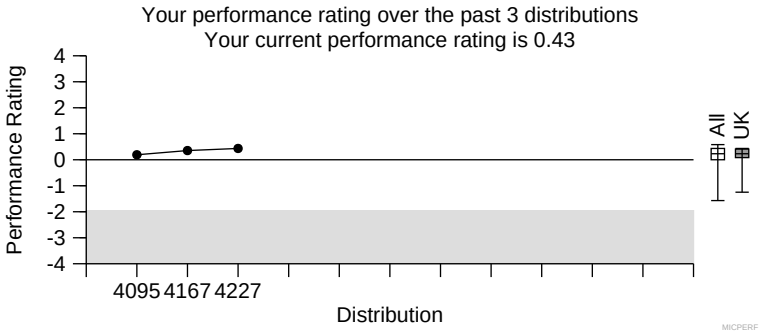
Intended Result		Your Report	Your Score
Specimen 4217	Influenza virus A H1N1	Influenza virus A H1N1	2
Specimen 4218	Influenza virus B	Influenza virus B	2
Specimen 4219	Influenza virus A H3N2	Influenza virus A H3N2	2
Specimen 4220	Adenovirus	Adenovirus	2

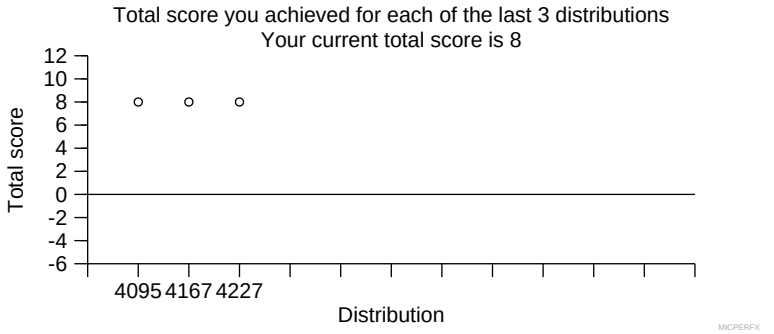
Cumulative score information
Total number of specimens sent to you for **UKNEQAS Molecular detection of respiratory viruses** over the last 3 distributions is 12
For these distributions specimen numbers 3813 3814 3815 3816 4028 4029 4030 4031 4217 4218 4219 4220 have been analysed and scored.

Number of reports analysed 3
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 24 out of a possible total of 24

The mean score calculated from the reports returned by **UK** laboratories was 23.10 (with a standard error of 2.08)

Performance rating
Your performance rating for **UKNEQAS Molecular detection of respiratory viruses** (i.e. the number of standard errors by which your cumulative score lies above or below the mean) for **UK** laboratories is 0.43.
A performance rating of more than 1.96 standard errors below the mean indicates possible poor performance.
Please note your performance rating may alter 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.





Comments:
A total of 109 sets of specimen were distributed for testing with 108 participants returning results within the specified period.
Overall performance for this distribution was excellent with 99.1% of participants reporting correct results for Influenza virus A (H1N1), 97.2% for Influenza virus B, 98.1% for Influenza virus A (H3N2) and 94.0% for Adenovirus type 2.

In the histograms on page 2 and subsequent pages a maximum of 12 amplification methods results are displayed: this include 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.

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

Enquiries: Pre-distribution test results are available should you experience a technical failure and wish to discuss the results. Written enquiries about this distribution should be addressed to Dr Beatrix Kele at the email address below. For repeat specimens please order using the web form or e-mail: **organiser@ukneqasmicro.org.uk** stating your laboratory identification number, the distribution name and number and specimen number(s).

Acknowledgements: : We would like to thank the WHO Collaborating Centre for Reference and Research on Influenza, at the Crick Worldwide Influenza Centre, London and Royal Brompton & Harefield NHS Foundation Trust London for their assistance with the molecular identification testing and provision of clinical isolates and PHE Manchester for their kind assistance with pre-distribution testing.

