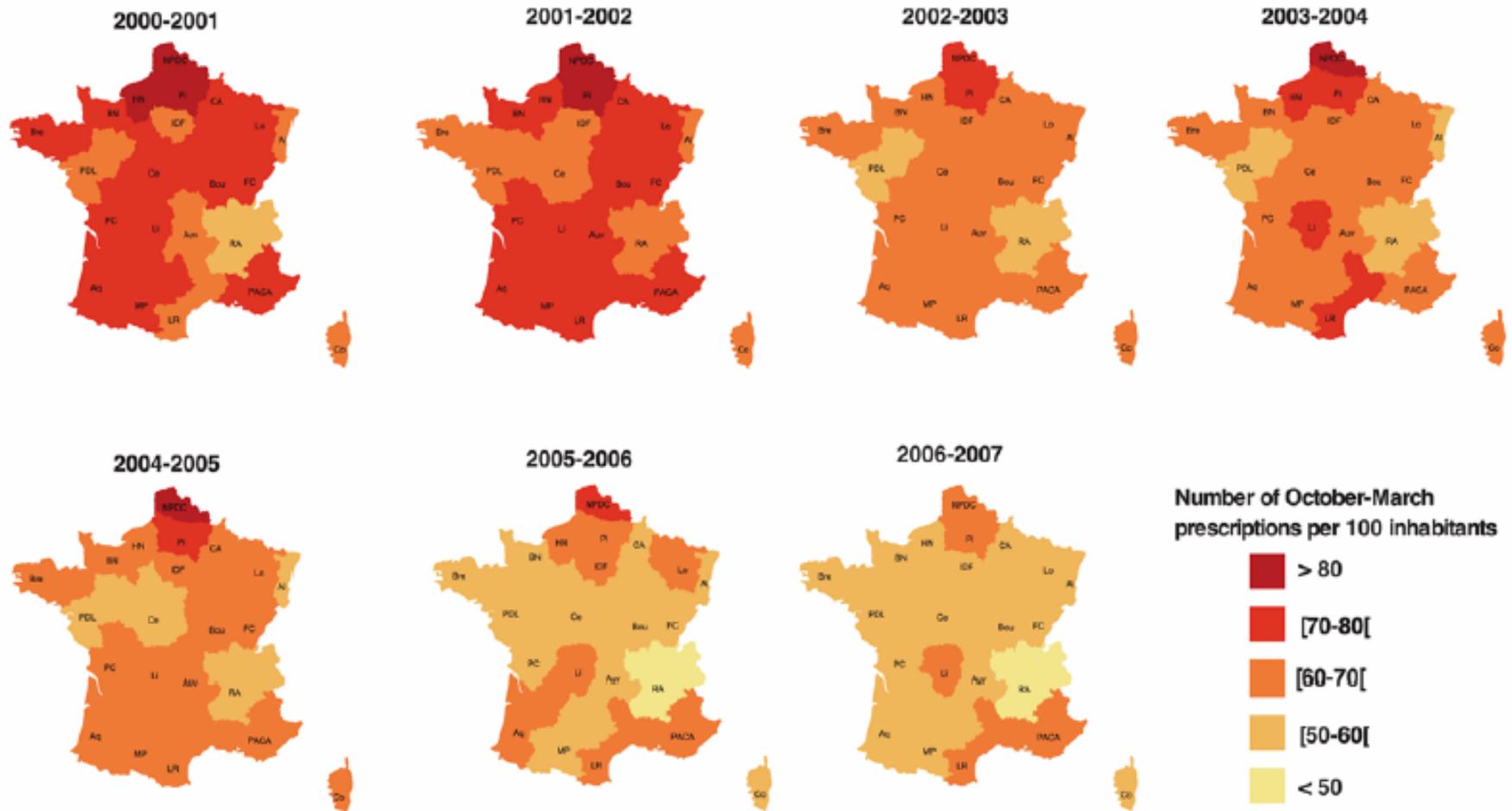


Figure 2. Winter antibiotic prescriptions in France by region, from October 2000 to March 2007. The number of October-March

Moyenne nationale pour l'hiver 2006-2007 :

5,1 prescriptions pour 10 habitants contre 6,7 pour l'hiver 2001-2002

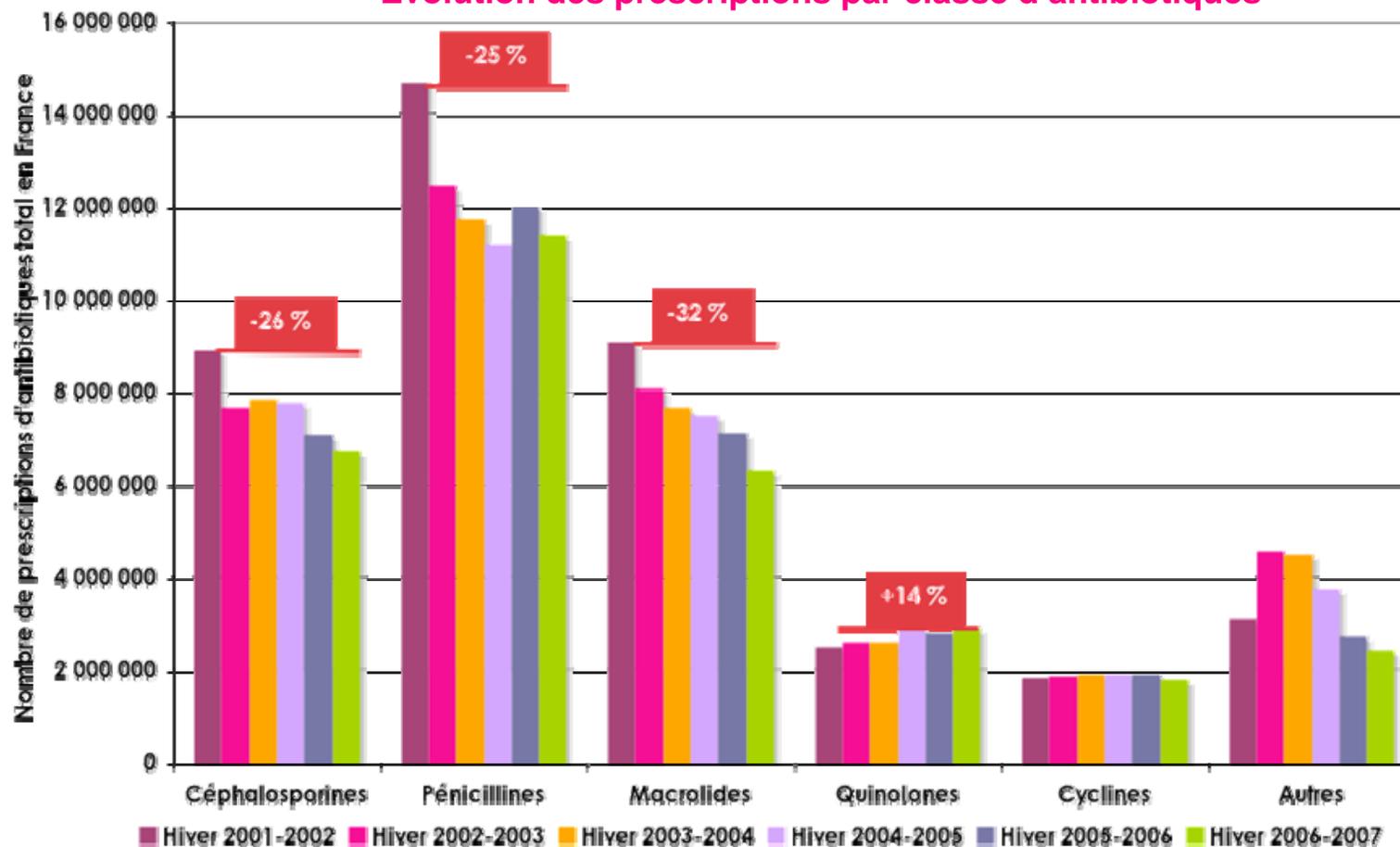
Les grandes évolutions par classe thérapeutique

