Public Health England

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Summary of Results

External Quality Assessment of Water Microbiology

Hospital Tap Water Scheme

Distribution Number: HTW14 **Sample Numbers: HTW14A, HTW14B**

Distribution Date:	**November 2018**
Results Due:	**30 November 2018**
Report Date:	**04 December 2018**
Samples prepared and quality control tested by:	**Angela Appea** **Richard Borrill** **Thomas Harper** **Margaret Njenga** **Zak Prior** **Lili Tsegaye** **Vanessa Waite**
Data analysed by:	**Nita Patel** **Manchari Rajkumar**
Report compiled by:	**Nita Patel** **Manchari Rajkumar**
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For further information about the scheme please refer to:

Scheme Guide: https://www.gov.uk/government/publications/food-and-water-proficiency-testing-schemes-scheme-guide

Guide to Scoring and Statistics:

https://www.gov.uk/government/publications/food-and-water-proficiency-testing-schemes-scoring-systems-and-statistics

General guidance for z-scores:

Participants' enumeration results are converted into z-scores using the following formula:

$$Z = \frac{(x_i - X_{pt})}{\sigma_{pt}}$$

x_i = participants' result (expressed as a $\log_{10}$ value)

X_{pt} = assigned value (participants' consensus median (expressed as a $\log_{10}$ value))

σ_{pt} = the fixed standard deviation for the examination (calculated by FEPTU)

The σ_{pt}-value expresses the acceptable difference between the individual participant's result and the participants' consensus median. The σ_{pt}-value used for calculating z-scores in the Hospital Tap Water Scheme is 0.35. A guide to interpreting z-scores follows, although laboratories must interpret their scores in the context of their own laboratory situation:

z = -1.99 to +1.99	satisfactory
z = -2 to -2.99 or +2 to +2.99	questionable
z= < -3.00 or > + 3.00	unsatisfactory

It is usually recommended that z-scores exceeding ± 2.0 are investigated to establish the possible cause. As a general rule, PHE recommends that all questionable and unsatisfactory results are investigated.

FEPTU Quality Control: To demonstrate homogeneity of the sample, a minimum of 10 LENTICULE® discs, selected randomly from a batch, are tested in duplicate for the enumeration test.

To demonstrate stability of the sample, a minimum of six LENTICULE discs, selected randomly from a batch, are examined throughout the distribution period for the enumeration test.

FEPTU results are determined using the method stated in the UK Department of Health document: Health Technical Memorandum 04-01: Safe water in healthcare premises Part C: Pseudomonas aeruginosa - advice for augmented care units (2016).

The FEPTU results are used for guidance in the preliminary interim results notification, letters are posted on the website immediately after every distribution; electronic notification of their availability is sent to all participants.

Refer to section 17.0 of the Scheme Guide if you have experienced difficulties with any of the examinations.

https://www.gov.uk/government/publications/food-and-water-proficiency-testing-schemes-scheme-guide

Participants are reminded that reporting incorrect or false negative results for water samples could have serious public health implications.

Please contact FEPTU staff for advice and information:

Repeat samples	Carmen Gomes or Kermin Daruwalla
Data Analysis	Manchari Rajkumar or Nita Patel
Microbiological advice	Nita Patel or Zak Prior
General comments and complaints	Nita Patel or Zak Prior
Scheme consultants	Caroline Willis
Scheme Co-ordinator	Nita Patel

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FEPTU's website

Accreditation: PHE Water EQA Scheme for Hospital Tap Water is accredited by the United Kingdom Accreditation Service (UKAS) to ISO/IEC 17043:2010.

UKAS PROFICIENCY TESTING

0006

Sample: HTW14A

Contents:

Pseudomonas aeruginosa 19 (NCTC 10332), *Klebsiella oxytoca* 19 (wild strain)

Expected Results:

All counts are expressed as colony forming units (cfu) per 100mL.
The fixed standard deviation value (σpt value) used for calculation of the z-score is **0.35** for this parameter.

