

ESGBIS → ESGBIES

**ESCMID/ESGBIES**

**Survey on antibiotic treatment of  
infective endocarditis**

- Objective of the survey
  - Describe current practice of Ab Rx in IE
  - Identify subjects for clinical research
- Dissemination of the survey to IE "specialists"
  - ESGBIES members
  - ISCIVD symposium registration process
  - European national IE networks (Spain, France, Italy)
  - Informally...

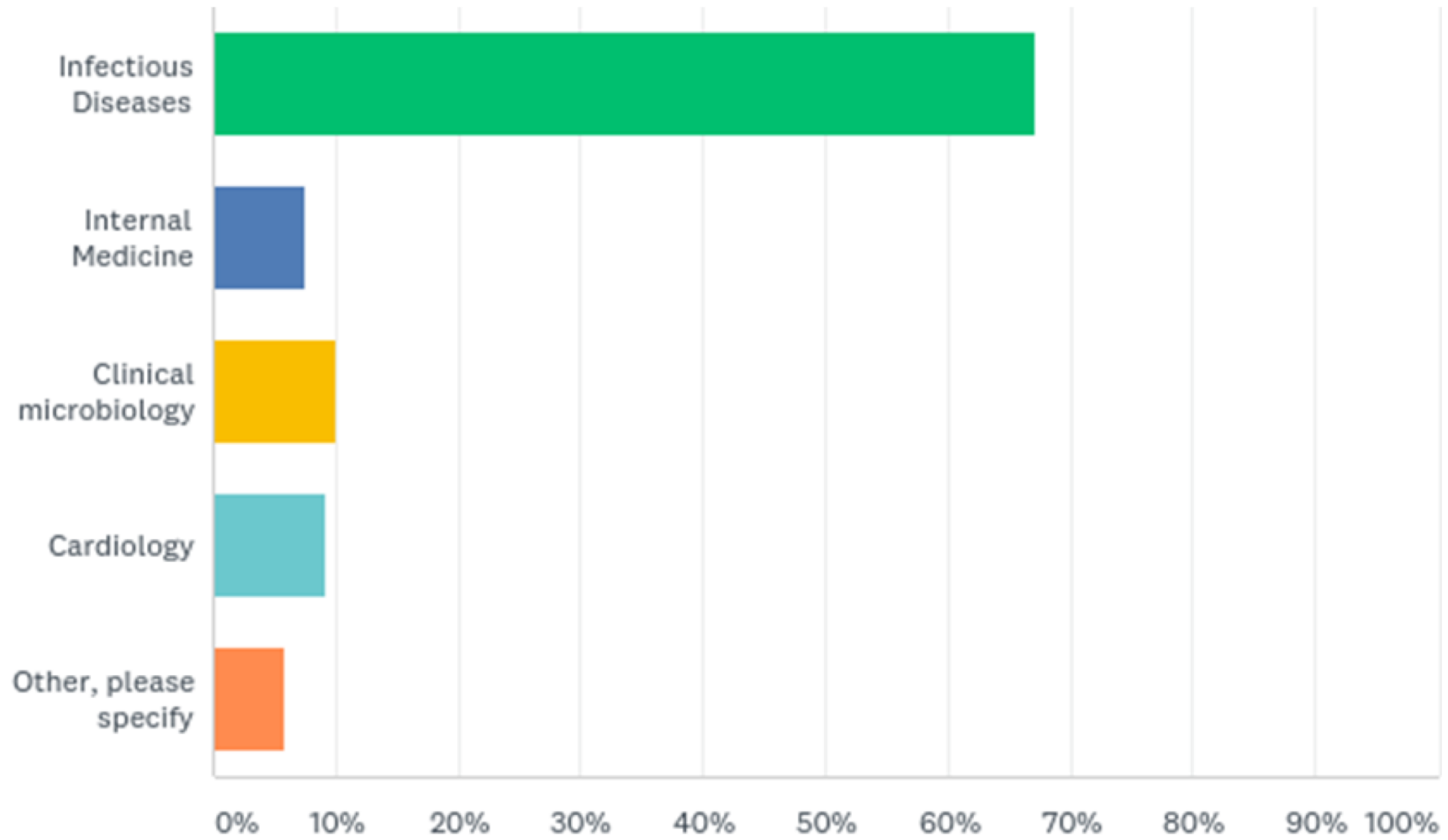
## Q2: What is your country of practice?

COUNTRIES	N
FR - France	37
IT - Italy	16
DE - Germany	13
ES - Spain	11
NL - Netherlands	5
GB – United Kingdom	3
Others ( $\leq 2$ responders/country)*	35

\*: Albania, Australia, Belgium, Bulgaria, Brazil, Belarus, Canada, Denmark, Georgia, Greece, Croatia, Israel, Lebanon, Malta, Panama, Poland, Romania, Sweden, Singapore, Turks and Calcos Islands, Tunisia, Turkey, Ukraine, United States