⊠ Recul net sur trois classes

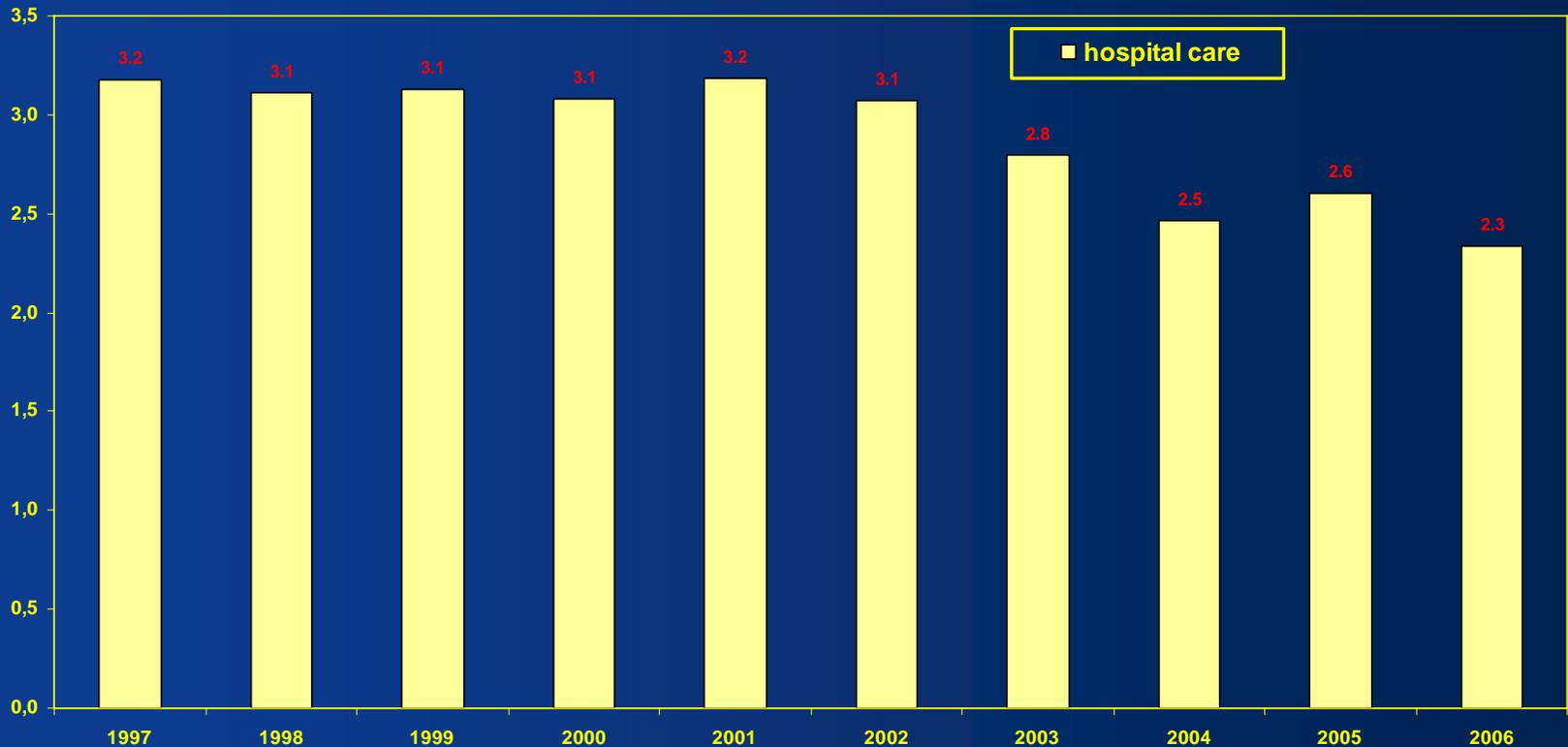
⊠ **Macrolides** : - 32 %. **Pénicillines** : - 25 %. **Céphalosporines** : - 26 %

⊠ **Hausse des Quinolones** : + 14 %

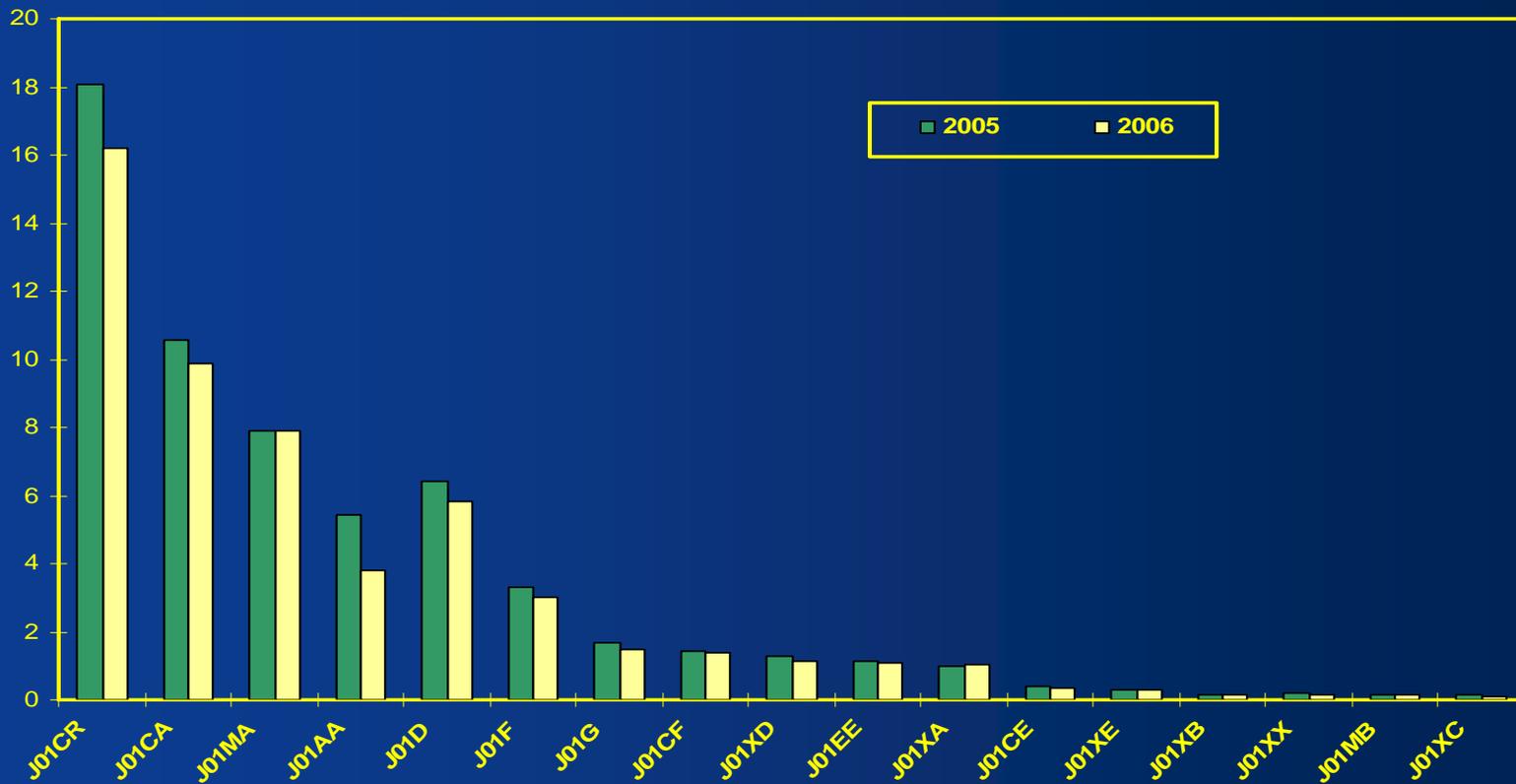
Evolution des prescriptions par classe d'antibiotiques



