



Carbapenem resistance in gram-negative bacteria in the Republic of Moldova, 2019-2023



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INTRODUCTION

Carbapenem resistance:

- Indicator of potential gaps in infection prevention and control (IPC) practices
- Reflects inappropriate use of antibiotics

National Antimicrobial Resistance (AMR) Surveillance System:

- Established in 2018
- To collect data per international standards.

AIM

To describe carbapenem resistance among gram - negative bacteria between 2019 and 2023 to inform future strategies for antimicrobial stewardship and infection control.

METHODS

Data included gram - negative bacterial isolates from hospitalized patients’ blood cultures collected between 2019 and 2023.

Carbapenem resistance testing:

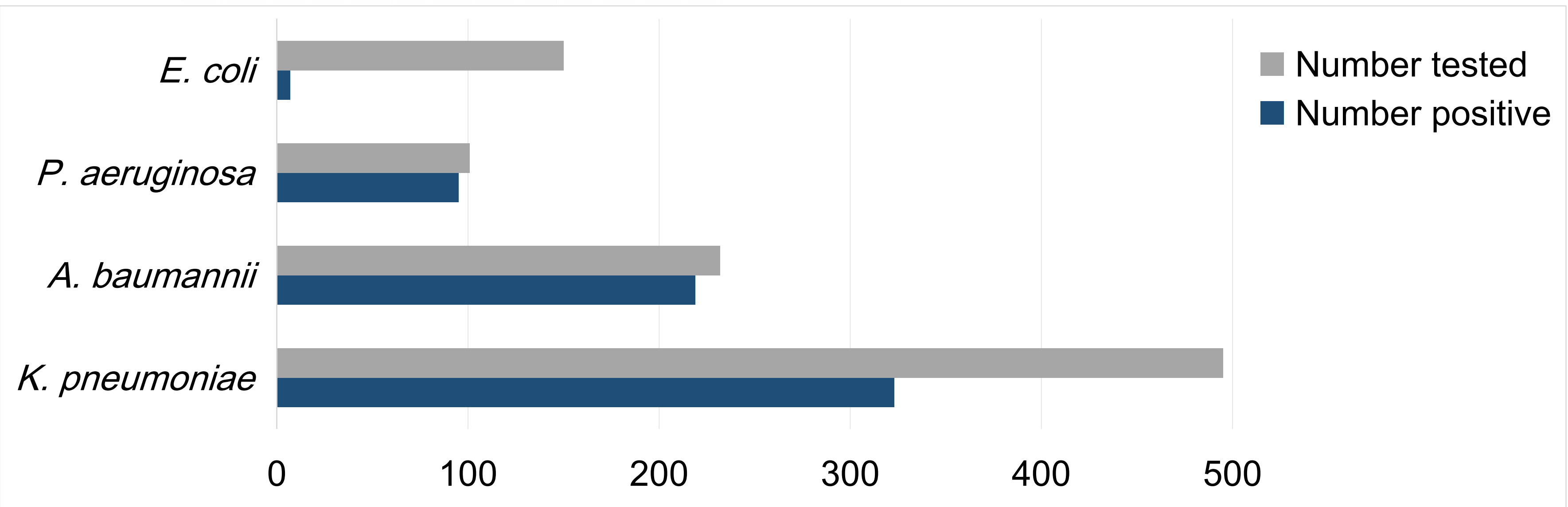
- National Reference laboratory
- Polymerase Chain Reaction (PCR) to detect the genes encoding carbapenemases
- Specific primers included for genes bla OXA-23, bla OXA-48, bla NDM

Descriptive analysis of AMR patterns:

- The proportion and distribution by year of resistant strains by bacterial species and specific resistance genes

RESULTS

Fig. 1: Number of strains tested and positive for carbapenem - resistance, Moldova, 2019-2023



* Out of 978 isolates tested, 644 (65.8%) were carbapenem - resistant.

