

Table 1. 2019-C CDF Survey Supplemental Questionnaire Questions and Responses

Question	Responses
Q1. On average, how many stool specimens are tested for <i>C. difficile</i> in your laboratory each week?	<ul style="list-style-type: none"> - <5 - 5-50 - 51-100 - 101-500 - >500
Q2. Which of the following best describes your laboratory?	<ul style="list-style-type: none"> - National or regional reference laboratory - Community hospital laboratory - Academic hospital laboratory - Independent local and/or commercial laboratory - Veteran's hospital laboratory - Other, specify: (free text field)
Q3. Which of the following tests are performed by your laboratory (Select all that apply and indicate the manufacturer from the Manufacturer Master List.)	<ul style="list-style-type: none"> - Toxin A/B immunoassay Manufacturer (master list code) - GDH and toxin A/B combo Immunoassay Manufacturer (master list code) - Nucleic acid amplification testing (eg, PCR) Manufacturer (master list code) - Cell culture cytotoxicity neutralization assay (CCNA) - Toxigenic culture - Other, specify: (free text field)
Q4. Does your laboratory use a <i>C. difficile</i> multi-step testing algorithm (ie, one test is performed first and based on the result, is followed by a different test)?	<ul style="list-style-type: none"> - Yes - No
Q5. Which testing approach or algorithm is currently used in your laboratory?	<ul style="list-style-type: none"> - Toxin A/B immunoassay alone - Nucleic acid amplification testing (NAAT) alone - GDH and toxins A/B combination (combo) alone - GDH followed by toxin immunoassay, if GDH positive - NAAT followed by toxin immunoassay, if NAAT is positive - NAAT followed by GDH and toxins A/B combo, if NAAT is positive - GDH and toxins A/B combo followed by NAAT, if combo results are discrepant - GDH followed by cell culture cytotoxicity neutralization assay (CCNA), if GDH is positive - Other, specify: (free text field)
Q6. Which of the following best describes your laboratory's approach to <i>C. difficile</i> test result reporting in the patient health record?	<ul style="list-style-type: none"> - We perform one test only and report the result - We use an algorithm and report results of all tests in the algorithm - We use an algorithm and report the result of the last test performed only - We use an algorithm, report all test results, and provide interpretive commentary - We do report differently, specify: (free text field)
Q7. What preanalytical criteria testing restrictions for <i>C. difficile</i> are enforced in your laboratory? (Select all that apply.)	<ul style="list-style-type: none"> - Reject formed stool that does not take shape of the container or another formed stool criteria - Reject stool from infants (if yes, specify age cut off): (free text field)

Question	Responses
	- Reject testing on patients taking laxatives - Other, specify (free text field)
Q8. Does your laboratory report detection of the NAP1 hypervirulent strain?	- Yes - No

Supplemental Questionnaire Results

Q1. On average, how many stool specimens are tested for <i>C. difficile</i> in your laboratory each week?	No.	Percent
<5	233	20.1
5-50	768	66.4
51-100	100	8.6
101-500	52	4.5
>500	4	0.3
	1157	

Q2. Which of the following best describes your laboratory?	No.	Percent
Community hospital laboratory	758	65.7
Academic hospital laboratory	118	10.2
Veteran's hospital laboratory	99	8.6
Independent local and/or commercial laboratory	67	5.8
National or regional reference laboratory	52	4.5
Other	59	5.1
	1153	

Q3. Tests performed by your laboratory (<i>Multiple responses allowed.</i>)	n=1145	
	No.	Percent
Nucleic acid amplification testing	786	68.6
GDH and Toxin A/B combo immunoassay	582	50.8
Toxin A/B immunoassay	228	19.9
Cell culture cytotoxicity neutralization assay (CCNA)	6	0.5
Other	43	3.8

Q3a. Toxin A/B immunoassay manufacturer	No.	Percent
Meridian ImmunoCard Toxins A&B	77	38.9
TechLab/Alere QUIK CHEK Complete	50	25.3
TechLab/Alere Tox A/B QUIKCHEK	14	7.1
Meridian Premier Toxin A+B	13	6.6
TechLab/Alere QUIK CHEK	10	5.1
Cepheid Xpert	9	4.5
Remel Xpect Toxin A/B	6	3.0
TechLab/Alere TOX AB II	5	2.5
Meridian illumigene	4	2.0
BioMerieux VIDAS, VIDAS3, miniVIDAS	3	1.5
Meridian Alethia	3	1.5
Luminex	1	0.5
Other	3	1.5
	198	