Results	
FEPTU median (MF)[1]	19
No. results returned	40
Assigned value (Participants' median all results)	16
Interpretation based on assigned value*	Unsatisfactory
Uncertainty of assigned value	2
Participants' mean (all results)	16
Expected Range	1 - 34
Standard deviation**	9
No of outlying counts	2
False positives	
False negatives	1
Your result	
Your interpretation	
Score for performance assessment	
Z-score	

[1] Membrane filtration
* Reference: HTM 04-01 part B
** Robust S^* based on median absolute deviation about the participants' median (*MADe*)

Total sent samples	45
Not examined	4
Non returns	1

Sample: HTW14B

Contents:

Pseudomonas aeruginosa 66 (wild strain), *Burkholderia cepacia* 30 (NCTC 10743)

Expected Results:

All counts are expressed as colony forming units (cfu) per 100mL.
The fixed standard deviation value (σpt value) used for calculation of the z-score is **0.35** for this parameter.

Results	
FEPTU median (MF)[1]	66
No. results returned	40
Assigned value (Participants' median all results)	58
Interpretation based on assigned value*	Unsatisfactory
Uncertainty of assigned value	4
Participants' mean (all results)	59
Expected Range	19 - 97
Standard deviation**	19
No of outlying counts	2
False positives	
False negatives	0
Your result	
Your interpretation	
Score for performance assessment	
Z-score	

[1] Membrane filtration
* Reference: HTM 04-01 part B
** Robust S^* based on median absolute deviation about the participants' median (*MADe*)

Total sent samples	45
Not examined	4
Non returns	1

Performance Assessment Sheet

Distribution	Sample	*Pseudomonas aeruginosa* score
HTW14	HTW14A	
	HTW14B	
HTW13	HTW13A	
	HTW13B	
HTW12	HTW12A	
	HTW12B	
Total maximum possible score		
Total percentage		

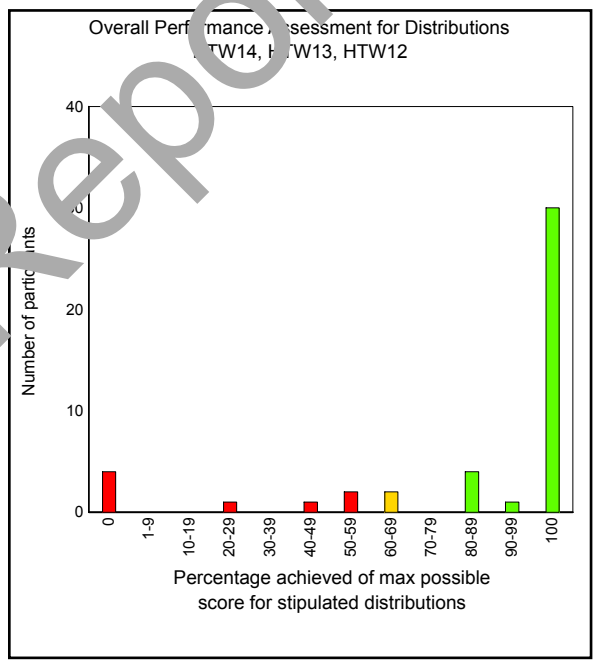
Performance Assessment Comment:

Participants are reminded that to take advantage of the performance assessment overtime tool provided in the reports they need to take part in more than one distribution a year.

Performance assessments are designed to alert participants to on-going problems with their examinations and are provided after every distribution. Scores are allocated to results reported for every parameter, for every sample to help assess performance.

