

# ESBL-PRODUCING ENTEROBACTERIACEAE : IMPROVED QUALITY OF CARE IN A FRENCH TEACHING HOSPITAL

*A before and after uncontrolled interventional study*

V. Mondain, F. Lieutier, C. Pulcini, N. Degand, E. Bernard,  
L. Landraud, R. Ruimy, S. Dumas, T. Fosse, P-M. Roger



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# Conflicts of interest

None

# French Public Health Authority

## Recommendations (02/2010)

- All ESBL infections require **specialized advice**
- Treatment must be **specifically adapted (carbapenem-sparing)**
- **Hygiene measures** must be implemented: **standard** and **additional precautions**
- Both the **patient** and his/her **general practitioner** should be **informed**

# Specific difficulties related to ESBL

These infections are:

- **scattered** among patient groups
- **community-acquired** or healthcare related
- prevalent in healthcare departments where resistance was until recently rarely a concern
- **easily transmitted** with a major gut reservoir persisting even after a treatment
- **Physicians are insufficiently trained** to deliver this type of information

# Nice University Hospital, 1999 - 2007



Identification of  
resistance mechanism



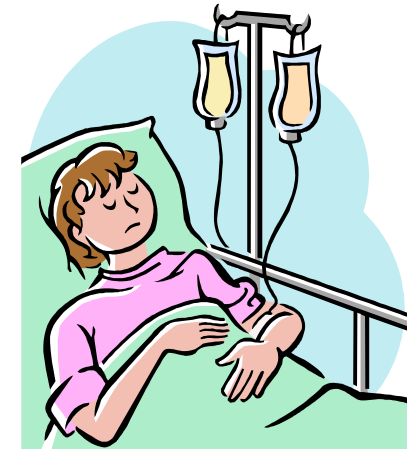
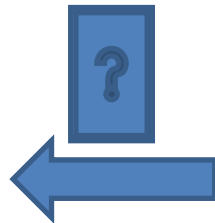
Hospital Hygiene  
Operational Team



Medical department



ID specialist



Audit: lab result **delay of 3-4 days**, during which patient may be discharged or transferred to another unit

# Nice University Hospital, 2007-2012

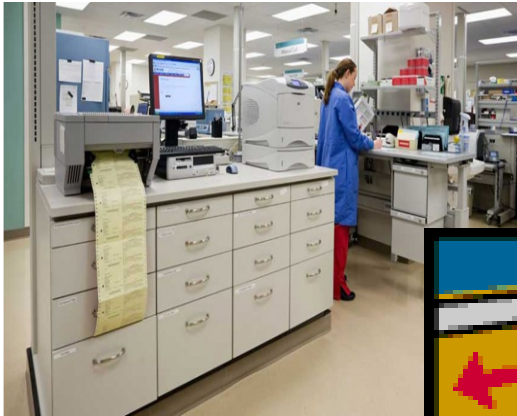


**2007, notification by microbiology lab  
via electronic patient medical record  
advising contact with ID specialist and  
HHOT**

**2011, Information transmitted via staff  
meetings and newsletters**



# 07/2012: Notification of Critical Result for 3GC-R Enterobacteriaceæ



**ID specialist and all the  
antimicrobial stewardship team**

- **ID specialist call to clinician**
  - Advice recorded in the electronic chart
- **Provision of an ESBL Toolkit**
  - Information sheet for the clinician,
  - Treatment protocols according to infection site
    - with re-assessment on day 3
    - and carbapenem de-escalation
  - Special form on hygiene measures to be explained to the patient (HIC),
  - Letter template to GP or healthcare staff