Report authorised by: Dr. Sanjiv Rughooputh, Scheme Organiser

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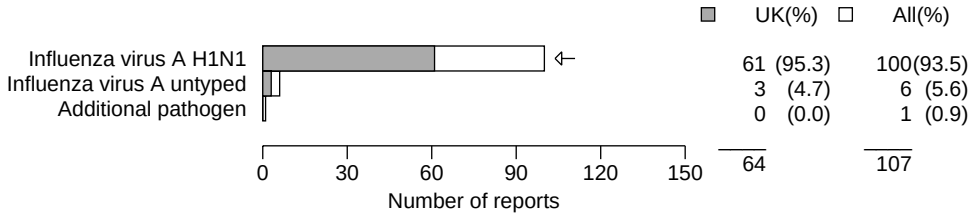
Published at 15:35 on Friday 23 March 2018

One freeze-dried simulated nasopharyngeal aspirate sample, one freeze-dried simulated nasopharyngeal swab sample and two throat swab samples were dispatched with a request to test each for the presence of respiratory viruses, using molecular methods. Specimen 4217 contained Influenza virus A (H1N1) $TCID_{50}$ of $10^{3.39}$. Specimen 4218 contained Influenza B virus $TCID_{50}$ of $10^{4.15}$. Specimen 4219 contained Influenza virus A (H3N2)and was prepared from infected cells with 1:100 dilution. Specimen 4220 contained Adenovirus type 2 $TCID_{50}$ of $10^{4.5}$.

Specimen : 4217

Simulated nasopharyngeal swab from a 7 year old male with high grade fever, cough and coryza.

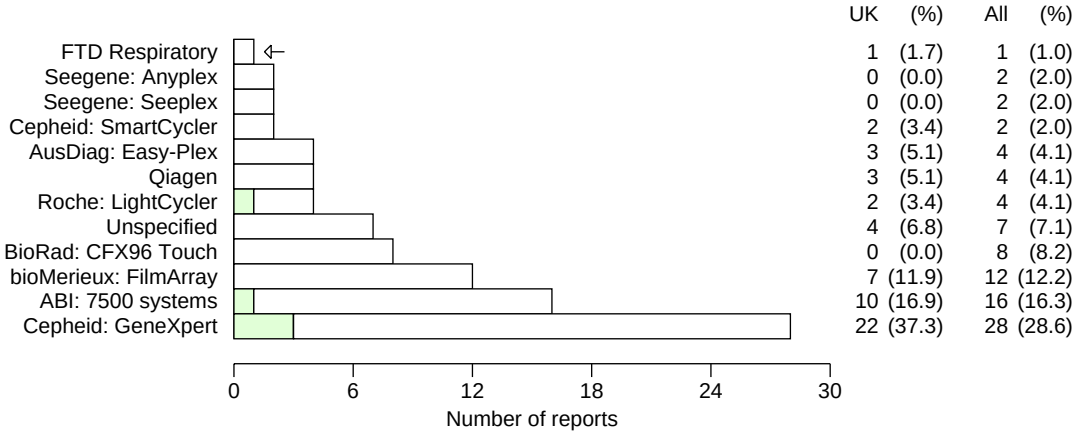


Intended result:
Influenza virus A (H1N1)

Additional pathogen:
Rhinovirus

Specimen : 4217

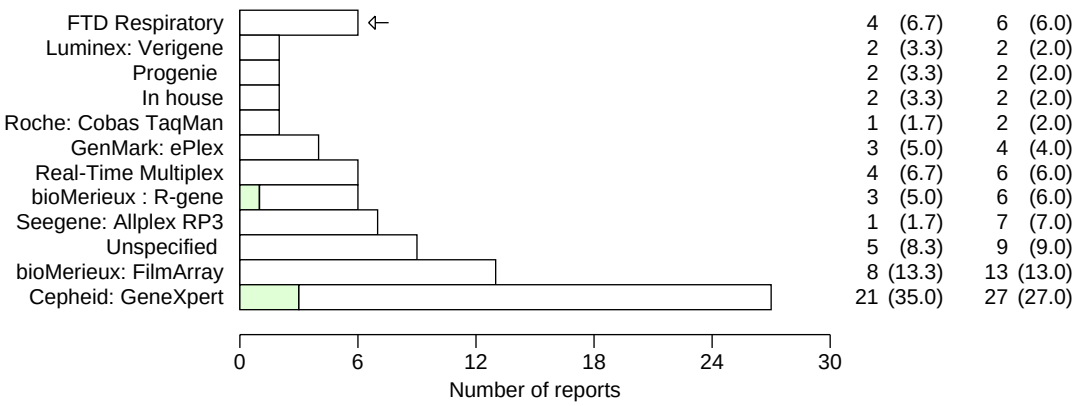
Simulated nasopharyngeal swab from a 7 year old male with high grade fever, cough and coryza.
Amplification platform



