

# Guidelines Observance by General Practitioners: A quantitative Study using the "Small Samples Approach" for In-depth, Case-based Analysis of Prescription Behaviour for Respiratory-Tract Infections in French-speaking Belgium

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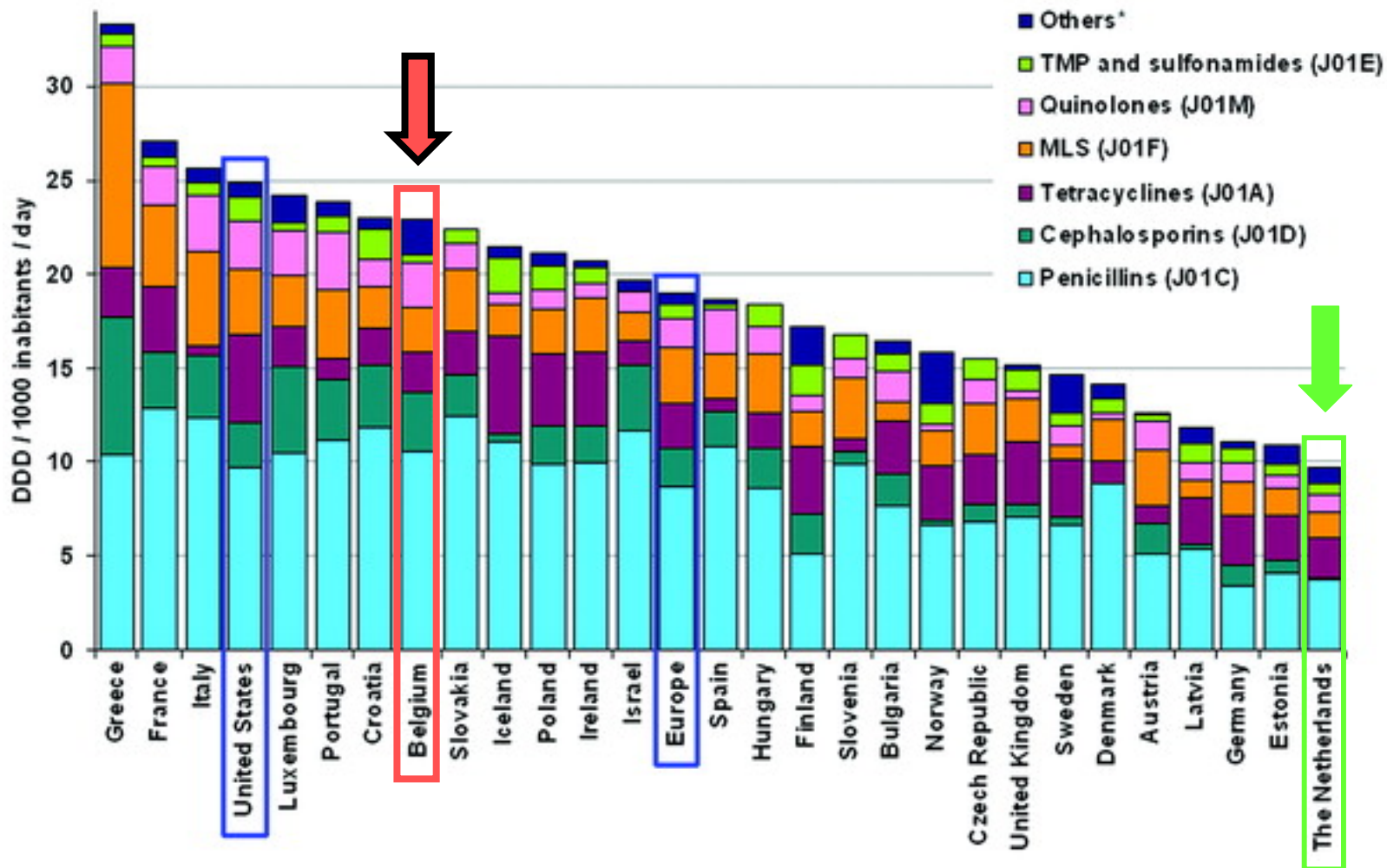
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# Background: do Belgian GP overprescribe antibiotics?



