

Intended Result	Your Report	Your Score
Specimen 4146 <i>Candida tropicalis</i>	<i>Candida tropicalis</i>	2
Amphotericin B susceptible	susceptible	2
Anidulafungin susceptible	susceptible	2
Fluconazole susceptible	susceptible	2
Flucytosine susceptible	susceptible	2
Voriconazole susceptible	susceptible	2
Specimen 4147 <i>Aspergillus fumigatus</i> species complex	<i>Aspergillus fumigatus</i> species	2
Amphotericin B susceptible	susceptible	2
Anidulafungin susceptible	susceptible	2
Fluconazole not applicable	not examined	Not scored
Flucytosine not applicable	not examined	Not scored
Itraconazole susceptible	susceptible	2
Voriconazole susceptible	susceptible	2

Cumulative score information

Total number of specimens sent to you for **UK NEQAS for Antifungal susceptibility** over the last 3 distributions is 6

Specimen numbers 3837 3838 4007 4008 4146 4147 have been sent.

Number of specimens received too late for analysis (not scored) 0

Your cumulative score for the specimen/test combinations that you reported was 68 out of a possible total of 68

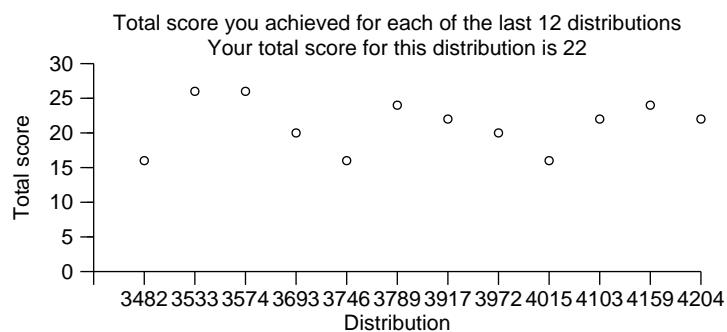
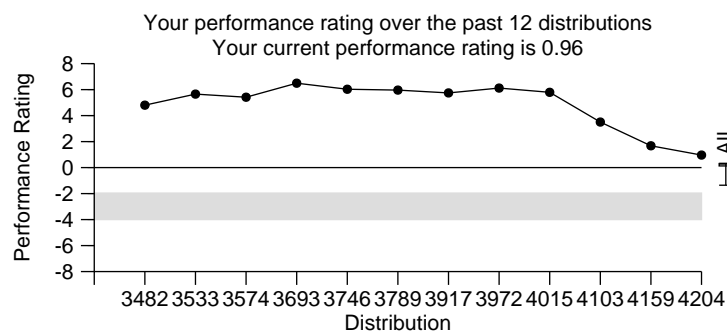
The mean score calculated from the reports returned by UK laboratories testing the specimen/test combinations you examined was 65.90 with a standard error of 2.18

Performance rating

Your performance rating for **UK NEQAS for Antifungal susceptibility** (i.e. the number of standard errors by which your cumulative score lies above or below the mean for **UK** laboratories) is 0.96

A performance rating of more than 1.96 standard errors below the mean indicates possible poor performance.

Performance ratings may change if other participants' results are amended. No score penalty is incurred for non return of reports. However non reporting of results may be used as a measure of poor performance.



Turn around time: The time taken to report your results was 0 day(s). This information is provided for your own use and does not form part of your performance assessment.

Comments

Specimen 4146: This specimen is *Candida tropicalis*. Performance was excellent with 98.2% (217/221) of participants reporting the correct identification. The concordance with intended susceptibility results ranged between 93% - 100%.

Specimen 4147: The organism in this specimen is an *Aspergillus fumigatus* species complex. A good performance with 94.3% (197/209) of participants reporting the correct species of *Aspergillus*. The concordance with intended susceptibility results ranged between 82.3% - 98.8%.