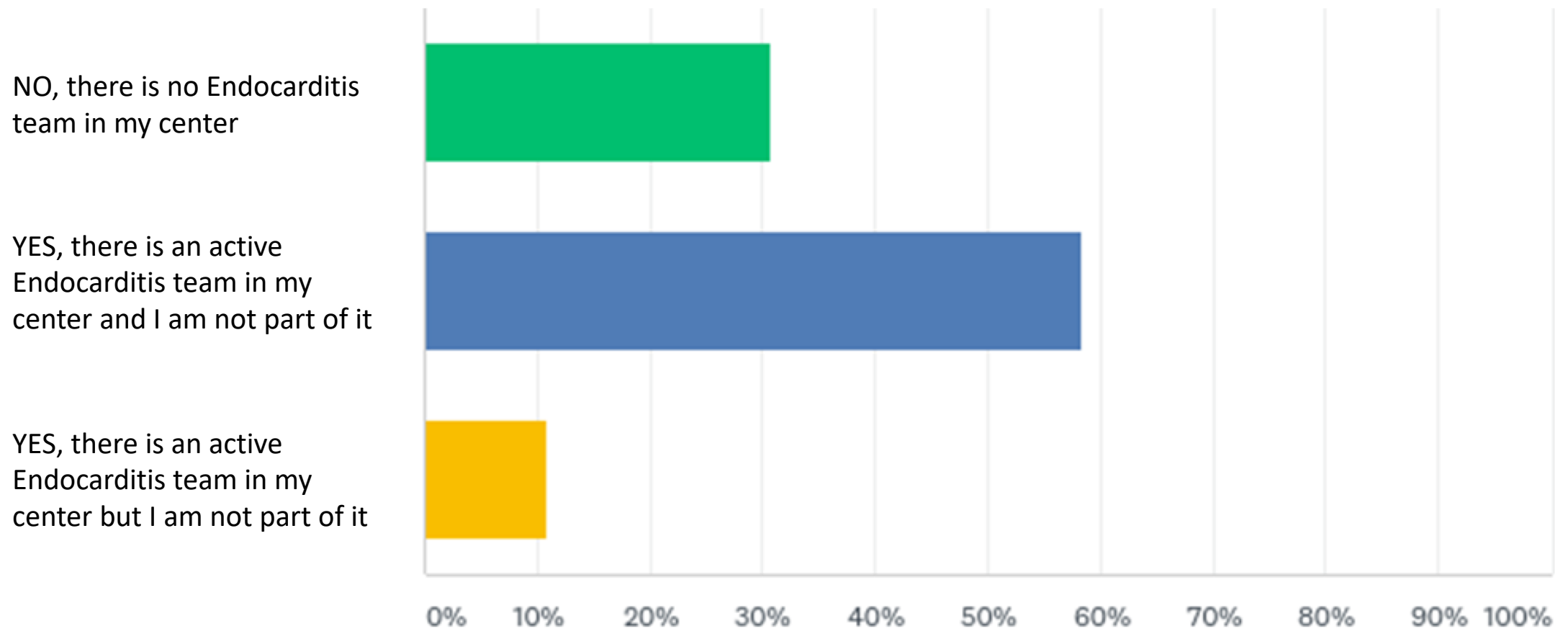
• Answered: 120 Skipped: 0

# Q4: What is your specialty?



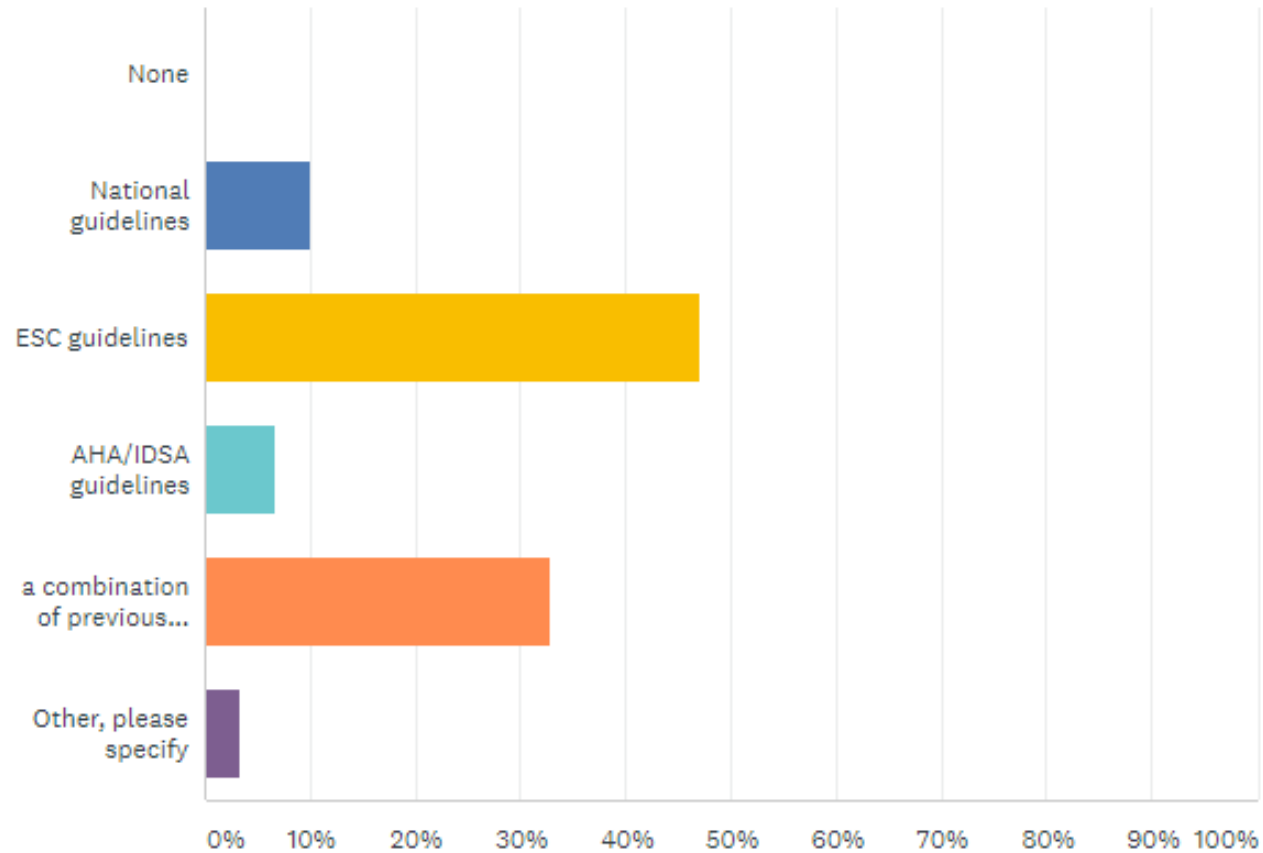
• Answered: 120 Skipped: 0

Q5: Is there an active "Endocarditis Team" in your medical center ? If yes, are you part of it?