Goossens et al. & the Antimicrobial Consumption Project Group. Comparison of outpatient systemic antibacterial use in 2004 in the United States and 27 European countries. Clin Infect Dis. 2007 Apr 15;44(8):1091-5. Erratum in: Clin Infect Dis. 2007 May 1;44(9):1259.

# Actions of the authorities and Aims of the Study

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Since 2000, annual public campaigns,  
with a positive impact on antibiotic  
sales decrease\*

"Use antibiotics less frequently but  
better"

"Save antibiotics, they may save  
your life"

\* I. Bauraind, J. M. Lopez-Lozano, A. Beyaert, J. L. Marchal, B. Seys, F. Yane, E. Hendrickx, H. Goossens, P. M. Tulkens, and L. Verbist. Association between antibiotic sales and public campaigns for their appropriate use. *JAMA* 292 (20):2468-2470, 2004.



# Actions of the authorities and Aims of the Study

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- All Belgian GPs have been presented with guidelines for antibiotic use in respiratory tract infections using **Evidence-Based Medicine** data ...  
(supported by the "Antibiotic Policy Coordination Committee", an official body with participation of the main Belgian experts in Infectious Diseases)
- Every Belgian GP receives at regular interval her/his individual "feed-back" comparing her/his personal prescribing habits to an "average GP" in her/his local environment

→ Are those guidelines and feed-backs conducive to a (more) rational prescription behaviour ?

# Method: Lot Quality Assurance Sampling [LQAS]

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- Originally developed in Industry to assess the quality of a production in comparison with a pre-defined standard while limiting the size of the sample
  - a set of **samples** of limited size is taken at random and subjected to in-depth examination for pertinent criteria
  - if a predefined percentage of the samples fulfil the criteria, the whole **lot** is considered as acceptable
- Used in Public Health \* to define extremes in behaviour and/or to assess the success of a give action (vaccination, e.g.)
  - definition of a **level of performance**  
(e.g. > 75 % of vaccinated children in a region or a county ...)
  - known **level of precision**
- In our case, the analysis will examine the obedience of the GP to guidelines in her/his contact with actual patients
  - if **3/5** or more of the scripts are made according to guidelines, the GP will be considered with **90 % probability** as following these guidelines for **75 % of his practice**

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\* - Lemeshow S. et al, 1991, Lot Quality Assurance Sampling: Single-and Double Sampling Plans. World Health Statistics Quarterly 44: 115-132.  
- World Health Organization, 1996, Monitoring Immunization Services Using the Lot Quality Technique. WHO/VRO/TRAM/96.01.  
- <http://www.cpc.unc.edu/measure/publications/html/ms-00-08-tool09.html>

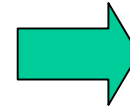
# LQAS: Application to this study

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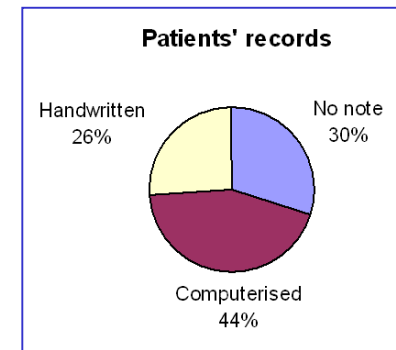
- Selection of GPs (30) at random in French-speaking Belgium for data collection from medical records and direct interview on 5 patients who were prescribed antibiotics for a respiratory tract infection
- For each patient contact (total: 150), obtain pertinent data from the prescribing GP about
  - medical history,
  - reasons for encounter,
  - symptoms and clinical examination,
  - patient's demand,
  - imaging or laboratory tests,
  - diagnostic,
  - prescribed antibiotic and obedience to guidelines (as seen by the GP)
  - main reasons to have prescribed an antibiotic for this patient
- Analysis of the data (after anonymisation) in a simple-blinded fashion by two independent researchers (both GPs) for assessment of guideline observance (antibiotic need and choice) against the Belgian published guidelines.

