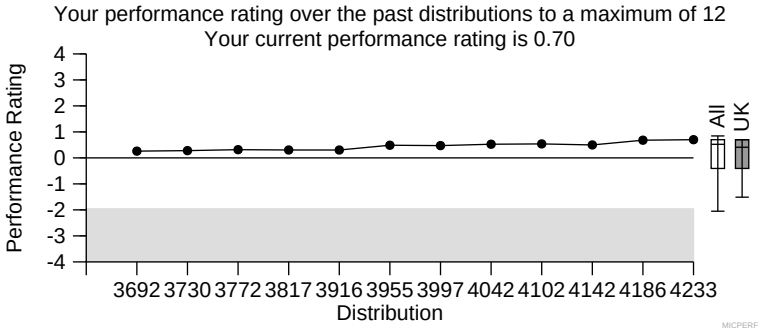
Intended Result		Your Report	Your Score
Specimen 4232	Non-toxigenic *Clostridium difficile*	Non-toxigenic *Clostridium difficile*	2
Specimen 4233	Toxigenic *Clostridium difficile*	Toxigenic *Clostridium difficile*	2

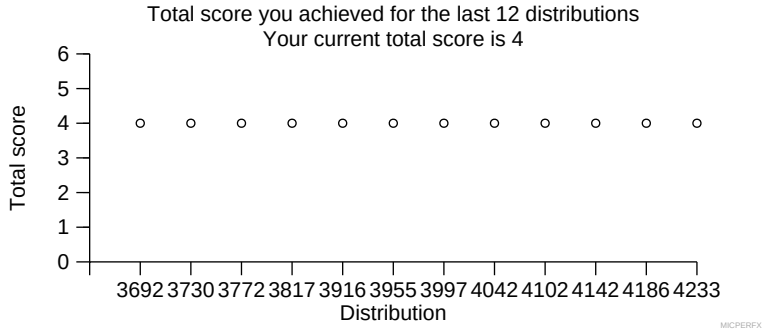
Cumulative score information
Total number of specimens sent to you for **UK NEQAS for *Clostridium difficile*** over the last 4 distributions is 8
Specimen numbers 3835 3836 3962 3963 4089 4090 4232 4233 have been analysed and scored.

Number of reports returned and scored 8
Number of specimens reported as not examined (not scored) 0
Number of specimens received too late for analysis (not scored) 0
Number of specimens for which no report was received (not scored) 0
Your cumulative score for these specimens was 16 out of a possible total of 16

The mean score calculated from the reports returned by **UK** laboratories was 14.10 with a standard error of 2.71.

Performance rating
Your performance rating for **UK NEQAS for *Clostridium difficile*** (i.e. the number of standard errors by which your cumulative score lies above or below the mean for **UK** laboratories) is 0.70.
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 return of results may be used as a measure of poor performance.





Turn around time: The time taken to report your results was 7 day(s). This information is provided for your own use and does not form part of your performance assessment.

Comments

A total of 418 sets of specimens were distributed for testing with 406 participants returning results within the specified period.
Specimen 4232 contained a non-toxigenic strain of *Clostridium difficile* ribotype 010.
Specimen 4233 contained a toxigenic strain of *Clostridium difficile* ribotype 005.

Please refer to the final page of this report for further information and comment.

Results tables on page 2
In the histograms on page 2 and subsequent pages a maximum of 25 kit/test method results are displayed: this includes the most commonly used methods and the method(s) used in your laboratory indicated by an arrow(s). The figures in the histograms and those in the overall results tables may differ 1) due to exclusion of kits displayed in the histograms resulting in apparently lower numbers of data sets in the histograms or 2) due to participants using more than one kit resulting in higher numbers of data sets in the histograms.

Techlab QuikChek Complete Users
Please note that the GDH results for this assay are entered against the assay name ‘QuikChek Complete (GDH)’ and the toxin results for this assay against ‘QuikChek Complete (Tox)’.

We thank colleagues at the Anaerobic Reference Unit Cardiff, National Public Health Service for Wales for the supply of strains and provision of confirmatory testing.

Enquiries
For repeat specimens please order using the web form or email **organiser@ukneqasmicro.org.uk** stating your laboratory identification number, the distribution name and number, and specimen number/s.
Any technical enquiries related to this distribution, please contact Shila Seaton using the email address above. In-house test results are available should you experience a technical failure and wish to discuss the results.