*Page 2: Flucytosine results determined by disk diffusion when following EUCAST guidelines.

IE – All reported clinical breakpoints are now species specific in accordance with EUCAST guidelines. Where interpretations of the MIC are absent there is insufficient evidence to set breakpoints for this species.

As a general rule, susceptibility results are not scored when there are no established breakpoints or there is a difference in interpretation of the established breakpoints between EUCAST and CLSI.

Expert comments prepared by Dr Elizabeth Johnson can be found on the final page of this report. Additional comments on guidelines used by participants were prepared by UK NEQAS.

We thank colleagues in the Public Health England (PHE)-NIS: Mycology Reference Laboratory, Bristol for the supply of strains and provision of confirmatory testing, and the Mycology Reference Centre Manchester, Wythenshawe Hospital for the provision of confirmatory identification and susceptibility testing.

This distribution was organised jointly by UK NEQAS and the Mycology Reference Laboratory, Myrtle Road, Kingsdown, Bristol, BS2 8EL. Comments or queries on mycological aspects of the distribution should be addressed to Dr Elizabeth Johnson, Director of the PHE-NIS Mycology Reference Laboratory, Bristol. Queries on other aspects should be addressed to Mrs Shila Seaton, Scheme Manager, UK NEQAS.

Enquiries: Repeat specimens can be obtained by using the web form or e-mail organiser@ukneqasmicro.org.uk stating your laboratory identification number, the distribution name and number, and specimen number/s.

Report authorised by: Dr Sanjiv Rughooputh, Director



Specimen : 4146

Candida tropicalis

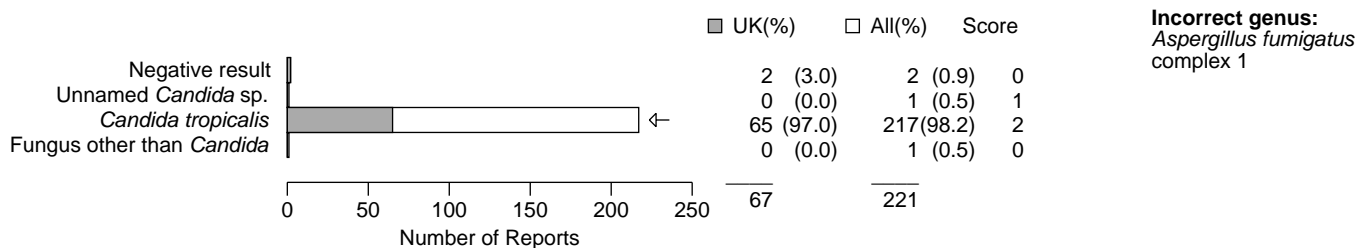
Your report : *Candida tropicalis*

Method Reference Lab	EUCAST		Result	EUCAST Breakpoints (mg/L)		CLSI		Result	CLSI Breakpoints (mg/L)	
	1	2		S ≤ 1 R > 1	S ≤ 2 R > 4	1	2		S ≤ 1 R ≥ 2	S ≤ 2 R ≥ 8
Amphotericin B	0.25	0.25	S	S ≤ 1 R > 1		0.5	-	S	S ≤ 1 R ≥ 2	
Anidulafungin	0.015	≤0.008	S	S ≤ 0.064 R > 0.064		0.06	-	S	S ≤ 2 R ≥ 8	
Fluconazole	0.5	1	S	S ≤ 2 R > 4		0.25	-	S	S ≤ 2 R ≥ 4	
Flucytosine	-	-	S*see pg 1			≤0.125	-	S	S ≤ 4 R ≥ 32	
Voriconazole	≤0.015	0.03	S	S ≤ 0.125 R > 0.125		≤0.03	-	S	S ≤ 0.12 R ≥ 1	

Pathogen - specimen 4146

Blood culture: 24 year old leukaemic patient with spleen abscess. The identity and antifungal susceptibility of the isolate was queried.

