Encuesta sobre servicios de diagnóstico de laboratorios de micología en Perú

Results

Diego Villa

09 November, 2022

Contents

General information	6
Region where the hospital/laboratory is located	6
Capacity of the hospital/laboratory	7
Time the laboratory has been carrying out mycological diagnoses	7
By region	7
By capacity	7
Additional information about the hospital/health facility the laboratory belongs	8
Total number of hospital beds	8
By region	8
By capacity	8
Available services in the hospital/health facility	9
By region	9
By capacity	10
Additional information about the micology/microbiology laboratory	10
Approximate area of the microbiology work zone	10
By region	10
By capacity	11
Separated work zone for fungal diagnostic tests	11
By region	11
By capacity	11
Work zone area for fungal diagnostic tests	12
By region	12
Ry capacity	19

Available equipments for the diagnostic of fungi	. 13
By region	. 14
By capacity	. 15
accreditation and quality assessment	15
Participation of the mycology laboratory in an external quality assessment scheme	. 15
By region	. 16
By capacity	. 16
Areas in which the mycology laboratory is evaluated	. 16
By region	. 17
By capacity	. 17
Iuman resources	17
Technical staff in the microbiology laboratory	. 17
By region	. 18
By capacity	. 18
Professional staff in the microbiology laboratory	. 18
By region	. 18
By capacity	. 19
Total staff in the microbiology laboratory	. 19
By region	. 19
By capacity	. 19
Total staff in the mycology area	. 20
By region	. 20
By capacity	. 20
Mycology training/education program for mycology laboratory staff	. 20
By region	. 21
By capacity	. 21
Times a year the mycology trainigs are held	. 21
By region	. 21
By capacity	. 22
Training to other areas of the hospital/health facility	. 22
By region	. 22
By capacity	. 22
Audience of the trainings carried out by the mycology laboratory	. 23

Internal demand for mycological tests	23
Average number of samples for mycosis diagnosis before COVID-19	23
By region	23
By capacity	24
Average number of samples for mycosis diagnosis in the last 3 months	24
By region	24
By capacity	25
Departments/units that have sent samples for the diagnosis of mycoses	25
By region	26
By capacity	27
Most frequent sample types processed in the last 3 months $\dots \dots \dots \dots \dots \dots$	28
By region	28
By capacity	29
Average number of processed samples (last 3 months)	29
Skin scales, hair or nails	29
Sputum, bronchoaspirate or bronchial brushing	30
Mucosal exudates	30
Biopsies	31
Urine	31
Blood	32
Intravascular catheter	32
Cerebrospinal fluid collection	33
Bone marrow	34
Microscopic examinations	34
Does the mycology laboratory perform microscopic examinations?	34
By region	34
By capacity	35
Available microscopic examinations	35
By region	36
By capacity	36
Delivery time of chinese ink stain test results	36
By region	37
By capacity	37
Delivery time of Giemsa ink stain test results	37
By region	37
By capacity	38

Results deliver	y method
By region	i
By capac	ity
Fungal identific	ation: Yeast
Available cultu	re medias for yeast identification
By region	i
By capac	ity
Does the labor	ratory has yeast identification systems?
By region	i
By capac	ity
Available yeast	identification systems
By region	i
By capac	ity
Routine storag	ge of clinical yeast isolates
By region	i
v	
By capac	ity
By capac	ation: Mold (Filamentous/Dimorphic Fungi)
By capac Fungal identific Available cultu	ation: Mold (Filamentous/Dimorphic Fungi) are medias for mold identification
By capac Fungal identific Available cultu By region	ation: Mold (Filamentous/Dimorphic Fungi) are medias for mold identification
By capace Fungal identific Available culture By region By capace	ation: Mold (Filamentous/Dimorphic Fungi) are medias for mold identification
By capace Fungal identific Available culture By region By capace Does the labor	ation: Mold (Filamentous/Dimorphic Fungi) are medias for mold identification
By capace Fungal identific Available culture By region By capace Does the labor By region	ation: Mold (Filamentous/Dimorphic Fungi) are medias for mold identification
By capace Fungal identific Available culture By region By capace Does the labor By region By capace	ation: Mold (Filamentous/Dimorphic Fungi) are medias for mold identification
By capace Fungal identific Available culture By region By capace Does the labor By capace Does the labor Does the labor	ation: Mold (Filamentous/Dimorphic Fungi) are medias for mold identification
By capace Fungal identific Available culture By region By capace Does the labor By capace Does the labor By capace Does the labor By capace	ation: Mold (Filamentous/Dimorphic Fungi) are medias for mold identification
By capace Fungal identific Available culture By region By capace Does the labor By region By region By region	ation: Mold (Filamentous/Dimorphic Fungi) are medias for mold identification
By capace Fungal identific Available culture By region By capace Does the labor By capace Does the labor By region By region By region Available mold	ation: Mold (Filamentous/Dimorphic Fungi) are medias for mold identification
By capace Fungal identific Available culture By region By capace Does the labor By capace Does the labor By capace Does the labor By region By region By capace Available mold By region	ation: Mold (Filamentous/Dimorphic Fungi) are medias for mold identification ity ratory has mold identification systems? attribute the systems are systems attributed by the systems are systems attributed by the systems are systems.
By capace Fungal identific Available culture By region By capace Does the labor By capace Does the labor By region By capace Available mold By region By region By capace	ation: Mold (Filamentous/Dimorphic Fungi) are medias for mold identification ity attory has mold identification systems? attory send mold isolates to external labs for identification? attory ity attory send mold isolates to external labs for identification?
By capace Fungal identific Available culture By region By capace Does the labor By capace Does the labor By region By capace Available mold By region By capace Available mold By region By capace Available mold By region By capace Routine storage	ation: Mold (Filamentous/Dimorphic Fungi) are medias for mold identification

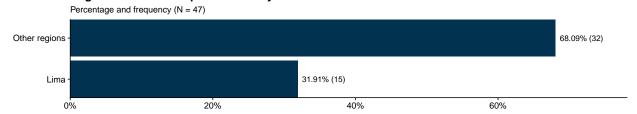
Antifungal susceptibility testing	4
By region	4
By capacity	4
Does the laboratory perform the antifungal susceptibility tests or are they sent to a laboratory?	
By region	
By capacity	
What types of fungi are antifungal susceptibility tests available for?	
By region	
By capacity	
Serological tests	5
Are antibody tests against fungi (Aspergillus sp., Histoplasma capsulatum, Parace brasiliensis) available in your laboratory?	
By region	
By capacity	5
Are antibody tests against fungi available in another laboratory in your hospital?	
By region	
By capacity	
Are the tests for the detection of antibodies against fungi sent to an external laboratory	? 5
By region	
By capacity	
Are Cryptococcus antigen detection tests available in your laboratory?	
By region	
By capacity	
Are Cryptococcus antigen tests available at another lab in the hospital?	
By region	5
By capacity	
Are Cryptococcus antigen tests sent to an external laboratory?	
By region	5
By capacity	
Which antigen detection tests for Cryptococcus are available in your laboratory or hosp	oital? 5
Are <i>Histoplasma capsulatum</i> antigen detection tests available in your laboratory?	
By region	
By capacity	
Are <i>Histoplasma capsulatum</i> antigen tests available at another lab in the hospital?	
By region	5
By capacity	ŗ

Are <i>Histoplasma capsulatum</i> antigen tests sent to an external laboratory?	 . 56
By region	 . 56
By capacity	 . 57
Are Aspergillus sp. antigen detection tests available in your laboratory?	 . 57
By region	 . 57
By capacity	 . 57
Are Aspergillus sp. antigen tests available at another lab in the hospital?	 . 58
By region	 . 58
By capacity	 . 58
Are Aspergillus sp. antigen tests sent to an external laboratory?	 . 58
By region	 . 59
By capacity	 . 59
olecular diagnosis	5 9
Are PCR tests for the diagnosis of fungi available in your laboratory/hospital?	 . 59
By region	 . 59
By capacity	 . 60
Available PCR tests for the diagnosis of fungi	 . 60
ther capacities	60
Available antifungals for the treatment of patients	 . 60
By region	 . 61
By capacity	 . 61

General information

Region where the hospital/laboratory is located

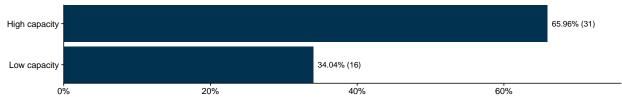
Region where the hospital/laboratory is located



Capacity of the hospital/laboratory

Capacity of the hospital/laboratory





Time the laboratory has been carrying out mycological diagnoses

Characteristic	N = 47
Time (years) the laboratory has been carrying out	
mycological diagnoses	
Responses	47
Range	0, 56
Median (IQR)	$9.00 \ (4.50, \ 21.50)$
Mean (SD)	14.19 (13.83)

By region

Characteristic	Other regions, $N = 32$	$\mathbf{Lima},\mathrm{N}=15$	Overall, $N = 47$
Time (years) the			
laboratory has been			
carrying out			
mycological diagnoses			
Responses	32	15	47
Range	0, 56	4, 50	0, 56
Median (IQR)	6.50 (3.75, 13.25)	20.00 (8.50, 22.50)	$9.00 \ (4.50, \ 21.50)$
Mean (SD)	$12.25 \ (14.38)$	18.33 (11.98)	14.19 (13.83)

By capacity

Characteristic	Low capacity, N = 16	High capacity, N = 31	Overall, $N = 47$
Time (years) the			
laboratory has been			
carrying out			
mycological diagnoses			
Responses	16	31	47
Range	0, 31	1, 56	0, 56
Median (IQR)	5.00(3.50, 8.00)	15.00 (5.50, 25.00)	9.00 (4.50, 21.50)
Mean (SD)	7.44 (8.25)	17.68 (14.91)	14.19 (13.83)

Additional information about the hospital/health facility the laboratory belongs $\,$

Total number of hospital beds

Characteristic	N = 47	
Total number of hospital beds		
Responses	45	
Range	0, 1,000	
Median (IQR)	$100.00 \ (25.00, \ 280.00)$	
Mean (SD)	$173.56 \ (199.50)$	
No response	2	

By region

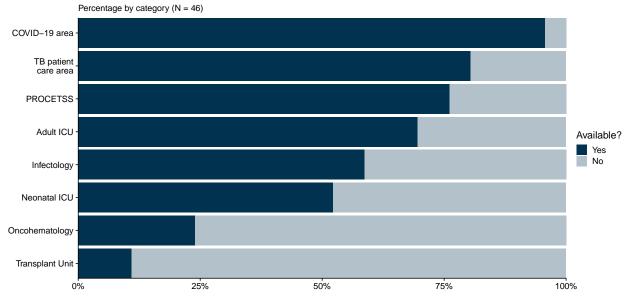
Characteristic	Other regions, $N = 32$	$\mathbf{Lima},\mathrm{N}=15$	Overall, $N = 47$
Total number of			
hospital beds			
Responses	31	14	45
Range	0,565	0, 1,000	0, 1,000
Median (IQR)	100.00 (8.50, 220.00)	173.00 (100.00, 399.50)	100.00 (25.00, 280.00)
Mean (SD)	129.35 (142.99)	271.43 (269.37)	173.56 (199.50)
No response	1	1	2

