



News from EUCAST Development Laboratory (EDL)

Erika Matuschek
EUCAST Development Laboratory

Revised breakpoints

- Revision of zone diameter breakpoints related to changes in MIC breakpoints
 - Updated aminopenicillin breakpoints for *Enterobacterales*
 - Additional meningitis breakpoints
 - Removal of several I category breakpoints
- Revised disk diffusion screening breakpoint for beta-lactam resistance in viridans group streptococci

Screening for beta-lactam resistance in viridans group streptococci

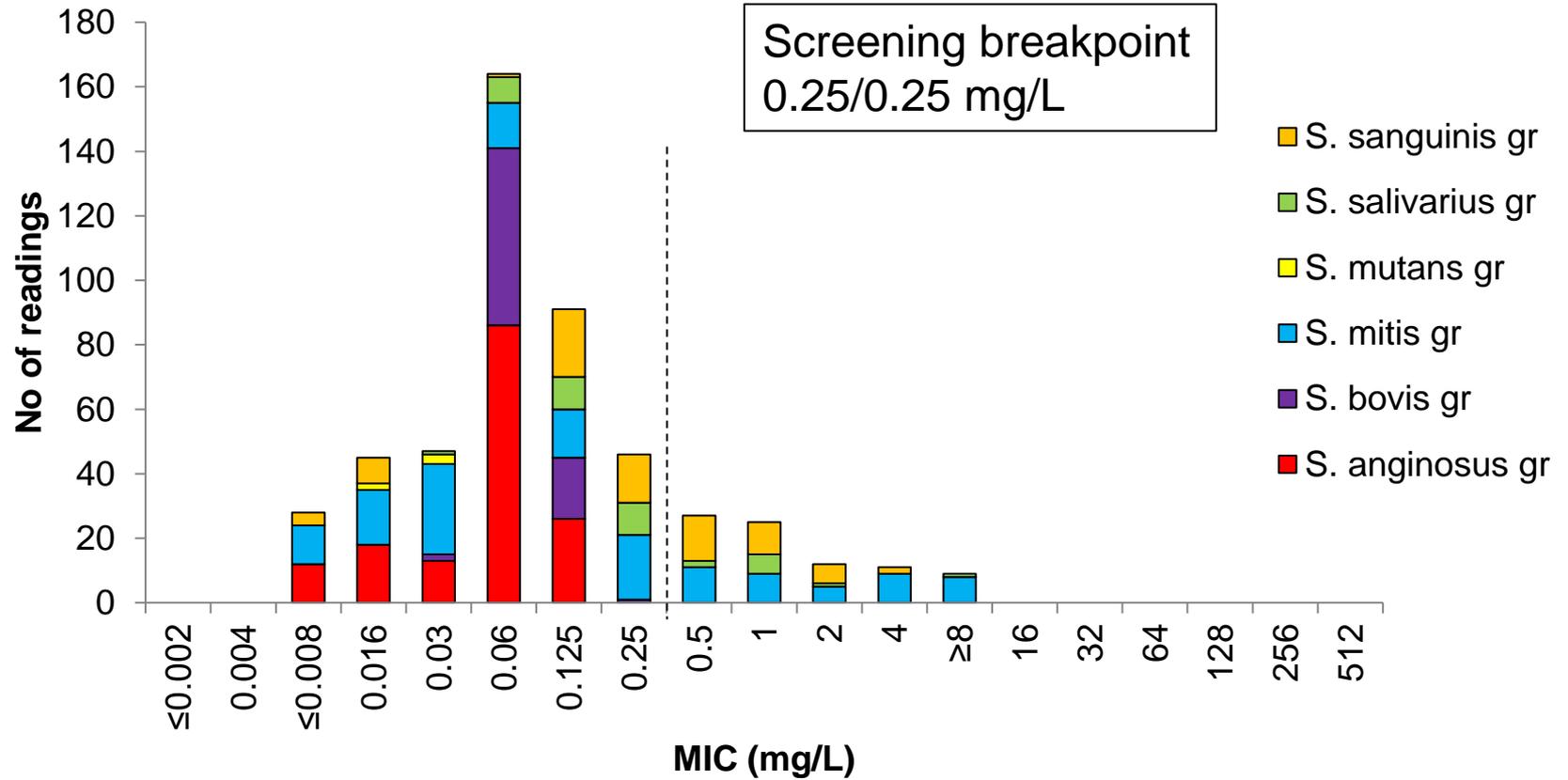
- A collaborative study with Streptococcal Reference Centre in France in 2022 generated new data for recent viridans group streptococci from invasive infections.
- As part of the study, benzylpenicillin 1 unit and other beta-lactam disks were evaluated as screening disks for beta-lactam resistance.
 - Benzylpenicillin performed best among the tested disks.