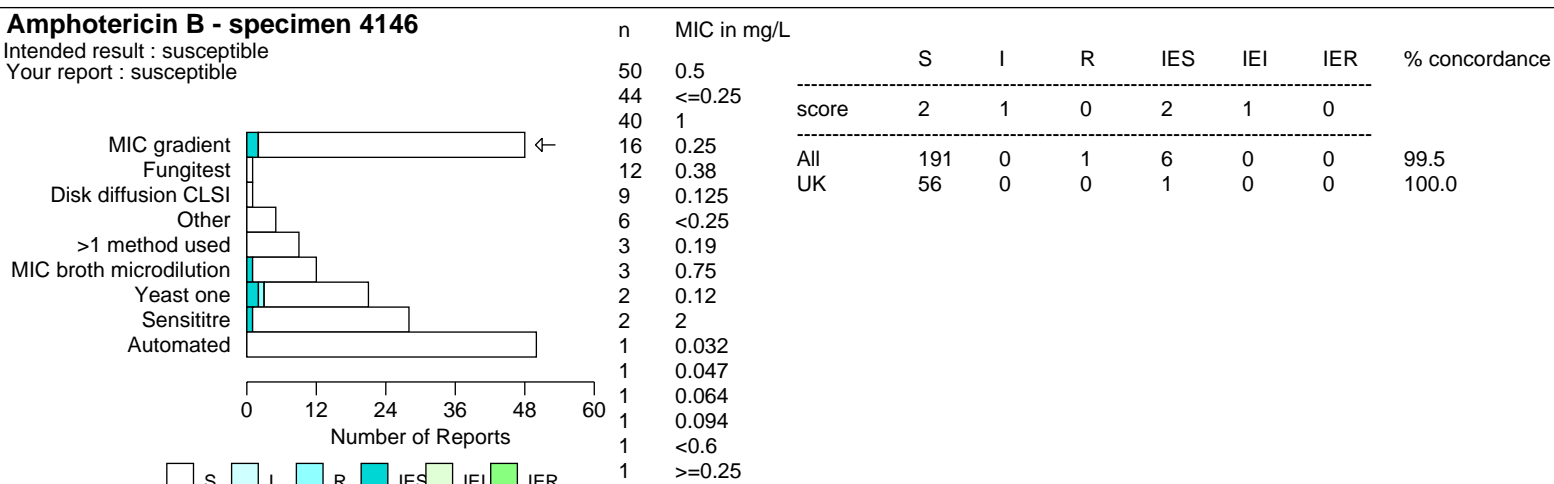
Intended result : *Candida tropicalis*



Amphotericin B - specimen 4146

Intended result : susceptible

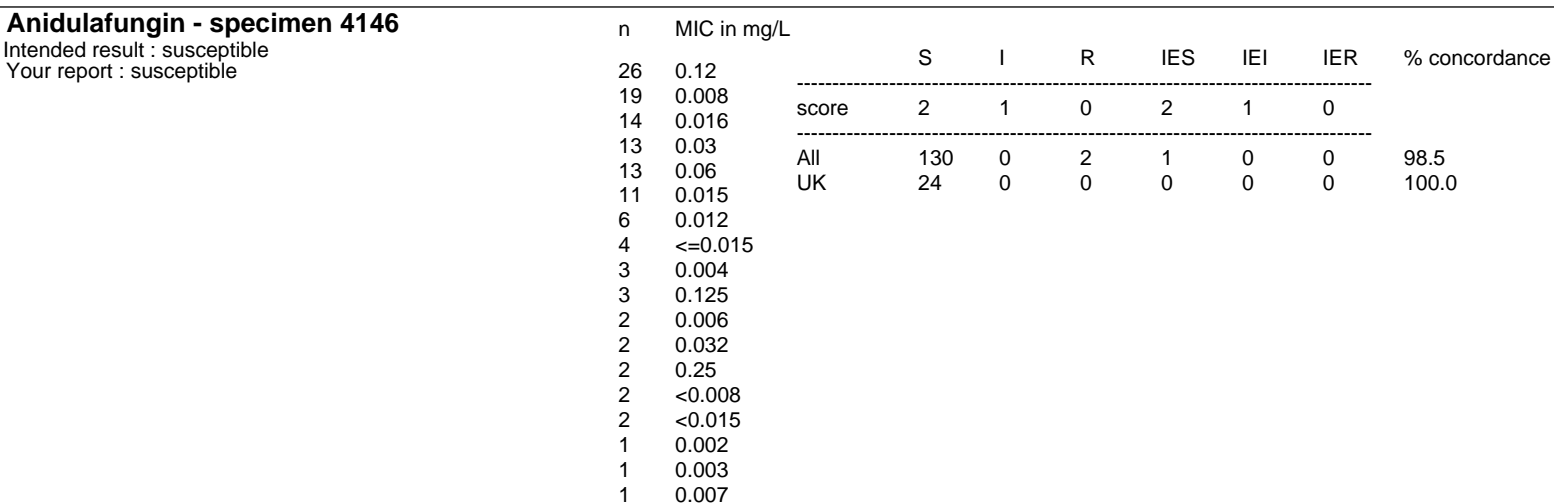
Your report : susceptible



Anidulafungin - specimen 4146