By capacity

Characteristic	Low capacity, N = 16	High capacity, N = 31	Overall, $N = 47$
Total number of			
hospital beds			
Responses	15	30	45
Range	0, 302	0, 1,000	0, 1,000
Median (IQR)	40.00 (13.00, 110.00)	199.00 (26.25, 327.50)	100.00 (25.00, 280.00)
Mean (SD)	78.93 (87.42)	$220.87 \ (223.05)$	173.56 (199.50)
No response	1	1	2

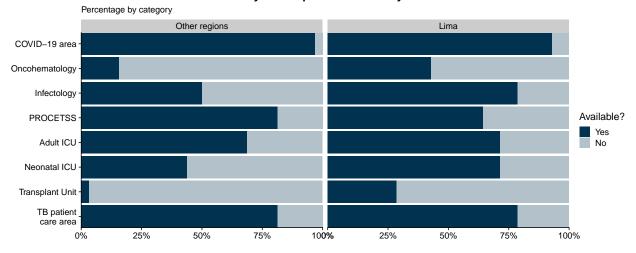
Available services in the hospital/health facility

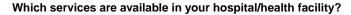
Which services are available in your hospital/health facility?

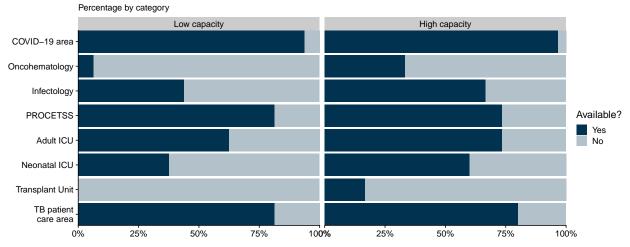


By region

Which services are available in your hospital/health facility?



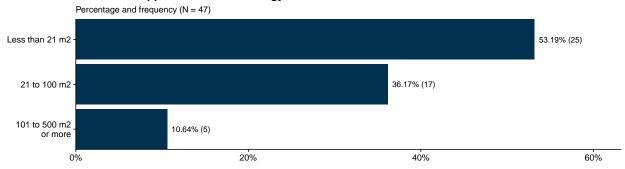




Additional information about the micology/microbiology laboratory

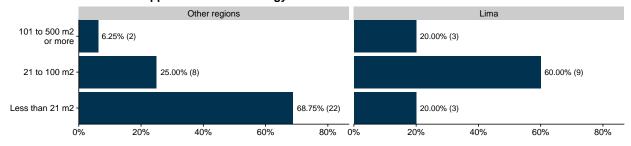
Approximate area of the microbiology work zone

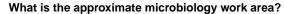
What is the approximate microbiology work area?

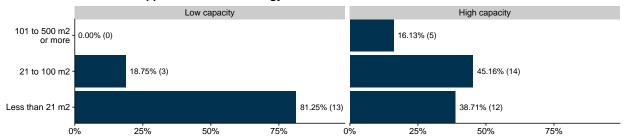


By region

What is the approximate microbiology work area?

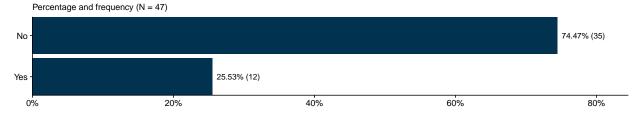






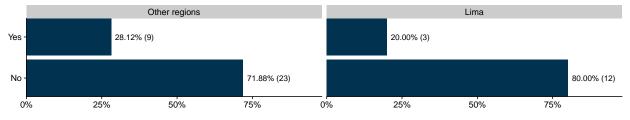
Separated work zone for fungal diagnostic tests

Do you have a separate work zone for fungal diagnostic tests?



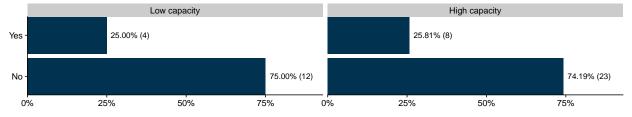
By region

Do you have a separate work zone for fungal diagnostic tests?



By capacity

Do you have a separate work zone for fungal diagnostic tests?



Work zone area for fungal diagnostic tests

Work zone area for fungal diagnostic tests

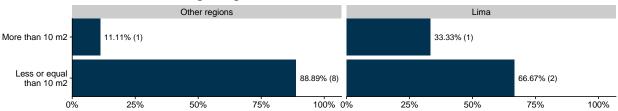
Percentage and frequency (N = 12)

Less or equal than 10 m2 - 16.67% (2)

More than 10 m2 - 25% 50% 75%

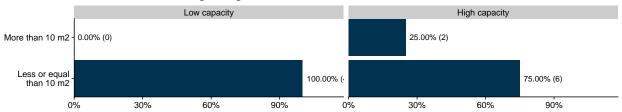
By region

Work zone area for fungal diagnostic tests

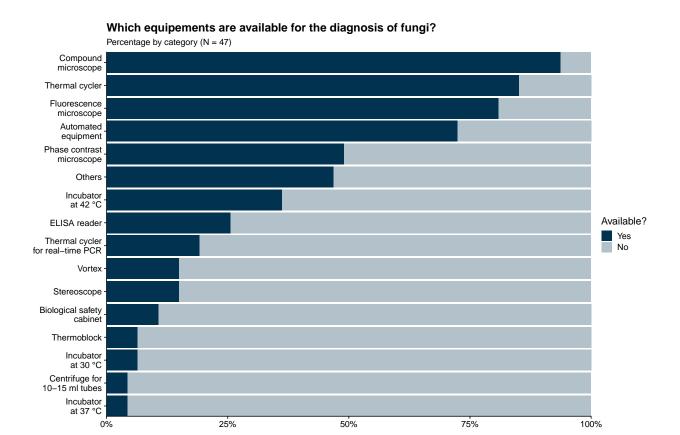


By capacity

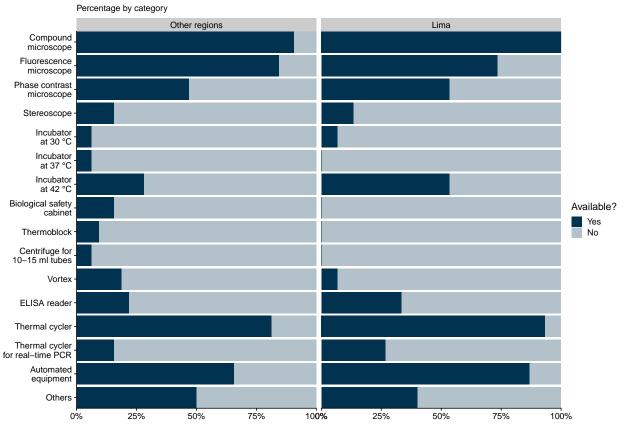
Work zone area for fungal diagnostic tests

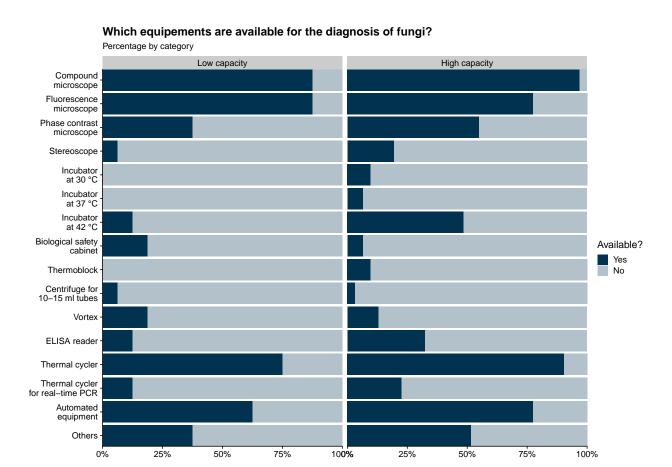


Available equipments for the diagnostic of fungi



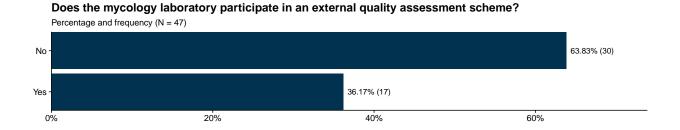
Which equipements are available for the diagnosis of fungi?



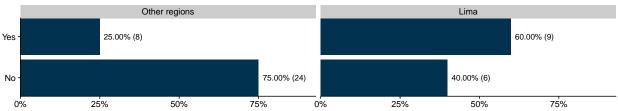


Accreditation and quality assessment

Participation of the mycology laboratory in an external quality assessment scheme

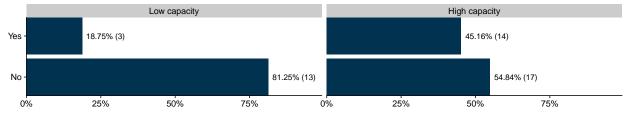


Does the mycology laboratory participate in an external quality assessment scheme?



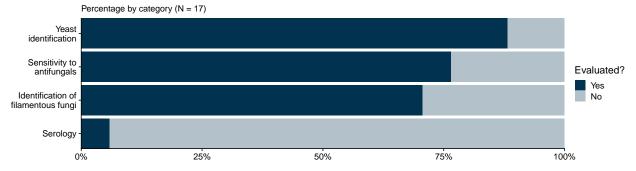
By capacity

Does the mycology laboratory participate in an external quality assessment scheme?

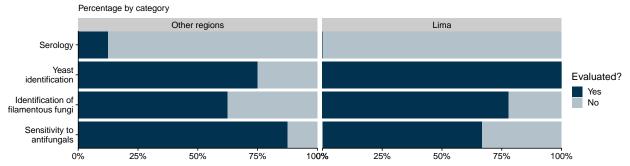


Areas in which the mycology laboratory is evaluated

In which areas is the mycology laboratory evaluated?

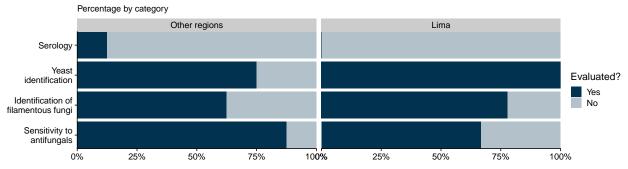


In which areas is the mycology laboratory evaluated?



