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# **Fenotypiska markörer för OXA-48-producerande Enterobacteriaceae**

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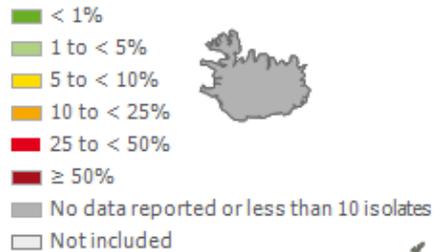
NordicAST Göteborg 28 maj 2014

# ESBL<sub>CARBA</sub> hos *K. pneumoniae* i Europa

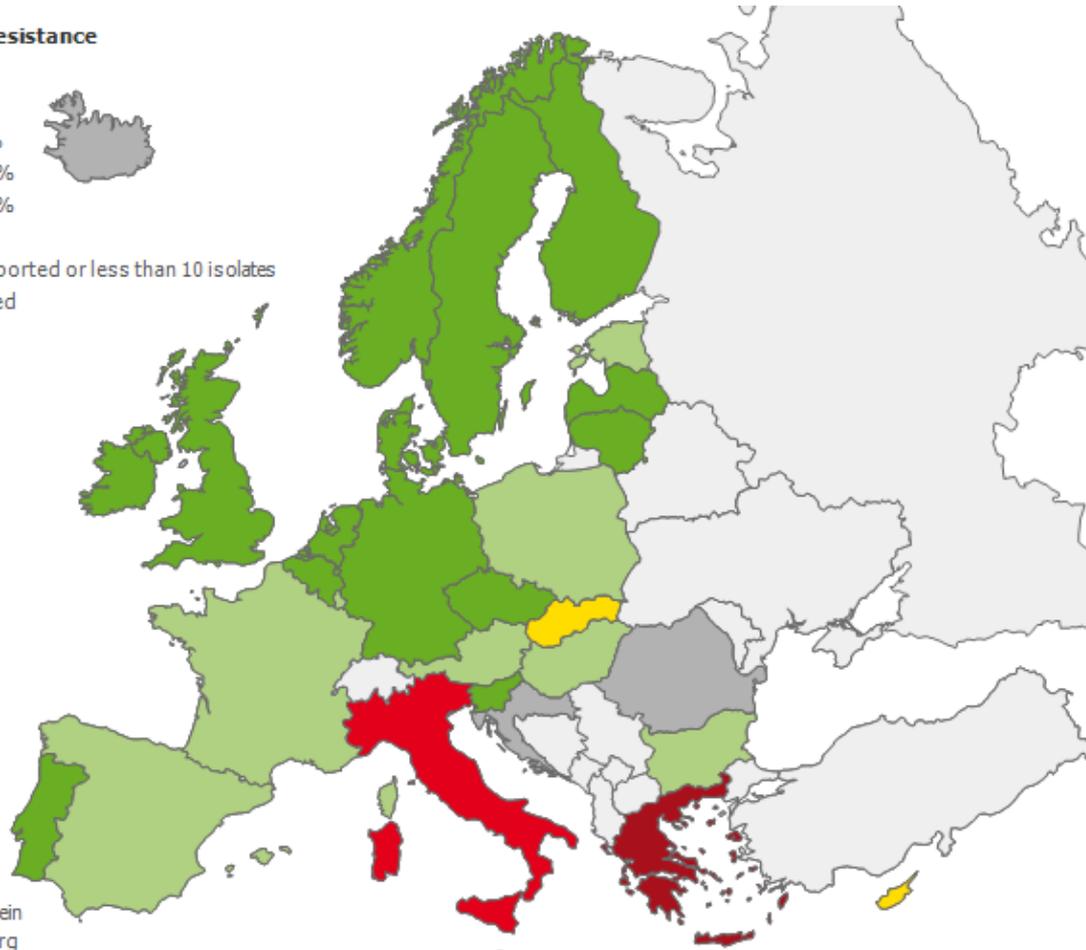


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## Percentage resistance



■ Liechtenstein  
■ Luxembourg  
■ Malta

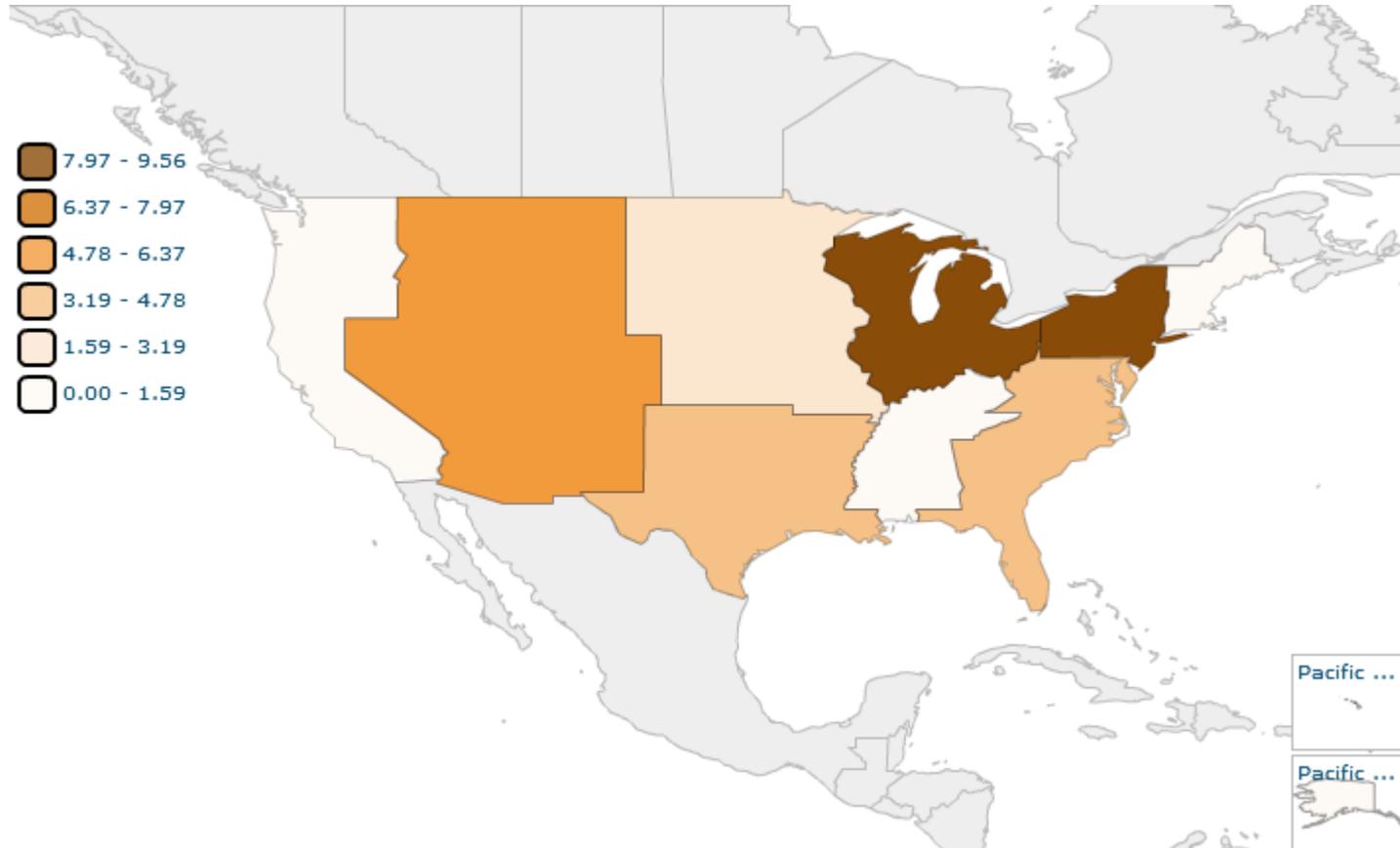