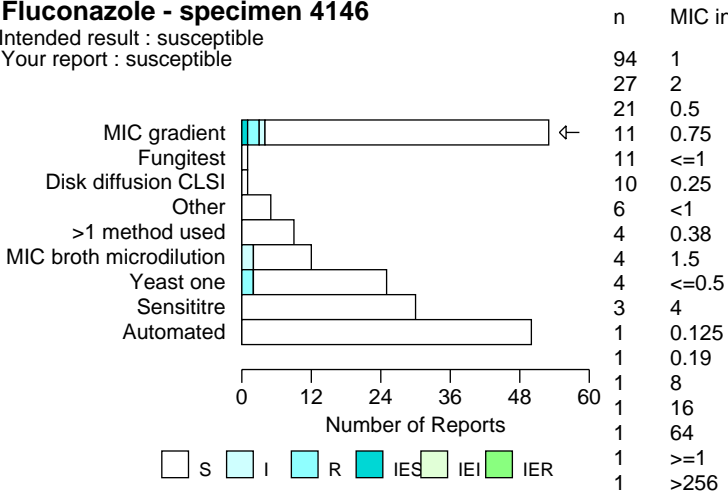
Intended result : susceptible

Your report : susceptible



Fluconazole - specimen 4146

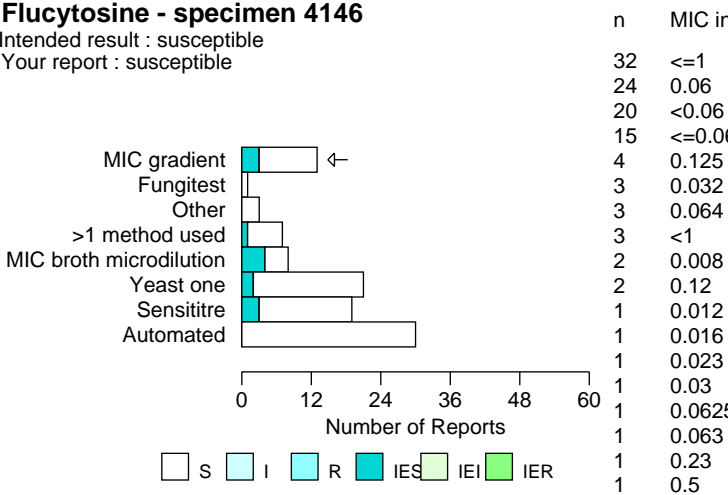
Intended result : susceptible
Your report : susceptible