The evolution in the number of DDDs per 1,000 inhabitants per day

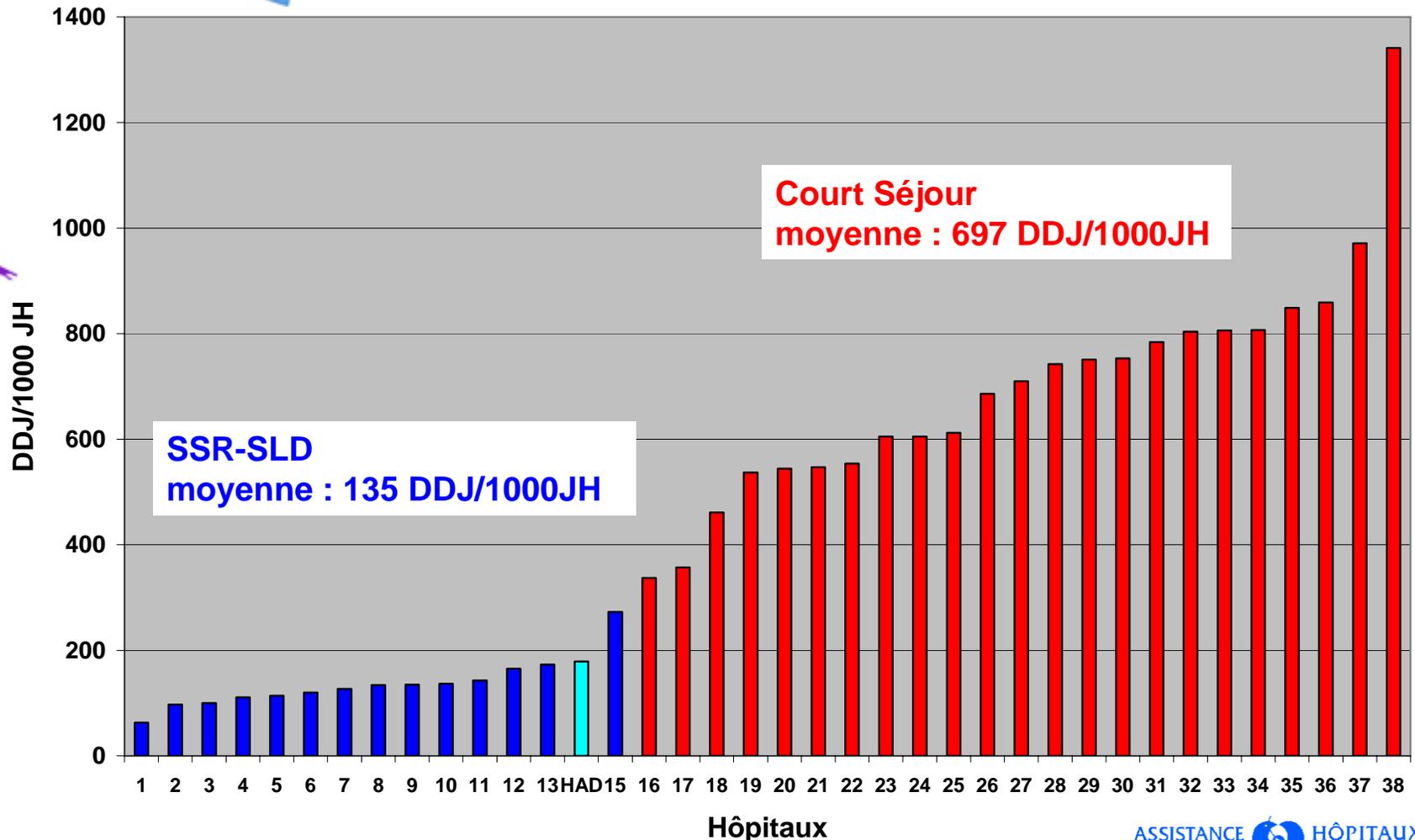


Evolution of consumption (J01) in hospital care 2005 – 2006 (million DDD)



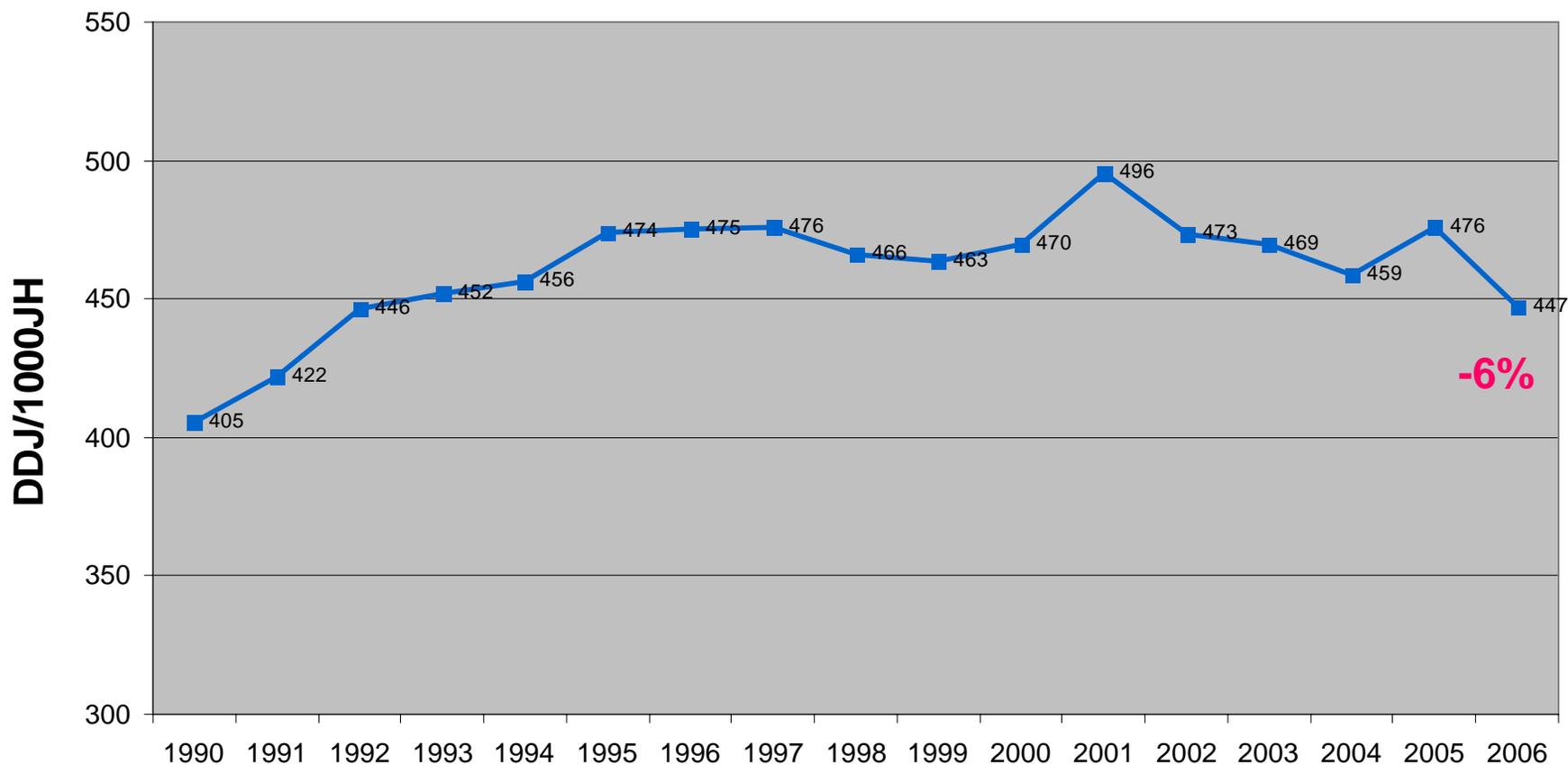
Consommation des AB en DDJ/1000JH en 2006 dans les hôpitaux de l'AP-HP