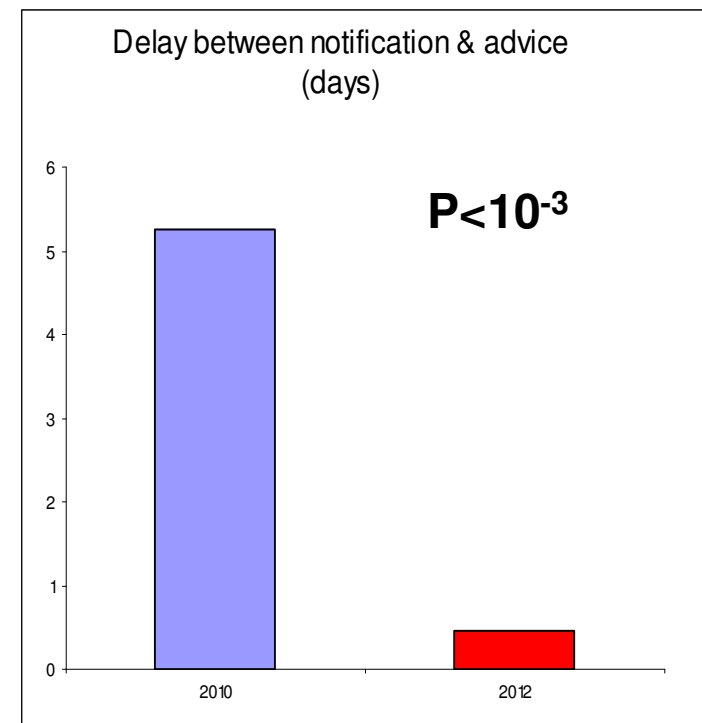
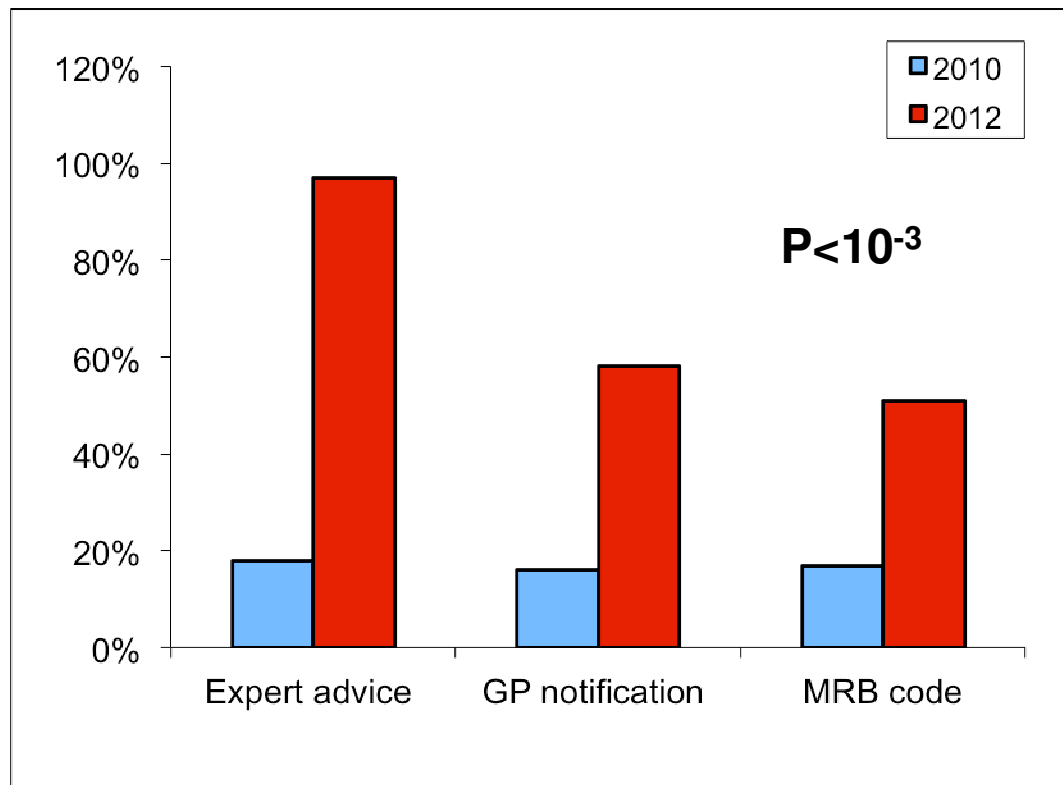
2005	2007	2012
Fax sent to the patient's attending physician as soon as ESBL is diagnosed	Microbiologist suggests to request advice from ID specialist on suspected or detected ESBL	Microbiologist informs the ID specialist and AM team by email of 3GC-R isolate
Physician can call the ID specialist		ID specialist calls systematically and sends ESBL toolkit