Influenza virus A H1N1
Influenza virus A + an additional pathogen
Unidentified agent
Influenza virus A untyped
Named virus other than that specified
No virus

Specimen : 4217

Simulated nasopharyngeal swab from a 7 year old male with high grade fever, cough and coryza.
Virus detection method



Your Report : Influenza virus A H1N1
Your Score : **2**

Overall Results	UK	All	Score
Influenza virus A H1N1	61	100	2
Unidentified agent	0	0	0
Named virus	0	0	-1
Additional pathogen	0	1	-1
Influenza virus A untyped	3	6	2
No virus	0	0	0
Total	64	107	
% Correct	100	99.1	

Influenza virus A H1N1
Influenza virus A + an additional pathogen
Unidentified agent
Influenza virus A untyped
Named virus other than that specified
No virus

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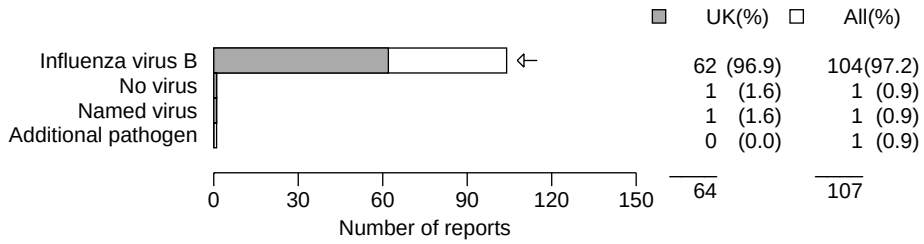
Specimen : 4218

Simulated throat swab from a 28 year old female with history of smoking, sore throat, muscle pain and malaise.