(C) ECDC/Dundas/TESSy

BSI, bloodstream infection.

<http://ecdc.europa.eu/en/publications/Publications/antimicrobial-resistance-surveillance-europe-2012.pdf>

# ESBL<sub>CARBA</sub> hos *K. pneumoniae* i USA



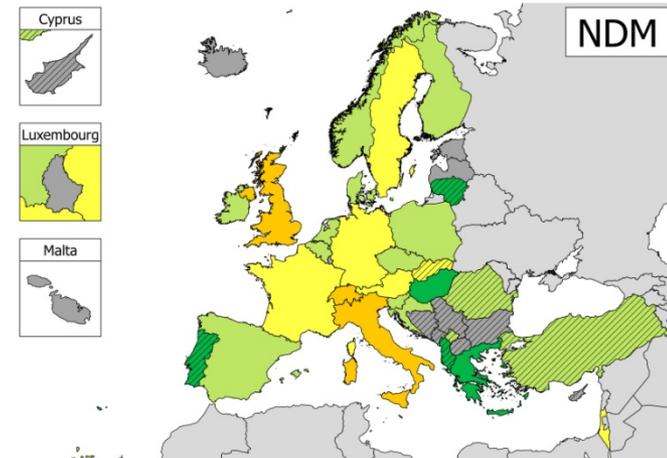
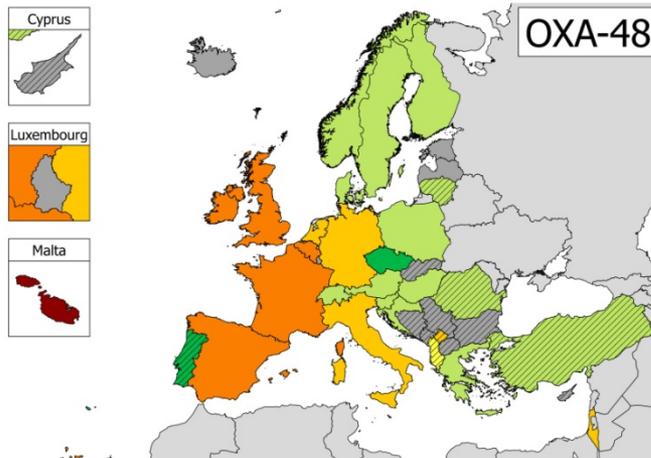
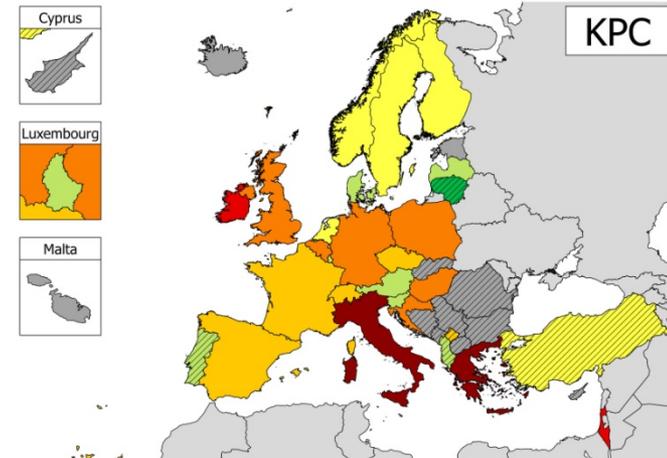
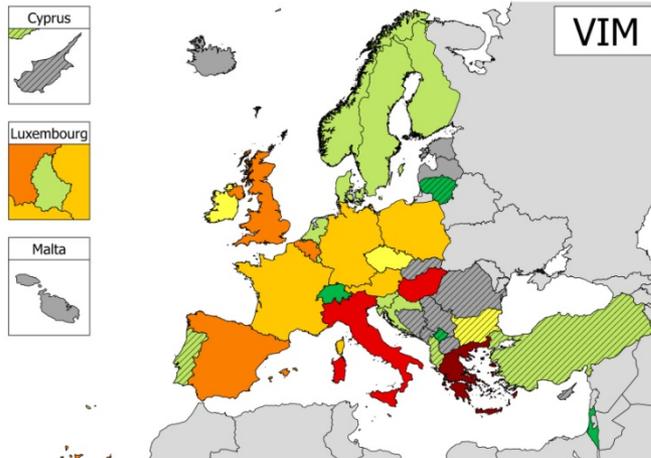
Center for Disease Dynamics, Economics and Policy. Data source: The Surveillance Network, USA.