Bilan standardisé DDASS



Evolution de la consommation des antibiotiques dans les hôpitaux de l'AP-HP

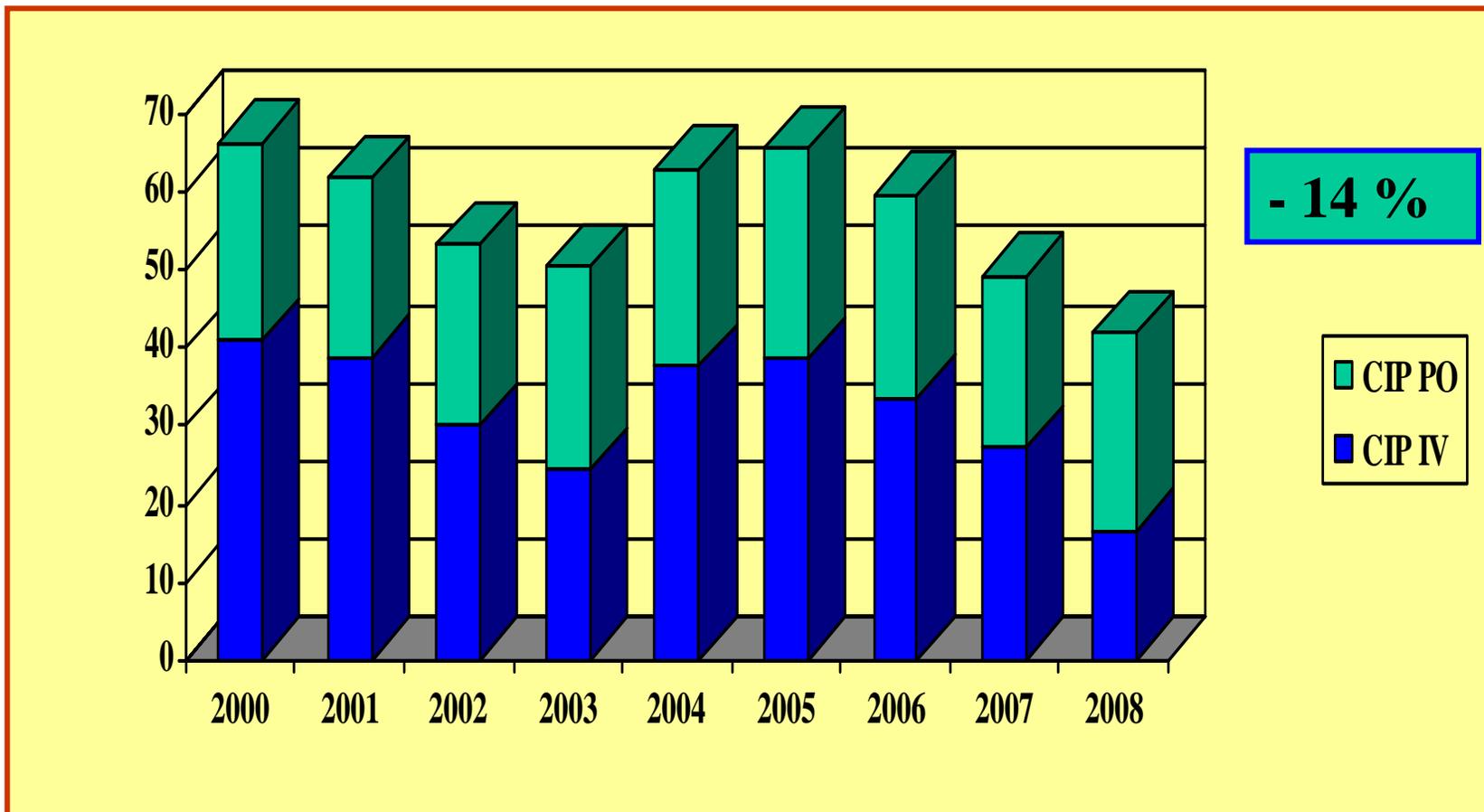
Source AGEPS



-6%

HOPITAL SAINT-LOUIS

Evolution des DDJ/1000 JH Ciprofloxacine



CIP IV

62 %



59 %

55 %

40 %

DDJ

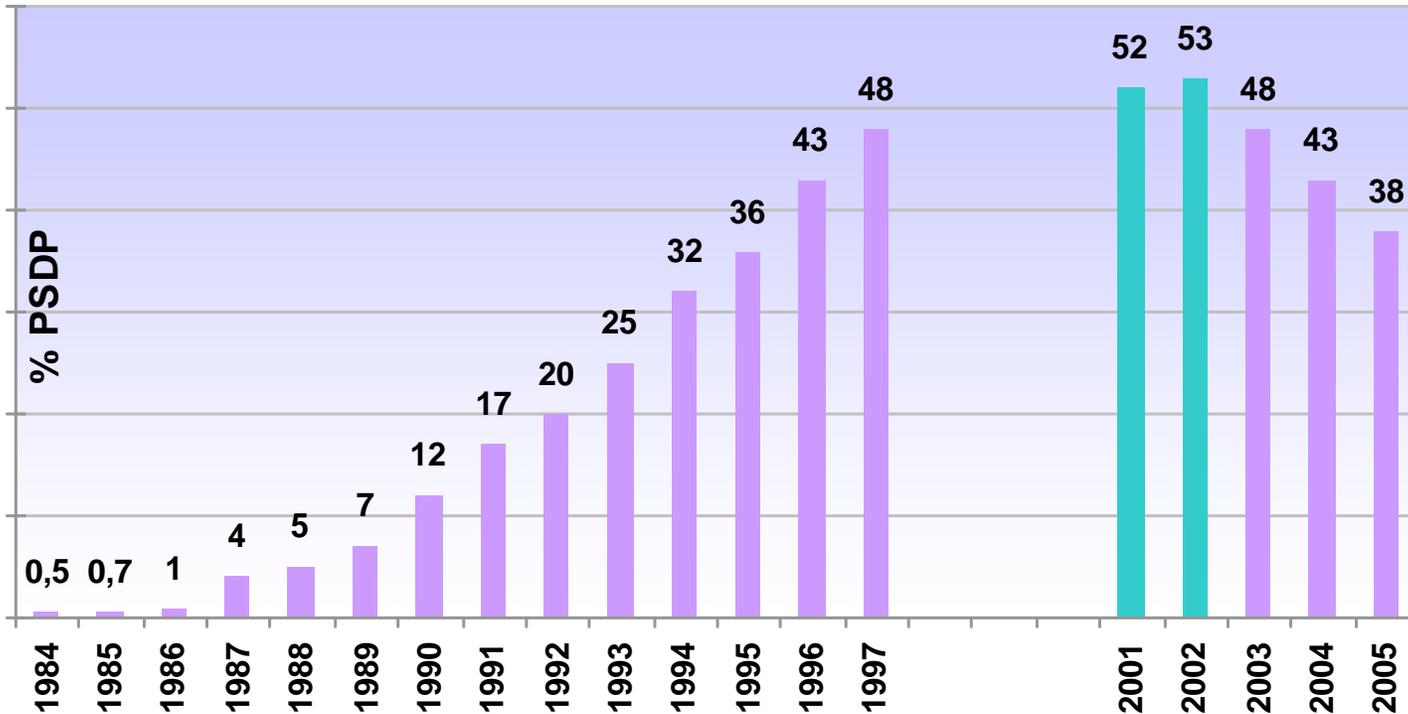


96 %

65 %

Coût

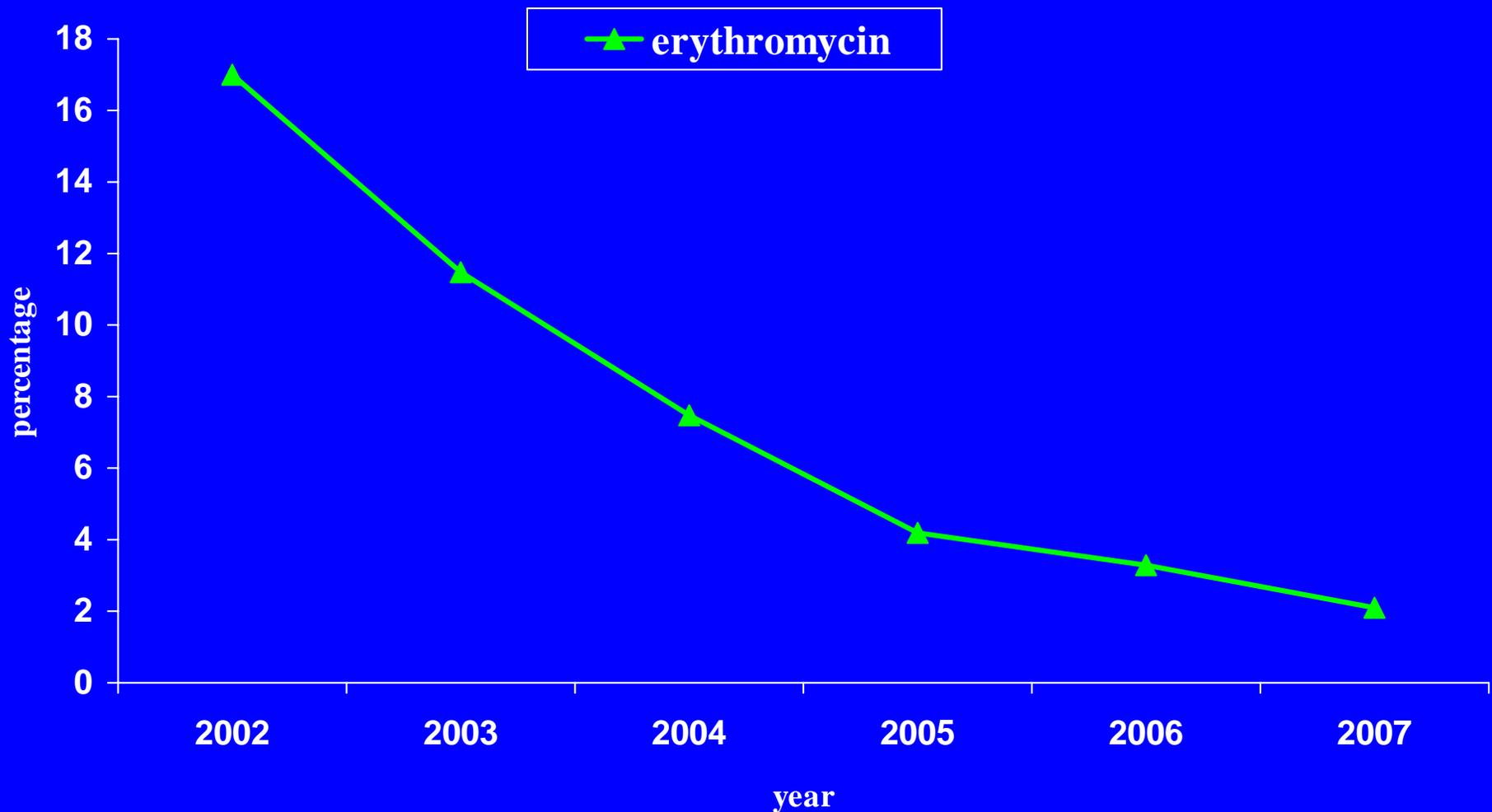
Penicillin resistance (% PSDP) in *S. pneumoniae* National Reference Center - France



1984-1997, Geslin P. ; 2001-2005, ORP-CNRP , Varon E., Gutmann L.