By capacity

In which areas is the mycology laboratory evaluated?



Human resources

Technical staff in the microbiology laboratory

Characteristic	N=46	
Technical staff in the microbiology lab		
Responses	46	
Range	0, 20	
Median (IQR)	$1.00 \ (1.00, \ 2.00)$	
Mean (SD)	2.57 (3.87)	

Characteristic	Other regions, $N = 32$	$\mathbf{Lima},\mathrm{N}=14$	Overall, $N = 46$
Technical staff in the			
microbiology lab Responses	32	14	46
Range	0, 20	1, 11	0, 20
Median (IQR)	$1.00 \ (0.75, \ 2.00)$	$2.00 \ (1.00, \ 3.00)$	$1.00 \ (1.00, \ 2.00)$
Mean (SD)	$2.44 \ (4.29)$	2.86 (2.82)	2.57 (3.87)

By capacity

Characteristic	Low capacity, N = 16	$\begin{array}{c} \textbf{High capacity}, N = \\ 30 \end{array}$	Overall, $N = 46$
Technical staff in the			
microbiology lab			
Responses	16	30	46
Range	0, 20	0, 15	0, 20
Median (IQR)	2.00 (1.00, 2.25)	$1.00 \ (1.00, \ 2.00)$	$1.00 \ (1.00, \ 2.00)$
Mean (SD)	3.25 (4.95)	2.20(3.20)	2.57(3.87)

Professional staff in the microbiology laboratory

Characteristic	N = 46	
Professional staff in the microbiology lab		
Responses	46	
Range	0, 28	
Median (IQR)	$3.00 \ (1.00, 4.00)$	
Mean (SD)	4.59 (6.05)	

By region

Characteristic	Other regions, $N = 32$	$\mathbf{Lima},\mathrm{N}=14$	Overall, $N = 46$
Professional staff in the			
microbiology lab			
Responses	32	14	46
Range	0, 20	1, 28	0, 28
Median (IQR)	$2.00\ (1.00,\ 3.00)$	3.00(3.00, 5.75)	3.00 (1.00, 4.00)
Mean (SD)	3.38 (4.01)	7.36 (8.75)	4.59 (6.05)

Characteristic	Low capacity, $N = 16$	High capacity, $N = 30$	Overall, $N = 46$
Professional staff in the			
microbiology lab			
Responses	16	30	46
Range	0, 7	1, 28	0, 28
Median (IQR)	3.00 (1.00, 3.00)	$3.00 \ (1.25, 5.00)$	3.00 (1.00, 4.00)
Mean (SD)	2.62 (1.82)	5.63 (7.20)	4.59 (6.05)

Total staff in the microbiology laboratory

Characteristic	N = 46
Total staff in the microbiology lab	
Responses	46
Range	1, 35
Median (IQR)	$4.00 \ (2.00, \ 6.75)$
Mean (SD)	7.15 (8.47)

By region

Characteristic	Other regions, $N = 32$	$\mathbf{Lima},\mathrm{N}=14$	Overall, $N = 46$
Total staff in the			
microbiology lab			
Responses	32	14	46
Range	1, 35	2, 32	1, 35
Median (IQR)	$3.50 \ (2.00, 5.25)$	5.50 (4.00, 9.00)	$4.00\ (2.00,\ 6.75)$
Mean (SD)	$5.81\ (7.46)$	$10.21\ (10.06)$	7.15 (8.47)

By capacity

Characteristic	Low capacity, N = 16	High capacity, N = 30	Overall, $N = 46$
Total staff in the			
microbiology lab			
Responses	16	30	46
Range	1, 27	1, 35	1, 35
Median (IQR)	4.00(2.75, 5.25)	4.00(2.00, 7.00)	4.00(2.00, 6.75)
Mean (SD)	5.88 (6.47)	7.83 (9.40)	7.15 (8.47)

Total staff in the mycology area

Characteristic	N = 40
Total staff in the mycology area	
Responses	40
Range	0, 6
Median (IQR)	$1.00 \ (1.00, \ 3.00)$
Mean (SD)	1.73 (1.57)

By region

Characteristic	Other regions, $N = 28$	$\mathbf{Lima},\mathrm{N}=12$	Overall, $N = 40$
Total staff in the			
mycology area			
Responses	28	12	40
Range	0, 6	0, 5	0, 6
Median (IQR)	1.00 (1.00, 3.00)	$1.00 \ (1.00, \ 1.50)$	$1.00 \ (1.00, \ 3.00)$
Mean (SD)	1.79 (1.60)	1.58 (1.56)	1.73 (1.57)

By capacity

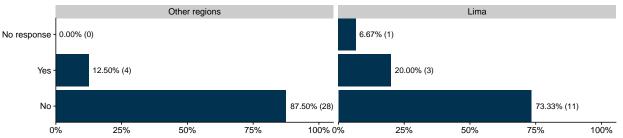
Characteristic	Low capacity, $N = 14$	$\begin{array}{c} \textbf{High capacity}, N = \\ 26 \end{array}$	Overall, $N = 40$
Total staff in the			
mycology area	1.4	26	40
Responses Range	$ \begin{array}{c} 14 \\ 0.6 \end{array} $	0, 5	40 0, 6
Median (IQR) Mean (SD)	1.50 (1.00, 3.00) 2.21 (1.76)	1.00 (1.00, 2.50) 1.46 (1.42)	1.00 (1.00, 3.00) 1.73 (1.57)

Mycology training/education program for mycology laboratory staff

Does your institution have a mycology training program for the mycology laboratory staff? Percentage and frequency (N = 47)

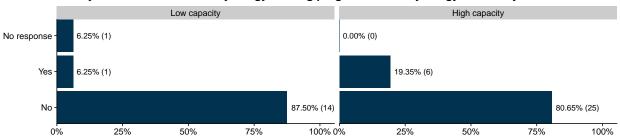


Does your institution have a mycology training program for the mycology laboratory staff?



By capacity

Does your institution have a mycology training program for the mycology laboratory staff?



Times a year the mycology trainigs are held

Characteristic	N = 7
Times a year the mycology trainigs are held	
Responses	7
Range	1, 4
Median (IQR)	$2.00 \ (1.00, \ 2.00)$
Mean (SD)	1.86 (1.07)

By region

Characteristic	Other regions, $N = 4$	$\mathbf{Lima},\mathrm{N}=3$	Overall, $N = 7$
Times a year the			
mycology trainigs are			
held			_
Responses	4	3	7
Range	1, 2	1, 4	1, 4
Median (IQR)	$1.50\ (1.00,\ 2.00)$	$2.00 \ (1.50, \ 3.00)$	$2.00 \ (1.00, \ 2.00)$
Mean (SD)	$1.50 \ (0.58)$	$2.33\ (1.53)$	1.86 (1.07)

Characteristic	Low capacity, $N = 1$	High capacity, N = 6	Overall, $N = 7$
Times a year the			
mycology trainigs are			
held			_
Responses	1	6	7
Range	2, 2	1, 4	1, 4
Median (IQR)	2.00 (2.00, 2.00)	$1.50 \ (1.00, \ 2.00)$	2.00 (1.00, 2.00)
Mean (SD)	2.00 (NA)	1.83(1.17)	1.86 (1.07)

Training to other areas of the hospital/health facility

Does the mycology laboratory carry out training aimed at other areas of the hospital/health facility?

Percentage and frequency (N = 47)

No - 91.49% (43)

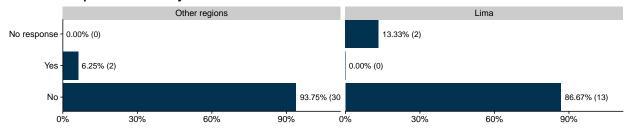
No response - 4.26% (2)

Yes - 4.26% (2)

0% 25% 50% 75% 100%

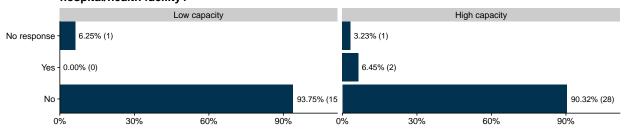
By region

Does the mycology laboratory carry out training aimed at other areas of the hospital/health facility?



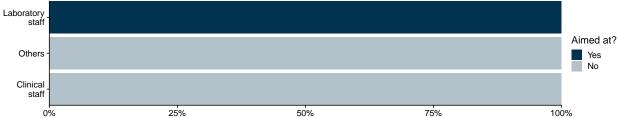
By capacity

Does the mycology laboratory carry out training aimed at other areas of the hospital/health facility?



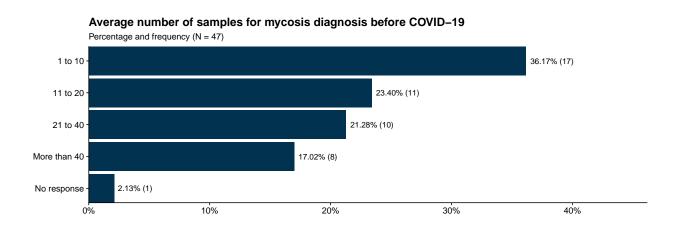
Audience of the trainings carried out by the mycology laboratory

Who is the training carried out by the mycology laboratory aimed at? Percentage by category (N = 2)



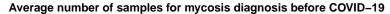
Internal demand for mycological tests

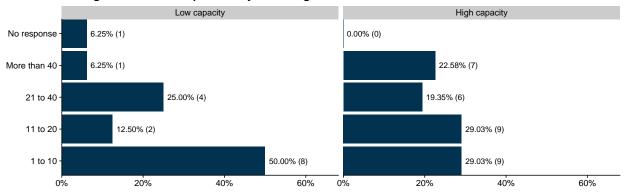
Average number of samples for mycosis diagnosis before COVID-19



By region

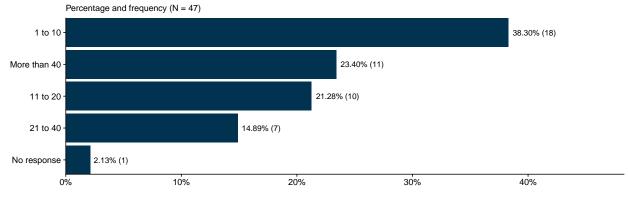
Average number of samples for mycosis diagnosis before COVID-19 Other regions Lima 3.12% (1) 0.00% (0) No response More than 40 6.25% (2) 40.00% (6) 21 to 40 18.75% (6) 26.67% (4) 21.88% (7) 26.67% (4) 11 to 20 50.00% (16) 6.67% (1) 1 to 10 -40% 20% 40% 60% 0% 20% 60% 0%