© CDDEP, 2013. <http://www.cddep.org/map>.

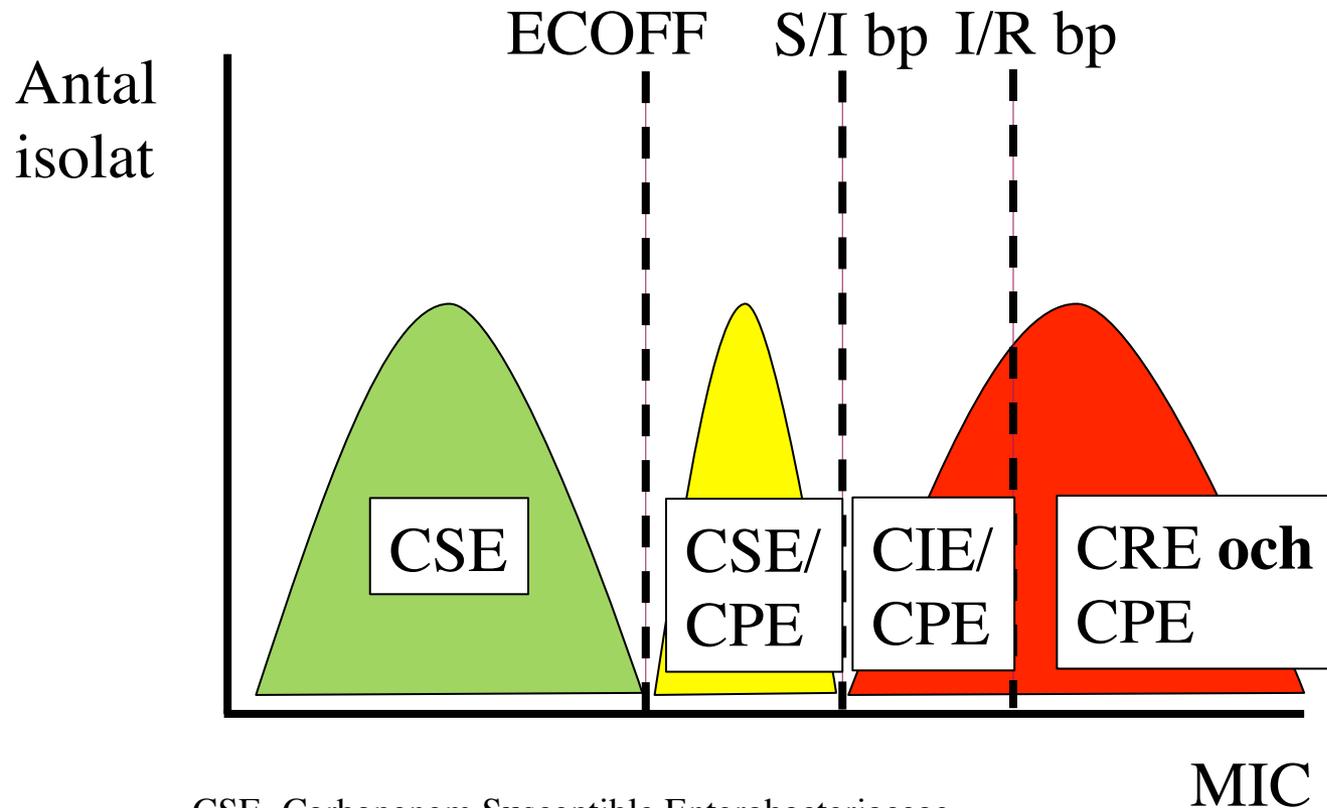
# ESBL<sub>CARBA</sub> genotyper i Europa

## Epidemiological stages

- No cases reported
- Sporadic occurrence
- Single hospital outbreak
- Sporadic hospital outbreaks
- Regional spread
- Inter-regional spread
- Endemic situation
- Data not available
- Not participating
- Uncertain