	S	I	R	IES	IEI	IER	% concordance
score	2	1	0	2	1	0	
All	200	4	4	1	0	0	96.2
UK	60	0	0	0	0	0	100.0

Flucytosine - specimen 4146

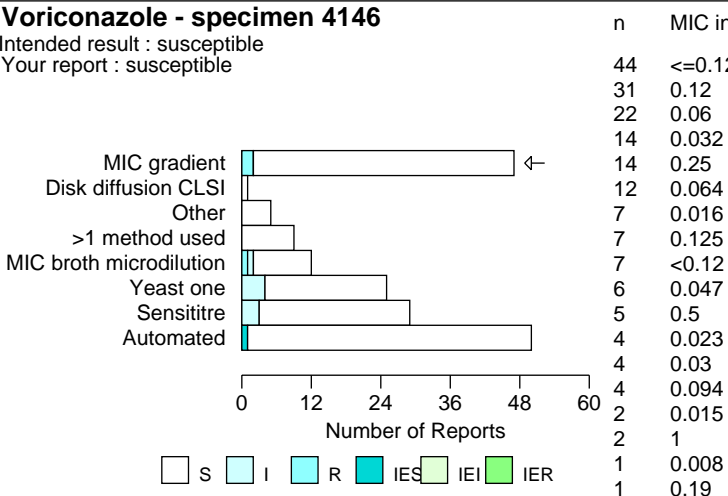
Intended result : susceptible
Your report : susceptible



	S	I	R	IES	IEI	IER	% concordance
score	2	1	0	2	1	0	
All	102	0	0	13	0	0	100.0
UK	41	0	0	2	0	0	100.0

Voriconazole - specimen 4146

Intended result : susceptible
Your report : susceptible



	S	I	R	IES	IEI	IER	% concordance
score	2	1	0	2	1	0	
All	185	8	6	1	0	0	93.0
UK	53	4	0	0	0	0	93.0



Specimen : 4147

Aspergillus fumigatus species complex

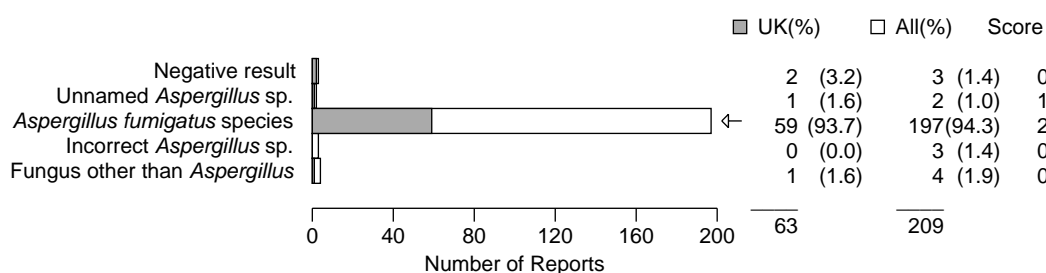
Your report : *Aspergillus fumigatus* species

Method Reference Lab	EUCAST		Result	EUCAST Breakpoints (mg/L)	CLSI		Result	CLSI Breakpoints (mg/L)
	1	2			1	2		
Amphotericin B	0.5	1	S	S≤1 R>2	0.25	-	S	S≤1 R≥2
Anidulafungin	-	-	-		≤0.125	-	S	
Fluconazole								
Flucytosine								
Itraconazole	0.5	0.5	S	S≤1 R>2	0.06	-	S	
Voriconazole	0.5	1	S	S≤1 R>2	0.125	-	S	

Pathogen - specimen 4147

Intended result : *Aspergillus fumigatus* species

Bone biopsy: 49 year old man with spinal lesion. The identity and antifungal susceptibility of the isolate was queried.