• Answered: 120 Skipped: 0

# Q6: Which endocarditis guidelines do you use in your own clinical practice?



• Answered: 119 Skipped: 1

Q7: Would you prescribe Rifampicin (in combination with at least one other antistaphylococcal drug) in the following situations where the staphylococcal strain is known to be susceptible to Rifampicin, and provided that there is no contra-indications to prescribe Rifampicin ?

	NEVER	SOMETIMES	ALWAYS	TOTAL
Native valve MSSA IE	73,83% 79	25,23% 27	0,93% 1	107
Native valve MRSA IE	63,55% 68	31,78% 34	4,67% 5	107
Prosthetic valve MSSA IE	3,67% 4	20,18% 22	76,15% 83	109
Prosthetic valve MRSA IE	0,91% 1	18,18% 20	80,91% 89	110
Pacemaker-associated MSSA IE	11,82% 13	48,18% 53	40,00% 44	110
Pacemaker-associated MRSA IE	6,36% 7	47,27% 52	46,36% 51	110

• Answered: 110 Skipped: 10

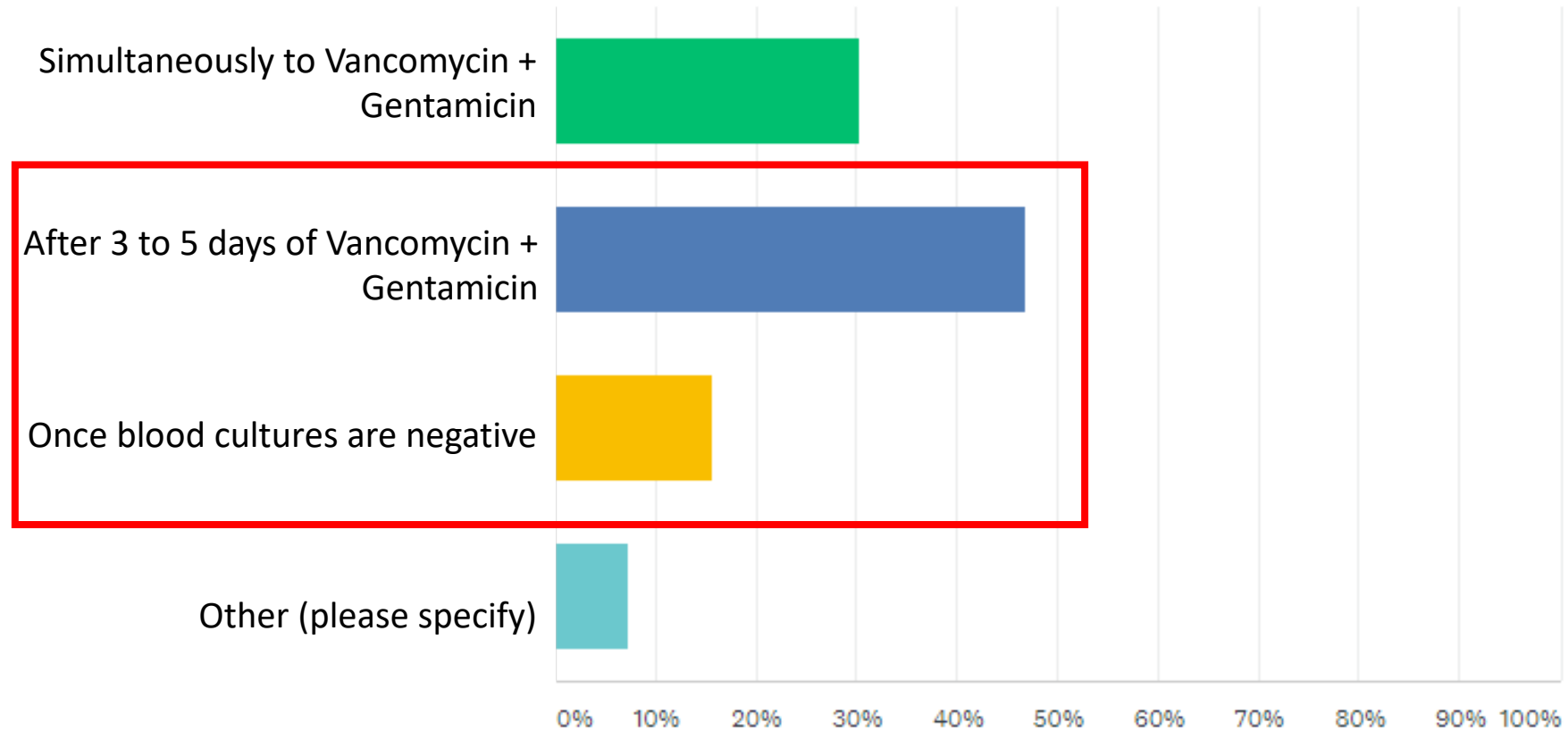
Q8: Among the following Rifampicin-containing regimens to be used as a **first-line treatment** for **prosthetic valve, Rifampicin-susceptible MRSA IE**, how likely would you prescribe each regimen (provided that the strain is susceptible to each drug)? Please mark your answer as follows: 0 = never, and likeliness from 1 (very unlikely) to 5 (very likely)