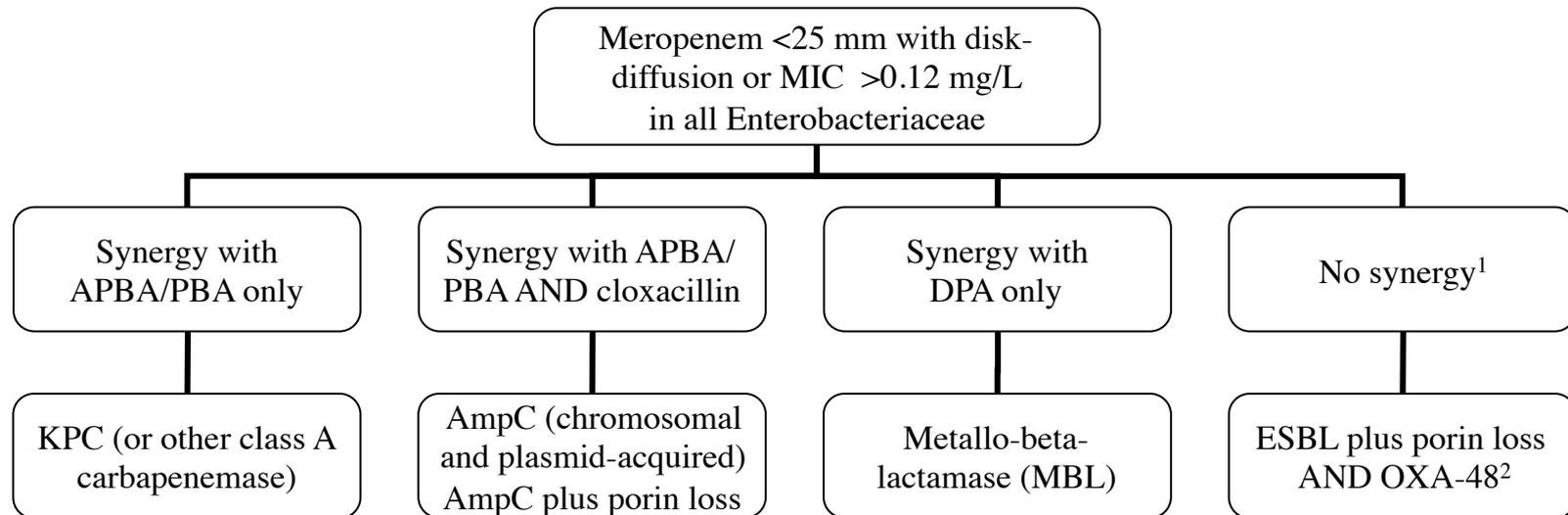


# ESBL<sub>CARBA</sub>/CPE ≠ CRE



CSE=Carbapenem Susceptible Enterobacteriaceae  
CPE=Carbapenemase-Producing Enterobacteriaceae  
CRE=Carbapenem Resistant Enterobacteriaceae  
ECOFF=Epidemiological Cut-Off Value  
bp=Clinical breakpoint

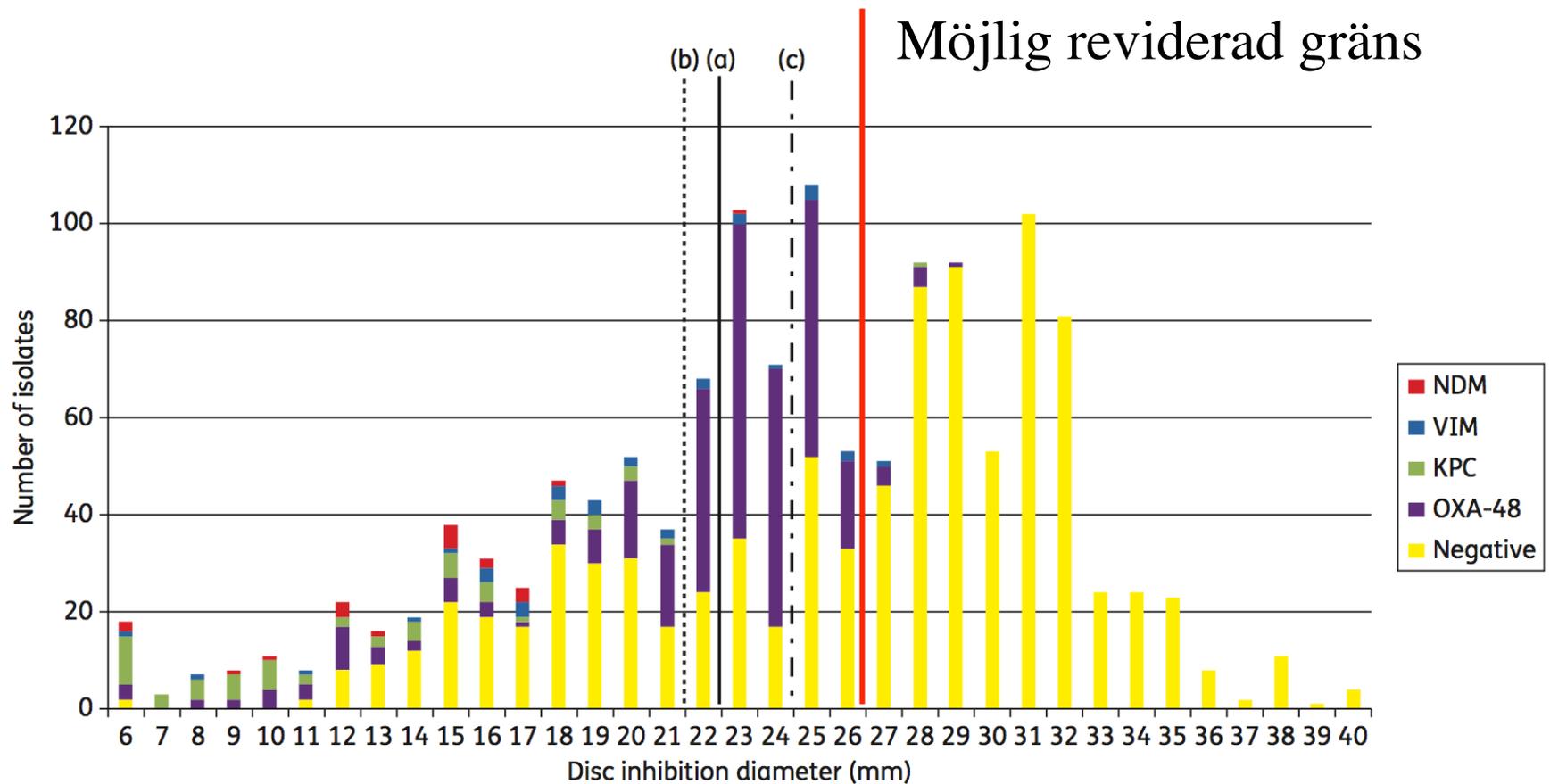
# EUCASTs rekommendationer



<sup>1</sup> Combination of KPC and MBL can also produce no synergy. Normally these isolates will have very high resistance levels to carbapenems. They are easiest to detect with molecular methods.

