

ESGAP workshop - Basic group

Interactive case studies in stewardship

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Table 4 Prevention of CPE: summary of recommendations

- For all different types of hospitals, an aggressive infection control strategy is recommended, including managing all patients with CPE using contact precautions and implementing the guidelines for detection of carbapenemase production.
- Infection control teams should be provided of appropriate human and material resources to accomplish their tasks.
- Educational training of all healthcare workers must be maintained continuously; institutions managers must facilitate these and other interventions.
- Hand hygiene should always be reinforced, monitored, and a priority issue of all healthcare institutions.
- Healthcare facilities should always provide resources for and appropriate and sustained compliance with hand hygiene, standard and contact precautions, and heat disinfection of bedpans and urinals.
- Patients under contact precautions should be clearly identified; patients, staff, family, and visitors must be aware of adopted measures, including strict hand hygiene.
- The strategy for screening for CPE — prevalent point cultures, surveillance of related CPE cases, or active surveillance by sending rectal swabs for culture — will depend upon the distinct epidemiological situation of the facility.
- In institutions where CPE are endemic, facilities should consider additional strategies, as educational reinforcement, strengthening of contact precautions, increase frequency of active surveillance cultures, enhance environmental cleaning, improve bedpan and urinal heat disinfection at ward level, chlorhexidine bathing in some situations, and improve communication within and between healthcare facilities.
- Antimicrobial stewardship should be progressively established in facilities where currently it is not being carried out, and reinforced where programs are undergoing.
- Carbapenems, third and fourth generation cephalosporins, and fluoroquinolones should always be carefully used.

Reinforce the AMSP

Multidisciplinary antimicrobial stewardship team	X
Prospective audit with intervention and feedback	
Formulary restriction and preauthorization	
Education	X
Guidelines	X
Antimicrobial cycling	
Antimicrobial order forms	X
Combination therapy	
Streamlining or de-escalation of therapy	
Dose optimization	

Decided with all intensivists +++

Prospective audit with intervention and feedback / Education

- Daily IDS contact with discussion of all AB prescriptions
- Daily microbiologist contact
- Regular and frequent educational sessions: diagnosis of VAP, treatment of CPE, optimised PK/PD,...

Combination therapy

Dose optimisation

- For all CPE infections

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De-escalation

- Essential +++



Other measures

- Reduce cephalosporins / carbapenems / fluoroquinolones
- Prefer meropenem to imipenem, and cefotaxime to ceftriaxone
- Reduce the duration of antibiotic treatments: PCT-guided protocol, local protocol adapted
- Limit the use of antibiotic prophylaxis (trauma, inspiration...)
- Catheter bundle + continuous quality improvement strategies
- Quarterly monitoring and feedback of antibiotic use and multi-resistant bacteria
- Selective decontamination of the digestive tract ?

Literature

J Antimicrob Chemother 2013; **68**: 89–96
doi:10.1093/jac/dks364 Advance Access publication 7 October 2012

**Journal of
Antimicrobial
Chemotherapy**

Infections caused by OXA-48-producing *Klebsiella pneumoniae* in a tertiary hospital in Spain in the setting of a prolonged, hospital-wide outbreak

José Ramón Paño-Pardo^{1,2*}, Guillermo Ruiz-Carrascoso³, Carolina Navarro-San Francisco^{1,2}, Rosa Gómez-Gil³, Marta Mora-Rillo^{1,2}, María Pilar Romero-Gómez³, Natalia Fernández-Romero³, Julio García-Rodríguez³, Verónica Pérez-Blanco⁴, Francisco Moreno-Ramos⁵ and Jesús Mingorance³