Report authorised by: Dr Sanjiv Rughooputh, Director

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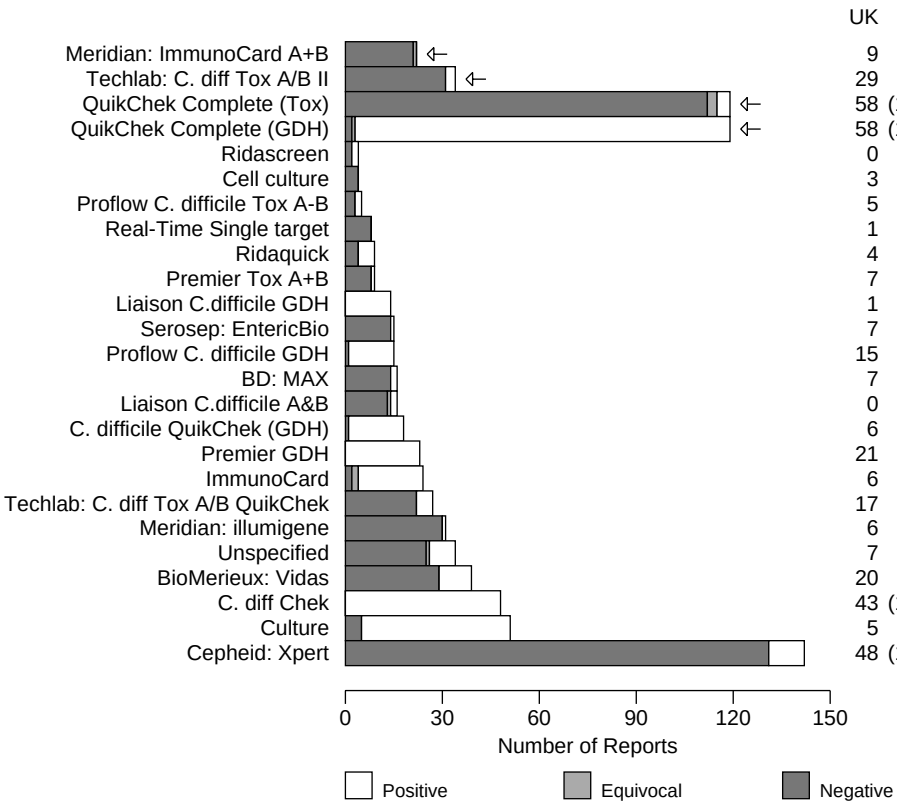
Specimen : 4232

Faeces. The presence of *Clostridium difficile* was queried. The specimen contained non-toxigenic *Clostridium difficile, Enterobacter cloacae* and *Klebsiella oxytoca.*



	UK	(%)	All	(%)
Meridian: ImmunoCard A+B	9	(2.3)	22	(2.5)
Techlab: C. diff Tox A/B II	29	(7.4)	34	(3.8)
QuikChek Complete (Tox)	58	(14.8)	119	(13.3)
QuikChek Complete (GDH)	58	(14.8)	119	(13.3)
Ridascreen	0	(0.0)	4	(0.4)
Cell culture	3	(0.8)	4	(0.4)
Proflow C. difficile Tox A-B	5	(1.3)	5	(0.6)
Real-Time Single target	1	(0.3)	8	(0.9)
Ridaquick	4	(1.0)	9	(1.0)
Premier Tox A+B	7	(1.8)	9	(1.0)
Liaison C.difficile GDH	1	(0.3)	14	(1.6)
Serosep: EntericBio	7	(1.8)	15	(1.7)
Proflow C. difficile GDH	15	(3.8)	15	(1.7)
BD: MAX	7	(1.8)	16	(1.8)
Liaison C.difficile A&B	0	(0.0)	16	(1.8)
C. difficile QuikChek (GDH)	6	(1.5)	18	(2.0)
Premier GDH	21	(5.4)	23	(2.6)
ImmunoCard	6	(1.5)	24	(2.7)
Techlab: C. diff Tox A/B QuikChek	17	(4.3)	27	(3.0)
Meridian: illumigene	6	(1.5)	31	(3.5)
Unspecified	7	(1.8)	34	(3.8)
BioMerieux: Vidas	20	(5.1)	39	(4.4)
C. diff Chek	43	(11.0)	48	(5.4)
Culture	5	(1.3)	51	(5.7)
Cepheid: Xpert	48	(12.2)	142	(15.9)