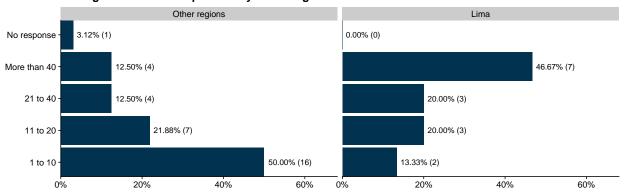
Average number of samples for mycosis diagnosis in the last 3 months

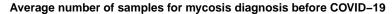
Average number of samples for mycosis diagnosis in the last 3 months

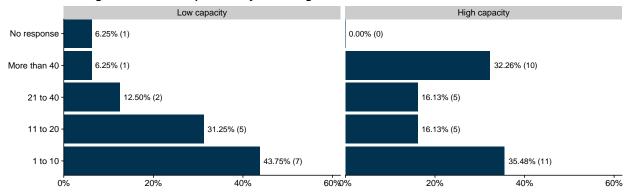


By region

Average number of samples for mycosis diagnosis before COVID-19

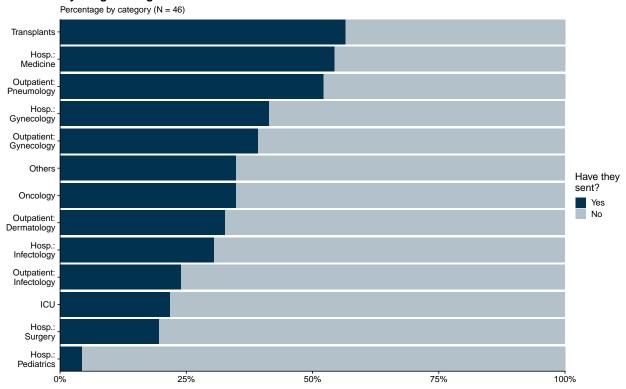




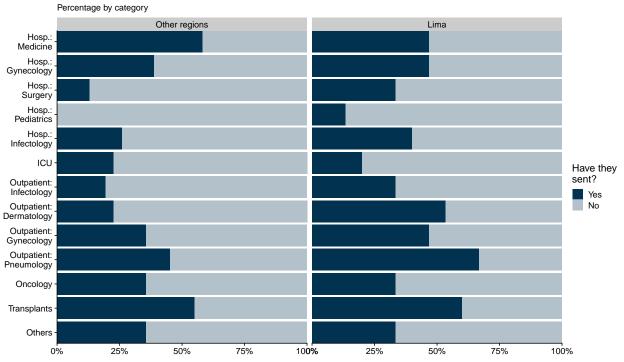


Departments/units that have sent samples for the diagnosis of mycoses

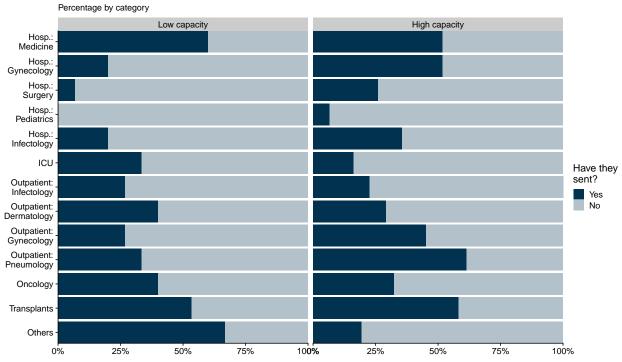
In the last 3 months, which hospital departments/units have sent samples for mycological diagnostic?



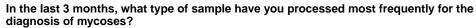
In the last 3 months, which hospital departments/units have sent samples for mycological diagnostic?

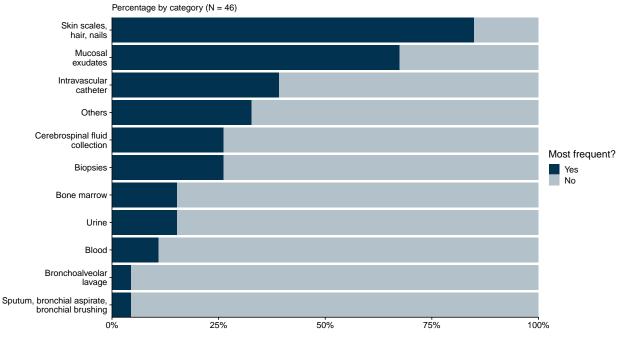


In the last 3 months, which hospital departments/units have sent samples for mycological diagnostic?



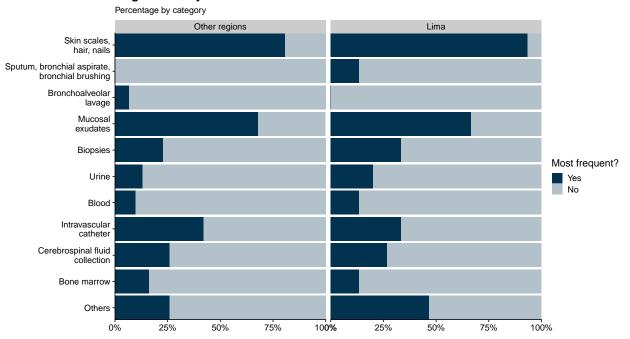
Most frequent sample types processed in the last 3 months



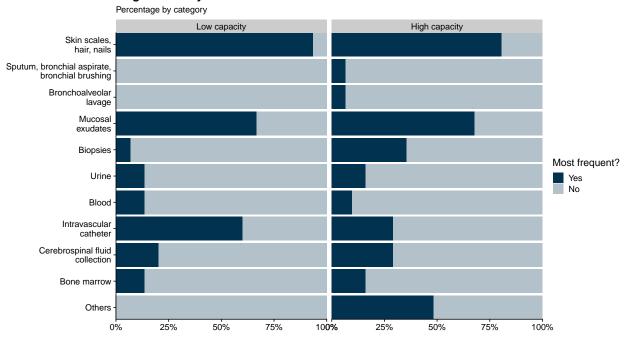


By region

In the last 3 months, what type of sample have you processed most frequently for the diagnosis of mycoses?



In the last 3 months, what type of sample have you processed most frequently for the diagnosis of mycoses?



Average number of processed samples (last 3 months)

Skin scales, hair or nails

Characteristic	N=39	
Skin scales, hair or nails		
Responses	39	
Range	1, 70	
Median (IQR)	$10.00 \ (5.00, \ 20.00)$	
Mean (SD)	16.44 (17.15)	

	Characteristic	Other regions, N =	$\mathbf{Lima},N=14$	Overall, $N = 39$
		25		
	Skin scales, hair or nails			
By region	Responses	25	14	39
	Range	1, 30	2, 70	1, 70
	Median (IQR)	10.00 (8.00, 15.00)	20.00 (5.00, 30.00)	10.00 (5.00, 20.00)
	Mean (SD)	11.16 (7.66)	25.86 (24.54)	16.44 (17.15)

	Characteristic	Low capacity, N = 14	$\begin{array}{c} \textbf{High capacity}, N = \\ 25 \end{array}$	Overall, N = 39
	Skin scales, hair or nails			
By capacity	Responses	14	25	39
	Range	2, 70	1, 70	1, 70
	Median (IQR)	10.00 (8.00, 15.00)	$10.00 \ (5.00, \ 25.00)$	10.00 (5.00, 20.00)
	Mean (SD)	16.14 (17.36)	16.60 (17.39)	16.44 (17.15)

Sputum, bronchoaspirate or bronchial brushing

Characteristic	N = 31
Sputum, bronchoaspirate or bronchial brushing	
Responses	31
Range	1,500
Median (IQR)	$12.00 \ (10.00, \ 50.00)$
Mean (SD)	48.58 (95.79)

	Characteristic	Other regions, $N =$	Lima, N = 10	Overall, $N = 31$
		21		
	Sputum,			
_	bronchoaspirate or			
By region	bronchial brushing			
	Responses	21	10	31
	Range	1, 88	3,500	1, 500
	Median (IQR)	10.00 (10.00, 30.00)	43.50 (12.50, 90.00)	12.00 (10.00, 50.00)
	Mean (SD)	22.67 (23.97)	103.00 (156.36)	48.58 (95.79)

	Characteristic	Low capacity, $N=10$	$\begin{array}{c} \textbf{High capacity}, N = \\ 21 \end{array}$	Overall, $N = 31$
By capacity	Sputum, bronchoaspirate or bronchial brushing Responses Range Median (IQR) Mean (SD)	10 1, 100 11.00 (7.75, 33.00) 26.40 (33.45)	21 1, 500 20.00 (10.00, 50.00) 59.14 (113.56)	31 1, 500 12.00 (10.00, 50.00) 48.58 (95.79)

Mucosal exudates

Characteristic	m N=7	
Mucosal exudates		
Responses	7	
Range	5, 150	
Median (IQR)	$20.00 \ (12.50, \ 52.50)$	
Mean (SD)	43.57 (50.97)	

	Characteristic	Other regions, $N = 4$	Lima, N = 3	Overall, $N = 7$
	Mucosal exudates			
By region	Responses	4	3	7
-,	Range	5, 60	15, 150	5, 150
	Median (IQR)	15.00 (8.75, 30.00)	45.00 (30.00, 97.50)	$20.00 \ (12.50, 52.50)$
	Mean (SD)	23.75 (24.96)	70.00 (70.89)	43.57 (50.97)

Characteristic	Low capacity, $N=2$	High capacity, $N=5$	Overall, $N = 7$
Mucosal exudates			
Responses	2	5	7
Range	15, 60	5, 150	5, 150
Median (IQR)	$37.50\ (26.25,\ 48.75)$	$20.00 \ (10.00, \ 45.00)$	$20.00 \ (12.50, 52.50)$
Mean (SD)	37.50 (31.82)	46.00 (60.15)	43.57 (50.97)

Biopsies

Characteristic	N = 5
Biopsies	
Responses	5
Range	1, 15
Median (IQR)	$5.00 \ (1.00, 8.00)$
Mean (SD)	6.00 (5.83)

By region

Characteristic	Other regions, $N = 3$	Lima, N = 2	Overall, $N = 5$
Mucosal exudates			
Responses	3	2	5
Range	1, 8	5, 15	1, 15
Median (IQR)	$1.00 \ (1.00, \ 4.50)$	$10.00 \ (7.50, 12.50)$	$5.00 \ (1.00, \ 8.00)$
Mean (SD)	3.33(4.04)	10.00 (7.07)	6.00(5.83)

By capacity

Characteristic	Low capacity, $N=2$	High capacity, $N=3$	Overall, $N = 5$
Mucosal exudates			
Responses	2	3	5
Range	1, 8	1, 15	1, 15
Median (IQR)	$4.50\ (2.75,\ 6.25)$	5.00 (3.00, 10.00)	$5.00 \ (1.00, \ 8.00)$
Mean (SD)	4.50 (4.95)	7.00(7.21)	6.00(5.83)