	0	1	2	3	4	5	TOTAL
▼ Vancomycin + Gentamicin + Rifampicin	4,55% 5	5,45% 6	6,36% 7	12,73% 14	30,91% 34	40,00% 44	110
▼ Daptomycin + Gentamicin + Rifampicin	5,50% 6	16,51% 18	14,68% 16	20,18% 22	27,52% 30	15,60% 17	109
▼ Levofloxacin + Rifampicin	50,00% 54	21,30% 23	12,96% 14	9,26% 10	4,63% 5	1,85% 2	108
▼ Daptomycin + Rifampicin	12,96% 14	14,81% 16	14,81% 16	24,07% 26	20,37% 22	12,96% 14	108
▼ Linezolid + Rifampicin	45,87% 50	27,52% 30	11,93% 13	10,09% 11	2,75% 3	1,83% 2	109

• Answered: 110 Skipped: 10

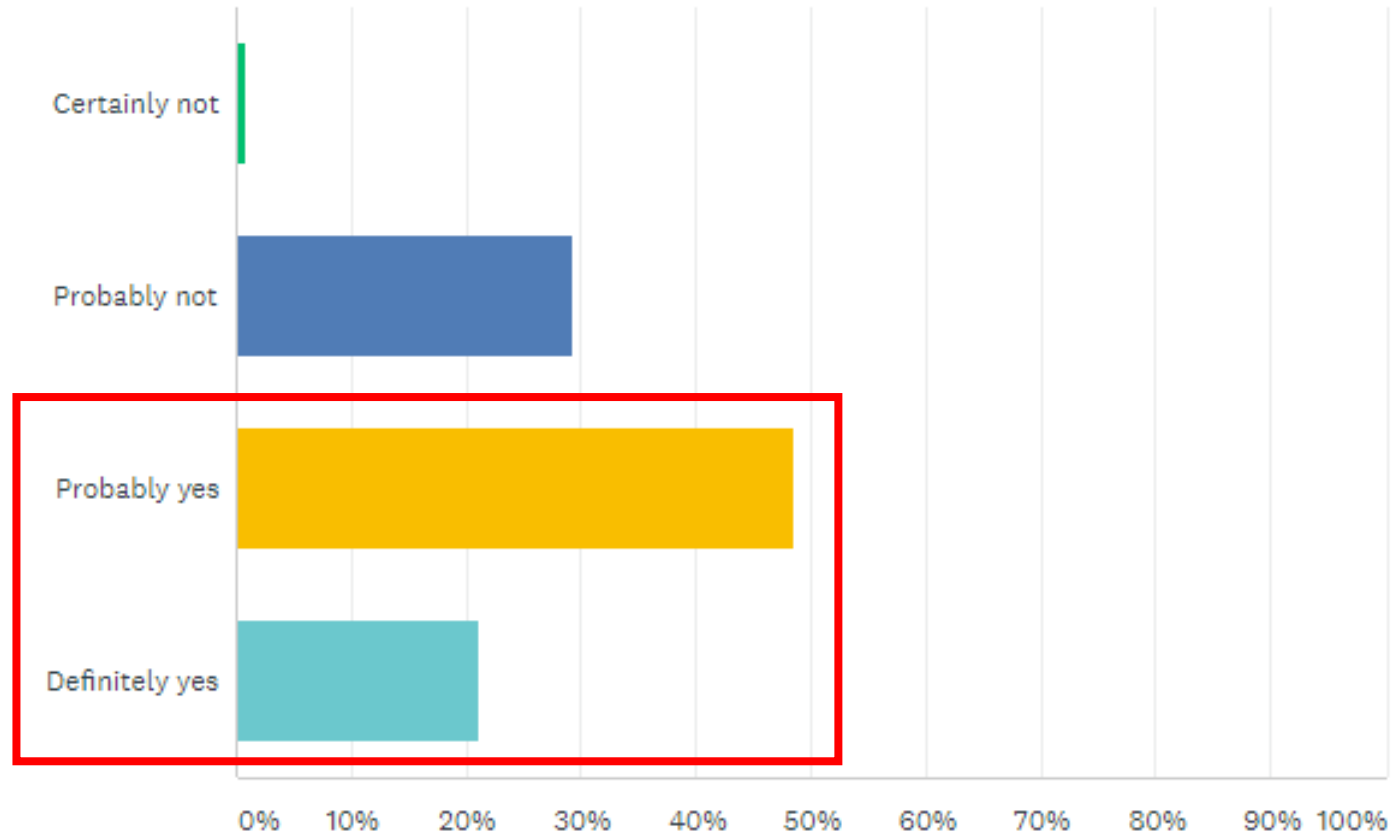


Q9: When prescribing Rifampicin as part of a first-line combination with Vancomycin and Gentamicin for MRSA PV IE, which of the following options best reflects your practice ? (single choice)