# Results (1/5)

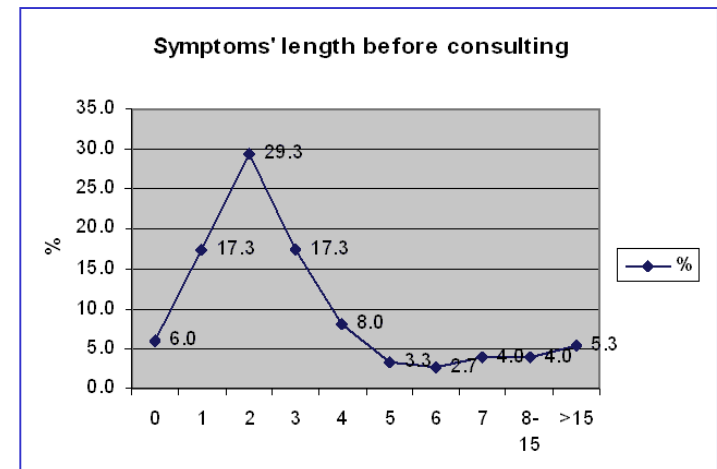
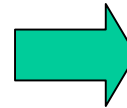
- Success in enrolment: 79% (30 agreeing / 38 approached) with good distribution throughout the French-speaking part of the country.