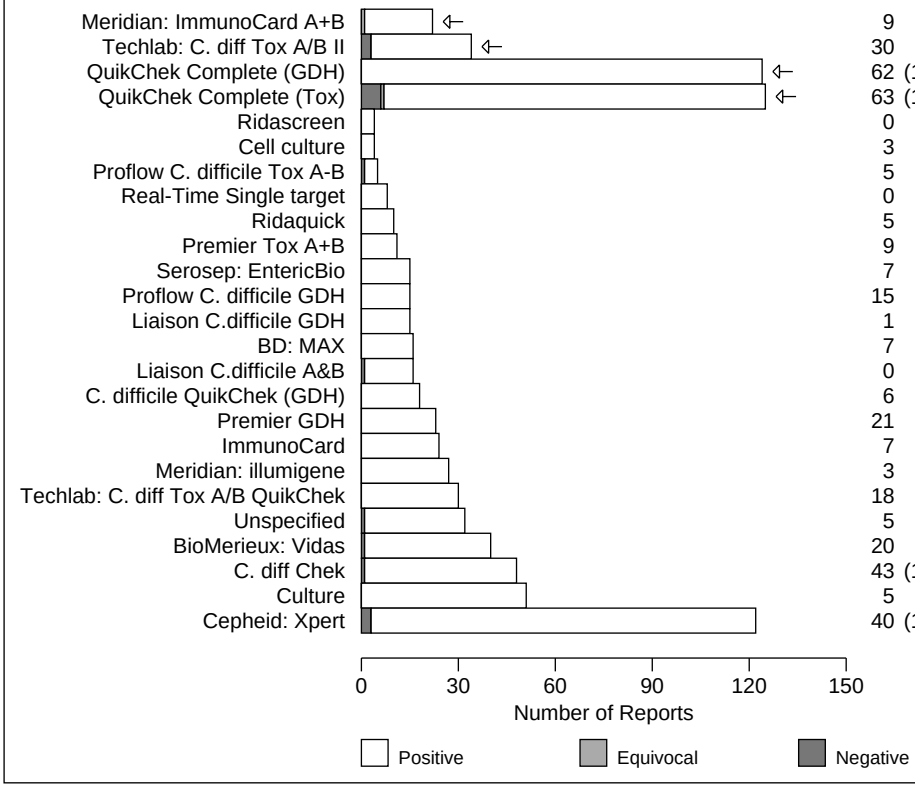
Your Report : Non-toxigenic *Clostridium difficile*

Your Score : **2**

Overall Results	UK	All	Score
C. difficile negative	5	17	-1
Specimen CDT negative	26	78	2
GDH negative	0	1	-1
Non-toxigenic *C. difficile*	26	136	2
Toxigenic *C. difficile*	8	22	-1
Specimen CDT positive	2	4	-1
Indeterminate	1	2	
GDH pos & CDT NT	1	7	1
GDH pos & CDT indet.	1	3	1
GDH pos & CDT neg	91	132	2
Total	161	402	

Specimen : 4233

Faeces. The presence of *Clostridium difficile* was queried. The specimen contained toxigenic *Clostridium difficile, Escherichia coli* and *Proteus mirabilis.*



	UK	(%)	All	(%)
Meridian: ImmunoCard A+B	9	(2.3)	22	(2.5)
Techlab: C. diff Tox A/B II	30	(7.6)	34	(3.8)
QuikChek Complete (GDH)	62	(15.8)	124	(14.0)
QuikChek Complete (Tox)	63	(16.0)	125	(14.1)
Ridascreen	0	(0.0)	4	(0.5)
Cell culture	3	(0.8)	4	(0.5)
Proflow C. difficile Tox A-B	5	(1.3)	5	(0.6)
Real-Time Single target	0	(0.0)	8	(0.9)
Ridaquick	5	(1.3)	10	(1.1)
Premier Tox A+B	9	(2.3)	11	(1.2)
Serosep: EntericBio	7	(1.8)	15	(1.7)
Proflow C. difficile GDH	15	(3.8)	15	(1.7)
Liaison C.difficile GDH	1	(0.3)	15	(1.7)
BD: MAX	7	(1.8)	16	(1.8)
Liaison C.difficile A&B	0	(0.0)	16	(1.8)
C. difficile QuikChek (GDH)	6	(1.5)	18	(2.0)
Premier GDH	21	(5.3)	23	(2.6)
ImmunoCard	7	(1.8)	24	(2.7)
Meridian: illumigene	3	(0.8)	27	(3.0)
Techlab: C. diff Tox A/B QuikChek	18	(4.6)	30	(3.4)
Unspecified	5	(1.3)	32	(3.6)
BioMerieux: Vidas	20	(5.1)	40	(4.5)
C. diff Chek	43	(10.9)	48	(5.4)
Culture	5	(1.3)	51	(5.7)
Cepheid: Xpert	40	(10.2)	122	(13.7)