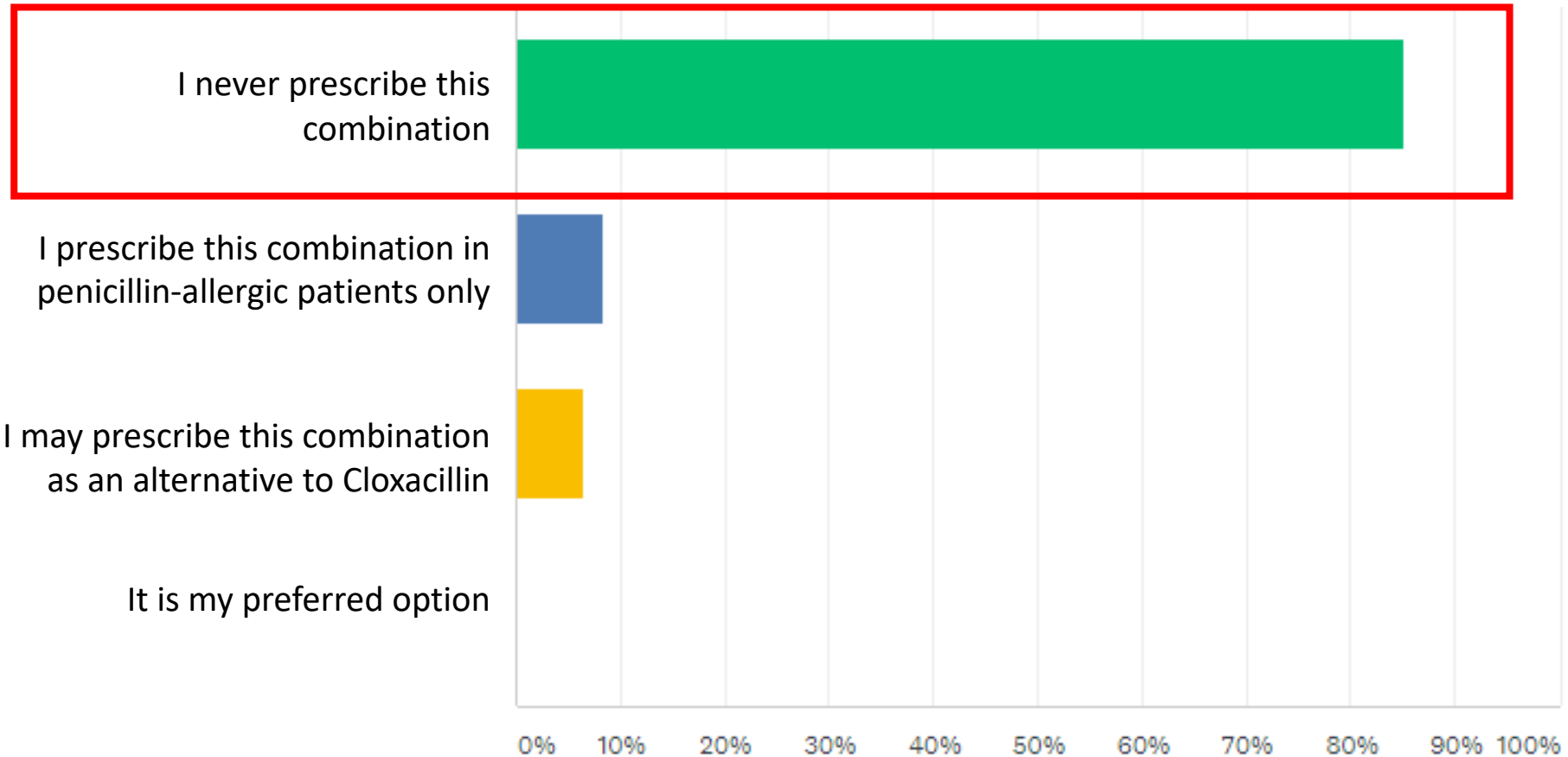
• Answered: 110 Skipped: 10

Q10: Do you think that uncertainty regarding the benefit:risk ratio associated with prescribing either immediate or deferred rifampicin as part of first-line combination therapy for prosthetic valve MRSA IE is high enough to deserve a comparative clinical trial ?



• Answered: 110 Skipped: 10

Q11: What best reflects your current practice regarding the Cotrimoxazole + Clindamycin combination given intravenously as a first-line treatment for native valve MSSA IE ?