(All-type bacterial samples, all age patients, 48 920 strains studied)

Antibiotic Resistance of Throat Isolates of *S. pyogenes* in Belgium : 2002 – 2007



National Reference Centre *S. pyogenes* (University of Antwerp)

Significant Reduction of Antibiotic Use in the Community after a Nationwide Campaign in France, 2002–2007

Elifsu Sabuncu^{1,2}, Julie David^{1,2}, Claire Bernède-Bauduin^{1,2}, Sophie Pépin³, Michel Leroy⁴, Pierre-Yves Boëlle^{5,6}, Laurence Watier^{7,8}, Didier Guillemot^{1,2,9,10*}

June 2009 | Volume 6 | Issue 6 | e1000084

Conclusions: The French national campaign was associated with a marked reduction of unnecessary antibiotic prescriptions, particularly in children. This study provides a useful method for assessing public-health strategies designed to reduce antibiotic use.

Date: 03/06/2009

OJD: 338618

Page: 1-13

Edition:(FR)

Suppl.:

Rubrique: SciencesMédecine

LE FIGARO



Les Français consomment moins d'antibiotiques

MÉDECINE. La France qui, jusqu'en 2001, était le pays européen qui consommait le plus d'antibiotiques, a réduit de façon importante les prescriptions de ces médicaments anti-infectieux. En huit ans, la consommation a baissé de 26,5 %, notamment grâce à la campagne « les antibiotiques, c'est pas automatique » menée par l'Assurance-maladie entre 2002 et 2007. **Page 13**

La France, un modèle contre les excès d'antibiotiques

Perspective

“Antibiotics Are Not Automatic Anymore”—The French National Campaign To Cut Antibiotic Overuse

Benedikt Huttner, Stephan Harbarth*

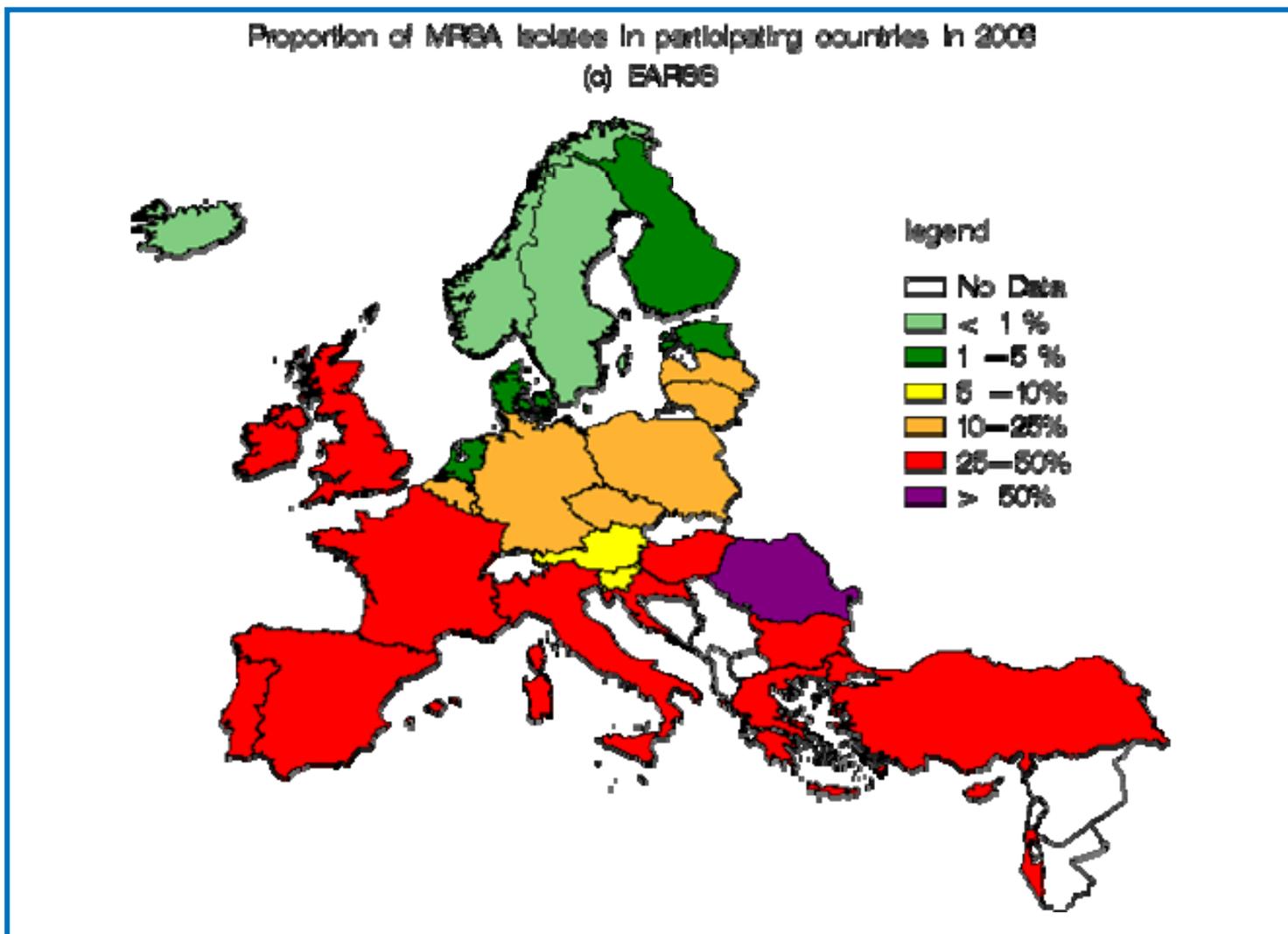
Infection Control Program, University of Geneva Hospitals and Medical School, Geneva, Switzerland

