Infectious Diseases Society of America
Emerging Infections Network

Preliminary Report for Query: 'The Effect of Increased SARS-CoV-2 Testing on Laboratory Services'

Three emailed requests to answer this query were sent (8/25, 9/3 and 9/10/20).
613 of 1,795 (34%) physicians responded from 8/25 through 9/16/20.

Note: The denominator includes only members who have ever responded to an EIN survey; 175 members who joined the EIN but have not yet responded to any surveys so far are excluded.

Practice characteristics of EIN ID physician respondents:

Practice:	Adult infectious diseases		464 (76%)
	Pediatric infectious diseases		149 (24%)
Region:	New England		51 (8%)
	Mid Atlantic		96 (16%)
	East North Central		93 (15%)
	West North Central		60 (10%)
	South Atlantic		110 (18%)
	East South Central		27 (4%)
	West South Central		35 (6%)
	Mountain		28 (5%)
	Pacific		109 (18%)
	Canada and Puerto Rico		4 (0.6%)
Years' experience since ID fellowship:		<5 years	112 (18%)
		5-14	187 (31%)
		15-24	118 (19%)
		≥25	196 (32%)
Employment:	Hospital/clinic		217 (35%)
	Private/group practice		117 (19%)
	University/medical school		242 (40%)
	VA and military		37 (6%)
Primary hospital type:	Community		124 (20%)
	Non-university teaching		149 (25%)
	University		271 (44%)
	VA hospital or DOD		40 (7%)
	City/county		24 (4%)
	Outpatient only		5 (0.8%)

The same questions were also sent to Clinical Microbiology Laboratory Directors via ASM's ClinMicroNet listserv on 8/27 and 9/9/2020. Their results are shown in blue font.

187 physicians responded by email reporting that they were not aware of problems related to increased SARS-CoV-2 testing. Those responses are included in Question 2 results only ("No").

All 85 clinical microbiology lab directors who responded used the online form.

Question 1. For your institution, where is SARS-CoV-2 testing performed? *[Select all that apply]*

	[N= 426 ID physicians]	*[N= 85 lab directors]*
a. PCR testing:		
Onsite only	253 (60%)	55 (65%)
Offsite only	34 (8%)	0
Both onsite and offsite	133 (31%)	29 (34%)
Not sure or *[Not answered]*	6 (1%)	1 (1%)
b. antigen testing:		
Onsite only	72 (17%)	8 (9%)
Offsite only	35 (8%)	4 (5%)
Both onsite and offsite	8 (2%)	3 (4%)
Not sure or *[Not answered]*	85 (20%)	8 (9%)
Not available	226 (53%)	62 (73%)

Question 2. Are you aware of any delays in results or unavailable tests (non-SARS-CoV-2 tests) in your institution due to the demand to perform SARS-CoV-2 PCR or antigen testing?

	[N= 613 ID physicians]	*[N= 85 lab directors]*
No (opt out of survey)	417 (68%)	12 (14%)
Yes	196 (32%)	73 (86%)

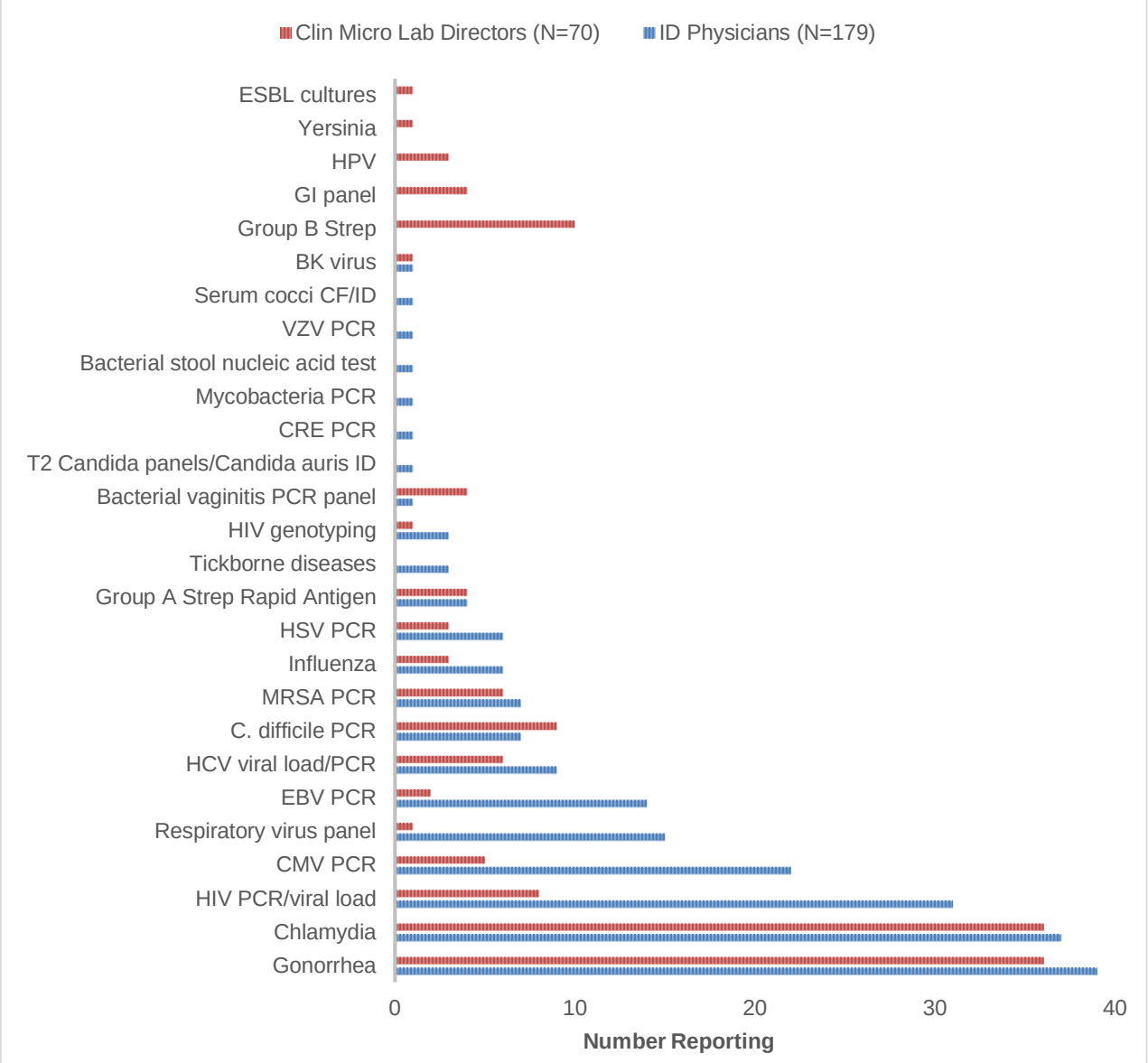
ID physicians who answered "No" were more likely to work in a VA/Department of Defense hospital (p=0.0003), be employed by the federal government (p=0.0007) and have at least 15 years of ID experience (p=0.025).