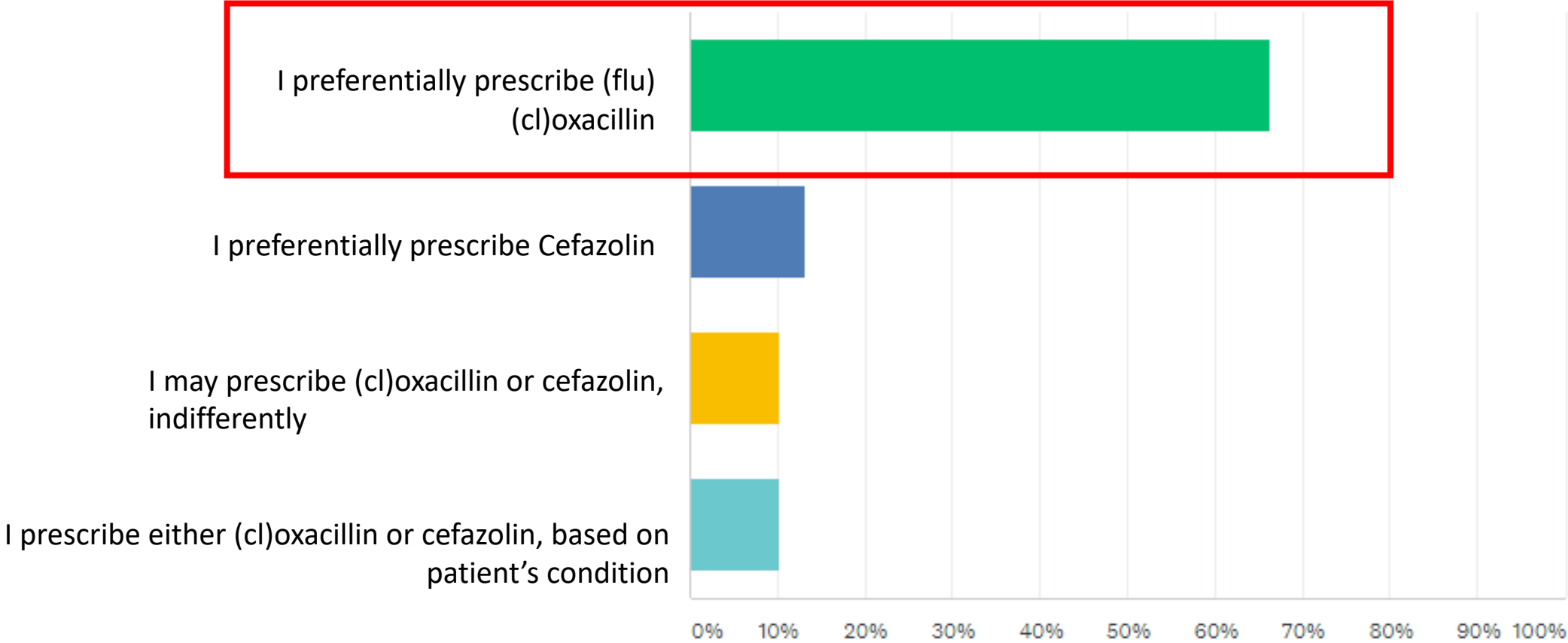
• Answered: 109 Skipped: 11

Q12: For the first-line treatment of native valve MRSA IE, which of the following regimens would you prescribe, based on your current practice (provided that glomerular filtration rate is normal)?

	NEVER	SOMETIMES	ALWAYS	TOTAL	MOYENNE PONDÉRÉE
Vancomycin alone 30 mg/kg/d	33,33% 33	34,34% 34	32,32% 32	99	1,99
Vancomycin alone 40 mg/kg/d	49,47% 47	43,16% 41	7,37% 7	95	1,58
Vancomycin alone 50-60 mg/kg/d	73,40% 69	19,15% 18	7,45% 7	94	1,34
Daptomycin alone 10 mg/kg/d	26,88% 25	56,99% 53	16,13% 15	93	1,89
Daptomycin alone 12 mg/kg/d or more	50,54% 47	43,01% 40	6,45% 6	93	1,56
Vancomycin + a second agent	28,13% 27	57,29% 55	14,58% 14	96	1,86
Daptomycin + a second agent	23,23% 23	55,56% 55	21,21% 21	99	1,98
Cotrimoxazole + Clindamycin	89,36% 84	10,64% 10	0,00% 0	94	1,11

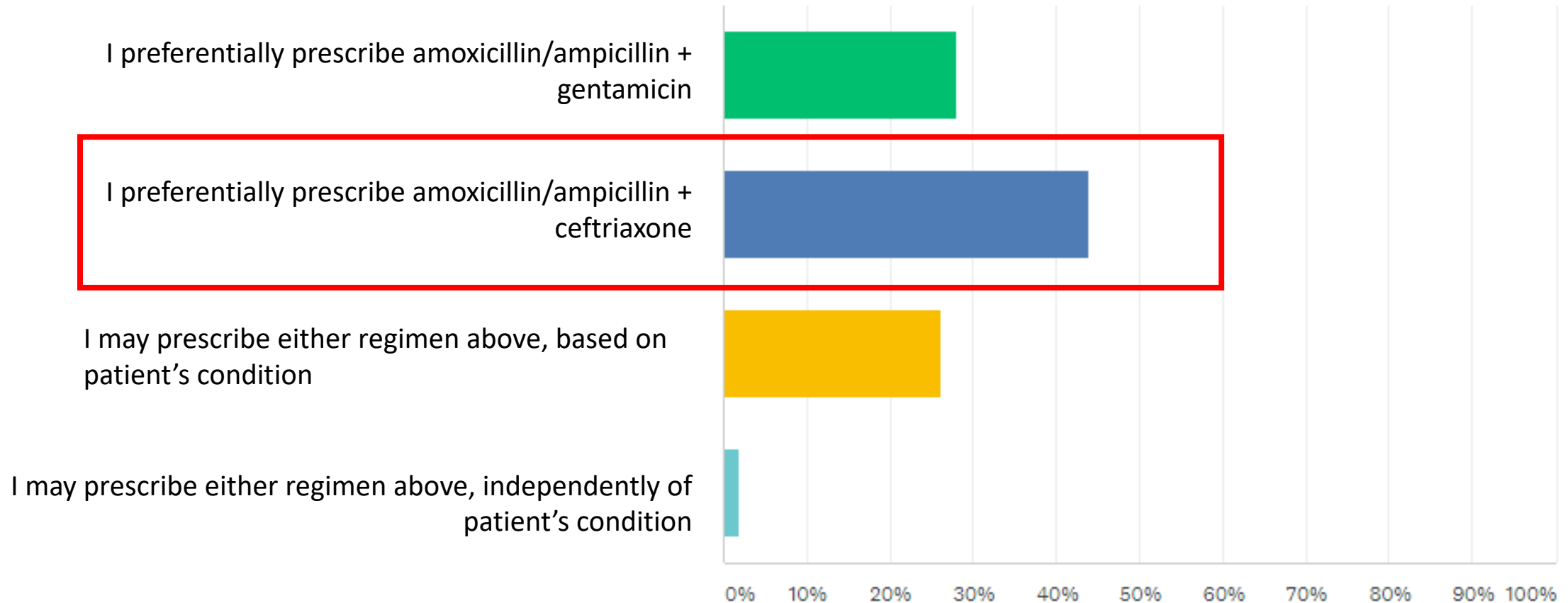
• Answered: 110 Skipped: 10

Q13: Which of the following statements best reflects your current practice regarding the  $\beta$ -lactam you prescribe as a first-line treatment for native valve MSSA IE ?



• Answered: 109 Skipped: 11

# Q14: What best reflects your current practice regarding first-line treatment for *E. faecalis* IE ?



• Answered: 109 Skipped: 11

Q15: Would you prescribe Gentamicin (in combination with at least one other antistaphylococcal drug) in the following situations where the staphylococcal strain is known to be susceptible to Gentamicin, and provided that there is no contra-indications to prescribe Gentamicin ?