Urine

Characteristic	N = 18
Urine	
Responses	18
Range	3, 11,000
Median (IQR)	$42.50 \ (16.25, \ 287.50)$
Mean (SD)	$783.67 \ (2,564.28)$

	Characteristic	Other regions, $N =$	$\mathbf{Lima}, N=5$	Overall, $N = 18$
		13		
	Urine			
By region	Responses	13	5	18
	Range	10, 700	3, 11,000	3, 11,000
	Median (IQR)	$35.00 \ (15.00, 125.00)$	300.00 (28.00, 1,000.00)	$42.50 \ (16.25, \ 287.50)$
	Mean (SD)	$136.54 \ (205.29)$	$2,466.20 \ (4,787.49)$	783.67 (2,564.28)

By capac

	Characteristic	Low capacity, $N = 9$	High capacity , $N = 9$	Overall, $N = 18$
	Urine			
acity	Responses	9	9	18
	Range	3, 11,000	10, 1,000	3, 11,000
	Median (IQR)	$50.00\ (15.00,\ 400.00)$	$30.00 \ (20.00, 125.00)$	$42.50 \ (16.25, \ 287.50)$
	Mean (SD)	$1,384.78 \ (3,613.48)$	$182.56 \ (320.62)$	$783.67 \ (2,564.28)$

${\bf Blood}$

Characteristic	N = 12	
Blood		
Responses	12	
Range	3, 1,000	
Median (IQR)	$125.00 \ (24.50, \ 362.50)$	
Mean (SD)	270.08 (364.19)	

	Characteristic	Other regions, $N = 8$	$\mathbf{Lima}, \mathrm{N} = 4$	Overall, $N = 12$
ъ .	Blood Responses	8	4	19
By region	Range Modian (IOP)	3, 1,000	20, 1,000	3, 1,000

By region	Responses Range Median (IQR) Mean (SD)	8 3, 1,000 80.00 (24.50, 130.50) 183.88 (334.01)	4 20, 1,000 375.00 (267.50, 550.00) 442.50 (408.12)	
-				

Ву

	Characteristic	Low capacity, $N = 3$	High capacity, $N = 9$	Overall, $N = 12$
	Blood			
By capacity	Responses	3	9	12
	Range	3, 130	20, 1,000	3, 1,000
	Median (IQR)	$120.00 \ (61.50, 125.00)$	$132.00\ (26.00,\ 400.00)$	$125.00 \ (24.50, 362.50)$
	Mean (SD)	84.33 (70.61)	332.00 (404.81)	270.08 (364.19)

Intravascular catheter

Characteristic	N = 7
Intravascular catheter	
Responses	7
Range	4, 200
Median (IQR)	$10.00 \ (10.00, 40.00)$
Mean (SD)	44.86 (70.98)

Response	_	Intravascular catheter	5	2	7
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	By region	Responses			
$ \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$		_	,	,	· · · · · · · · · · · · · · · · · · ·
Characteristic Low capacity, N = 2 High capacity, N = 5 Overall, N = 7			, , ,	, , ,	
$ \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$					(+)
Responses 2 5 7 7 4,200		Characteristic	Low capacity, N = 2	High capacity, N = 5	Overall, $N = 7$
Responses 2 5 7 7 4,200		Intravascular catheter			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	By capacity	TD.	2	5	7
	By capacity	Range	10, 20	4, 200	4, 200
		Median (IQR)	15.00 (12.50, 17.50)	10.00 (10.00, 60.00)	10.00 (10.00, 40.00)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		Mean (SD)	15.00 (7.07)	56.80 (83.19)	44.86 (70.98)
$ \begin{array}{ c c c c c } \hline Cerebrospinal fluid collection \\ Responses \\ Range \\ Median (IQR) \\ Mean (SD) & 12.00 (8.00, 20.00) \\ \hline \\ $	Cerebrospir	al fluid collection			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Characteri	istic		N = 15	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Cerebrospin	al fluid collection			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				15	
$ \textbf{By region} \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	Median (1	IQR)		12.00 (8.00, 20.00)	
	Mean (SI	0)		21.73 (29.25)	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		Characteristic	Other regions, $N = 8$	$\mathbf{Lima},\mathrm{N}=7$	Overall, $N = 15$
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		-			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	By region		0	7	15
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Dy region				-
		9		,	*
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$					
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		Mean (SD)	13.00 (8.57)	31.71 (41.14)	21.73(29.25)
By capacity collection Responses 0 15 15 Range Inf, -Inf 5, 120 5, 120 Median (IQR) NA (NA, NA) 12.00 (8.00, 20.00) 12.00 (8.00, 20.00)		Mean (SD)	13.00 (8.57)	31.71 (41.14)	21.73 (29.25)
Responses 0 15 15 Range Inf, -Inf 5, 120 5, 120 Median (IQR) NA (NA, NA) 12.00 (8.00, 20.00) 12.00 (8.00, 20.00)				High capacity, N =	· /
Range Inf, -Inf 5, 120 5, 120 Median (IQR) NA (NA, NA) 12.00 (8.00, 20.00) 12.00 (8.00, 20.00)		Characteristic Cerebrospinal fluid		High capacity, N =	· /
Median (IQR) NA (NA, NA) 12.00 (8.00, 20.00) 12.00 (8.00, 20.00)	By capacity	Characteristic Cerebrospinal fluid collection	Low capacity, N = 0	High capacity, N =	Overall, N = 15
	By capacity	Characteristic Cerebrospinal fluid collection Responses	Low capacity, $N = 0$	High capacity, N = 15	Overall, $N = 15$
	By capacity	Characteristic Cerebrospinal fluid collection Responses Range	Low capacity, $N=0$ 0 Inf, -Inf	High capacity, N = 15 15 5, 120	Overall, N = 15 15 5, 120

Other regions, N=5

 ${\bf Characteristic}$

 ${\bf Intravascular\ catheter}$

Lima, N=2

Overall, N = 7

Bone marrow

Characteristic	N=2
Bone marrow	
Responses	2
Range	3, 3
Median (IQR)	$3.00 \ (3.00, \ 3.00)$
Mean (SD)	$3.00\ (0.00)$

Bv	region

Characteristic	Other regions, $N = 0$	Lima, N = 2	Overall, $N=2$
Bone marrow			
Responses	0	2	2
Range	Inf, -Inf	3, 3	3, 3
Median (IQR)	NA (NA, NA)	3.00 (3.00, 3.00)	3.00 (3.00, 3.00)
Mean (SD)	NA (NA)	3.00 (0.00)	3.00 (0.00)

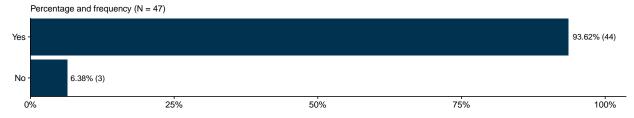
By capacity

Characteristic	Low capacity, $N = 0$	High capacity, $N=2$	Overall, $N=2$
Bone marrow			
Responses	0	2	2
Range	$\operatorname{Inf},\operatorname{-Inf}$	3, 3	3, 3
Median (IQR)	NA (NA, NA)	3.00 (3.00, 3.00)	3.00 (3.00, 3.00)
Mean (SD)	NA (NA)	3.00(0.00)	3.00(0.00)

Microscopic examinations

Does the mycology laboratory perform microscopic examinations?

Does the mycology laboratory perform microscopic examinations?

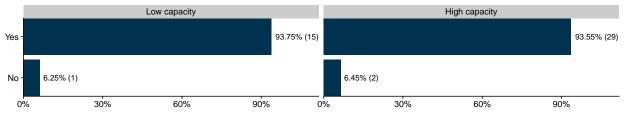


By region

Does the mycology laboratory perform microscopic examinations?

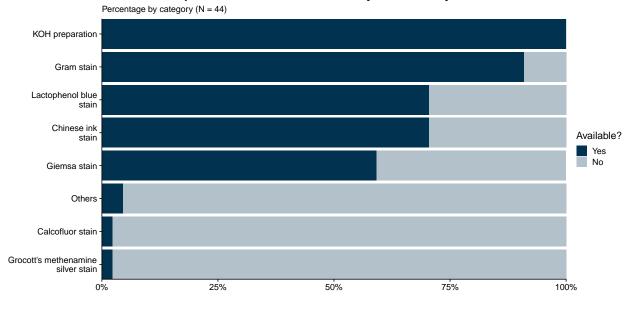


Does the mycology laboratory perform microscopic examinations?

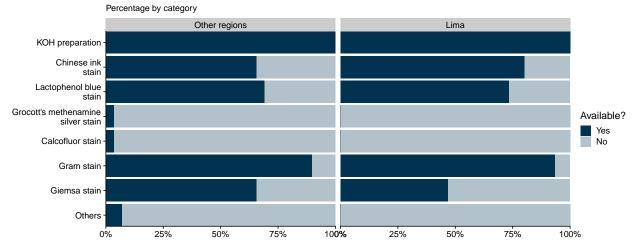


Available microscopic examinations

What microscopic examinations are available in your laboratory?

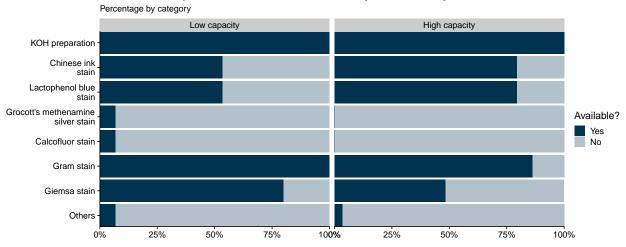


What microscopic examinations are available in your laboratory?



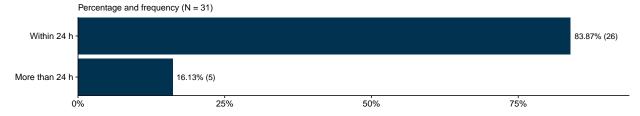
By capacity

What microscopic examinations are available in your laboratory?

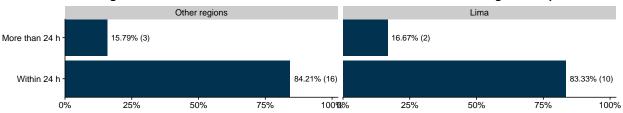


Delivery time of chinese ink stain test results

How long does it take to deliver the chinese ink stain test results after receiving the sample?

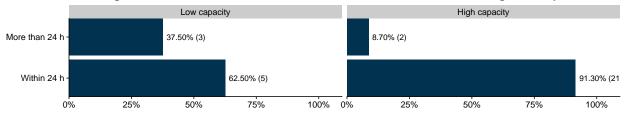


How long does it take to deliver the chinese ink stain test results after receiving the sample?