Fig. 2: Proportion of carbapenem - resistant strains, Moldova, 2019-2023

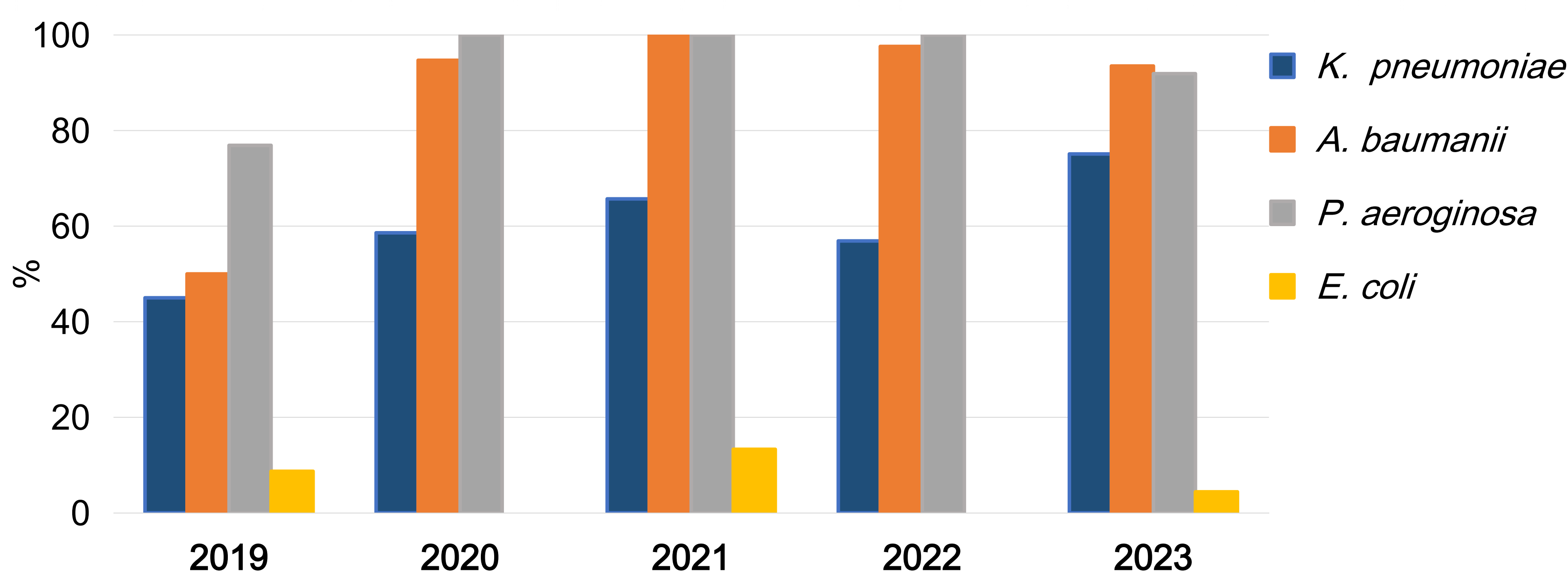
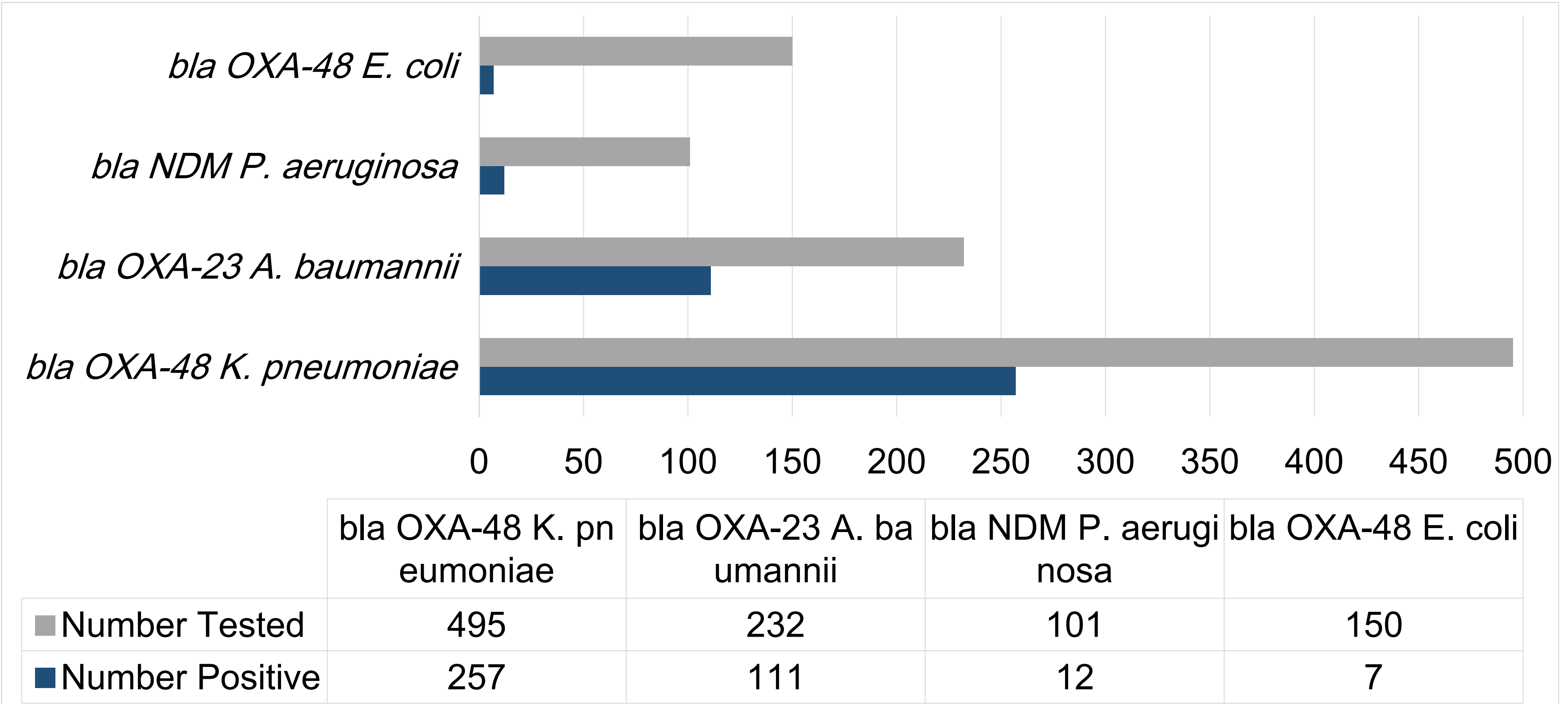


Fig. 3: Specific primers for identification of carbapenem - resistance, Moldova, 2019-2023



CONCLUSIONS

- High proportion of carbapenem resistance detected among tested gram - negative bacteria
- Such widespread resistance may signal excessive and indiscriminate use of last resort antimicrobials

Recommendations:

- Implement control measures following detection of resistance genes
- Apply stringent infection control protocols to curb the spread of resistance
- Promote antibiotic stewardship practices to mitigate further spread of carbapenem resistance

CONTACT INFORMATION

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