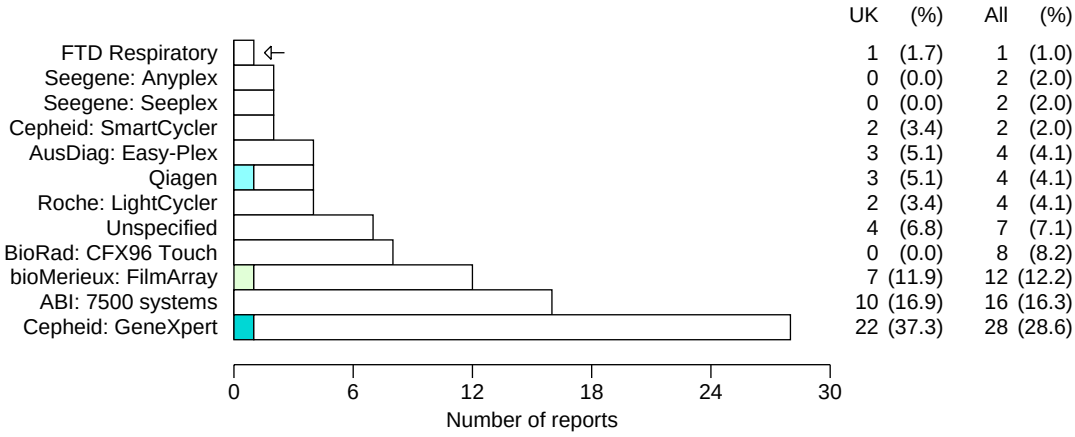
Intended result:
Influenza B virus

Named virus:
Influenza virus A

Additional pathogen:
Influenza virus A

Specimen : 4218

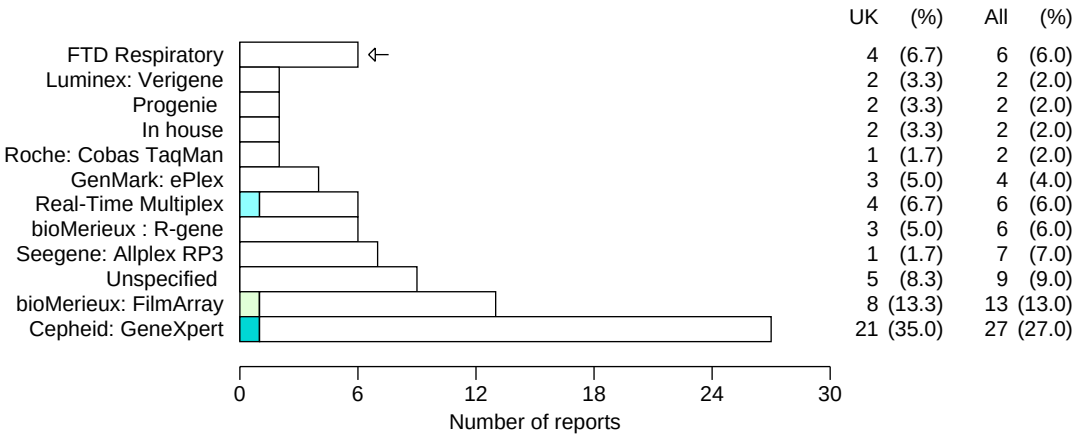
Simulated throat swab from a 28 year old female with history of smoking, sore throat, muscle pain and malaise.
Amplification platform



Influenza virus B
Influenza virus B + an additional pathogen
Unidentified agent
No virus
Named virus other than that specified

Specimen : 4218

Simulated throat swab from a 28 year old female with history of smoking, sore throat, muscle pain and malaise.
Virus detection method



Your Report : Influenza virus B
Your Score : **2**

Overall Results	UK	All	Score
Influenza virus B	62	104	2
Unidentified agent	0	0	0
Named virus	1	1	-1
Additional pathogen	0	1	-1
No virus	1	1	0
Total	64	107	
% Correct	96.9	97.2	

Influenza virus B
Influenza virus B + an additional pathogen
Unidentified agent
No virus
Named virus other than that specified

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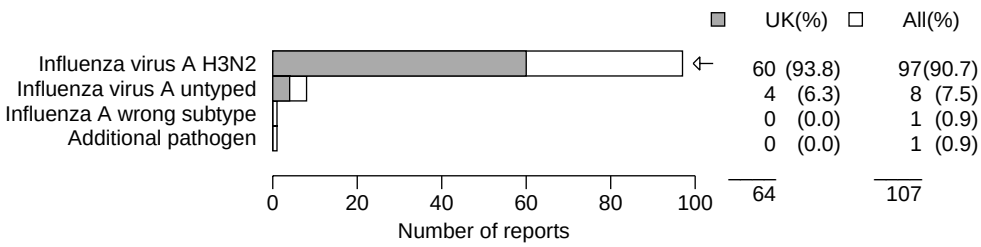
Specimen : 4219

Simulated throat swab from a 72 year old male complaining of rhinitis, fever and myalgia for 3 days.