EUCAST Breakpoint Tables v 13.0

- Benzylpenicillin (MIC or disk diffusion) can be used to screen for beta-lactam resistance in viridans group streptococci.
- Isolates categorised as screen negative can be reported susceptible to beta-lactam agents for which clinical breakpoints are listed (including those with “Note”).
- Isolates categorised as screen positive should be tested for susceptibility to individual agents or reported resistant.

Benzylpenicillin MIC

Viridans group streptococci, 505 isolates

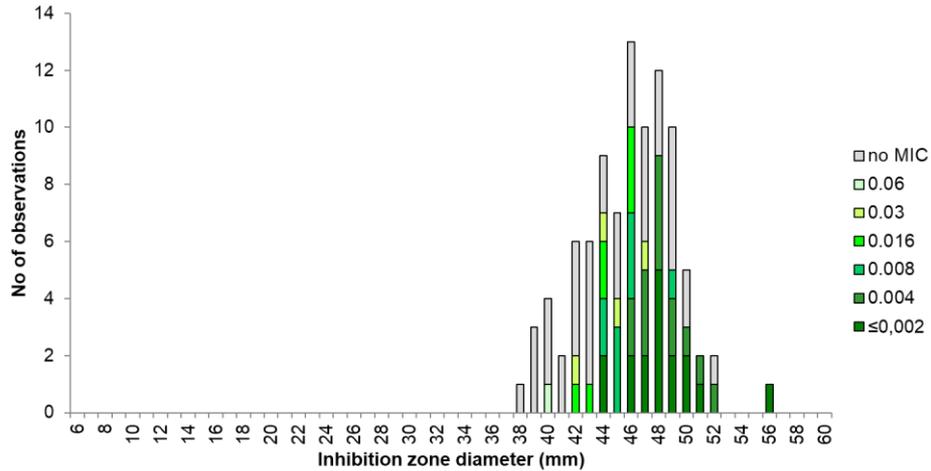


Disk diffusion *N. gonorrhoeae*

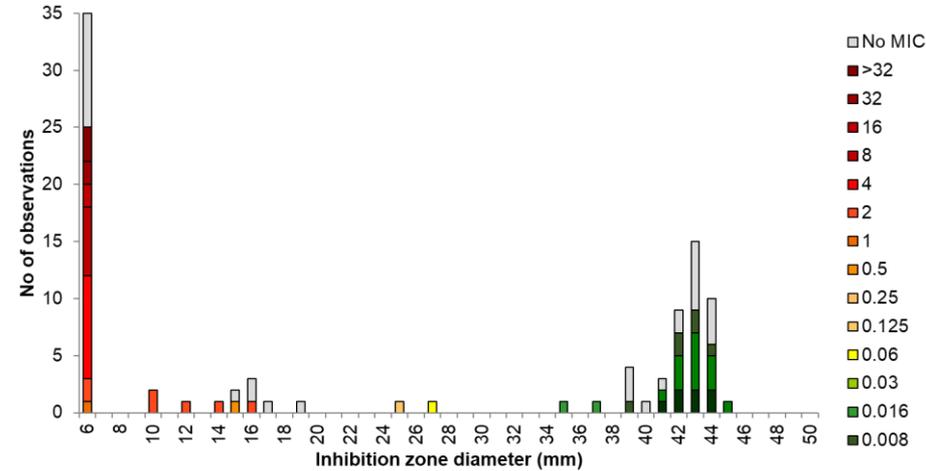
- Evaluation of an alternative medium for disk diffusion of *N. gonorrhoeae*
- Good correlation with MICs from Swedish NRL
- Evaluation of media from 3 manufacturers ongoing

Examples of MIC-zone diameter correlations for *N. gonorrhoeae*

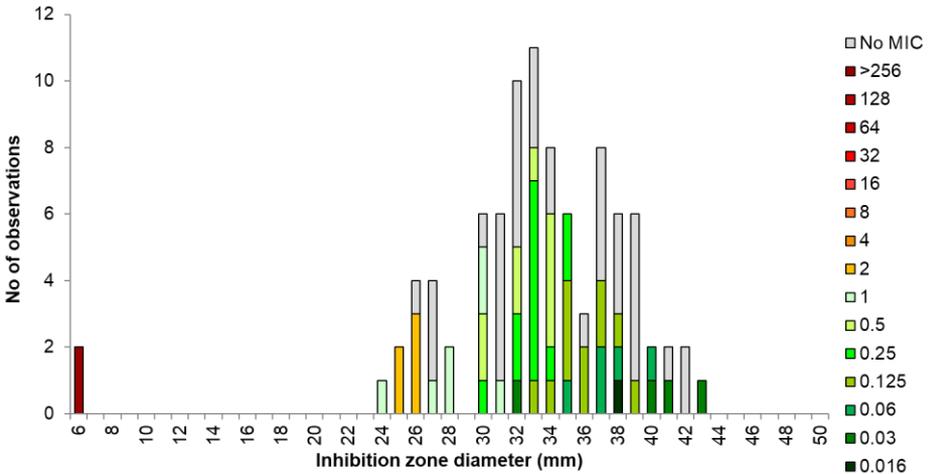
Ceftriaxone 30 µg vs. MIC
N. gonorrhoeae, 93 isolates