June 2009 | Volume 6 | Issue 6 | e1000080

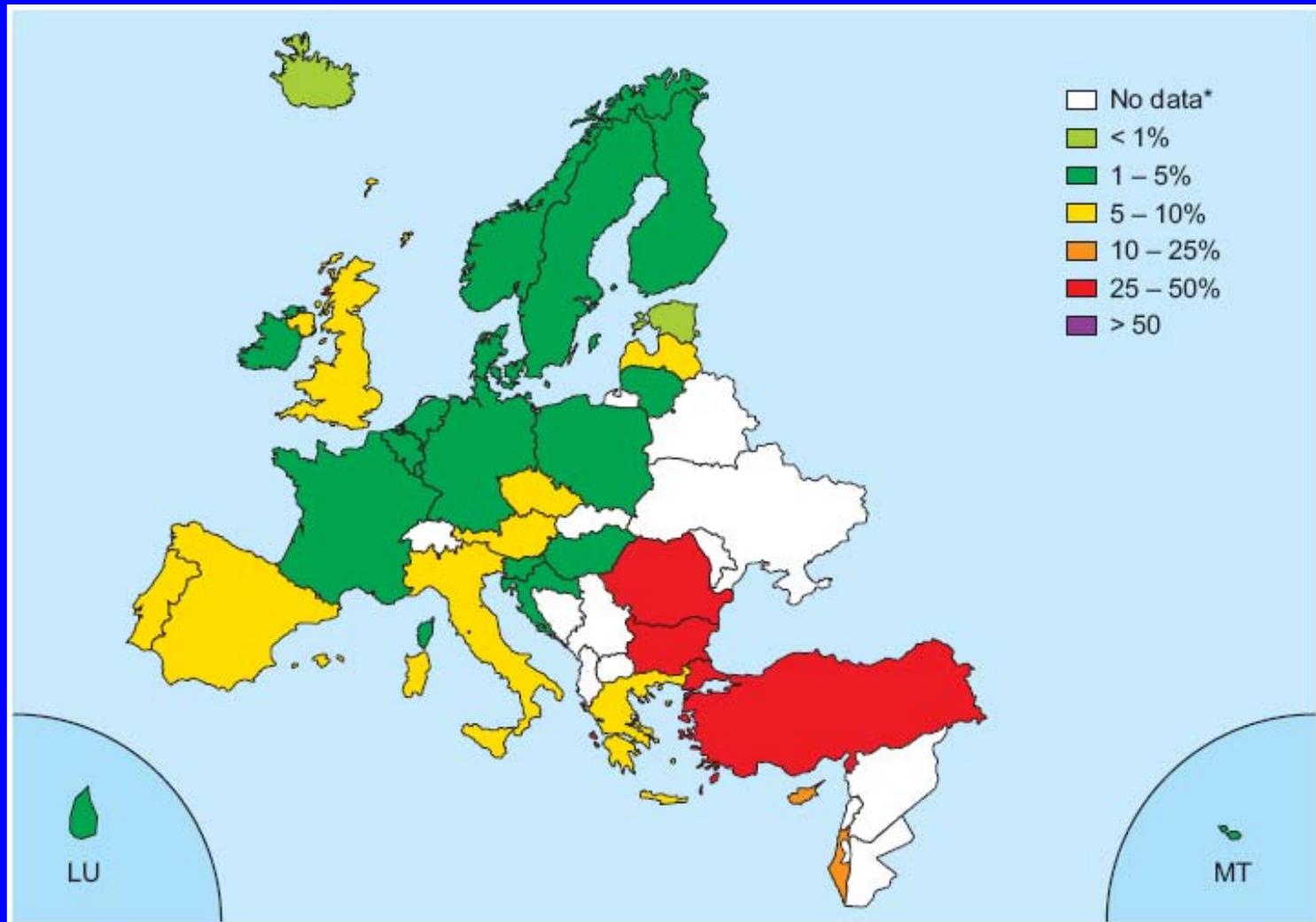
All in all, the French have to be congratulated for their success story demonstrating that, if policy makers and opinion leaders are serious about reducing antibiotic misuse, this goal can be achieved by well-coordinated national efforts. Throughout the world, we should no longer accept antibiotic misuse and resistance as “automatic”.

ET MAINTENANT... ?

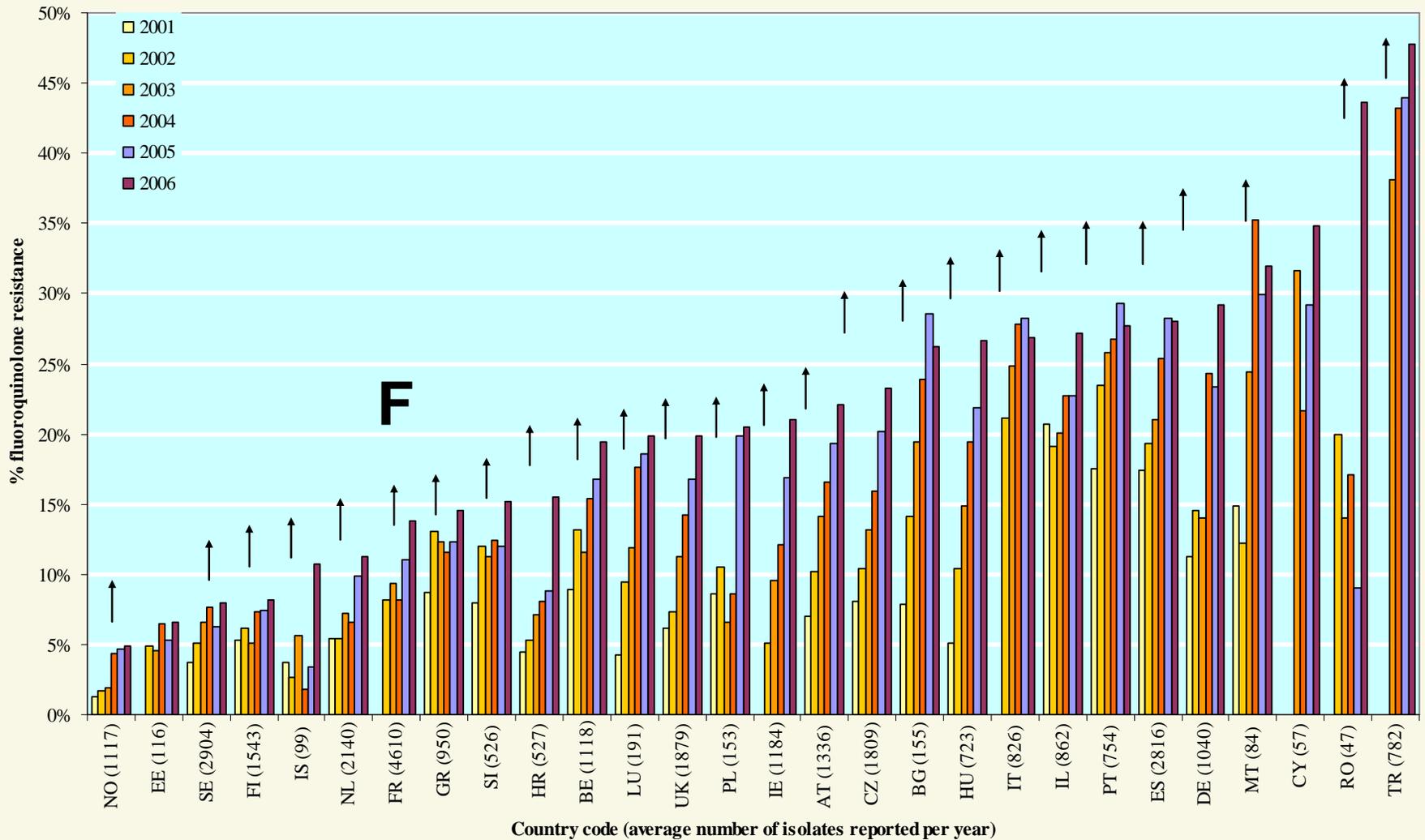
Methicillin-Resistant *Staph. aureus* in Europe, 2006



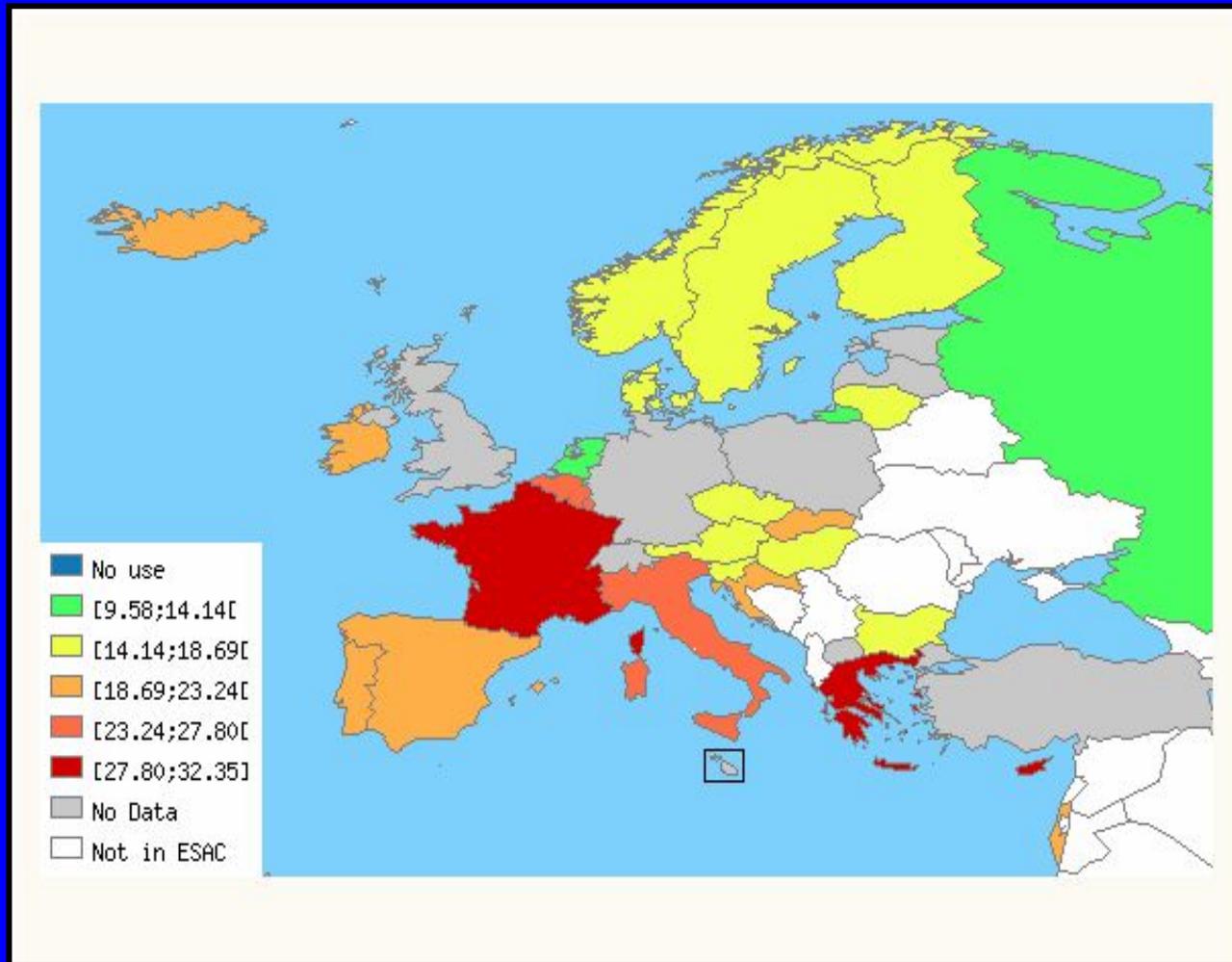
EARSS : *E.coli* R 3rd generation cephalosporins