AMS measures

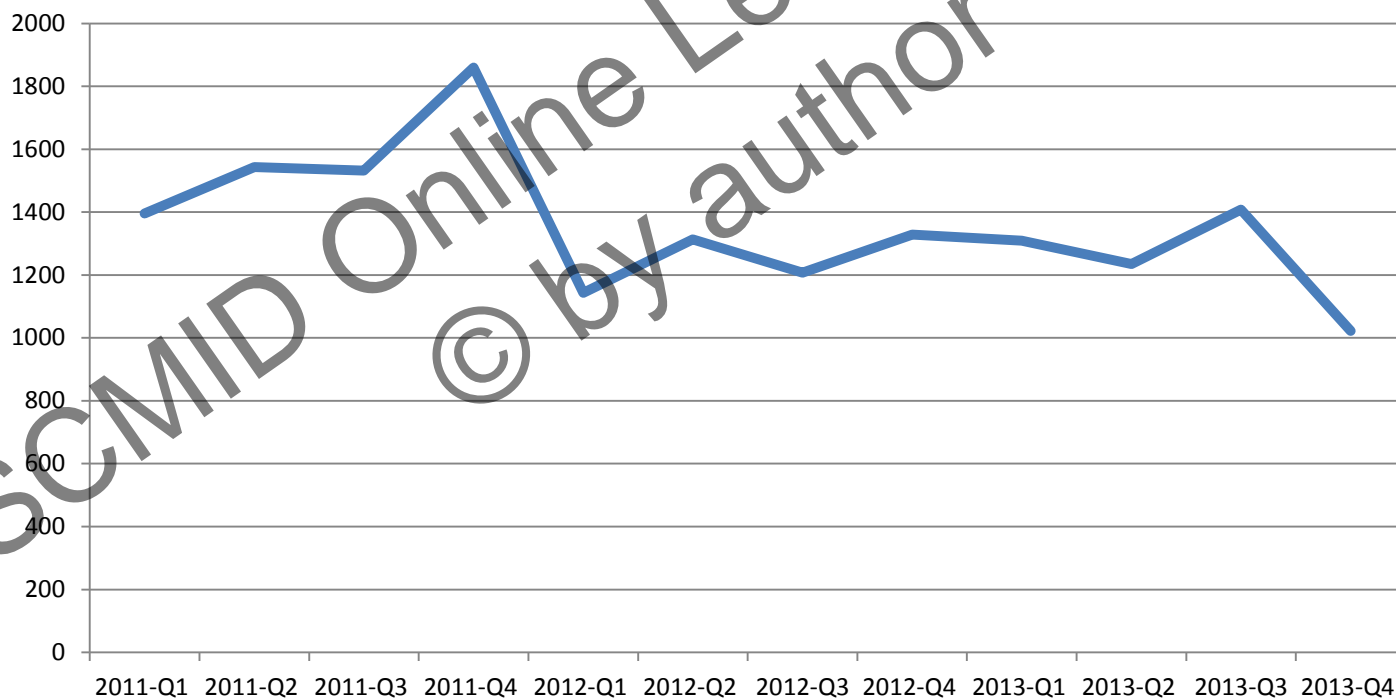
- The attending physician in charge of the patient received assistance from the IDS , who was systematically informed of all CRE isolates detected in clinical cultures
- The local AMS team assessed all non-ICU carbapenem prescriptions on day 3 as well as all antimicrobial non-ICU prescriptions on day 7

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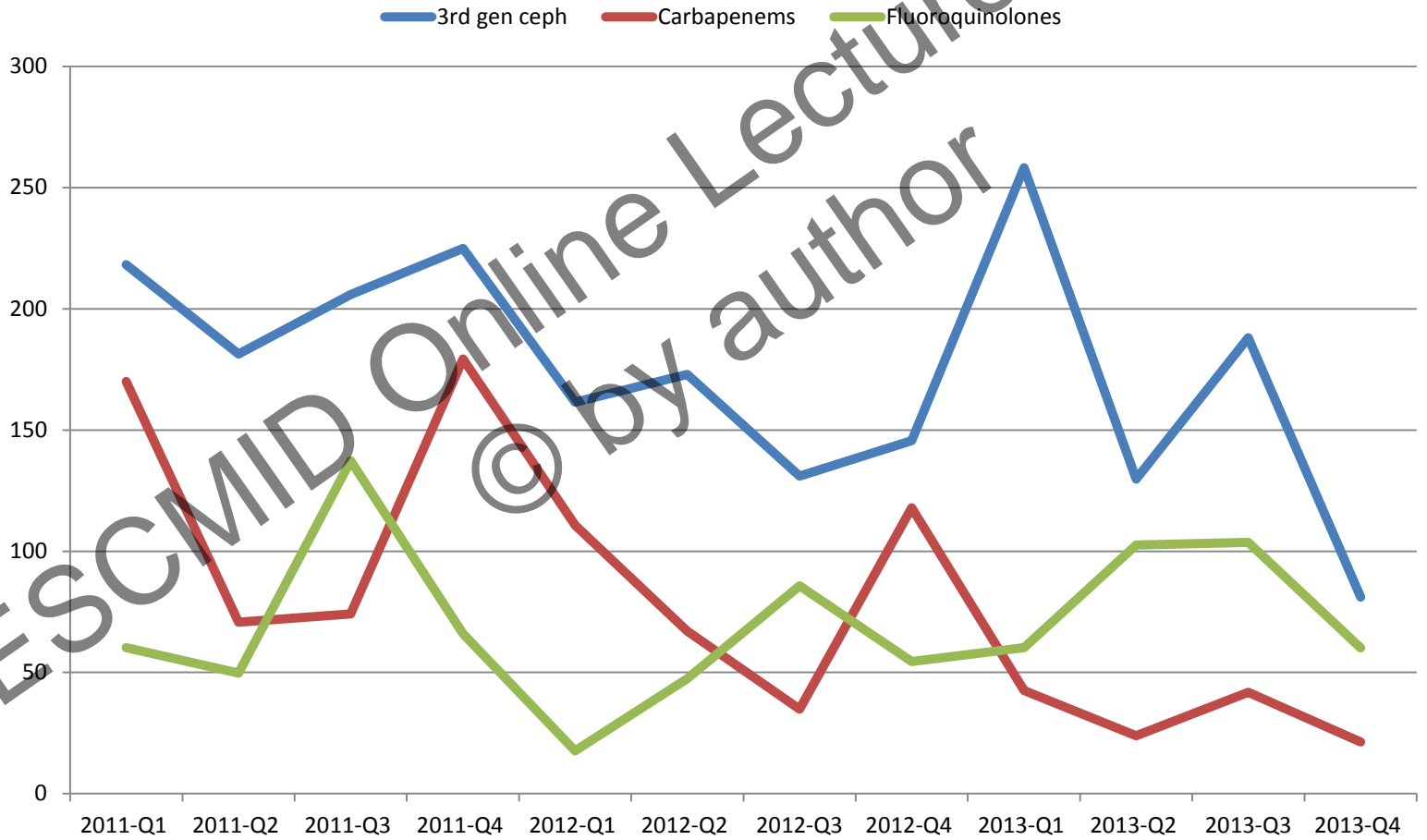
WHAT HAPPENED ?