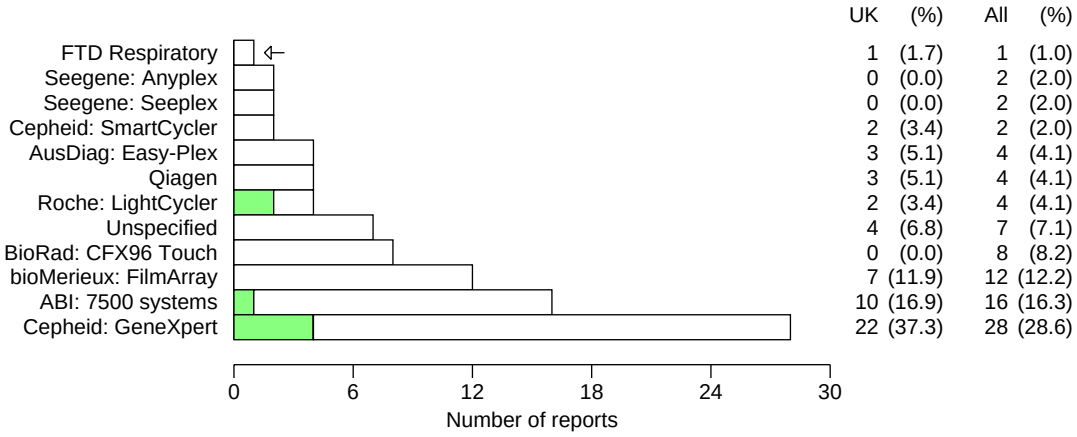


Intended result:
Influenza virus A (H3N2)

Additional pathogen:
Rhinovirus

Specimen : 4219

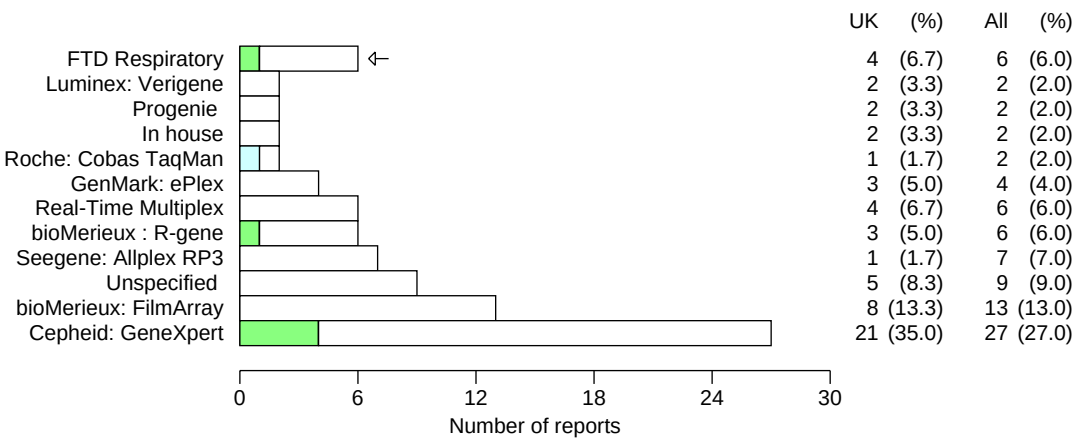
Simulated throat swab from a 72 year old male complaining of rhinitis, fever and myalgia for 3 days.
Amplification platform



Influenza virus A H3N2
Named virus other than that specified
No virus
Influenza virus A wrong subtype
Influenza virus A + an additional pathogen
Unidentified agent
Influenza virus A untyped

Specimen : 4219

Simulated throat swab from a 72 year old male complaining of rhinitis, fever and myalgia for 3 days.
Virus detection method



Your Report : Influenza virus A H3N2
Your Score : **2**

Overall Results	UK	All	Score
Influenza virus A H3N2	60	97	2
Influenza A wrong subtype	0	1	-1
Unidentified agent	0	0	0
Named virus	0	0	-1
Additional pathogen	0	1	-1
Influenza virus A untyped	4	8	2
No virus	0	0	0
Total	64	107	
% Correct	100	98.1	

Influenza virus A H3N2
Named virus other than that specified
No virus
Influenza virus A wrong subtype
Influenza virus A + an additional pathogen
Unidentified agent
Influenza virus A untyped

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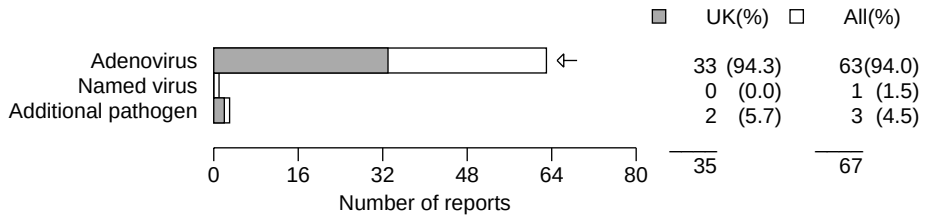
Specimen : 4220

Simulated nasopharyngeal aspirate from a 9 year old female with red eyes, fever and pharyngitis.