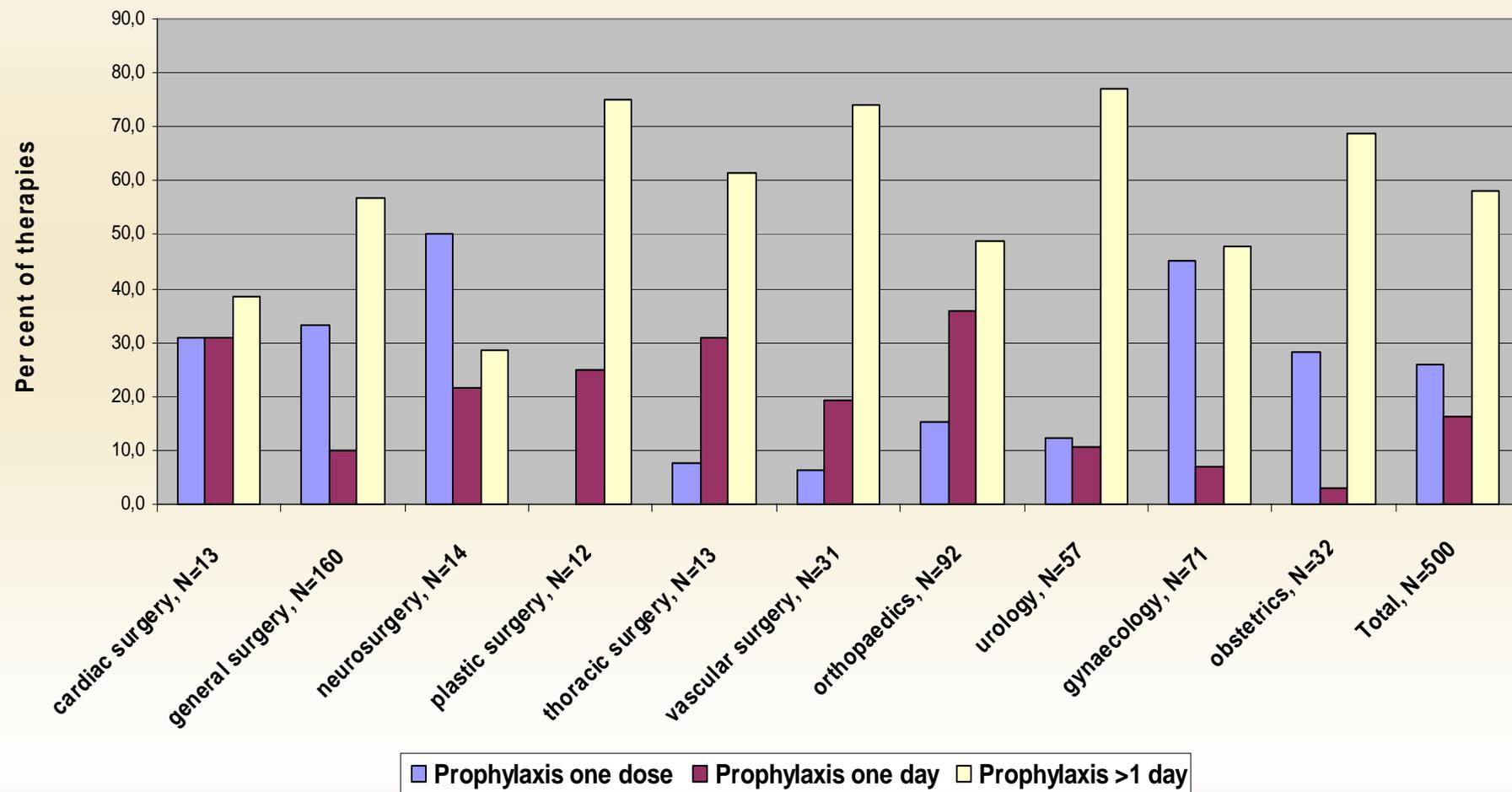
Fluoroquinolone-Resistant *E.coli* in Europe, 2001-2006



ESAC 2006



ESAC Point Prevalence Survey in 20 Hospitals in Europe: Length of Pre-operative Prophylaxis in Surgery



Quelles actions ?

1. Sensibiliser / informer
2. Conseiller
3. Surveiller / évaluer
4. Approche multidisciplinaire
5. Réduire l'exposition aux antibiotiques
 - Indications / progrès dg
 - Réévaluation J2-J3 +++
 - Désescalade (si possible)
 - Durée des traitements
6. Assurer la plus forte activité intrinsèque au trt
 - Concept PK/PD

« ANTIBIOTIC STEWARDSHIP »

SURFING THE WEB

INVITED ARTICLE

Victor L. Yu, Section Editor

Navigating the Web in Search of Resources on Antimicrobial Stewardship in Health Care Institutions

Leonardo Pagani,¹ Inge C. Gyssens,^{2,3} Benedikt Huttner,⁴ Dilip Nathwani,⁵ and Stephan Harbarth⁴

¹Division of Infectious Diseases, Bolzano Central Hospital, Bolzano, Italy; ²Nijmegen University Center for Infectious Diseases and Radboud University and ³Canisius-Wilhelmina Hospital, Nijmegen, The Netherlands; ⁴Geneva University Hospitals and Medical School, Geneva, Switzerland; and ⁵Ninewells Hospital and Medical School, Dundee, Scotland

Clin Infect Dis, 2009; 48: 626-32

The role of evidence in the decline of antibiotic use for common respiratory infections in primary care