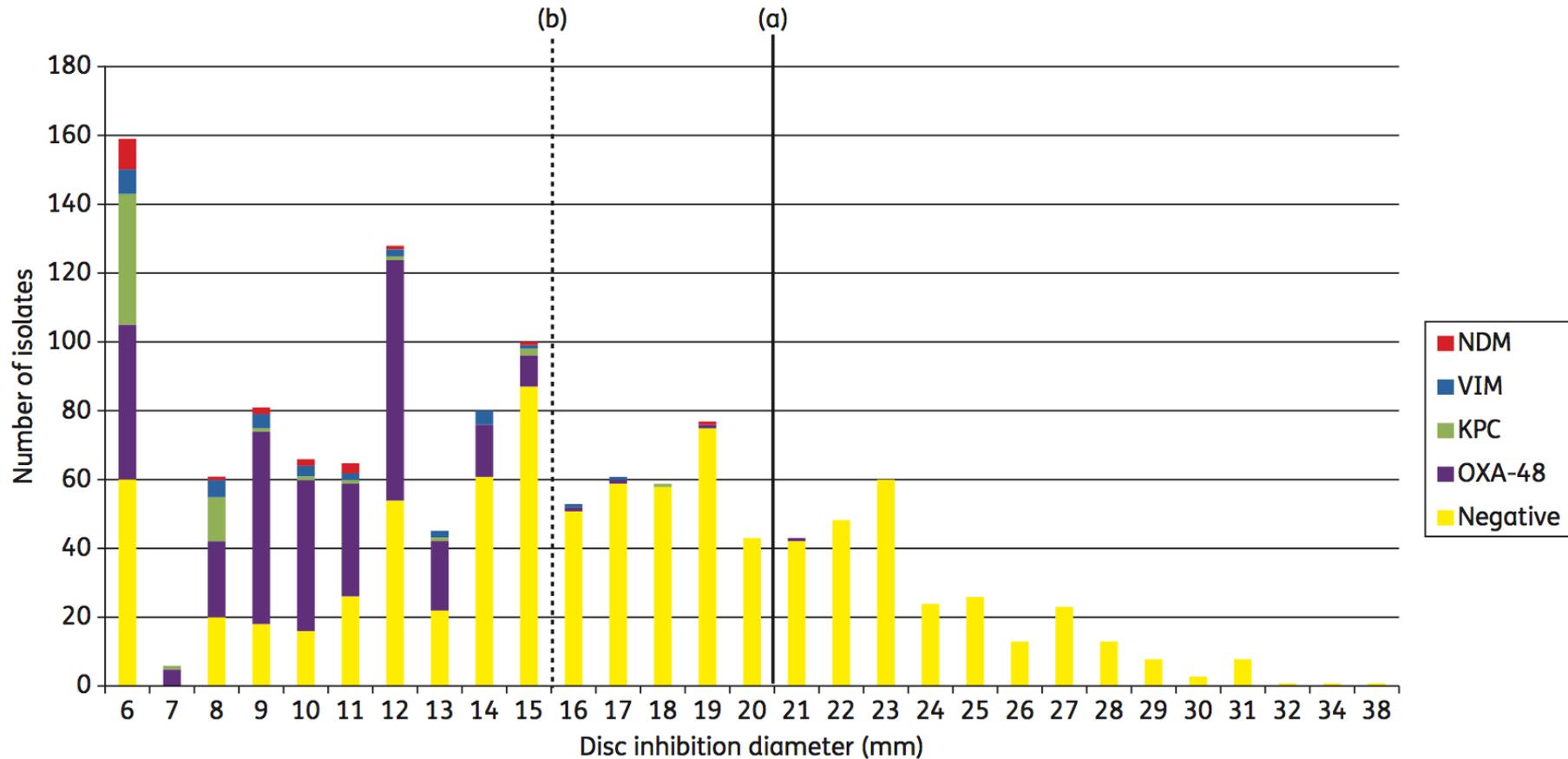
<sup>2</sup> High-grade temocillin resistance (>32 mg/L, temocillin (30 µg) zone diameter ≤11 mm) is a phenotypic indicator of OXA-48.