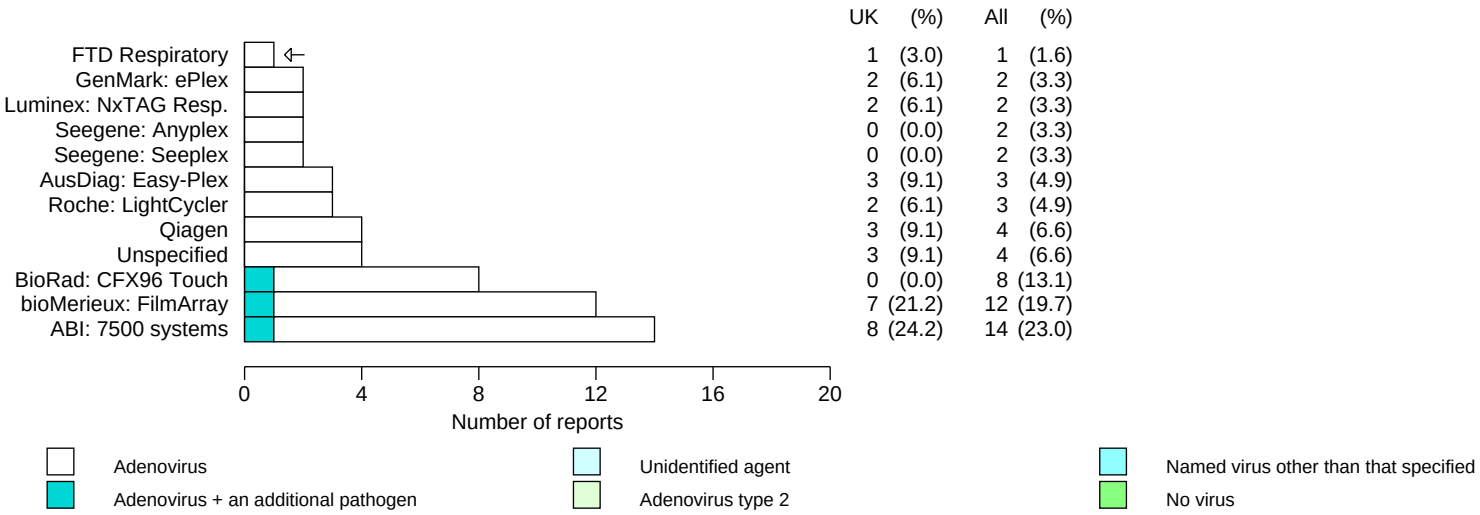
Intended result:
Adenovirus type 2

Named viruses:
Influenza virus A
Human Coronaviruses

Additional pathogen:
Influenza virus A
Influenza virus A H3

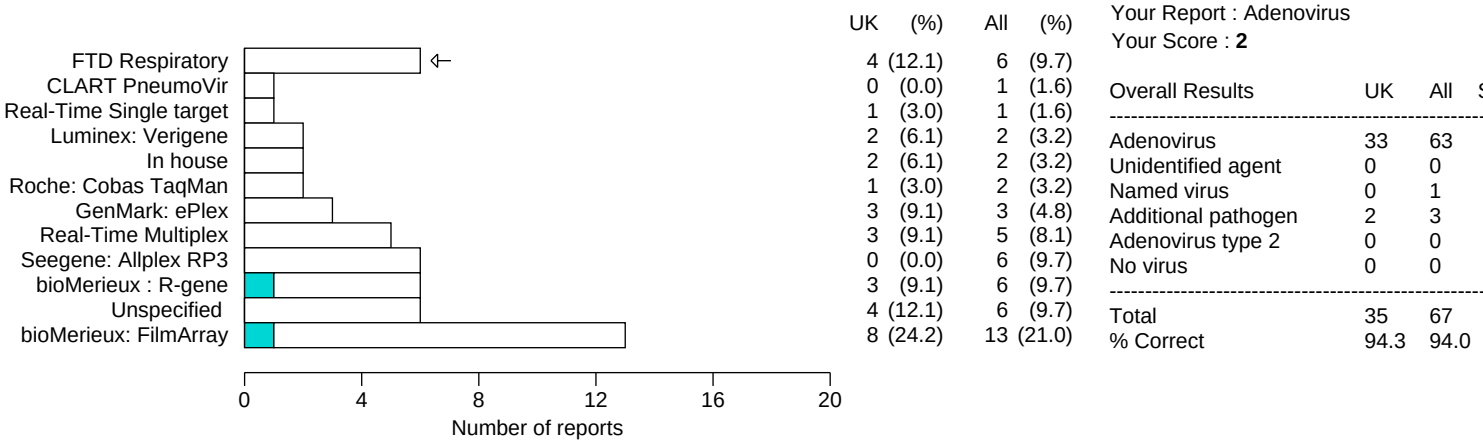
Specimen : 4220

Simulated nasopharyngeal aspirate from a 9 year old female with red eyes, fever and pharyngitis.
Amplification platform



Specimen : 4220

Simulated nasopharyngeal aspirate from a 9 year old female with red eyes, fever and pharyngitis.