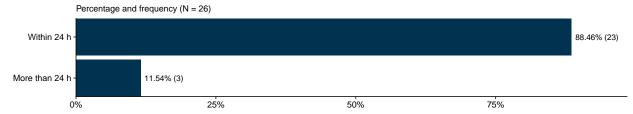
By capacity

How long does it take to deliver the chinese ink stain test results after receiving the sample?



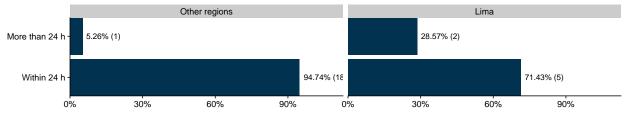
Delivery time of Giemsa ink stain test results

How long does it take to deliver the giemsa ink stain test results after receiving the sample?

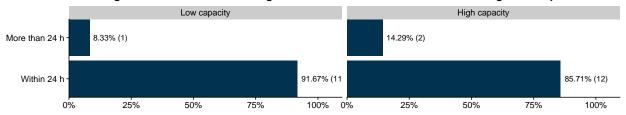


By region

How long does it take to deliver the giemsa ink stain test results after receiving the sample?

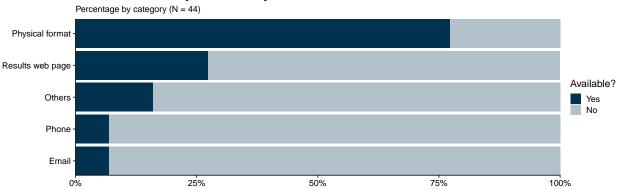


How long does it take to deliver the giemsa ink stain test results after receiving the sample?



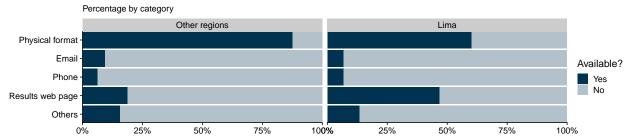
Results delivery method

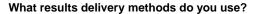
What results delivery methods do you use?

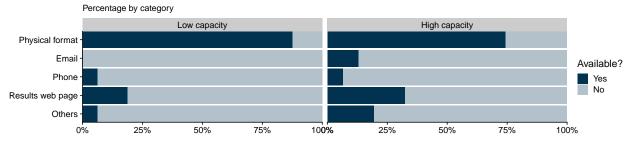


By region

What results delivery methods do you use?



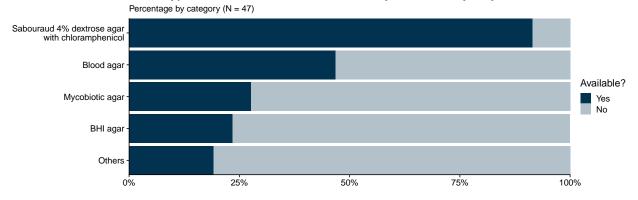




Fungal identification: Yeast

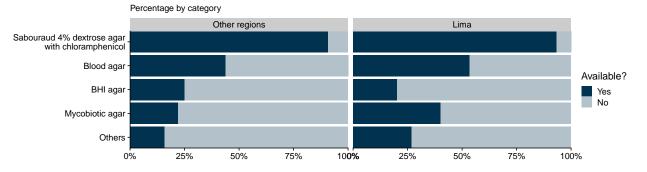
Available culture medias for yeast identification

Which types of culture medias are available in your laboratory for yeast identification?

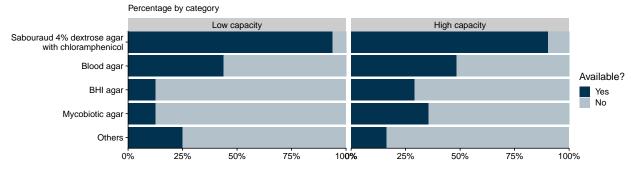


By region

Which types of culture medias are available in your laboratory for yeast identification?

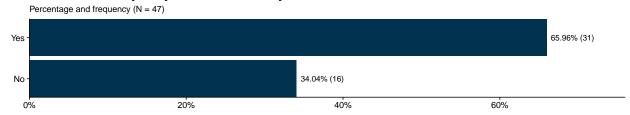


Which types of culture medias are available in your laboratory for yeast identification?



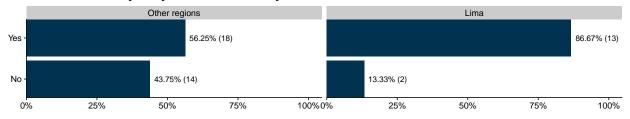
Does the laboratory has yeast identification systems?

Does the laboratory has yeast identification systems?



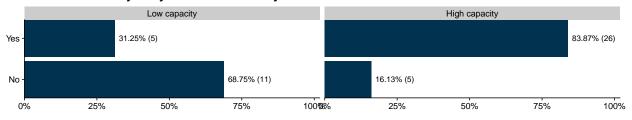
By region

Does the laboratory has yeast identification systems?



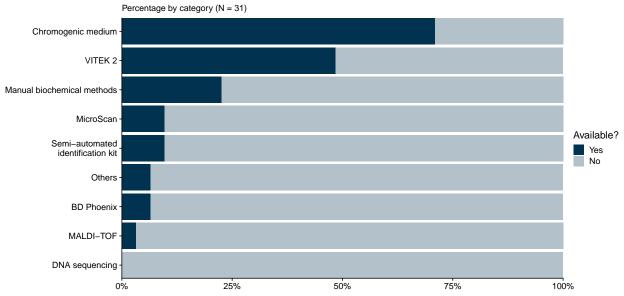
By capacity

Does the laboratory has yeast identification systems?



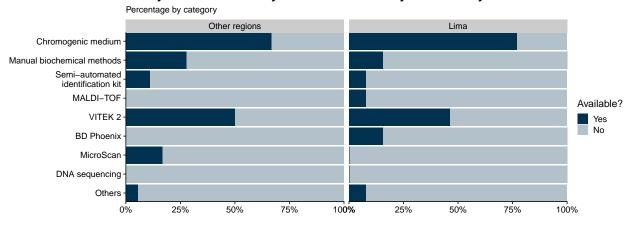
Available yeast identification systems



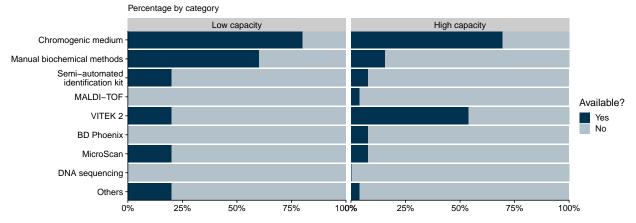


By region

What yeast identification systems are available in your laboratory?

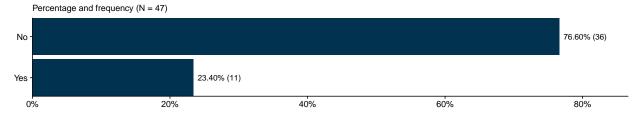


What yeast identification systems are available in your laboratory?



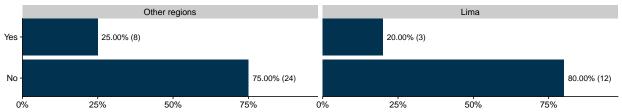
Routine storage of clinical yeast isolates

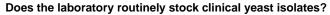
Does the laboratory routinely stock clinical yeast isolates?

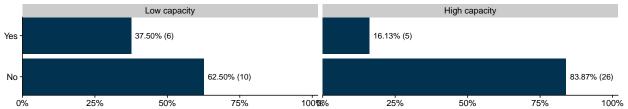


By region

Does the laboratory routinely stock clinical yeast isolates?



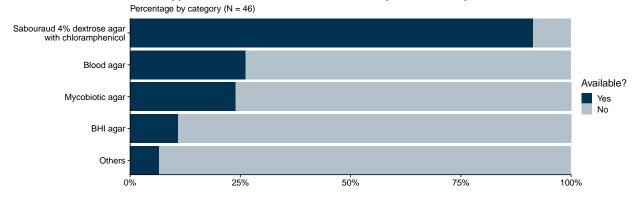




Fungal identification: Mold (Filamentous/Dimorphic Fungi)

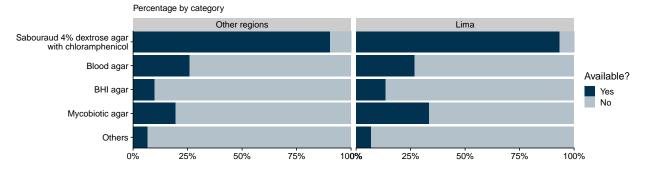
Available culture medias for mold identification

Which types of culture medias are available in your laboratory for mold identification?

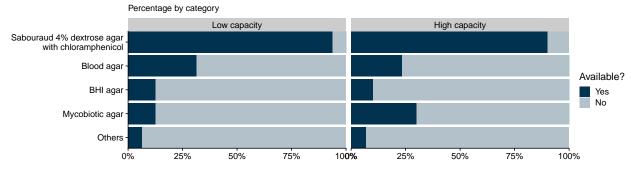


By region

Which types of culture medias are available in your laboratory for mold identification?

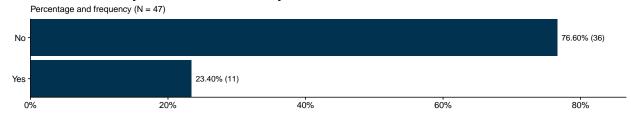


Which types of culture medias are available in your laboratory for mold identification?



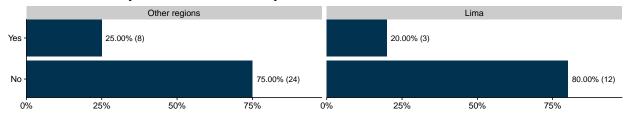
Does the laboratory has mold identification systems?

Does the laboratory has mold identification systems?



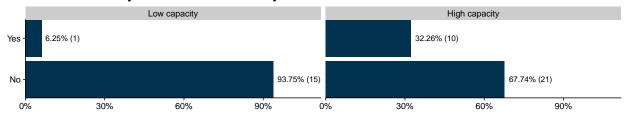
By region

Does the laboratory has mold identification systems?



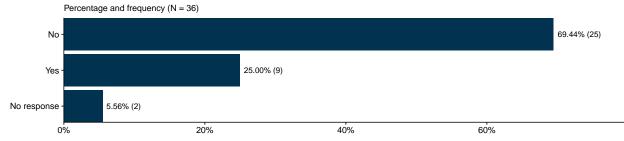
By capacity

Does the laboratory has mold identification systems?