Jarold L Cosby, Nick Francis, Christopher C Butler

Lancet Infect Dis 2007; 7:
749-56

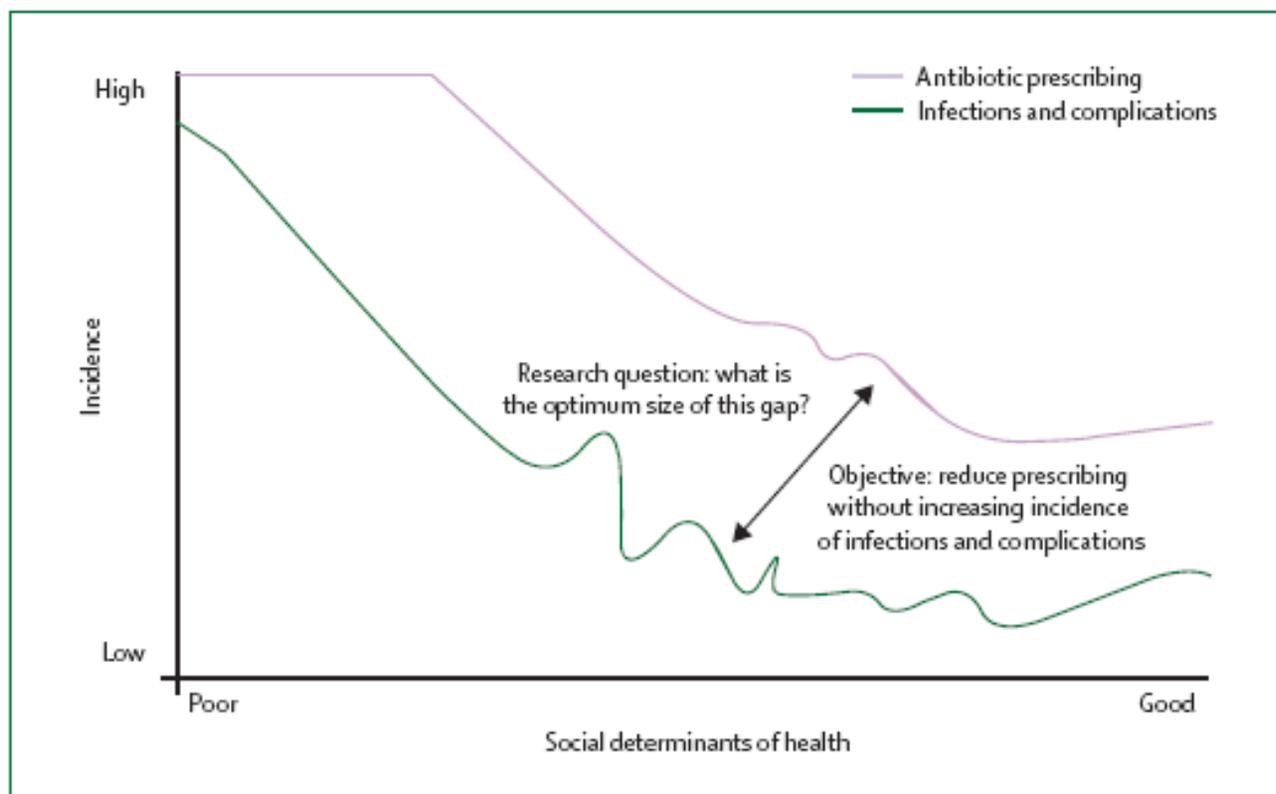


Figure: Relating common infection and antibiotic prescribing trends to a primary-care research agenda for common infections

Hospital and Societal Costs of Antimicrobial-Resistant Infections in a Chicago Teaching Hospital: Implications for Antibiotic Stewardship

Rebecca R. Roberts,^{1,6} Bala Hota,^{3,6} Ibrar Ahmad,¹ R. Douglas Scott II,⁷ Susan D. Foster,⁹ Fauzia Abbasi,¹² Shari Schabowski,^{1,6} Linda M. Kampe,⁴ Ginevra G. Ciavarella,⁵ Mark Supino,¹ Jeremy Naples,¹ Ralph Cordell,⁸ Stuart B. Levy,^{9,10,11} and Robert A. Weinstein^{2,3,6}

Clin Infect Dis, 2009; 49: 1175-84

1391 patients adulte « à risque »
188 (13.5%) avec IBR
Étude cas-témoins :
• excès DMS : 6.4-12.7 j
• surcoût : 18 à 29000 USD/pt
• mortalité attribuable : 6.5%

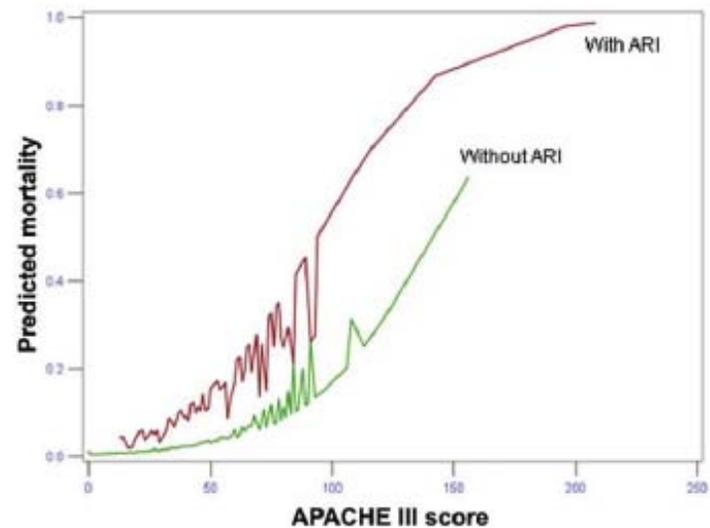


Figure 1. Predicted mortality for patients with and without antimicrobial-resistant infection (ARI). APACHE, Acute Physiology and Chronic Health Evaluation.

LES EFFORTS PAIERONT...

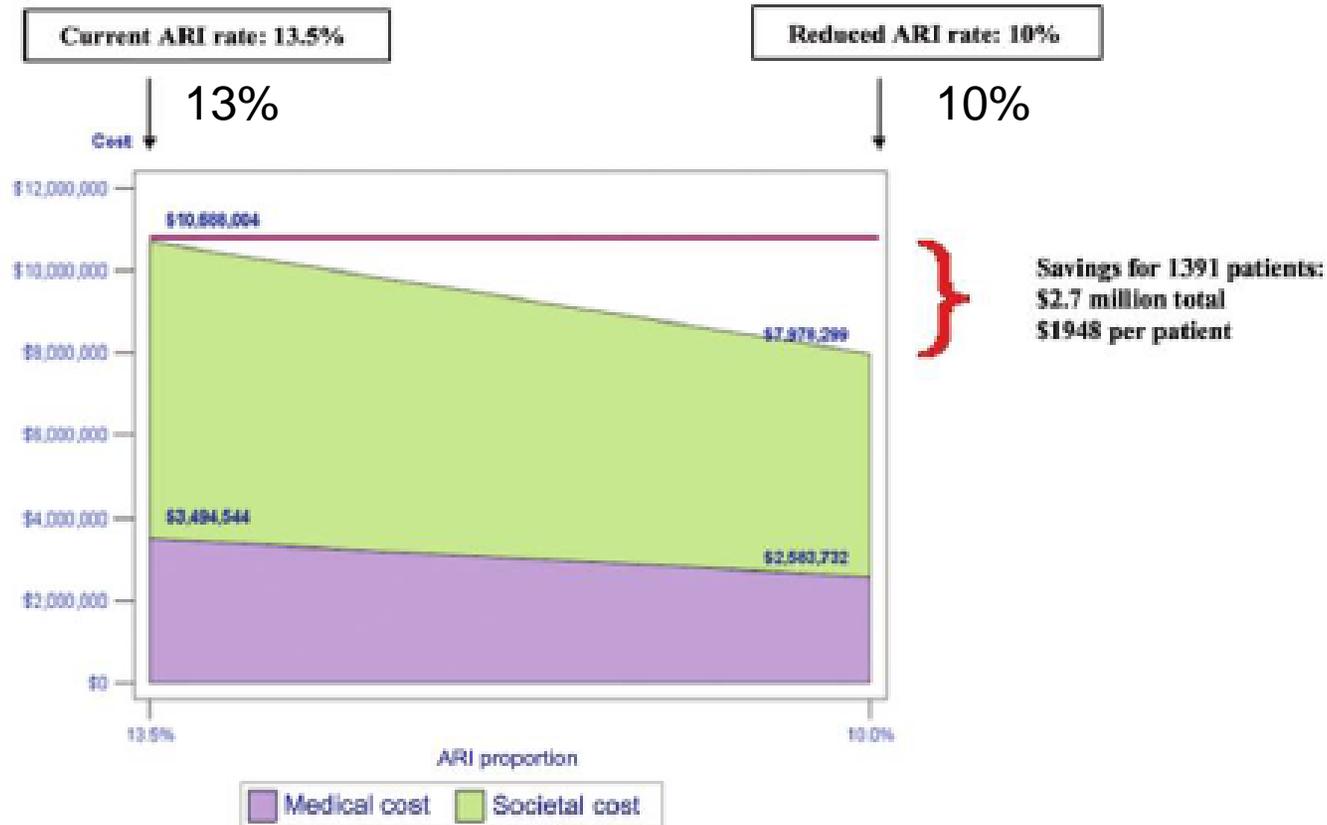


Figure 2. Projected cost savings if antimicrobial-resistant infection (ARI) rates were reduced from 13.5% to 10%.



18 Nov 2008

1st EU « Antibiotic Day »

L'antibiotique, un médicament pas comme les autres

Document à destination des professionnels de santé



LES ANTIBIOTIQUES SONT DES MEDICAMENTS INDISPENSABLES

LEUR EFFICACITE EST MENACEE, SACHONS LES PRESERVER

MAINTENIR LEUR EFFICACITE RELEVE DE LA RESPONSABILITE DE TOUS



REMERCIEMENTS

- Les membres du comité de pilotage du Plan Antibiotiques : AC Crémieux, P Choutet, R Cohen, P Dellamonica, D Guillemot, S Alfandari
- JM Azanowski (DGS)
- A de Warren (CNAM)
- D Monnet (ECDC)
- H Goossens (ESAC)...