Q3b. GDH and Toxin A/B combo immunoassay manufacturer	No.	Percent
TechLab/Alere QUIK CHEK Complete	457	92.7
TechLab/Alere QUIK CHEK	22	4.5
BioMerieux VIDAS, VIDAS3, miniVIDAS	2	0.4
Cepheid Xpert	2	0.4
TechLab/Alere CHEK	2	0.4
Meridian ImmunoCard Toxins A&B	1	0.2
Meridian illumigene	1	0.2
Remel Xpect Toxin A/B	1	0.2
Other	5	1.0
	493	

Q3c. Nucleic acid amplification testing manufacturer	No.	Percent
Cepheid Xpert	507	73.9
BD Max	48	7.0
Meridian illumigene	45	6.6
Meridian Alethia	36	5.2
Luminex	13	1.9
DiaSorin Molecular	8	1.2
Roche cobas 4800	4	0.6
Laboratory-developed test	3	0.4
Quidel AmpliVue	3	0.4
Luminex Verigene	1	0.1

Q3c. Nucleic acid amplification testing manufacturer	No.	Percent
Quidel Lyra	1	0.1
TechLab/Alere QUIKCHEK Complete	1	0.1
Other	16	2.3
	686	

Q4. Does your laboratory use a <i>C. difficile</i> multi-step testing algorithm (ie, one test is performed first and based on the result, is followed by a different test)?	No.	Percent
Yes	684	59.0
No	475	41.0
	1159	

Q5. Which testing approach or algorithm is currently used in your laboratory?	No.	Percent
GDH and toxins A/B combo followed by NAAT, if combo results are discrepant	360	31.4
Nucleic acid amplification testing (NAAT) alone	299	26.1
NAAT followed by toxin immunoassay, if NAAT is positive	182	15.9
GDH and toxins A/B combination (combo) alone	102	8.9
NAAT followed by GDH and toxins A/B combo, if NAAT is positive	76	6.6
Toxin A/B immunoassay alone	62	5.4
GDH followed by toxin immunoassay, if GDH positive	25	2.2
GDH followed by NAAT, if GDH positive	5	0.4
GDH followed by cell culture cytotoxicity neutralization assay (CCNA), if GDH is positive	5	0.4
GDH and toxins A/B combo followed by CCNA, if combo results are discrepant	4	0.3
Other	26	2.3
	1146	

Q6. Which of the following best describes your laboratory's approach to <i>C. difficile</i> test result reporting in the patient health record?	No.	Percent
We perform one test only and report the result	473	41.1
We use an algorithm, report all test results, and provide interpretive commentary	332	28.8
We use an algorithm and report results of all tests in the algorithm	248	21.5
We use an algorithm and only report the result of the last test performed	70	6.1
We do report differently	29	2.5
	1152	

Q7. What preanalytical criteria testing restrictions for <i>C. difficile</i> are enforced in your laboratory? (<i>Multiple responses allowed.</i>)	n=1131	
	No.	Percent
Reject formed stool that does not take shape of the container or another formed stool criteria	1093	96.6
Reject testing on patients taking laxatives	388	34.3
Reject stool from infants	211	18.7
Other	170	15.0

Q7b. Infant stool rejection age cut-off	No.	Percent
6 months	5	2.7
1 year	61	33.5
2 years	109	59.9
3-4 years	7	3.8
	182	

Q8. Does your laboratory report detection of the NAP1 hypervirulent strain?	No.	Percent
Yes	278	24.4
No	862	75.6
	1140	

Institution location	No.	Percent
Domestic	1077	92.8
International	83	7.2
	1160	

Institution country	No.	Percent
United States	1077	92.8
Canada	19	1.6
Saudi Arabia	16	1.4
United Arab Emirates	9	0.8
Singapore	6	0.5
Qatar	4	0.3
China	3	0.3
India	3	0.3
Mexico	3	0.3
Thailand	3	0.3
Israel	2	0.2
South Africa	2	0.2
South Korea	2	0.2
Bahrain	1	0.1
Belgium	1	0.1
Bermuda	1	0.1
Colombia	1	0.1
Italy	1	0.1
Japan	1	0.1
Lebanon	1	0.1
Pakistan	1	0.1
Spain	1	0.1
Switzerland	1	0.1
Taiwan	1	0.1
	1160	

Results stratified by location (Domestic [US only] or International): Logistic regression models were used to test for practice differences by location. The models were fit with two factors--location and practice setting (academic, community, other). *P* values are provided for statistically significant differences (significance threshold of .05).