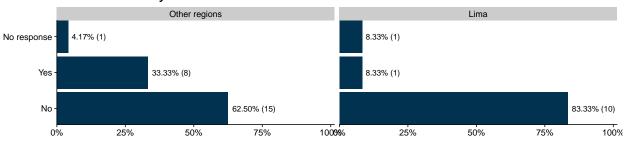
Does the laboratory send mold isolates to external labs for identification?

Does the laboratory send mold isolates to external labs for identification?



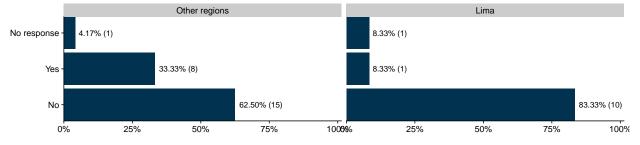
By region

Does the laboratory send mold isolates to external labs for identification?



By capacity

Does the laboratory send mold isolates to external labs for identification?



Available mold identification systems

What mold identification systems are available in your laboratory?

Percentage by category (N = 11)

Morphological characterization

Others
DNA sequencing
MALDI-TOF
0% 25% 50% 75% 100%

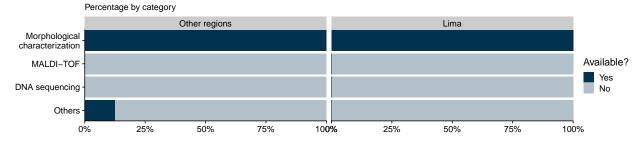
By region

What mold identification systems are available in your laboratory?

Percentage by category Other regions Lima Morphological characterization Available? MALDI-TOF Yes DNA sequencing No Others -50% 25% 50% 75% 25% 75% 100% 0% 100%

By capacity

What mold identification systems are available in your laboratory?

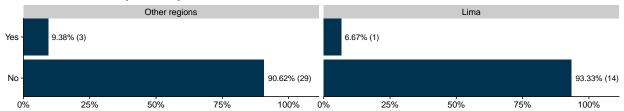


Routine storage of clinical yeast isolates

Does the laboratory routinely stock clinical mold isolates?

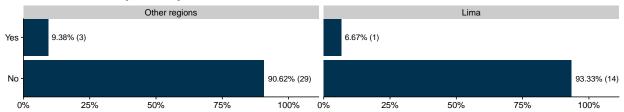
By region

Does the laboratory routinely stock clinical mold isolates?



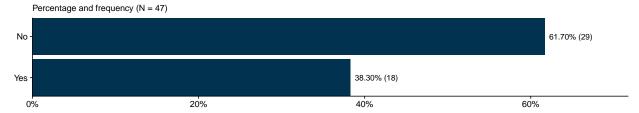
By capacity

Does the laboratory routinely stock clinical mold isolates?

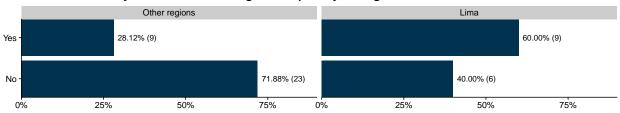


Antifungal susceptibility testing

Does the laboratory offer in-vitro antifungal susceptibility testing services?

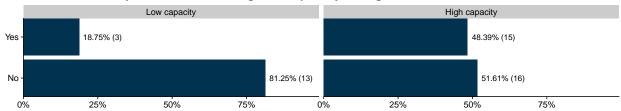


Does the laboratory offer in-vitro antifungal susceptibility testing services?



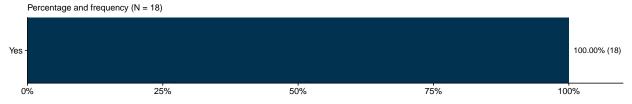
By capacity

Does the laboratory offer in-vitro antifungal susceptibility testing services?



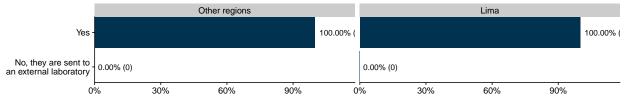
Does the laboratory perform the antifungal susceptibility tests or are they sent to an external laboratory?

Does the laboratory perform the antifungal susceptibility tests or are they sent to an external laboratory?

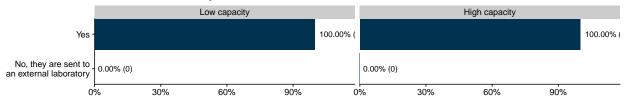


By region

Does the laboratory perform the antifungal susceptibility tests or are they sent to an external laboratory?



Does the laboratory perform the antifungal susceptibility tests or are they sent to an external laboratory?

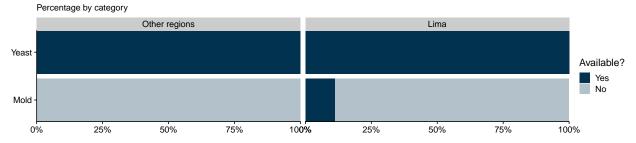


What types of fungi are antifungal susceptibility tests available for?

What types of fungi are antifungal susceptibility tests available for?

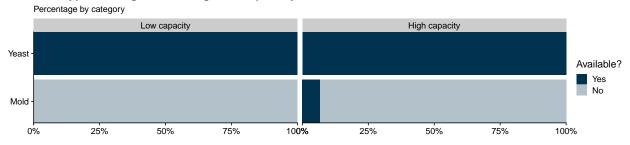
By region

What types of fungi are antifungal susceptibility tests available for?



By capacity

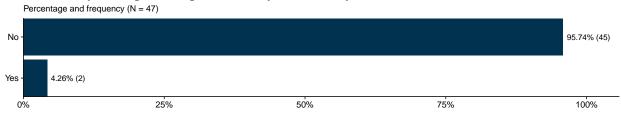
What types of fungi are antifungal susceptibility tests available for?



Serological tests

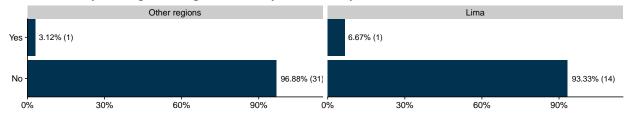
Are antibody tests against fungi (Aspergillus sp., Histoplasma capsulatum, Paracoccidioides brasiliensis) available in your laboratory?

Are antibody tests against fungi available in your laboratory?



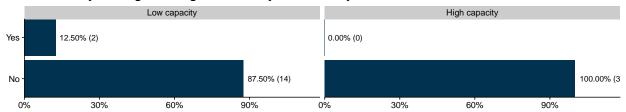
By region

Are antibody tests against fungi available in your laboratory?



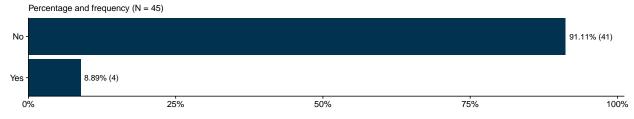
By capacity

Are antibody tests against fungi available in your laboratory?

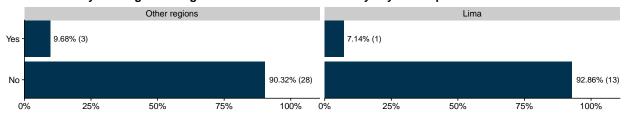


Are antibody tests against fungi available in another laboratory in your hospital?

Are antibody tests against fungi available in another laboratory in your hospital?

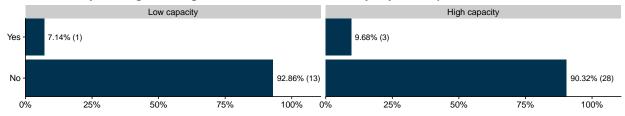






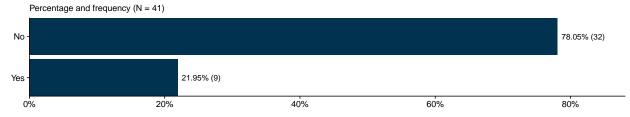
By capacity

Are antibody tests against fungi available in another laboratory in your hospital?



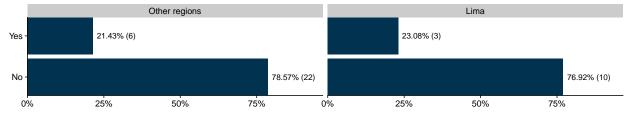
Are the tests for the detection of antibodies against fungi sent to an external laboratory?

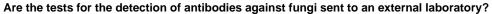
Are the tests for the detection of antibodies against fungi sent to an external laboratory?

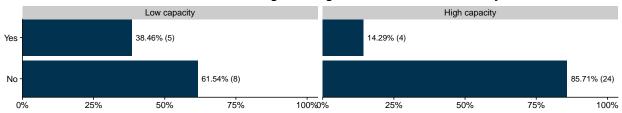


By region

Are the tests for the detection of antibodies against fungi sent to an external laboratory?

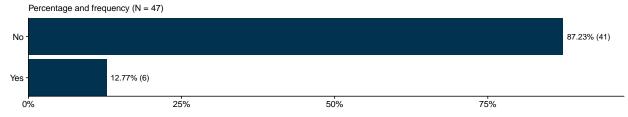






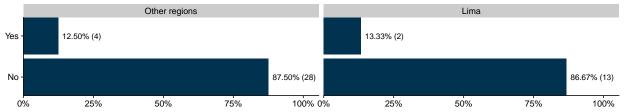
Are Cryptococcus antigen detection tests available in your laboratory?

Are Cryptococcus antigen detection tests available in your laboratory?



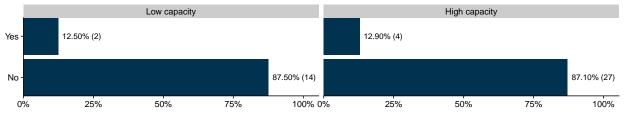
By region

Are Cryptococcus antigen detection tests available in your laboratory?



By capacity

Are Cryptococcus antigen detection tests available in your laboratory?



Are Cryptococcus antigen tests available at another lab in the hospital?

Are Cryptococcus antigen tests available at another lab in the hospital?

Percentage and frequency (N = 41)

No - 100.00% (41)

75%

100%

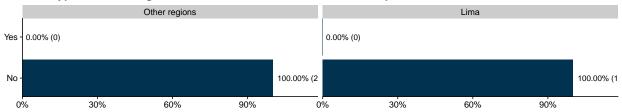
50%

By region

0%

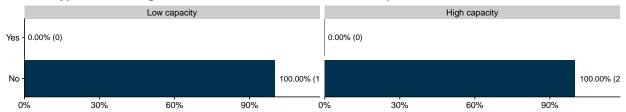
Are Cryptococcus antigen tests available at another lab in the hospital?