	NEVER	SOMETIMES	ALWAYS	TOTAL
Native valve MSSA IE	65,38% 68	30,77% 32	3,85% 4	104
Native valve MRSA IE	56,31% 58	35,92% 37	7,77% 8	103
Prosthetic valve MSSA IE	14,15% 15	39,62% 42	46,23% 49	106
Prosthetic valve MRSA IE	10,48% 11	38,10% 40	51,43% 54	105
Pacemaker-associated MSSA IE	27,36% 29	54,72% 58	17,92% 19	106
Pacemaker-associated MRSA IE	23,81% 25	55,24% 58	20,95% 22	105

• Answered: 109 Skipped: 11

Q16: If using daptomycin as a salvage therapy for MRSA IE that failed a vancomycin-containing regimen, how likely would you prescribe each of the following regimens (provided that the strain is susceptible to each drug) ? Please mark your answer as follows: 0 = never, and likeliness from 1 (very unlikely) to 5 (very likely).

	0	1	2	3	4	5	TOTAL
▼ Daptomycin alone	35,79% 34	13,68% 13	12,63% 12	12,63% 12	11,58% 11	13,68% 13	95
▼ Daptomycin + cefazolin	44,90% 44	11,22% 11	11,22% 11	12,24% 12	15,31% 15	5,10% 5	98
▼ Daptomycin + ceftaroline	25,77% 25	12,37% 12	6,19% 6	24,74% 24	21,65% 21	9,28% 9	97
▼ Daptomycin + (cl)oxacillin	33,68% 32	14,74% 14	7,37% 7	10,53% 10	17,89% 17	15,43% 15	95
▼ Daptomycin + fosfomicin	27,27% 27	10,10% 10	13,13% 13	19,19% 19	18,18% 18	12,12% 12	99
▼ Daptomycin + rifampicin	17,00% 17	13,00% 13	19,00% 19	12,00% 12	24,00% 24	15,00% 15	100

**57%**

• Answered: 100 Skipped: 20



Q17: If using ceftaroline as a salvage therapy for MRSA IE that failed a vancomycin-containing regimen, how likely would you prescribe each of the following regimens (provided that the strain is susceptible to each drug) ? Please mark your answer as follows: 0 = never, and likeliness from 1 (very unlikely) to 5 (very likely).

	0	1	2	3	4	5	TOTAL
▼ Ceftaroline alone	32,29% 31	22,92% 22	8,33% 8	17,71% 17	10,42% 10	8,33% 8	96
▼ Ceftaroline + cotrimoxazole	59,38% 57	16,67% 16	9,38% 9	12,50% 12	2,08% 2	0,00% 0	96
▼ Ceftaroline + Daptomycin	15,31% 15	4,08% 4	10,20% 10	15,31% 15	27,55% 27	27,55% 27	vs. 9% for Dapto + Cefta!
▼ Ceftaroline + fosfomycin	41,67% 40	13,54% 13	13,54% 13	15,63% 15	11,46% 11	4,17% 4	
▼ Ceftaroline + Imipenem-cilastatin	60,42% 58	13,54% 13	13,54% 13	6,25% 6	3,13% 3	3,13% 3	96

• Answered: 102 Skipped: 18

Q18: Among the following regimens to be used orally after 2 weeks of an effective IV treatment for an uncomplicated MSSA IE, how likely would you prescribe each regimen (provided that the strain is susceptible to each drug) ? Please mark your answer as follows: 0 = never, and likeliness from 1 (very unlikely) to 5 (very likely).

	0	1	2	3	4	5	TOTAL
(flu) (cl)oxacillin alone	72,92% 70	9,38% 9	1,04% 1	5,21% 5	4,17% 4	7,29% 7	96
(flu) (cl)oxacillin+ Rifampicin	60,20% 59	16,33% 16	4,08% 4	8,16% 8	7,14% 7	4,08% 4	98
(flu) (cl)oxacillin+ Fusidic acid	71,58% 68	14,74% 14	1,05% 1	4,21% 4	7,37% 7	1,05% 1	95
Linezolid alone	57,73% 56	14,43% 14	7,22% 7	13,40% 13	5,15% 5	2,06% 2	97
Linezolid + Rifampicin	51,02% 50	14,29% 14	14,29% 14	10,20% 10	6,12% 6	4,08% 4	98
Linezolid + Fusidic acid	66,67% 64	12,50% 12	9,38% 9	8,33% 8	3,13% 3	0,00% 0	96
Levofloxacin + Rifampicin	22,22% 22	7,07% 7	4,04% 4	12,12% 12	21,21% 21	33,33% 33	99
Cotrimoxazole + Rifampicin	30,61% 30	20,41% 20	9,18% 9	22,45% 22	11,22% 11	6,12% 6	98
Cotrimoxazole + Clindamycin	44,33% 43	22,68% 22	9,28% 9	12,37% 12	8,25% 8	3,09% 3	97

• Answered: 104 Skipped: 16

Q19: Among the following regimens to be used orally after 2 weeks of an effective IV treatment for an uncomplicated MRSA IE, how likely would you prescribe each regimen (provided that the strain is susceptible to each drug) ? Please mark your answer as follows: 0 = never, and likeliness from 1 (very unlikely) to 5 (very likely).