Q1. On average, how many stool specimens are tested for <i>C. difficile</i> in your laboratory each week?	Institution location			
	Domestic		International	
	No.	%	No.	%
<5	208	19.4	25	30.1
5-50	723	67.3	45	54.2
51-100	93	8.7	7	8.4
101-500	46	4.3	6	7.2
>500	4	0.4	0	0.0
	1074		83	

Q2. Which of the following best describes your laboratory?	Institution location			
	Domestic		International	
	No.	%	No.	%
Community hospital laboratory	734	68.6	24	28.9
Academic hospital laboratory	102	9.5	16	19.3
Veteran's hospital laboratory	97	9.1	2	2.4
Independent local and/or commercial laboratory	52	4.9	15	18.1
National or regional reference laboratory	40	3.7	12	14.5
Other	45	4.2	14	16.9
	1070		83	

Q3. Tests performed by your laboratory (Multiple responses allowed.)	Institution location				<i>P</i> value
	Domestic n=1065		International n=80		
	No.	%	No.	%	
Nucleic acid amplification testing	738	69.3	48	60.0	.004
GDH and Toxin A/B combo immunoassay	547	51.4	35	43.8	.51
Toxin A/B immunoassay	209	19.6	19	23.8	.19
Cell culture cytotoxicity neutralization assay (CCNA)	4	0.4	2	2.5	Not Tested
Other	34	3.2	9	11.3	.002

Q4. Does your laboratory use a <i>C. difficile</i> multi-step testing algorithm (ie, one test is performed first and based on the result, is followed by a different test)?	Institution location			
	Domestic		International	
	No.	%	No.	%
Yes	647	60.1	37	44.6
No	429	39.9	46	55.4
	1076		83	

P=.04

Q5. Which testing approach or algorithm is currently used in your laboratory?	Institution location			
	Domestic		International	
	No.	%	No.	%
GDH and toxins A/B combo followed by NAAT, if combo results are discrepant	339	31.8	21	25.9
Nucleic acid amplification testing (NAAT) alone	280	26.3	19	23.5
NAAT followed by toxin immunoassay, if NAAT is positive	178	16.7	4	4.9
GDH and toxins A/B combination (combo) alone	93	8.7	9	11.1
NAAT followed by GDH and toxins A/B combo, if NAAT is positive	74	6.9	2	2.5
Toxin A/B immunoassay alone	48	4.5	14	17.3
GDH followed by toxin immunoassay, if GDH positive	23	2.2	2	2.5
GDH followed by NAAT, if GDH positive	2	0.2	3	3.7
GDH followed by cell culture cytotoxicity neutralization assay (CCNA), if GDH is positive	5	0.5	0	0.0
GDH and toxins A/B combo followed by CCNA, if combo results are discrepant	2	0.2	2	2.5
Other	21	2.0	5	6.2
	1065		81	

Q6. Which of the following best describes your laboratory's approach to <i>C. difficile</i> test result reporting in the patient health record?	Institution location			
	Domestic		International	
	No.	%	No.	%
We perform one test only and report the result	428	40.0	45	54.2
We use an algorithm, report all test results, and provide interpretive commentary	320	29.9	12	14.5
We use an algorithm and report results of all tests in the algorithm	238	22.3	10	12.0
We use an algorithm and only report the result of the last test performed	62	5.8	8	9.6
We do report differently	21	2.0	8	9.6
	1069		83	

P<.001

Q7. What preanalytical criteria testing restrictions for <i>C. difficile</i> are enforced in your laboratory? (Multiple responses allowed.)	Institution location				P value
	Domestic n=1054		International n=77		
	No.	%	No.	%	
Reject formed stool that does not take shape of the container or another formed stool criteria	1029	97.6	64	83.1	<.001
Reject testing on patients taking laxatives	379	36.0	9	11.7	<.001
Reject stool from infants	191	18.1	20	26.0	.03
Other	153	14.5	17	22.1	.14

Infant stool rejection age cut-off	Institution location			
	Domestic		International	
	No.	%	No.	%
6 months	4	2.4	1	5.9
1 year	48	29.1	13	76.5
2 years	107	64.8	2	11.8
3-4 years	6	3.6	1	5.9
	165		17	

P=.003

Q8. Does your laboratory report detection of the NAP1 hypervirulent strain?	Institution location			
	Domestic		International	
	No.	%	No.	%
Yes	254	24.0	24	28.9
No	803	76.0	59	71.1
	1057		83	

Stratifications by practice setting (restricted to domestic laboratories):

Logistic regression models were used to test for practice differences by practice setting (academic, community, other). These results were restricted to all domestic laboratories. The requested testing was for community vs academic settings so I have provided those results below. The *P* values are adjusted for multiple comparisons with a Bonferroni correction.