# Trends in quality measurements over a 3 month period in 2010 and 2012

**Procedure traceability:** in the patient's electronic medical record

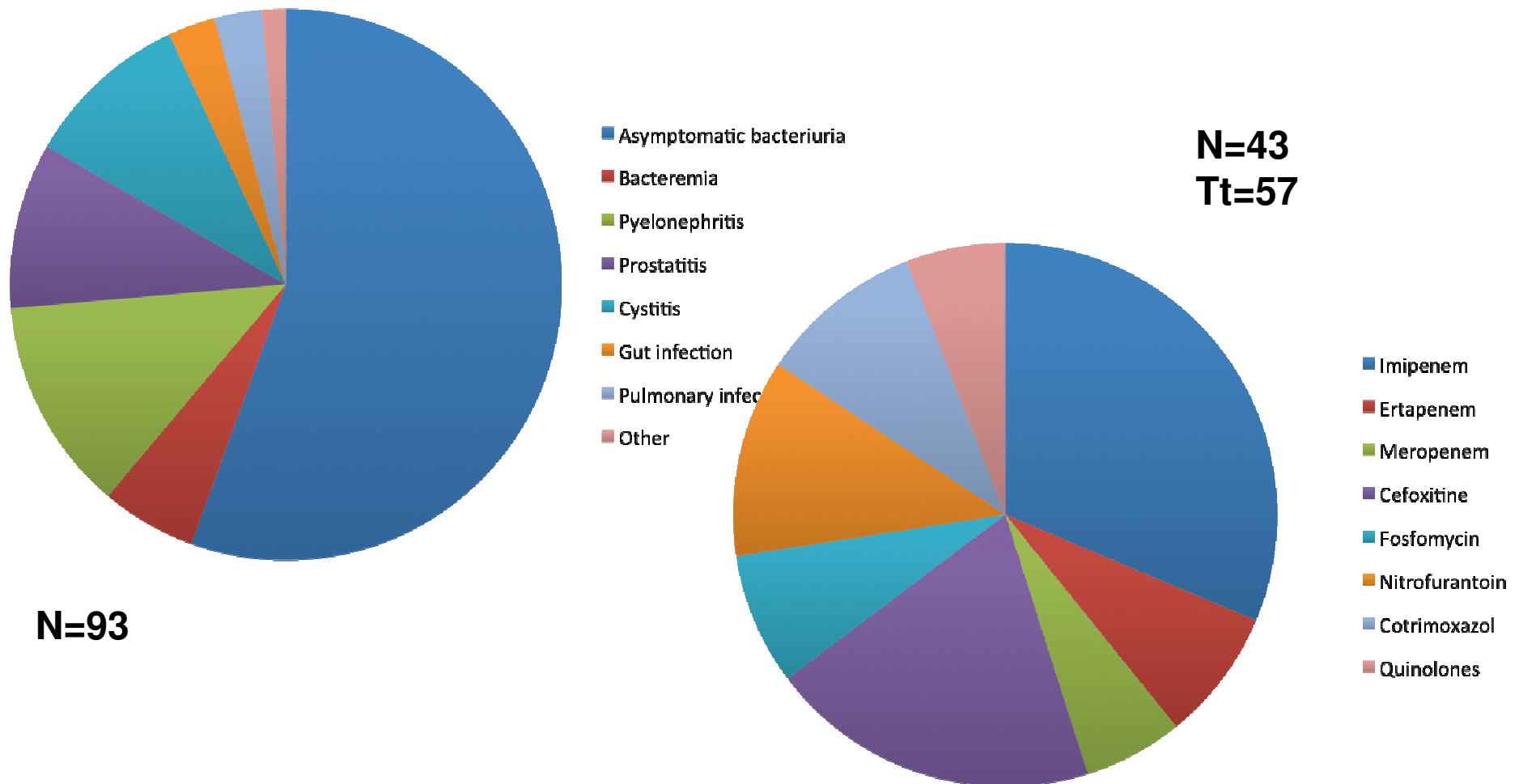
**Result traceability:** letter to the GP and coding