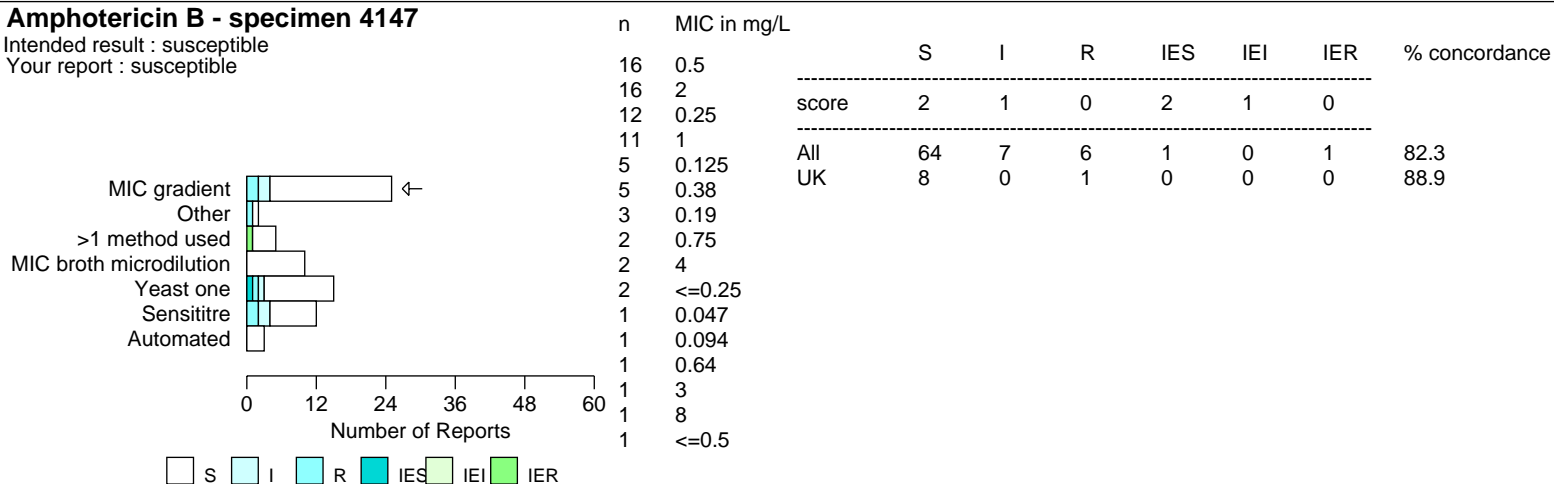
Incorrect genus:
Candida tropicalis 3
Scopulariopsis brevicaulis 1