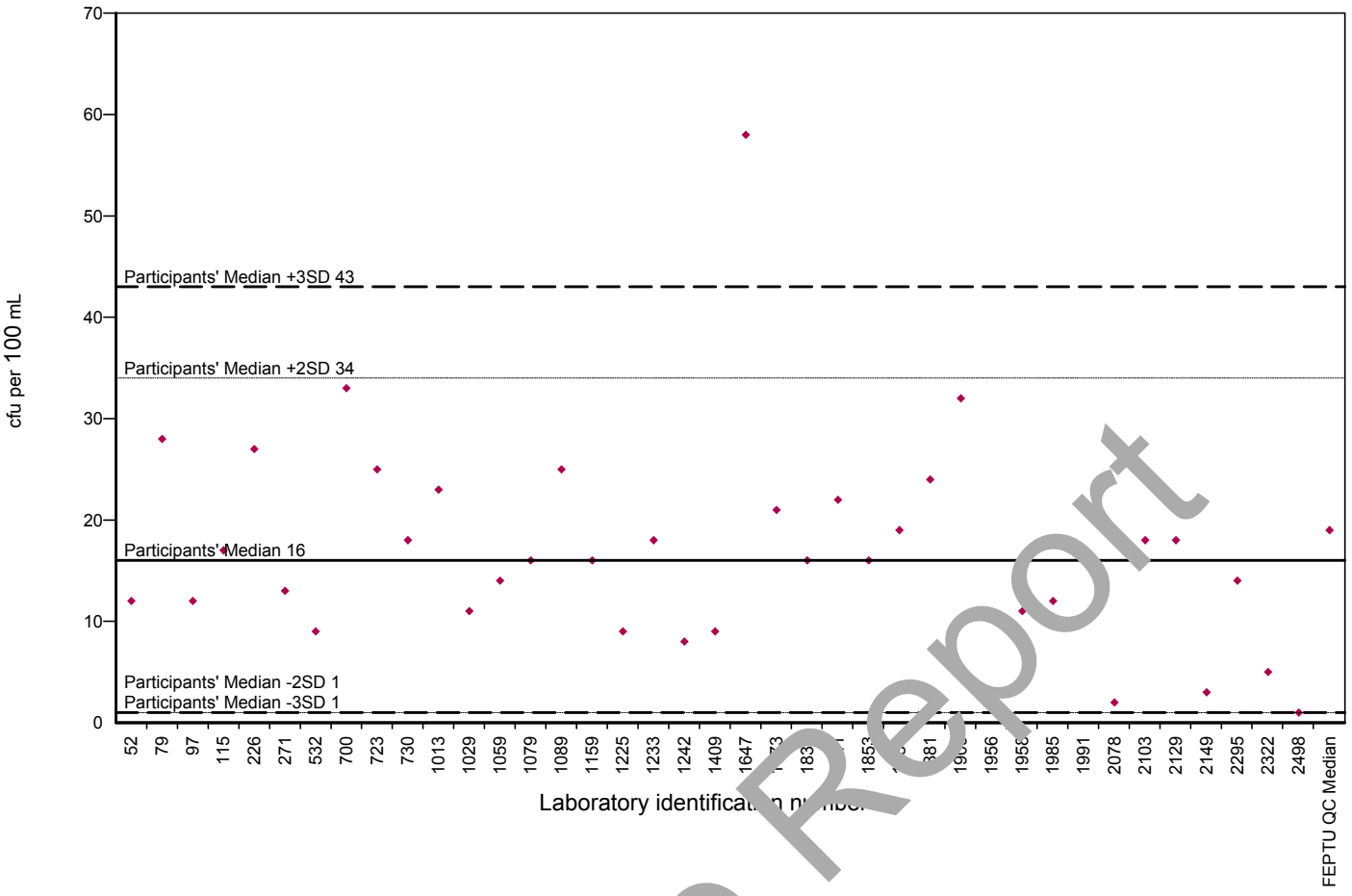
Cumulative scores are calculated for the current distribution for the Hospital Tap Water Scheme. Participants' cumulative scores for each of the examinations are compared with the maximum possible scores after every distribution.

Your overall performance with the enumerations in the hospital tap water proficiency testing samples for the current distribution is collated in the chart to the right.