Virus detection method



Your Report : Adenovirus
Your Score : **2**

Overall Results	UK	All	Score
Adenovirus	33	63	2
Unidentified agent	0	0	0
Named virus	0	1	-1
Additional pathogen	2	3	-1
Adenovirus type 2	0	0	2
No virus	0	0	0
Total	35	67	
% Correct	94.3	94.0	

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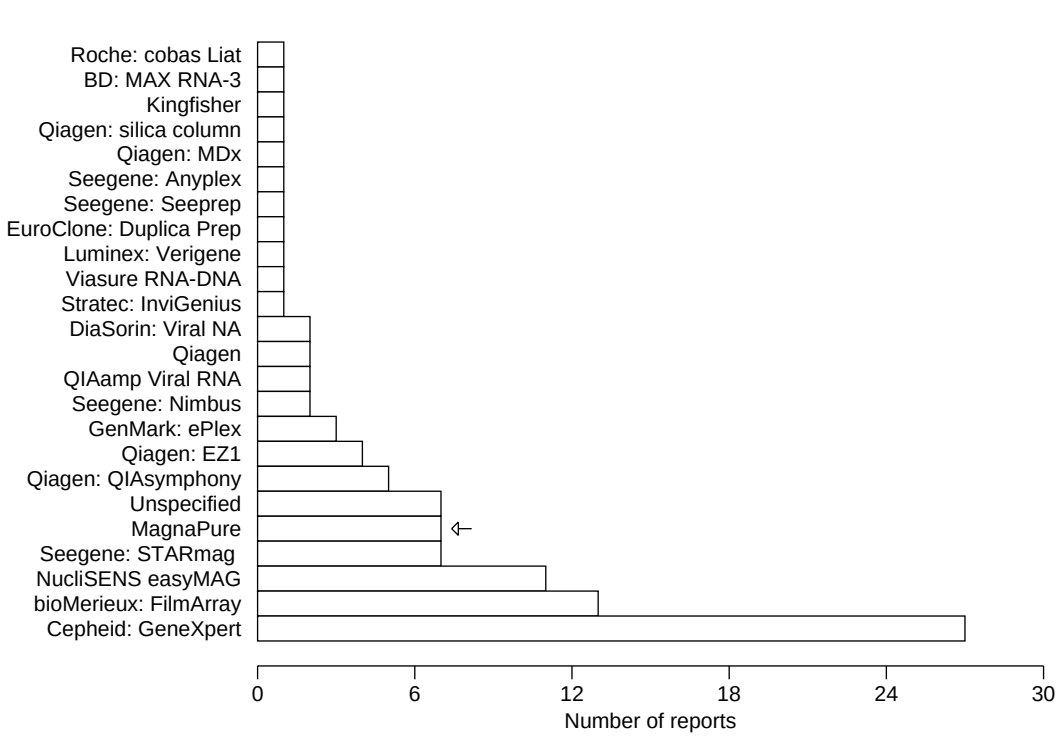
Nucleic acid extraction methods used by participating laboratories in this distribution