Your Report : Toxigenic *Clostridium difficile*

Your Score : **2**

Overall Results	UK	All	Score
C. difficile negative	0	0	-1
Specimen CDT negative	0	0	-1
GDH negative	1	1	-1
Non-toxigenic *C. difficile*	1	6	-1
Toxigenic *C. difficile*	89	251	2
Specimen CDT positive	67	132	2
Indeterminate	0	1	
GDH pos & CDT neg	2	3	-1
GDH pos & CDT NT	1	7	1
GDH pos & CDT indet.	1	1	1
Total	162	402	

Operated by Public Health England
NIS - Specialist Microbiology Services
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Comment on distribution 4233

Specimen 4232
This specimen contained a non-toxigenic strain of *Clostridium difficile* ribotype 010. The overall percentage of participants obtaining a correct result was 86.1% (346/402).
Fifty-six participants reported an incorrect result with the following breakdown:

C. difficile negative (17); Specimen CDT positive (4); GDH negative (1); Toxigenic *C. difficile* (22); GDH positive/CDT not tested (7); GDH positive/CDT indeterminate (3); Indeterminate (2).

Specimen 4233
This specimen contained a toxigenic strain of *Clostridium difficile* ribotype 005. The overall percentage of participants obtaining a correct result was 95.3% (383/402).
Nineteen participants reported an incorrect result with the following breakdown:

GDH negative (1); Non-toxigenic *C. difficile* (6); GDH positive/CDT negative (3); GDH positive/CDT not tested (7); GDH positive/CDT indeterminate (1); Indeterminate (1).

Please note that an equivocal toxin test result is only valid where an equivocal option is recommended and printed in the manufacturer's kit instructions for interpretation of a specific test reading. Where a valid equivocal result is reported together with a positive GDH result, a score of one point is applied.

Typing results: Information on typing is collected and presented but not scored.
A total of ten participants reported typing results for specimen **4232** (ribotype 010): Six participants correctly reported ribotype 010, one reported HMW 4 which correlates to ribotype 010, whilst three reported that the isolate was not ribotype 027.
A total of 16 participants reported typing results for specimen **4233** (ribotype 005): Eight participants correctly reported ribotype 005, one reported HMW 5 which correlates to ribotype 005, whilst seven reported that the isolate was not ribotype 027.

Please note that the *C. difficile* specimens are unsuitable for the detection of lactoferrin.

Participants may be interested in the following publications and web links related to the performance of toxin detection assays and recommended *Clostridium difficile* infection (CDI) testing algorithms:

- Planche T *et al.* Diagnosis of *Clostridium difficile* infection by toxin detection kits: a systematic review. *Lancet Infect Dis* 2008;**8**:777-84
- Crobach MJT *et al.* European Society of Clinical Microbiology and infectious Diseases (ESCMID): Data review and recommendations for diagnosing *Clostridium difficile*-infection (CDI). *CMI* 2009;**15**;1053-1066.
- Wilcox MH & Eastwood KA. *Clostridium difficile* toxin detection assays. NHS Purchasing and Supplies Agency, Centre for Evidence based Purchasing. Evaluation report CEP08054, 2009.
- Eastwood K *et al*. Comparison of nine commercially available *C. difficile* toxin detection assays, a real time PCR assay for C. difficile tcdB and a GDH detection assay, with cytotoxin testing and cytotoxigenic culture. *J Clin Microbiol* 2009;**47**:3211-7.
- **https://www.gov.uk/government/publications/updated-guidance-on-the-diagnosis-and-reporting-of-clostridium-difficile**
- **http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3318505/**
- **http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3147743/**
- **https://www.gov.uk/government/collections/clostridium-difficile-guidance-data-and-analysis**
- **http://www.jstor.org/stable/10.1086/651706**

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