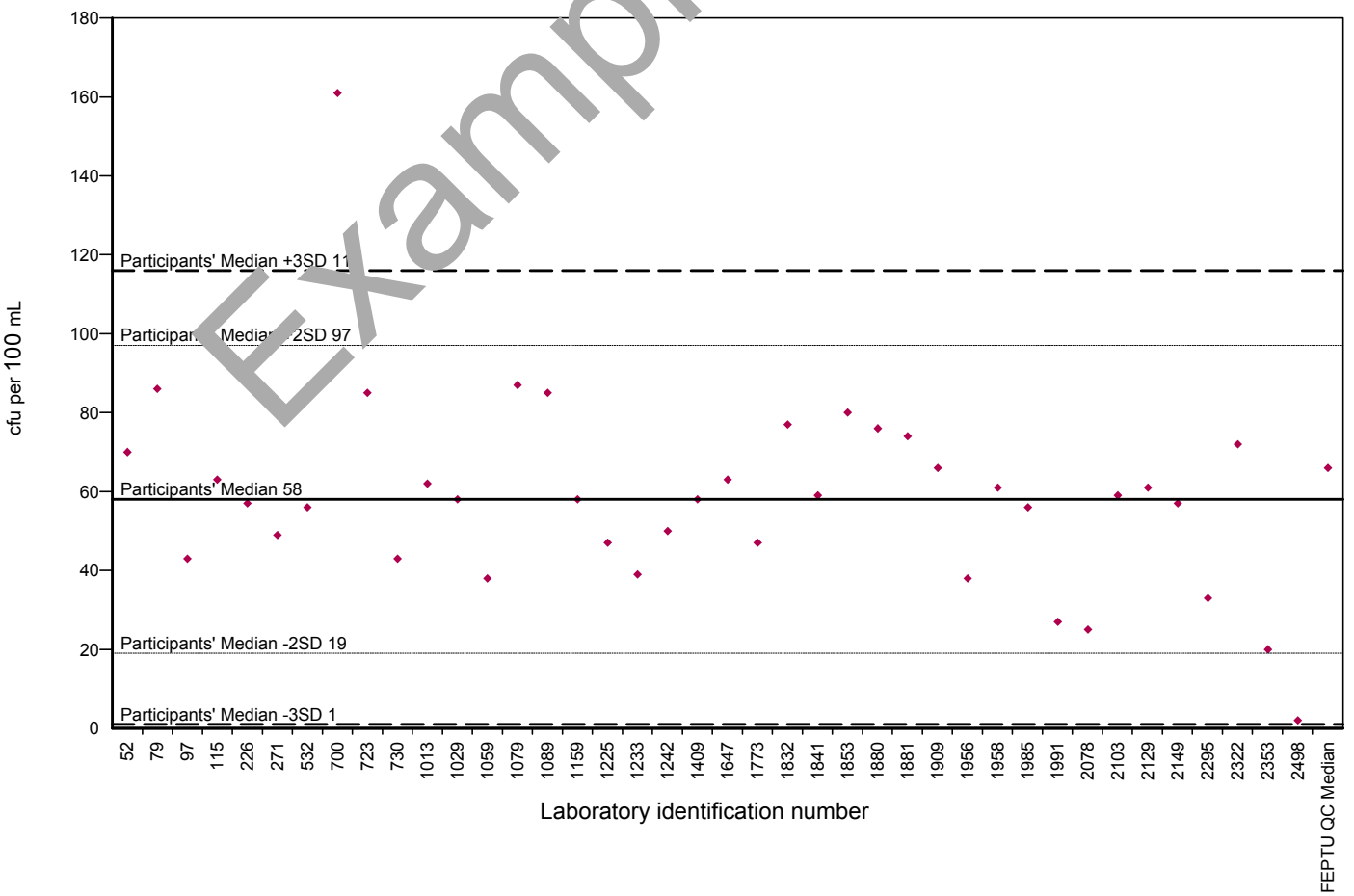
HTW14A - *Pseudomonas aeruginosa*

Key: ◆ Reported result



HTW14B - *Pseudomonas aeruginosa*

Key: ◆ Reported result



Sample specific comment:

HTW14A: 18 laboratories provided a conclusion on the results reported, responses are shown in the table below:

Colony forming counts reported per 100mL	Conclusion reported by the laboratories (number of laboratories)
Range reported 9 - 33	Risk-assess and retest (pre-/post-flush) as stated in HTM 04-01 part B (11)
Range reported 0 - 23	Satisfactory (3)
Count reported 9	Retest (pre-/post-flush) (1)
Range reported 3 - 16	Unsatisfactory (3)
Range reported 1 - 58	No comments/interpretation by laboratory provided (1)

HTW14B: 18 laboratories provided a conclusion on the results reported, responses are shown in the table below:

Colony forming counts reported per 100mL	Conclusion reported by the laboratories (number of laboratories)
Range reported 33 - 161	Risk-assess and retest (pre-/post-flush) as stated in HTM 04-01 part B (12)
Range reported 56 - 62	Satisfactory (2)
Range reported 20 - 87	Unsatisfactory (4)
Range reported 2 - 86	No comments/interpretation by laboratory provided (13)

Participants are reminded to only report a conclusion on a test result if this is part of your reporting procedures.

In the UK the following document provides information on the requirements for the quality assurance of water systems, microbiological testing and interpretation/conclusions of test results:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/524882/DH_HTM_0401_PART_B_acc.pdf

The Interpretations/conclusions of microbiological test results in your country may vary to those published in this document.

General Comment
If you do not return a result for a distribution, you will not be able to view all the participants' results data in your individualised report. Therefore, we will post generic reports on the website, which will be available for 12 months after the distribution has closed, so you can access the missing data.

End of report.