25%



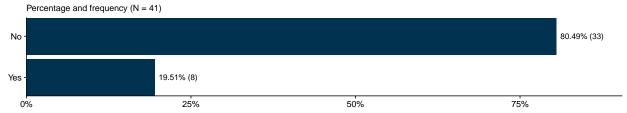
By capacity

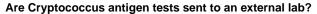
Are Cryptococcus antigen tests available at another lab in the hospital?

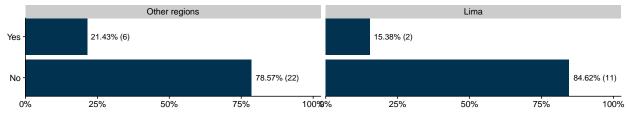


Are Cryptococcus antigen tests sent to an external laboratory?

Are Cryptococcus antigen tests sent to an external lab?

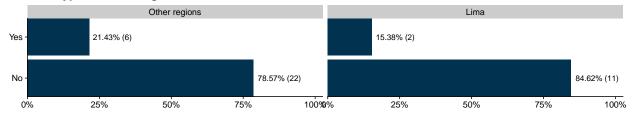






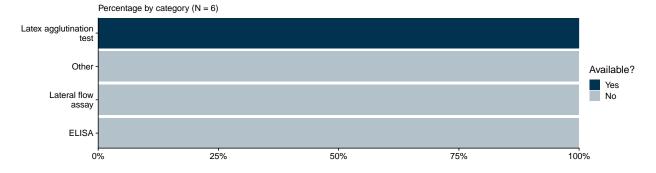
By capacity

Are Cryptococcus antigen tests sent to an external lab?



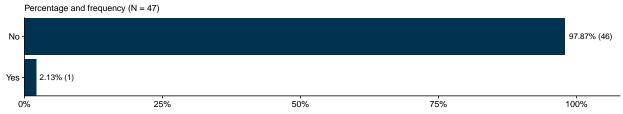
Which antigen detection tests for Cryptococcus are available in your laboratory or hospital?

Which antigen detection tests for Cryptococcus are available in your laboratory or hospital?



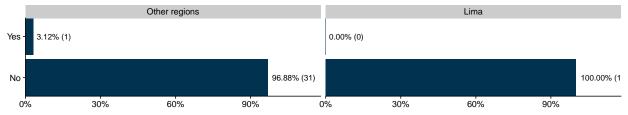
Are *Histoplasma capsulatum* antigen detection tests available in your laboratory?

Are Histoplasma capsulatum antigen detection tests available in your laboratory?



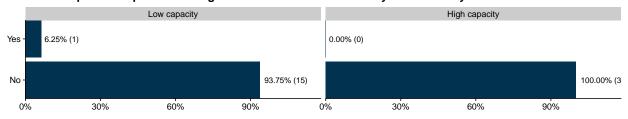
By region

Are Histoplasma capsulatum antigen detection tests available in your laboratory?



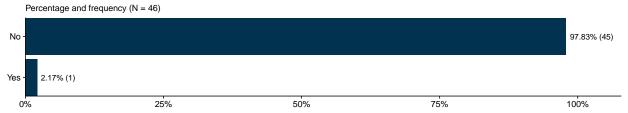
By capacity

Are Histoplasma capsulatum antigen detection tests available in your laboratory?

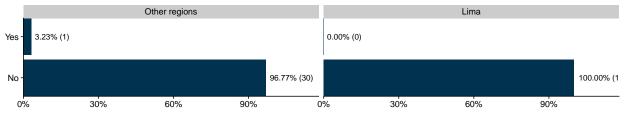


Are *Histoplasma capsulatum* antigen tests available at another lab in the hospital?

Are Histoplasma capsulatum antigen tests available at another lab in the hospital?

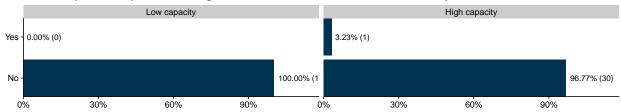


Are Histoplasma capsulatum antigen tests available at another lab in the hospital?



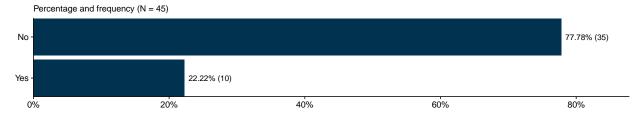
By capacity

Are Histoplasma capsulatum antigen tests available at another lab in the hospital?



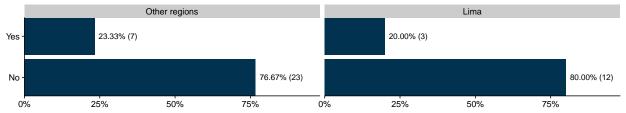
Are *Histoplasma capsulatum* antigen tests sent to an external laboratory?

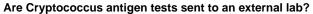
Are Histoplasma capsulatum antigen tests sent to an external lab?

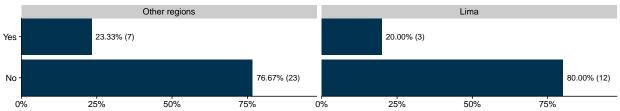


By region

Are Cryptococcus antigen tests sent to an external lab?

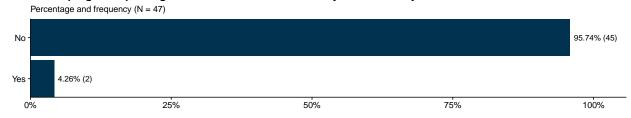






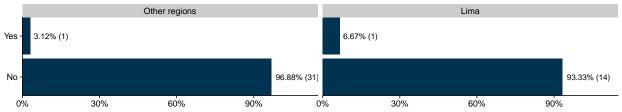
Are Aspergillus sp. antigen detection tests available in your laboratory?

Are Aspergillus sp. antigen detection tests available in your laboratory?



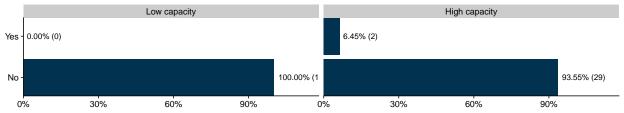
By region

Are Aspergillus sp. antigen detection tests available in your laboratory?



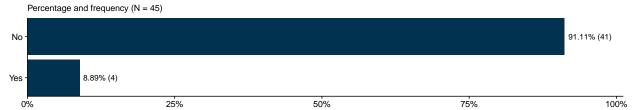
By capacity

Are Aspergillus sp. antigen detection tests available in your laboratory?



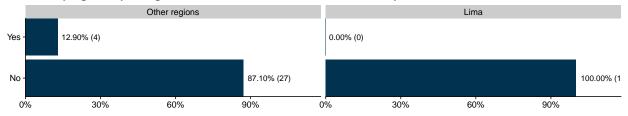
Are Aspergillus sp. antigen tests available at another lab in the hospital?

Are Aspergillus sp. antigen tests available at another lab in the hospital?



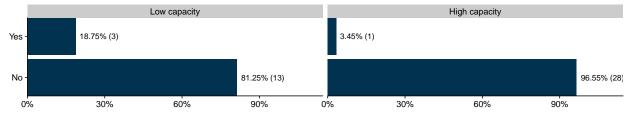
By region

Are Aspergillus sp. antigen tests available at another lab in the hospital?



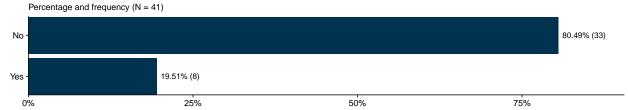
By capacity

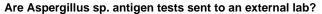
Are Aspergillus sp. antigen tests available at another lab in the hospital?

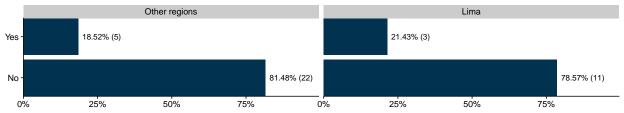


Are Aspergillus sp. antigen tests sent to an external laboratory?

Are Aspergillus sp. antigen tests sent to an external lab?

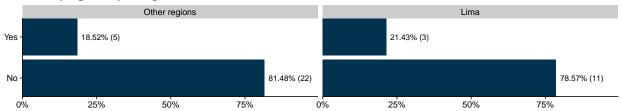






By capacity

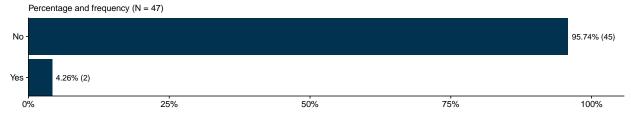
Are Aspergillus sp. antigen tests sent to an external lab?



Molecular diagnosis

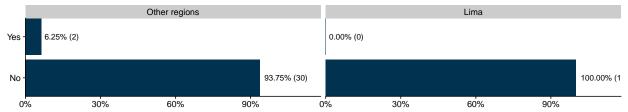
Are PCR tests for the diagnosis of fungi available in your laboratory/hospital?

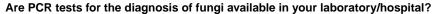
Are PCR tests for the diagnosis of fungi available in your laboratory/hospital?

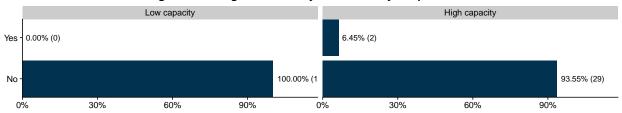


By region

Are PCR tests for the diagnosis of fungi available in your laboratory/hospital?

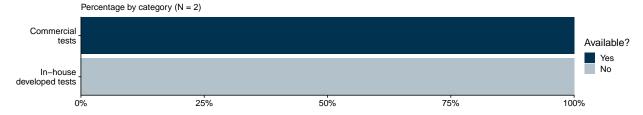






Available PCR tests for the diagnosis of fungi

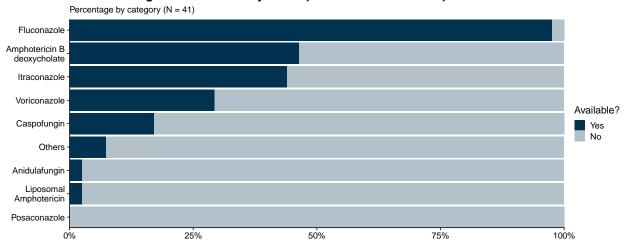
Which PCR test for the diagnosis of fungi are available in your laboratory or hospital?



Other capacities

Available antifungals for the treatment of patients

Which antifungals are available in your hospital for the treatment of patients?



Which antifungals are available in your hospital for the treatment of patients?

Percentage by category

Other regions
Lima

Fluconazole
Voriconazole
Posaconazole
Amphotericin B deoxycholate
Liposomal Amphotericin
Anidulafungin
Caspofungin
Iltraconazole
Others -

100%

25%

50%

75%

100%

By capacity

0%

25%

50%

Which antifungals are available in your hospital for the treatment of patients?

75%