	0	1	2	3	4	5	TOTAL
Linezolid alone	52,13% 49	13,83% 13	5,32% 5	10,64% 10	11,70% 11	6,38% 6	94
Linezolid + Rifampicin	30,93% 30	14,43% 14	12,37% 12	18,56% 18	13,40% 13	10,31% 10	97
Linezolid + Fusidic acid	57,29% 55	16,67% 16	6,25% 6	12,50% 12	5,21% 5	2,08% 2	96
Levofloxacin + Rifampicin	22,45% 22	7,14% 7	5,10% 5	17,35% 17	23,47% 23	24,49% 24	98
Cotrimoxazole + Rifampicin	30,61% 30	20,41% 20	4,08% 4	21,43% 21	15,31% 15	8,16% 8	98
Cotrimoxazole + Clindamycin	46,46% 46	20,20% 20	5,05% 5	17,17% 17	8,08% 8	3,03% 3	99

• Answered: 104 Skipped: 16

Q20: Among the following regimens to be used orally after 2 weeks of an effective IV treatment for an **uncomplicated *E. faecalis* IE**, how likely would you prescribe each regimen (provided that the strain is susceptible to each drug) ? Please mark your answer as follows: 0 = never, and likeliness from 1 (very unlikely) to 5 (very likely).

	0	1	2	3	4	5	TOTAL
Linezolid + Rifampicin	54,17% 52	16,67% 16	5,21% 5	13,54% 13	8,33% 8	2,08% 2	96
Linezolid + Moxifloxacin	54,74% 52	17,89% 17	7,37% 7	9,47% 9	5,26% 5	5,26% 5	95
Amoxicillin alone	33,67% 33	9,18% 9	12,24% 12	13,27% 13	10,20% 10	21,43% 21	98
Amoxicillin + Rifampicin	38,78% 38	21,43% 21	9,18% 9	13,27% 13	13,27% 13	4,08% 4	98
Amoxicillin + Moxifloxacin	50,00% 49	15,31% 15	12,24% 12	11,22% 11	8,16% 8	3,06% 3	98

• Answered: 104 Skipped: 16

Q21: Among the following regimens to be used orally after 2 weeks of an effective IV treatment for an uncomplicated IE due to penicillin fully **susceptible oral or group D streptococci (MIC < 1 mg/L)**, how likely would you prescribe each regimen (provided that the strain is susceptible to each drug) ? Please mark your answer as follows: 0 = never, and likeliness from 1 (very unlikely) to 5 (very likely).

	0	1	2	3	4	5	TOTAL
Amoxicillin alone	17,17% 17	4,04% 4	8,08% 8	14,14% 14	19,19% 19	37,37% 37	99
Amoxicillin + Rifampicin	40,40% 40	13,13% 13	10,10% 10	19,19% 19	13,13% 13	4,04% 4	99
Amoxicillin + Moxifloxacin	49,00% 49	12,00% 12	10,00% 10	15,00% 15	8,00% 8	6,00% 6	100
Linezolid + Rifampicin	57,14% 56	13,27% 13	16,33% 16	6,12% 6	5,10% 5	2,04% 2	98
Linezolid + Moxifloxacin	60,20% 59	17,35% 17	11,22% 11	6,12% 6	3,06% 3	2,04% 2	98

• Answered: 104 Skipped: 16

Q22: Among the following regimens to be used orally after 2 weeks of an effective IV treatment for an uncomplicated IE due to oral or group D streptococci with Penicillin MIC > 1 mg/L, how likely would you prescribe each regimen (provided that the strain is susceptible to each drug) ? Please mark your answer as follows: 0 = never, and likeliness from 1 (very unlikely) to 5 (very likely).

	0	1	2	3	4	5	TOTAL
Linezolid alone	41,67% 40	15,63% 15	13,54% 13	11,46% 11	7,29% 7	10,42% 10	96
Linezolid + Rifampicin	44,79% 43	13,54% 13	7,29% 7	14,58% 14	14,58% 14	5,21% 5	96
Linezolid + Moxifloxacin	50,53% 48	11,58% 11	8,42% 8	16,84% 16	10,53% 10	2,11% 2	95
Amoxicillin alone	66,67% 64	13,54% 13	5,21% 5	6,25% 6	4,17% 4	4,17% 4	96
Amoxicillin + Rifampicin	39,80% 39	20,41% 20	9,18% 9	11,22% 11	12,24% 12	7,14% 7	98
Amoxicillin + Moxifloxacin	41,41% 41	18,18% 18	8,08% 8	16,16% 16	11,11% 11	5,05% 5	99

• Answered: 104 Skipped: 16

# Snapshot on practices

- Gentamicin in SA IE: **65% never** on NVIE, **≈50%** on PVIE
- (flu)(cl)oxacillin preferred to cefazolin for NVSA IE: **65%**
- Rifampicin-containing regimens for PV, Rifampicin-susceptible MRSA IE
  - **1st**: Vancomycin+Rifampicin+Gentamicin
  - **2<sup>nd</sup>**: Daptomycin+Rifampicin±Gentamicin
  - **50% NEVER**: Levofloxacin+Rifampicin and Linezolid+Rifampicin
  - Delayed introduction of Rifampicin: **No 35% - YES 60%**
- SMX/TMP + Clindamycin as a first-line treatment for NV MSSA IE: **>80% NO**
- First-line treatment for *E. faecalis* IE: Amoxicillin+Ceftriaxone **45%**
- Salvage therapy for MRSA IE that failed a vancomycin-containing regimen
  - Likely use of Daptomycin+Ceftarolin **30%** – Ceftarolin+Daptomycin **55% ?!**
- Oral switch for SA IE
  - MSSA: (flu)cloxacillin (alone or in combo) **< 15%** – Levofloxacin+Rifampicin **55%**
  - MRSA: Levofloxacin+Rifampicin **55%**

# Needs in clinical evaluation and/or research

- Immediate vs deferred introduction of Rif in SAPVIE?: **YES > 70%**
- Best salvage therapy for MRSA IE that failed a vancomycin-containing regimen ?
- Need for a consensus on oral switch regimens after 2 weeks of IV Rx
  - Comparative trial?
  - Standardized practice and observational study?
- Dalbavancin: efficacy, dosage, duration
- Daptomycin + ASBL
  - Which ASBL (oxacillin, cefazolin, ceftarolin)?
  - Comparative or observational design?



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