- Availability of records: 70 %

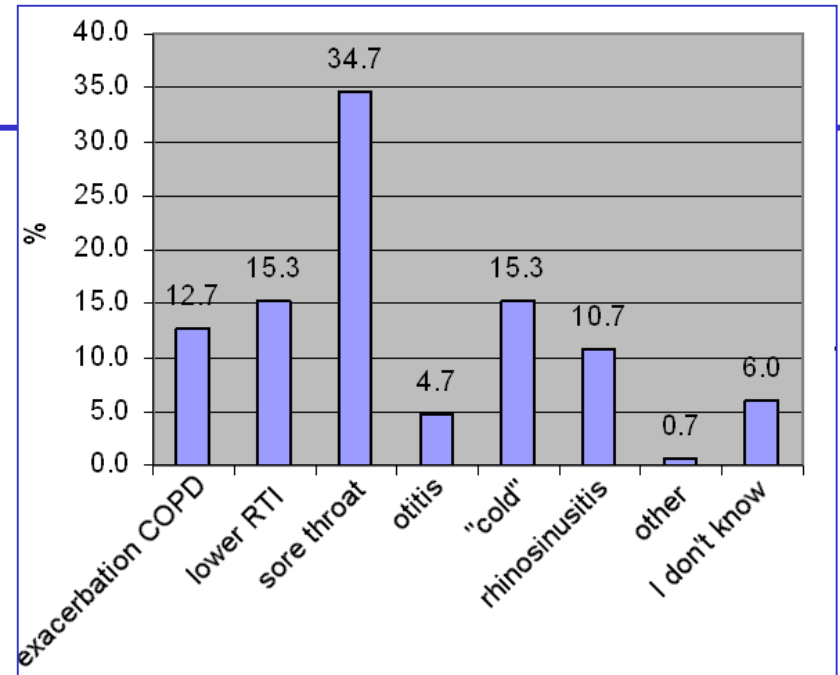


- time before consultation: 1-3 days

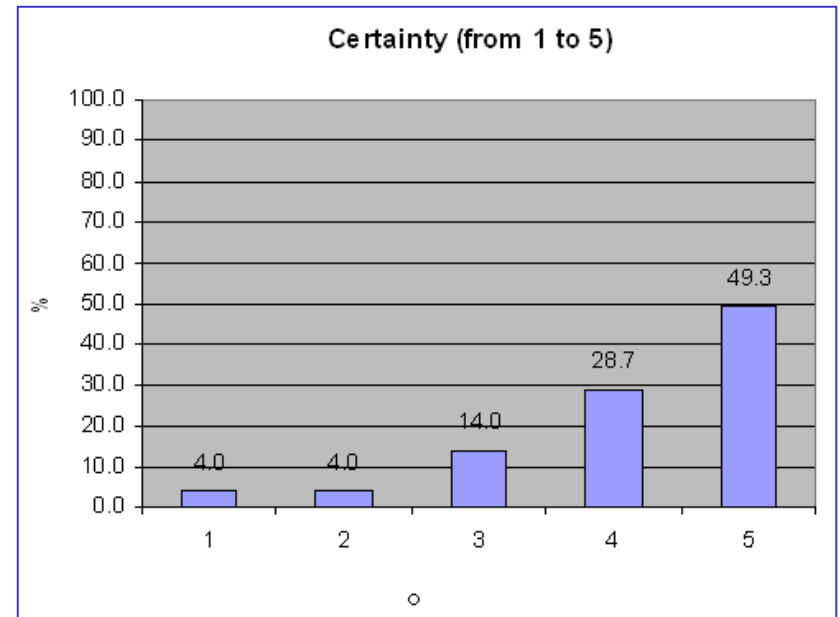


# Results (2/5)

- Diagnostics made by the GP



- Certainty of the diagnostic (as assessed by the GP)





## Results (3/5)

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- Observance of the guidelines as assessed by the GP's (with CI 95%) for all contacts
  - **YES: 41 % (33 - 49)**
  - **NO: 26 % (18-34)**
  - **guidelines not known: 32 % (24-40).**
- Observance of the guidelines (need or choice) as assessed by the independent researchers for all contacts
  - **NO : 59 % (51 - 67).**

In these contacts, patients' demand was the most frequent reason to prescribe.

# Results (4/5)

Number of GP's following the guidelines for 3 out of 5 patients or more (75% of the practice, precision level 90 %)

		According to the independent researchers		
		No	Yes	total
According to GP's	No	13	6	19
	Yes	6	5	11
	total	19	11	30

Agreement between GP's and independent researchers: 18/30

# Results (5/5)

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- The most important discrepancies between guidelines and actual practice were :
  - Amoxicilline prescribed for sore throat (n = 31)
  - Amoxi-Clav prescribed for acute exacerbation of COPD (n=9), acute sinusitis (n=5) of sore throat (n=6)
  - Antibiotic prescribed for common cold (n=24)

# Discussion

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- Official guidelines and recommendations have only a very limited impact on actual prescribing behaviour (even if starting point not known)
- Self assessment of guidelines observance is not reliable
- There is always a high impact of patients' demand
- Based on the present data and on previous research\*, efforts to curb the overprescribing of antibiotics in respiratory tract infections in community patients must aim at
  - decreasing patients' demands
  - using methods and messages that do not make the GPs guilty
  - making guidelines more convincing concerning their true value and independent from financial considerations

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\* this study is only one part of a more comprehensive programme; see previous data (qualitative analysis) presented at the 2007 RICAI (<http://www.facm.ucl.ac.be/posters.htm>)

# Coherence with our former quantitative study\*

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- High impact of patients' demand, context of liberal system in the patient – doctor relationship (« client »)
- Guidelines not trusted, suspected to be only economically oriented and potentially used as control tools
- Complementary test not often used (17 %)
- Non coherence: uncertainty in diagnostic  
(very high here – very low when asked in focus groups)

\* présentation orale à la 27<sup>ème</sup> Réunion Interdisciplinaire de Chimiothérapie Anti-infectieuse (RICAI), Paris, 7 décembre 2007

# Perspectives

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- Current : questionnaire study to confirm the prescription determinants identified in the qualitative study
- Future : ...

# Acknowledgments and Transparency Declaration

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## Financing:

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## Remunerations:

- J.-M. Feron and D. Legrand are paid for the performance of this study
- the independent researchers have received indemnifications corresponding to the work made for the study
- the GP's participating to the study have received an indemnification corresponding to the time spent with the interviewer
- P.M. Tulkens and the Academic Centre of General Practice coordinate the study without payment