

Prevalence of ESBL-producing- and Carbapenem-resistant- *Enterobacteriaceae* carriage in residents of French Nursing Homes.

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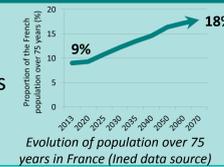
Introduction & purpose

Antimicrobial resistance is major public health issue, more specifically:

- Extended-spectrum-β-lactamase-producing *Enterobacteriaceae* (ESBLE)
 - Carbapenemase-producing *Enterobacteriaceae* (CPE)

Population aging:

- The elderly are more susceptible to infectious diseases
 - Infections are more severe



Nursing homes

- Epidemiological data poorly described
 - Place of life & place of care
 - Environment suitable for cross-transmission

Objectives

Main objective:

- To determine the prevalence of ESBLE and CPE in nursing homes (NHs) of Franche-Comté, a region of eastern France.

Secondary objectives :

- To determine genotypic characteristics of ESBLE and CPE.

- To identify risk factors associated with ESBLE and CPE carriage.

Methods

Study design

- Point prevalence survey
- Period: November 2017 to June 2018
- Location: NHs in Franche-Comté.

Inclusion criteria

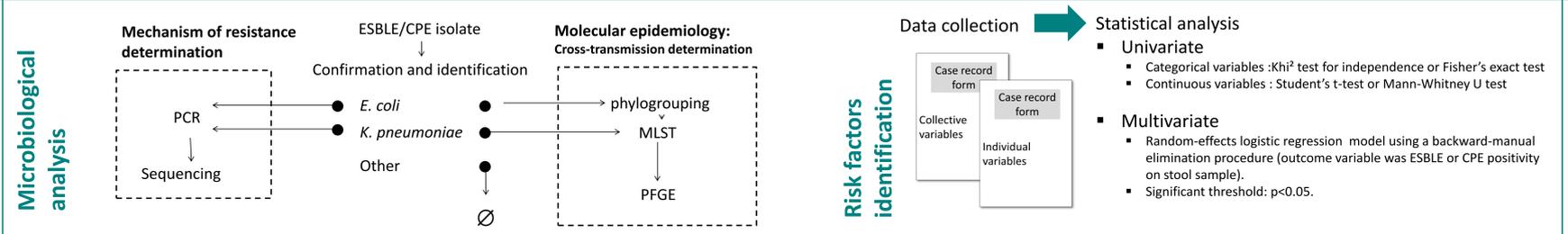
- presence the day of the study
- ability to agree.

Two stage sampling method:

- Randomization at NH level
- Randomization at resident level.

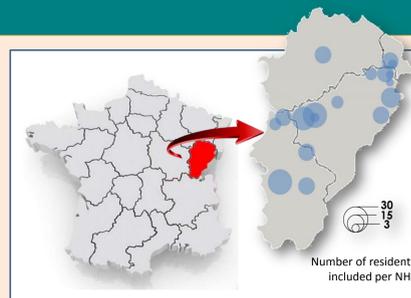
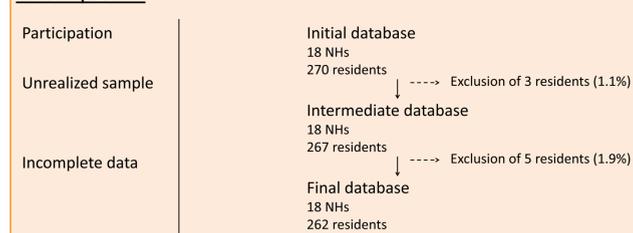
Screening

- Volunteer residents were screened
- Fresh stool or rectal swab
- Selective agar (ChromiD ESBL® & ChromiD CARBA SMART®)



Results

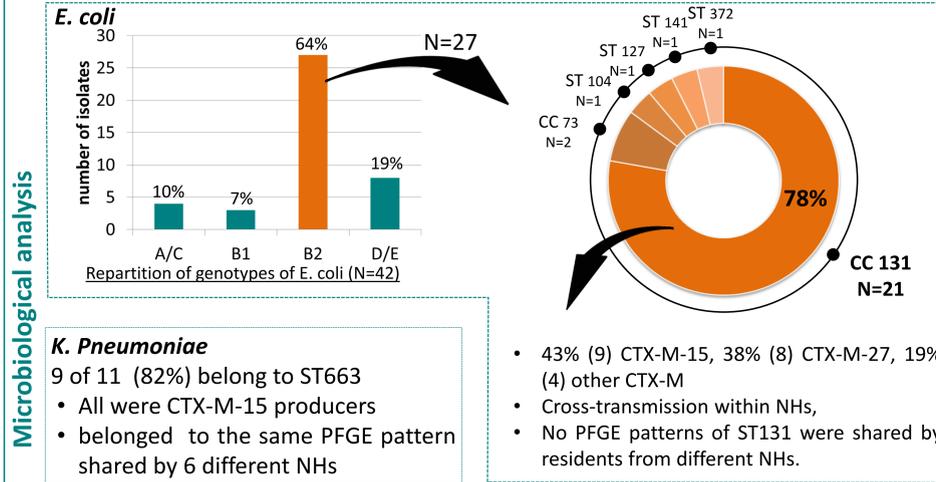
Participation



Location of participating nursing homes (NHs)

Carriage frequency

- ESBLE :
 - Overall prevalence: 52/262 (19.8 % [CI 95 %: 12.5-27.1])
 - Median prevalence: 20.0%(p25: 6.1-p75: 25.9)
- CPE : no CPE was detected



Risk factors identification

	Final model	
	OR (95% CI)	p
Individual-level factors		
No use of the toilets of the room	2.32 (1.17-4.57)	0.015
Previous antibiotherapy (6 months)	2.32 (1.20-4.49)	0.012
Previous hospitalisation (12 months)	2.04 (1.03-4.03)	0.041
Collective-level factors		
NH linked to a larger healthcare institution	0.41 (0.19-0.87)	0.020
Systematic use of single-use gloves	0.25 (0.11-0.58)	0.001

Conclusion

- NHs are an important reservoir of multi-drug resistant bacteria in our region, especially ESBLE-*E. coli* with the overrepresentation of ST 131. Despite the fact that no CPE was detected, the threat is real.
- Prevention measures should be implemented in NHs, implying antibiotic stewardship and excreta management.