Incorrect species complex:
Aspergillus niger 1
Aspergillus terreus 2

Amphotericin B - specimen 4147

Intended result : susceptible

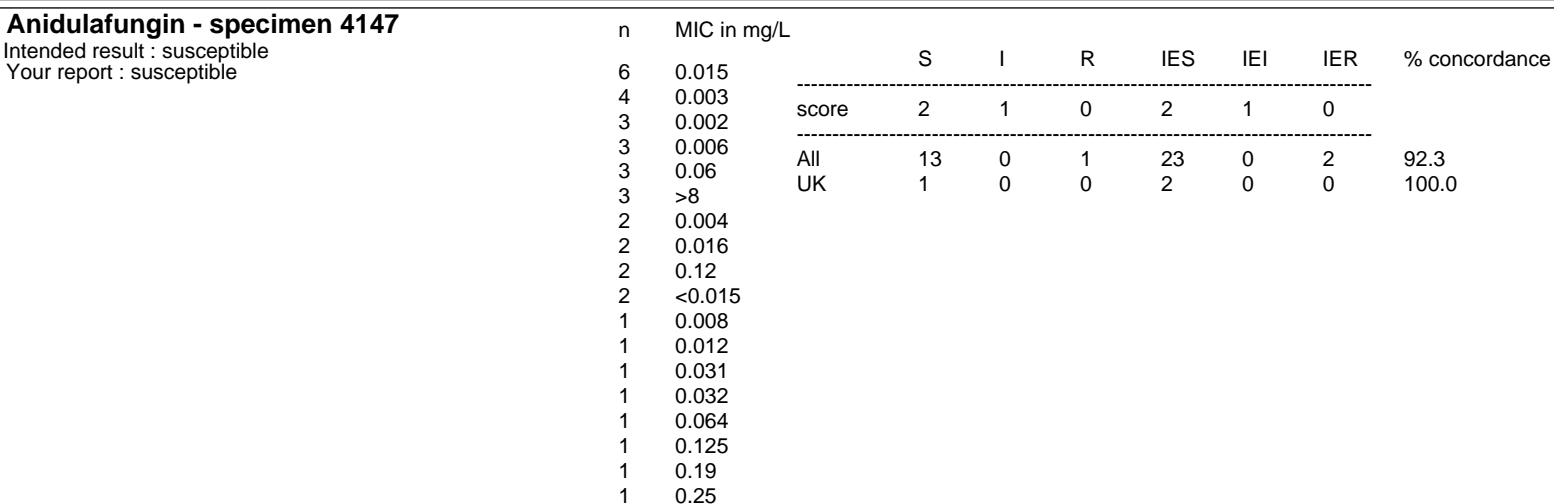
Your report : susceptible



Anidulafungin - specimen 4147

Intended result : susceptible

Your report : susceptible

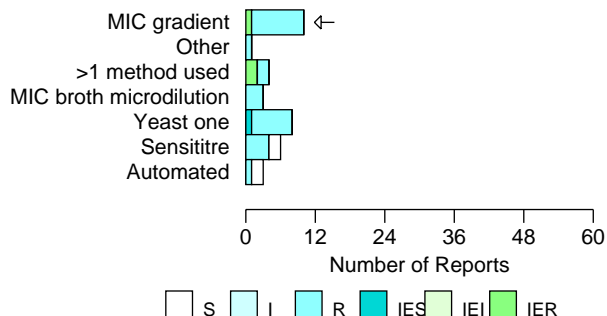


Fluconazole - specimen 4147

Intended result : not applicable
Your report : Not examined

n	MIC in mg/L	S	I	R	IES	IEI	IER	% concordance
20	>256							
4	256							
2	128							
2	<=1							
1	0.125							
1	0.5							
1	1							
1	32							
1	>128							
1	>64							
		score						

All		4	0	28	1	0	4	0.0
UK		1	0	1	0	0	0	0.0

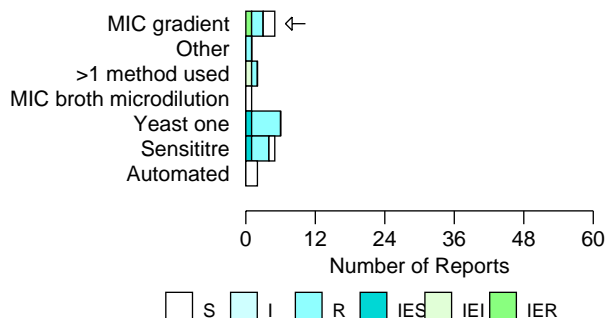


Flucytosine - specimen 4147

Intended result : not applicable
Your report : Not examined

n	MIC in mg/L	S	I	R	IES	IEI	IER	% concordance
5	>64							
3	8							
3	64							
3	>32							
2	<=1							
1	0.06							
1	0.064							
1	0.12							
1	0.25							
1	0.38							
1	1							
1	16							
1	<0.06							
1	>=32							
1	>8							
		score						