Evolution of antibiotic use

Total AB use (DDD/1000 patient-days)



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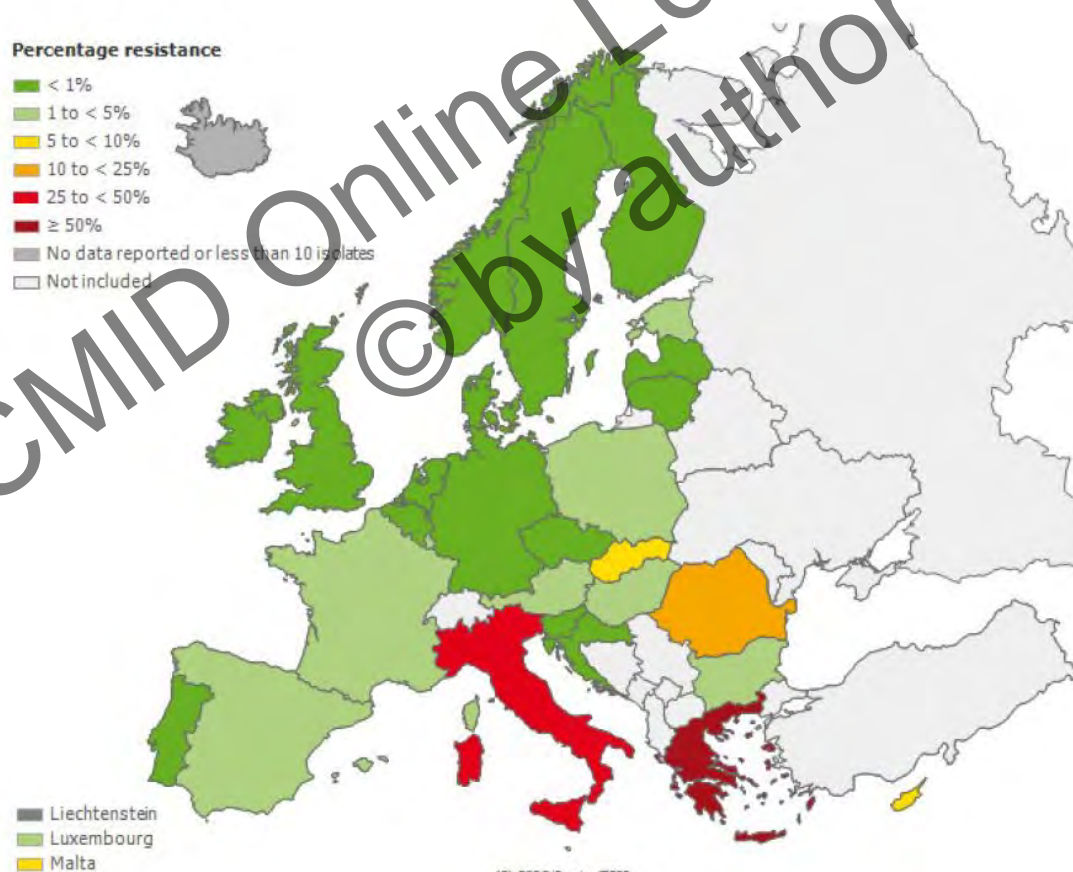
Control of the outbreak at the end of 2011... The end?



Proportion of Carbapenems Resistant (R+I) *Klebsiella pneumoniae* Isolates in Participating Countries in 2012

Percentage resistance

- < 1%
- 1 to < 5%
- 5 to < 10%
- 10 to < 25%
- 25 to < 50%
- ≥ 50%
- No data reported or less than 10 isolates
- Not included



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