Q1. On average, how many stool specimens are tested for <i>C. difficile</i> in your laboratory each week?	Practice setting			
	Community hospital laboratory		Academic hospital laboratory	
	No.	%	No.	%
<5	148	20.2	9	8.8
5-50	525	71.8	53	52.0
51-100	45	6.2	25	24.5
101-500	13	1.8	15	14.7
	731		102	

***P* < .001**

Q3. Tests performed by your laboratory (<i>Multiple responses allowed.</i>)	Practice setting				<i>P</i> value
	Community hospital laboratory n=723		Academic hospital laboratory n=102		
	No.	%	No.	%	
Nucleic acid amplification testing	462	63.9	85	83.3	<.001
GDH and Toxin A/B combo immunoassay	396	54.8	50	49.0	.83
Toxin A/B immunoassay	150	20.7	17	16.7	.99
Cell culture cytotoxicity neutralization assay (CCNA)	0	0.0	2	2.0	Not tested
Other	19	2.6	4	3.9	.99

Q4. Does your laboratory use a <i>C. difficile</i> multi-step testing algorithm (ie, one test is performed first and based on the result, is followed by a different test)?	Practice setting			
	Community hospital laboratory		Academic hospital laboratory	
	No.	%	No.	%
Yes	461	62.9	62	60.8
No	272	37.1	40	39.2
	733		102	

Q5. Which testing approach or algorithm is currently used in your laboratory?	Community hospital laboratory		Academic hospital laboratory	
	No.	%	No.	%
GDH and toxins A/B combo followed by NAAT, if combo results are discrepant	246	34.0	34	33.3
Nucleic acid amplification testing (NAAT) alone	159	22.0	31	30.4
NAAT followed by toxin immunoassay, if NAAT is positive	130	18.0	17	16.7
GDH and toxins A/B combination (combo) alone	75	10.4	5	4.9
NAAT followed by GDH and toxins A/B combo, if NAAT is positive	47	6.5	5	4.9
Toxin A/B immunoassay alone	32	4.4	3	2.9
GDH followed by toxin immunoassay, if GDH positive	17	2.4	1	1.0
GDH followed by cell culture cytotoxicity neutralization assay (CCNA), if GDH is positive	3	0.4	1	1.0
GDH and toxins A/B combo followed by CCNA, if combo results are discrepant	1	0.1	1	1.0
GDH followed by NAAT, if GDH positive	1	0.1	1	1.0
Other	12	1.7	3	2.9
	723		102	

Q6. Which of the following best describes your laboratory's approach to <i>C. difficile</i> test result reporting in the patient health record?	Practice setting			
	Community hospital laboratory		Academic hospital laboratory	
	No.	%	No.	%
We perform one test only and report the result	274	37.5	40	39.2
We use an algorithm, report all test results, and provide interpretive commentary	233	31.9	26	25.5
We use an algorithm and report results of all tests in the algorithm	166	22.7	27	26.5
We use an algorithm and only report the result of the last test performed	43	5.9	8	7.8
We do report differently	15	2.1	1	1.0
	731		102	

Q7. What preanalytical criteria testing restrictions for <i>C. difficile</i> are enforced in your laboratory? (<i>Multiple responses allowed.</i>)	Practice setting				P value
	Community hospital laboratory n=722		Academic hospital laboratory n=100		
	No.	%	No.	%	
Reject formed stool that does not take shape of the container or another formed stool criteria	706	97.8	99	99.0	.99
Reject testing on patients taking laxatives	274	38.0	49	49.0	.11
Reject stool from infants	137	19.0	39	39.0	<.001
Other	96	13.3	25	25.0	.008

Q8. Does your laboratory report detection of the NAP1 hypervirulent strain?	Practice setting			
	Community hospital laboratory		Academic hospital laboratory	
	No.	%	No.	%
Yes	157	21.8	18	17.8
No	562	78.2	83	82.2
	719		101	