All		6	0	12	3	1	2	0.0
UK		1	0	0	0	0	0	0.0

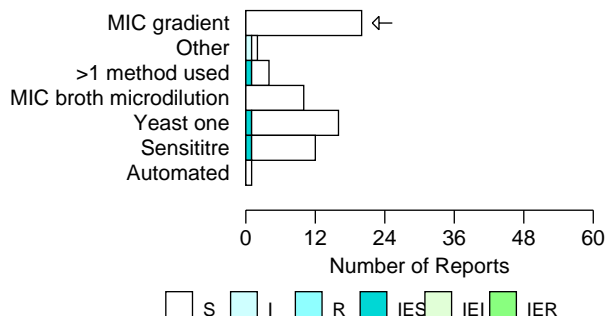


Itraconazole - specimen 4147

Intended result : susceptible
Your report : susceptible

n	MIC in mg/L	S	I	R	IES	IEI	IER	% concordance
16	0.5							
15	0.25							
8	0.12							
6	1							
5	0.06							
5	0.38							
4	0.75							
3	0.03							
3	0.125							
2	0.19							
1	0.0625							
1	1.5							
1	<=0.015							
		score						

All		68	1	0	3	0	0	98.6
UK		7	0	0	0	0	0	100.0

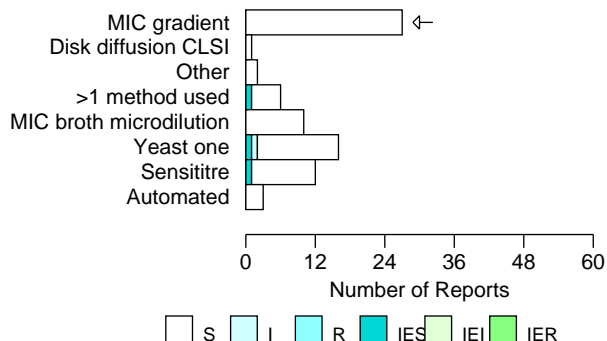


Voriconazole - specimen 4147

Intended result : susceptible

Your report : susceptible

n	MIC in mg/L	S	I	R	IES	IEI	IER	% concordance
22	0.125							
18	0.25							
8	0.12	score 2	1	0	2	1	0	
8	0.19							
8	0.5	All 81	1	0	3	0	0	98.8
6	0.094	UK 9	0	0	0	0	0	100.0
4	0.064							
2	1							
2	<=0.12							
1	0.03							
1	0.06							
1	0.0625							
1	2							



Distribution 4204

Specimen 4146 *Candida tropicalis*

The vast majority of laboratories correctly identified this isolate as *Candida tropicalis* (98.2%). Moreover there was very good concordance with testing of all of the antifungal agents with this fully susceptible strain. For most drugs concordance was up to 96%. The exception was with voriconazole where the concordance was 93% due to a small number of laboratories reporting intermediate susceptibility and a very few reporting resistance. This isolate of *Candida tropicalis* did not share the trait which is common in this species of producing heavy trailing endpoints with the azole drugs, thus determination of endpoints should have been much easier than usual.

Those that ticked the IE (insufficient evidence) boxes should note that there are published EUCAST and CLSI breakpoints for most of the drugs with this species.

Specimen 4147 *Aspergillus fumigatus* species complex

This isolate was correctly identified as *Aspergillus fumigatus* by 94.3% of participants. This isolate was fully susceptible to all the agents that would normally be used to treat invasive disease as reported by most laboratories, with high levels of concordance for most of the drugs tested.

The isolate was fully susceptible to amphotericin B, so those labs reporting MICs of 2.0 mg/L or above should have another look. There are EUCAST breakpoints for this organism-drug combination which reflect those published in the literature that many labs have used for years (≤ 1.0 mg/L susceptible, > 2.0 mg/L resistant).

We would not expect laboratories to routinely test mould isolates with fluconazole as most will be innately resistant as should have been found with this isolate. Most moulds, with the exception of some darkly pigmented species, are also innately resistant to flucytosine *in vitro* as most of those laboratories that did test this isolate reported.