2010 n= 89; 2012 n=93



# Accurate knowledge of ESBL epidemiology

- Creation of a prospective database



# Procedure evaluation beyond quality criteria

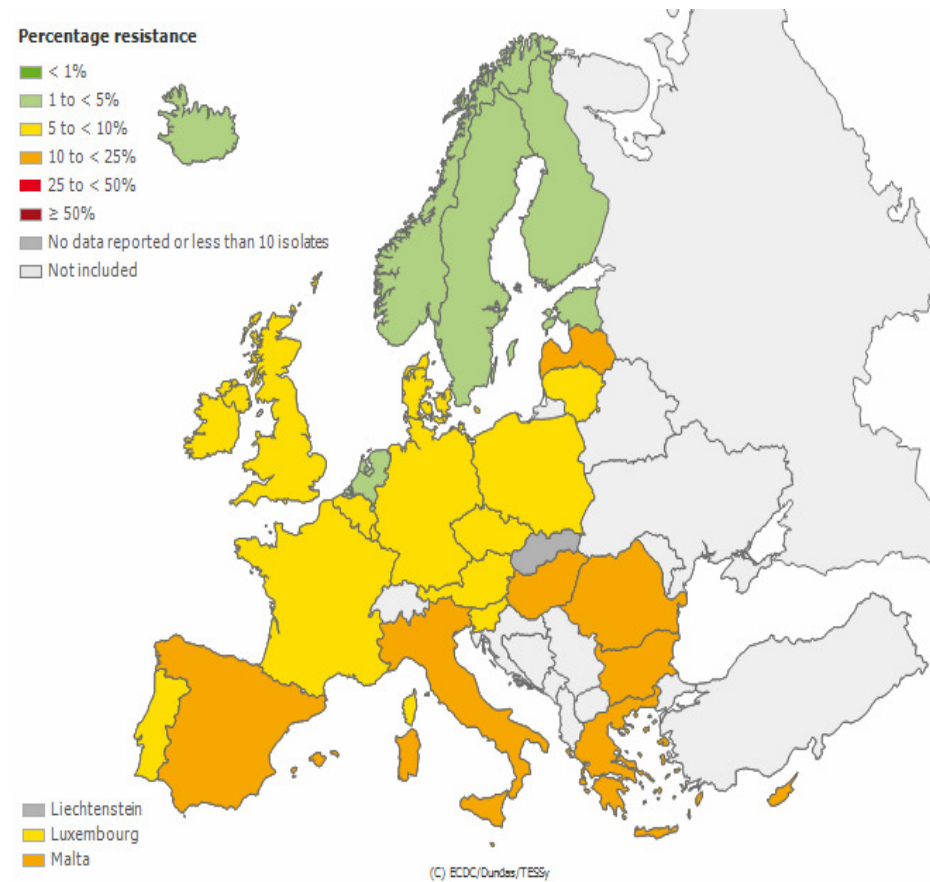
- **Simple, automated, inexpensive**
- **Relevant:** for treatment advice in 3GCR, for overall management in ESBL
- **Effective, transparent, favours multidisciplinary**
- **Cost-effective:** improved coding
- **Room for further improvement:** check-list labelling
- **Exportable** : to other health facilities, community-based practices, if a referee is available

# Limits and prospects

- Requires an Antimicrobial stewardship team and help from the IT department
- Process measures, expected impact on outcome measures
- Failures related to certain reservoirs:
  - ESBL-linked prostatitis
- The **ESBL ToolKit** is undergoing nationwide implementation A website is under development to be used in primary care or in other health care facilities
- Very recently we have shown **it improves the quality of antibiotic treatment in community practice**

# Conclusion

- ESBL management is not limited to the hospital
- Close to borders: 3.6% ESBL *E.coli* in Nice but 25% in Italy and more in North Africa
- Setting up a dedicated procedure according to recommendations guarantees **quality and safety of healthcare**



ecdc: Antimicrobial resistance surveillance report, 2011



Thanks to all the actors and doctors entailed in this study

**ID specialists**

E. Bernard  
V. Mondain  
C. Pulcini  
PM. Roger

**Microbiologists**

N. Degand  
S. Lemee  
L. Landraud  
R. Ruimy

**Pharmacists**

F. Lieutier  
S. Dumas  
R. Collomp

**Hygienists**

Y. Berrouanne  
T. Fosse  
P. Veyres

**Public Health Department**

B. Dunais  
C. Pradier

**Information Technology Department**

P. Mayer  
JF Minery