The 417 and 12 respondents who answered 'No' stopped here.
196 physicians and 73 micro lab directors answered at least some of the remaining questions

Question 3. Was the testing:

	[N= 196 ID physicians]	*[N= 73 lab directors]*
Delayed	133 (68%)	36 (49%)
Not available	34 (17%)	12 (17%)
Both delayed and not available	24 (12%)	24 (33%)
[Not answered]	5 (3%)	1 (1%)

Question 4. What non-SARS-CoV-2 test(s) have been affected?



Many Lab Directors also commented about media, reagent and platform shortages. Specific media shortages identified included: Mueller Hinton agar, HTM, blood agar, CNA agar, Myocel agar, Thayer-Martin agar, anaerobic agars. Also all PCR platforms using Roche Cobas, Cepheid and Biofire.

Question 5. In what way did SARS-CoV-2 testing cause the delay(s) or unavailability?
[Select all that apply; numbers add to more than 100%]

	[N= 196 ID physicians]	*[N= 73 lab directors]*
Insufficient reagents for other testing	107 (55%)	62 (85%)
Insufficient personnel for other testing	68 (35%)	28 (38%)
Insufficient devices for other testing	49 (25%)	31 (42%)
Exhausted supplies such as pipette tips	41 (21%)	48 (66%)
Not sure	34 (18%)	0
Other	20 (10%)	12 (16%)
[Not answered]	6 (3%)	0

Question 6. Has the demand for SARS-CoV-2 testing affected any of the following?

	[N= 196 ID physicians]	*[N= 73 lab directors]*
a. Communication with lab staff:		
Deteriorated	44 (22%)	24 (33%)
Same as before	112 (57%)	31 (42%)
Improved	31 (16%)	16 (22%)
[Not answered]	9 (5%)	2 (3%)
b. Turnaround time for non-SARS-CoV-2 tests:		
Deteriorated	122 (62%)	51 (70%)
Same as before	59 (30%)	16 (22%)
Improved	9 (5%)	6 (8%)
[Not answered]	6 (3%)	0
c. Access to special request testing (e.g. 16S RNA sequencing):		
Deteriorated	34 (17%)	16 (22%)
Same as before	144 (73%)	52 (71%)
Improved	1 (0.5%)	0
[Not answered]	17 (9%)	5 (7%)
d. Overall availability of lab services:		
Deteriorated	77 (39%)	44 (60%)
Same as before	103 (53%)	26 (36%)
Improved	4 (2%)	1 (1%)
[Not answered]	12 (6%)	2 (3%)

Question 7. Any comments about the impact of SARS-CoV-2 testing on other laboratory services? *[open text field]*

N= 83 ID physicians answered [4 typical examples shown below]
--"Has required tremendous effort and coordination of lab personnel and resources who have responded as the unsung heroes."
--"I have heard about a few close calls due to low reagents, tips and the staff are under a lot of pressure, but so far due to good management, it seems that our lab has been able to still provide all the other testing so far."
--"Lab reports critical shortage for media, including blood agar."
--"SARS-CoV-2 testing has had significant impact on our molecular diagnostic team. We've had to re-design our lab to adjust to the new workflow from the high SARS-CoV-2 test volumes, new instrumentation and new personnel. We've had to send some molecular tests to a reference lab to free up thermocyclers for testing. We've also had to send other molecular tests to our reference lab due to reagent shortage. Currently, we've run low on several different agar plates in micro and are having to source them from other vendors. It's been non-stop juggling and trouble shooting."

N= 56 lab directors answered
Multiple Lab Directors commented that lab personnel are overworked and stressed. There were also multiple comments about efforts to "work-around" shortages and develop creative solutions to manage insufficient media, reagents, supplies and personnel. Many comments refer to specific tests and specific supply chain issues.

Excel file with open-text field answers may be viewed here:
http://www.int-med.uiowa.edu/Research/EIN/Open_text_fields_COVIDlabImpact.xlsx