# OXA-48 utmanar EUCASTs riktlinjer – meropenem 10 µg

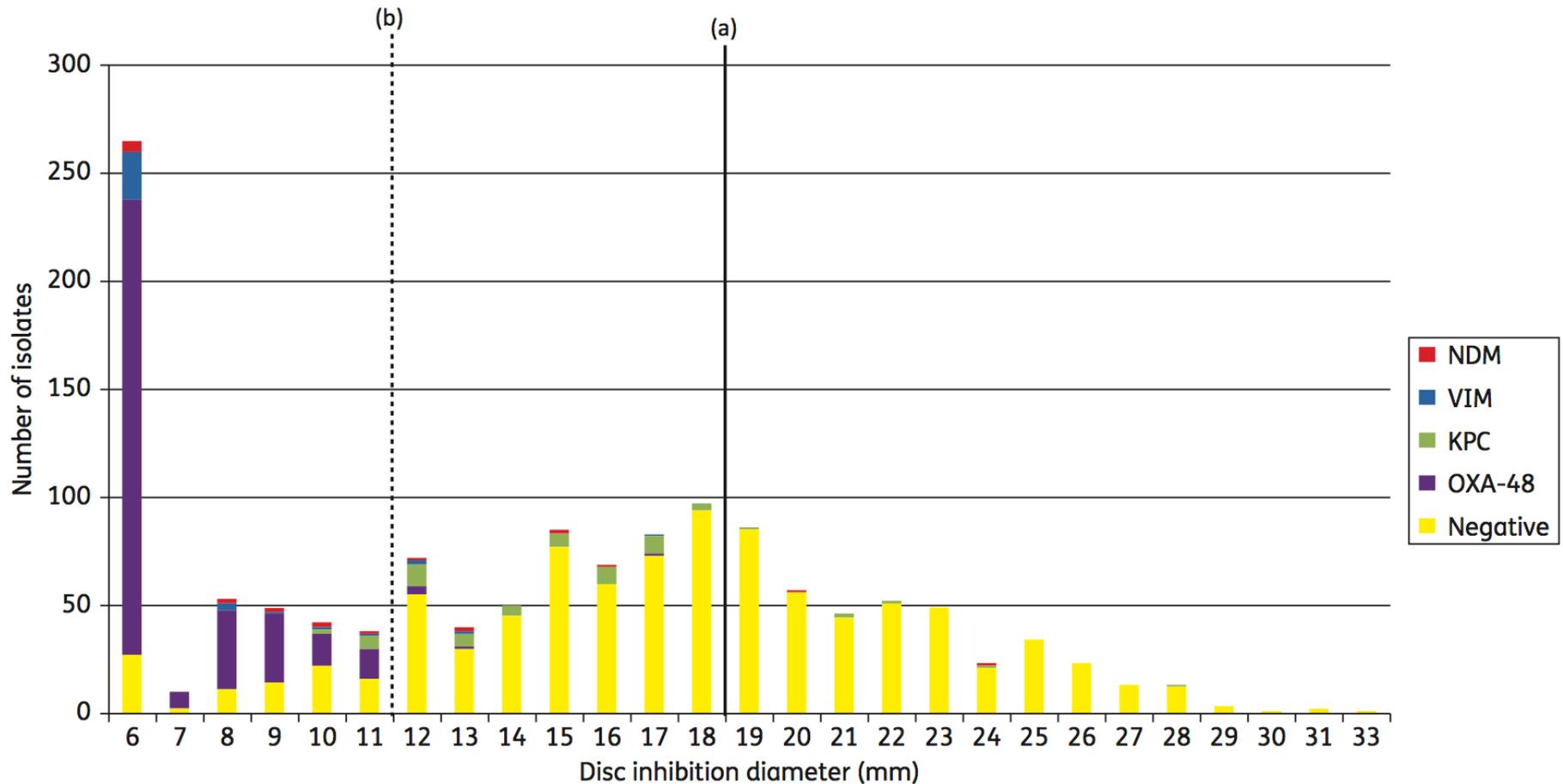


# Andra alternativ till karbapenemer: piperacillin-tazobactam (100/10 µg)

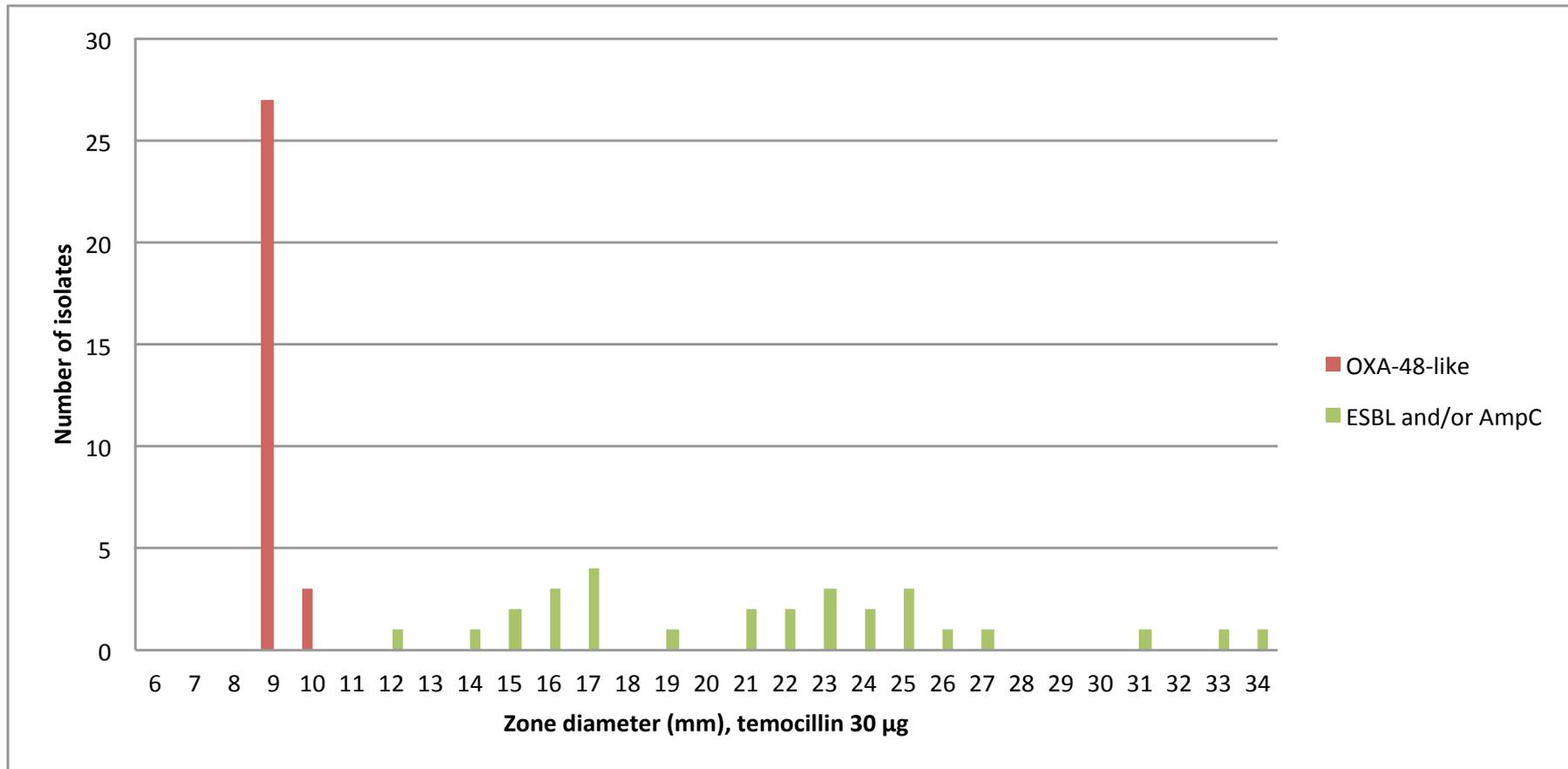
CLSI



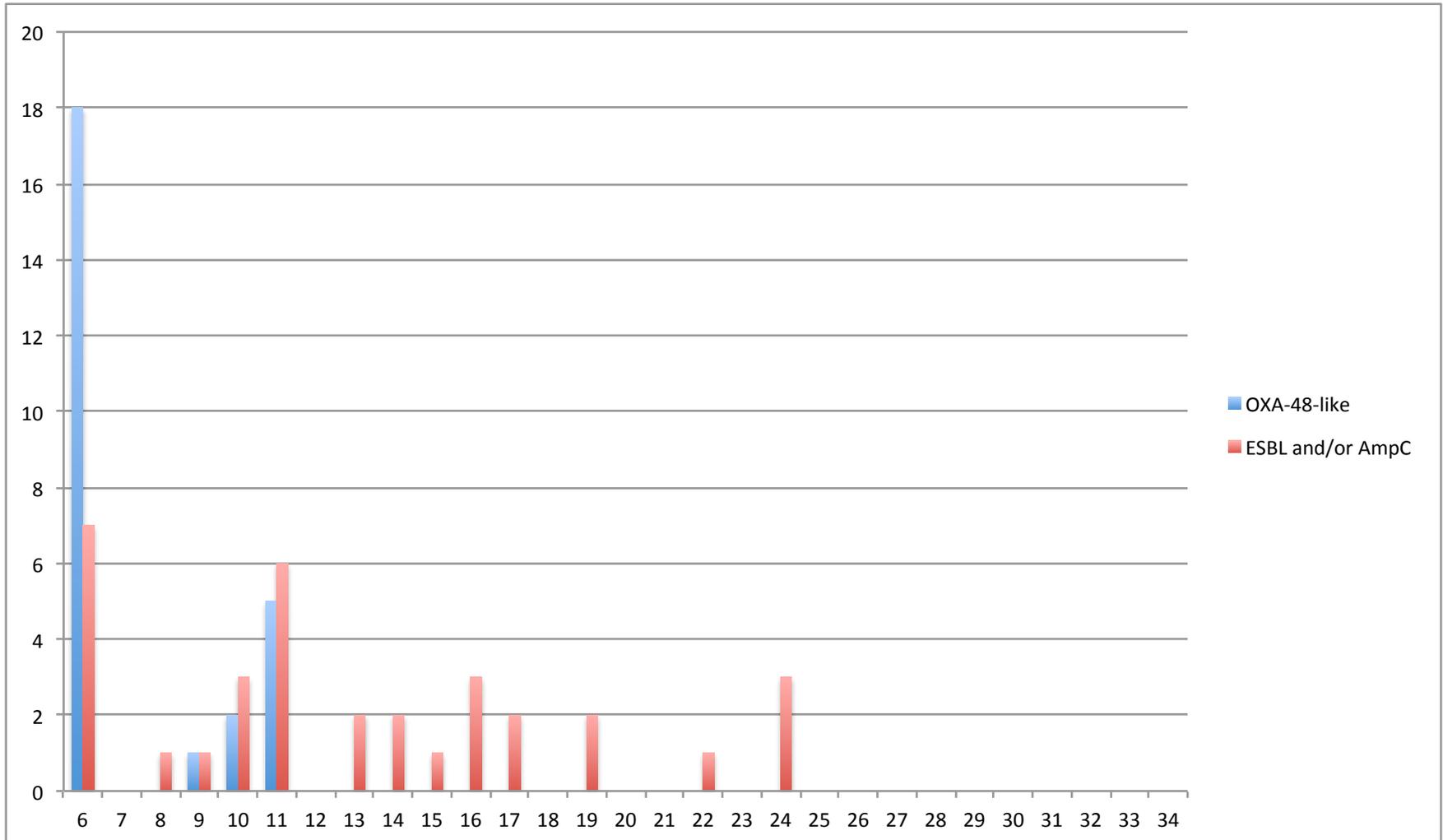
# Andra alternativ till karbapenemer: temocillin (30 µg)