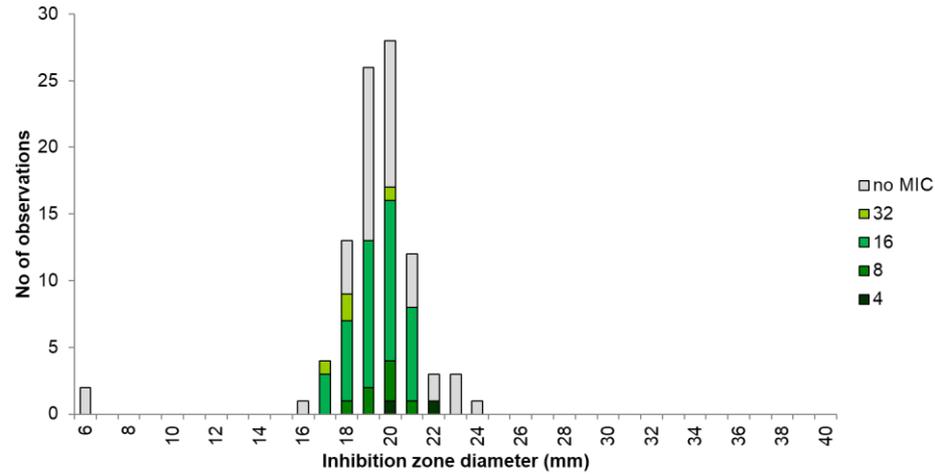
Pefloxacin 5 µg vs. ciprofloxacin MIC
N. gonorrhoeae, 93 isolates



Azithromycin 15 µg vs. MIC
N. gonorrhoeae, 92 isolates



Spectinomycin 25 µg vs. MIC
N. gonorrhoeae, 93 isolates



New antimicrobial agents

- Disk potency (CLSI-EUCAST joint working group protocol)
 - Phase 1 (10 disks) and 2 (2-4 disks)
- Media evaluation (CLSI-EUCAST joint working group protocol) – NEW!
- QC study (separate procedures)
- MIC-zone diameter correlation study to establish zone diameter breakpoints (separate procedures)

Media evaluation protocol

- Minimise factors (e.g. inoculum, incubation, measuring zones) other than the MH agar source that might affect the results.
 - QC strains and isolates with elevated MICs
 - Disks from at least 2 manufacturers
 - Media from at least 4 manufacturers

Media evaluation

Mean inhibition zone diameters (mm) from 3 repeats

	Test disk A			
	MH 1	MH 2	MH 3	MH 4
ATCC 25922	34	34	32	33
ATCC 27853	29	31	31	30
ATCC 700603	29	29	28	29
NCTC 13353	30	30	29	31
Clinical 1	22	22	22	23
Clinical 2	20	19	19	20

Test disk B			
MH 1	MH 2	MH 3	MH 4
34	34	32	33
30	31	31	30
29	29	29	28
31	30	30	31
22	22	21	23
20	19	20	21

Test disk C			
MH 1	MH 2	MH 3	MH 4
34	33	32	34
31	31	32	31
30	29	28	28
32	31	31	32
25	25	24	25
23	23	23	24

Disk evaluation

Mean inhibition zone diameters (mm) from 3 repeats

	MH 1		
	Disk A	Disk B	Disk C
ATCC 25922	34	34	34
ATCC 27853	29	30	31
ATCC 700603	29	29	30
NCTC 13353	30	31	32
Clinical 1	22	22	25
Clinical 2	20	20	23

MH 2		
Disk A	Disk B	Disk C
34	34	33
31	31	31
29	29	29
30	30	31
22	22	25
19	19	23

MH 3		
Disk A	Disk B	Disk C
32	32	32
31	31	32
28	29	28
29	30	31
22	21	24
19	20	23

MH 4		
Disk A	Disk B	Disk C
33	33	34
30	30	31
29	28	28
31	31	32
23	23	25
20	21	24

New antimicrobial agents in pipeline

- Cefepime-enmetazobactam
 - *Enterobacterales* and *P. aeruginosa*
- Aztreonam-avibactam
 - *Enterobacterales* and *P. aeruginosa*
- Ceftibuten-avibactam (potency decided)
- Imipenem-funobactam (phase 2 disk potency study ongoing)
- Contezolid (phase 2 disk potency study ongoing)
- ...and several others

Thanks!

- The EDL staff: Amra Basic, Onur Karatuna, Lucia Ortega, Lized Rodriguez and Gunnar Kahlmeter
- Emma Jonasson, Clinical Microbiology Växjö (RAST)
- **All clinical laboratories participating in studies, and contributing with data and/or isolates!**

Questions and/or problem?

Contact us!

erika.matuschek@eucast.org

jenny.ahman@eucast.org