	UK	(%)	All	(%)
Roche: cobas Liat	1	(1.6)	1	(1.0)
BD: MAX RNA-3	1	(1.6)	1	(1.0)
Kingfisher	1	(1.6)	1	(1.0)
Qiagen: silica column	0	(0.0)	1	(1.0)
Qiagen: MDx	1	(1.6)	1	(1.0)
Seegene: Anyplex	0	(0.0)	1	(1.0)
Seegene: Seeprep	1	(1.6)	1	(1.0)
EuroClone: Duplica Prep	1	(1.6)	1	(1.0)
Luminex: Verigene	1	(1.6)	1	(1.0)
Viasure RNA-DNA	0	(0.0)	1	(1.0)
Stratec: InviGenius	1	(1.6)	1	(1.0)
DiaSorin: Viral NA	1	(1.6)	2	(1.9)
Qiagen	0	(0.0)	2	(1.9)
QIAamp Viral RNA	1	(1.6)	2	(1.9)
Seegene: Nimbus	0	(0.0)	2	(1.9)
GenMark: ePlex	2	(3.3)	3	(2.9)
Qiagen: EZ1	3	(4.9)	4	(3.9)
Qiagen: QIAsymphony	3	(4.9)	5	(4.9)
Unspecified	2	(3.3)	7	(6.8)
MagnaPure	5	(8.2)	7	(6.8)
Seegene: STARmag	0	(0.0)	7	(6.8)
NucliSENS easyMAG	7	(11.5)	11	(10.7)
bioMerieux: FilmArray	8	(13.1)	13	(12.6)
Cepheid: GeneXpert	21	(34.4)	27	(26.2)

Comments on distribution 4227

Ct results are shown in tables below when more than five laboratories used the same extraction/amplification platform and amplification kit.

23 participants used the Cepheid: GeneXpert system for the detection of Influenza viruses and RSV. Out of 23 participants, 21 provided Ct results that are shown in the table below.

Specimen number	4217	4218	4219
Virus	Influenza A (H1N1) virus	Influenza B virus	Influenza A (H3N2) virus
$TCID_{50}$	$10^{-3.39}$	$10^{-4.15}$	Unknown
Cepheid: GeneXpert	24	24.8	19.3
	23.2	23.8	19.1
	23.5	24.2	19.2
	23	24	21
	26	26	23
	27.3	27.4	22.7
	27.8	29.2	25.3
	27.4	28.6	23.5
	26.9	23.6	20.7
	25.6	25.7	21.6
	28.2	28.3	24
	24.8	25.2	21.1
	23.1	24.1	19.2
	28.7	29.9	25.3
	22.7	24	18.8
	26.6	24.1	20.15
	24.45	24.2	21.25
	24	25	20.3
	22.4	23.2	19
	18.1	15.8	13.8
	27.5	28.2	23.4
min	**18.1**	**15.8**	**13.8**
max	**28.7**	**29.9**	**25.3**
median	**24.8**	**24.8**	**21**

Seven participants used the combination of Seegene:STARmag/Seegene PCR kit/ BioRAD: CFX96 instrument; their reported Ct results are shown in the table below.

Specimen number	4217	4218	4219	4220
Virus	Influenza A (H1N1) virus	Influenza B virus	Influenza A (H3N2) virus	Adenovirus type 2
$TCID_{50}$	$10^{-3.39}$	$10^{-4.15}$	Unknown	$10^{-4.5}$
Seegene: STARmag/ Seegene/ BioRAD: CFX96	23.93	27.89	23.12	20.15
	23.65	26.31	23.27	16.7
	26	24.36	21.22	16.01
	22.94	25.66	22.73	15.89
	23.1	25.77	21.26	18.34
	24.33	26.43	22.17	17.23
min	**22.94**	**24.36**	**21.22**	**15.89**
max	**26**	**27.89**	**23.27**	**20.15**
median	**23.79**	**26.04**	**22.45**	**16.97**

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