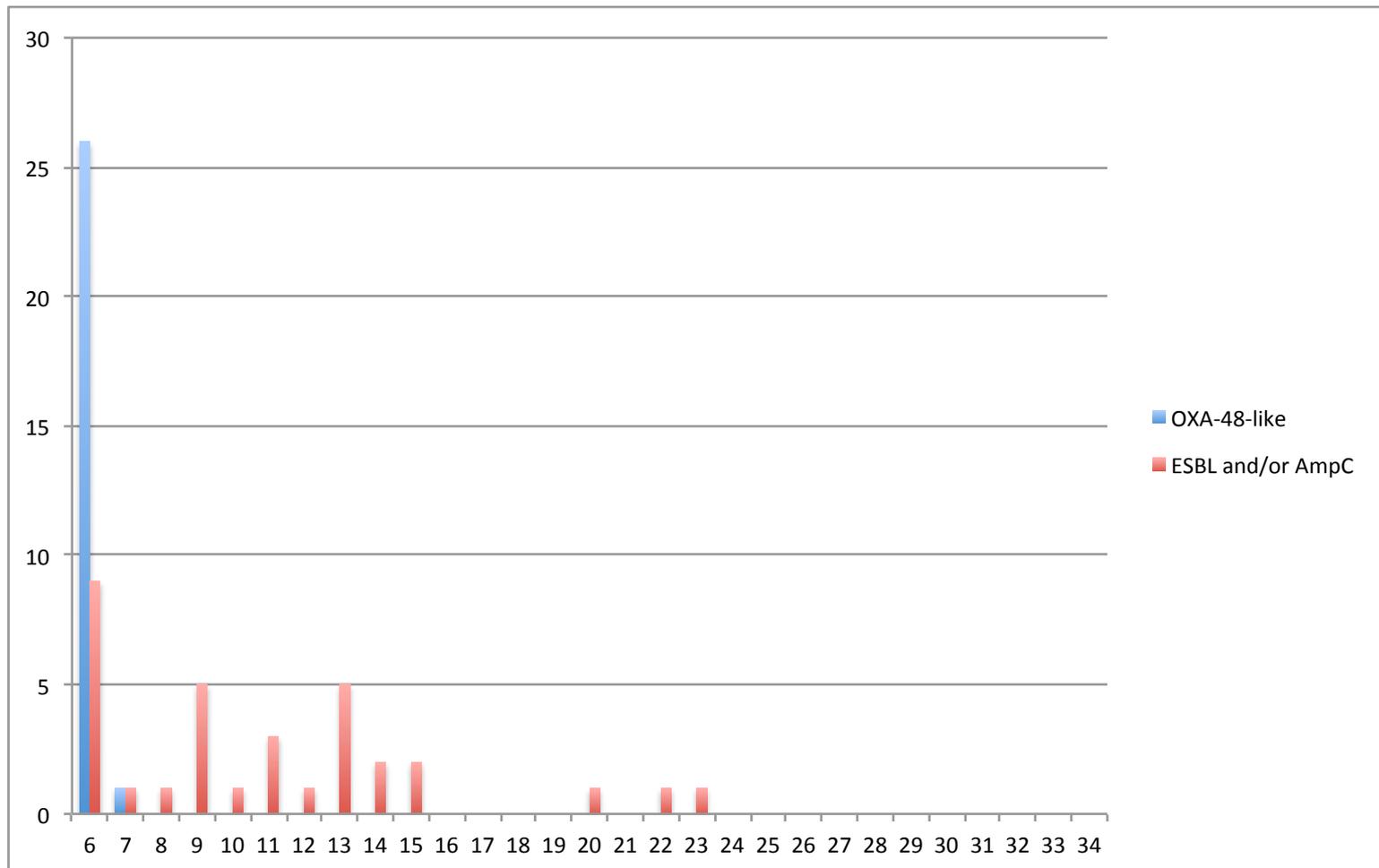
# Svenska data, Folkhälsomyndigheten



# Piperacillin-tazobactam (30 µg), Folkhälsomyndigheten



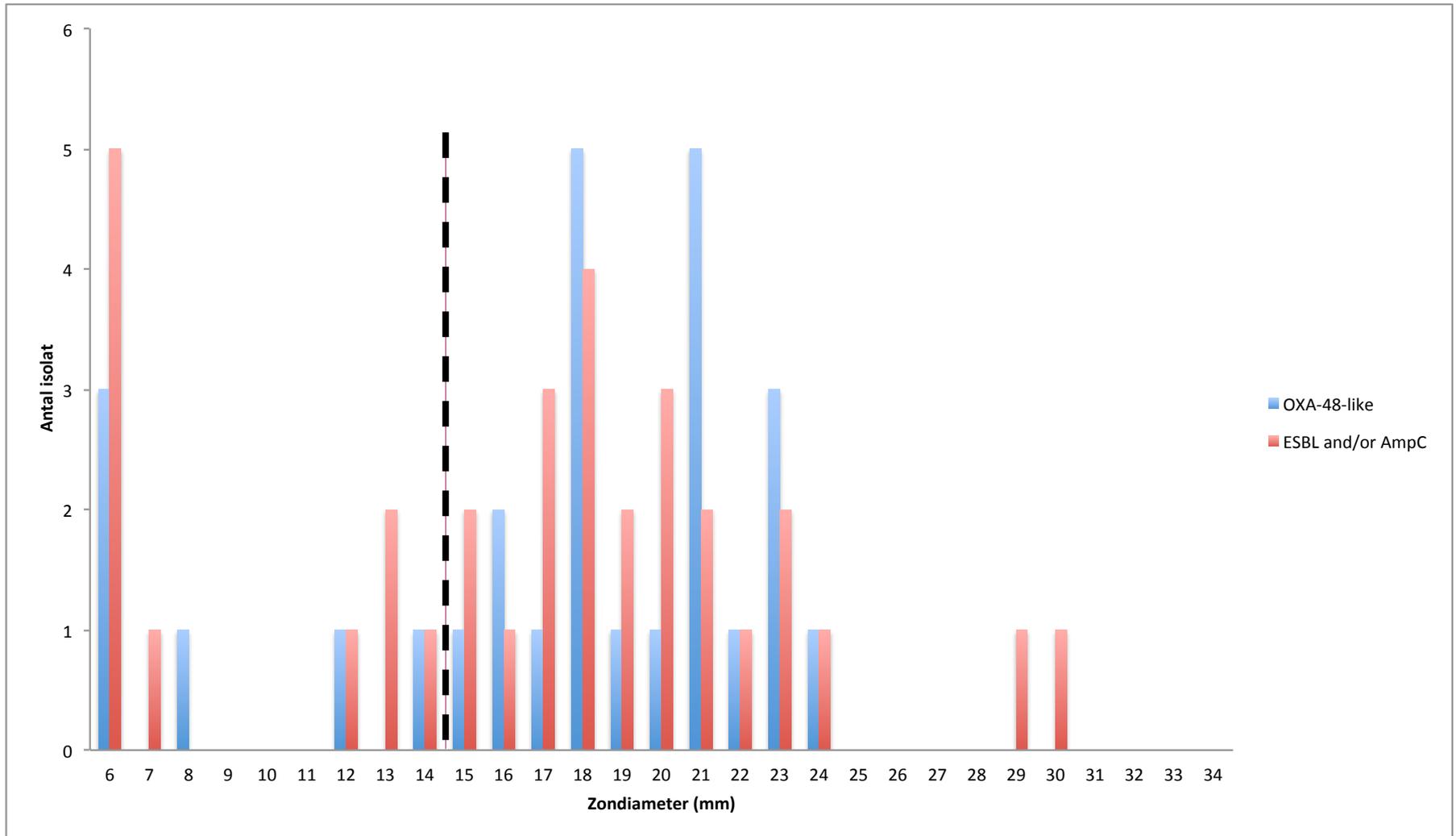
# Amoxicillin-klavulansyra (20/10 µg), Folkhälsomyndigheten



# Mecillinam (10 µg), Folkhälsomyndigheten



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# Slutsatser

- Kan bli nödvändigt att sätta en cut-off på 27 mm för att detektera alla Enterobacteriaceae med OXA-48
- Alternativen är att använda höggradig resistens mot piperacillin-tazobactam eller höggradig resistens mot amoxicillin-klavulansyra (t ex på urinodlingar)
- RAF rekommenderar nu att svenska laboratorier ska testa amoxicillin-klavulansyra (istället för ampicillin) – kan då användas som markör på OXA-48
- Temocillin kanske mindre aktuellt i primärscreening eftersom medlet inte används kliniskt
- Mecillinam och cefadroxil kan inte användas för fenotypisk detektion av OXA-48

# Tack till

- Karin Sjöström och Petra Edquist
- Svenska laboratorier som skickat in OXA-48 till Folkhälsomyndigheten