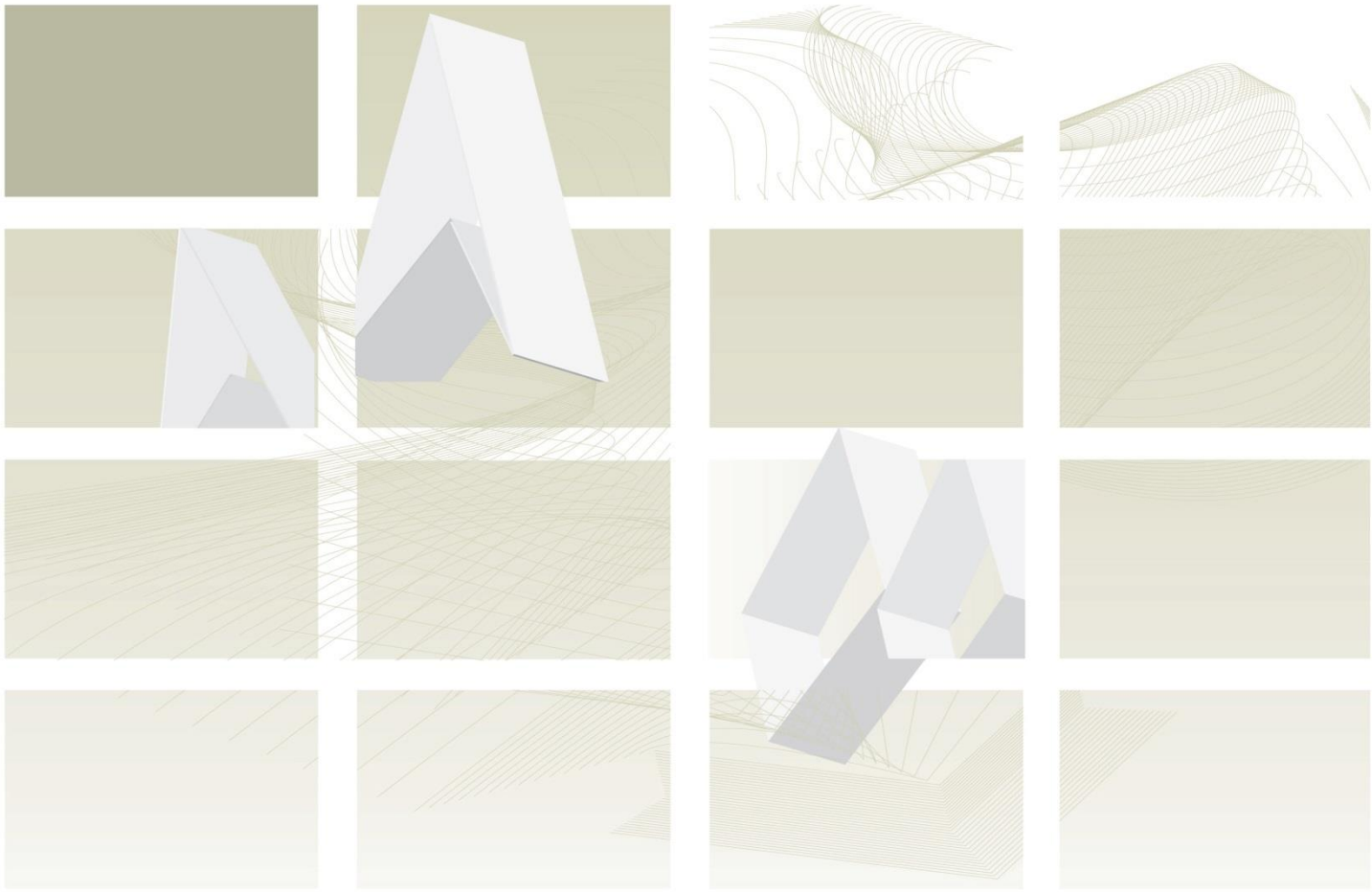
UK Standards for Microbiology Investigations

Review of users' comments received by
Working group for microbiology standards in clinical bacteriology

ID 3 Identification of *Listeria* species, and other non-sporing Gram positive rods (except *Corynebacterium*)



"NICE has renewed accreditation of the process used by **Public Health England (PHE)** to produce **UK Standards for Microbiology Investigations**. The renewed accreditation is valid until **30 June 2021** and applies to guidance produced using the processes described in **UK standards for microbiology investigations (UKSMIs) Development process, S9365', 2016**. The original accreditation term began in **July 2011.**"

This publication was created by Public Health England (PHE) in partnership with the NHS.
Recommendations are listed as ACCEPT/PARTIAL ACCEPT/DEFER/NONE or PENDING

Consultation: 29/05/2019 – 12/06/2019

Version of document consulted on: ID 3dm+

Proposal for changes

Comment number	1		
Date received	04/06/2019	**Lab name**	University Hospitals of Leicester NHS Trust
Section	a. 8.4 b. 8.5		
Comment			
a. 8.4; It has been known to be used to identify *T. bernardiae* and thus will help in its future identification and in elucidating the role that this rarely isolated species plays in infection of humans. Should rarely isolated be replaced by rarely identified? b. 8.4: In the section of nucleic acid amplification tests, there should be a comment on the value of 16S PCR as a method of identifying both cultured and non-culturable Listeria and related species. c. 8.5; Should there be a stronger recommendation to refer *Listeria monocytogenes* isolates from sterile site specimens for WGS, in order to support outbreak investigation in addition to confirmation of isolate identity?			
Evidence			
a. 8.4; *T bernardiae*: The assumption that *T bernardiae* is rarely isolated presupposes that it can be accurately identified when isolated. This assumption does not seem reasonable to me.			
Financial barriers			
No.			
Health benefits			
No.			
Are you aware of any interested parties we should consider consulting with on the development of this document?			
No.			
Recommended action	a. **ACCEPT** This has been updated in the document b. **ACCEPT** This has been updated in the document. c. **NONE**		

	It was the opinion of the working group that section 8.5 sufficiently covered WGS recommendation for *Listeria monocytogenes*.

Comment number	2		
Date received	11/06/2019	**Professional body**	Institute of Biomedical Science
Section	All		
Comment			

a. Title: Identification of *Listeria* species, and other non-sporing Gram positive rods (except Corynebacterium)

b. Section 4. Introduction Page 4

A systematic approach is used to differentiate clinically encountered, morphologically similar, aerobic and facultatively anaerobic, non-sporing Gram positive rods. The true branching organisms such as *Actinomyces*, *Nocardia* and *Streptomyces* species and those which produce spores are not described in this UK SMI. Rapidly growing *Mycobacterium* species may also be isolated on the media described in this document and acid-fast bacilli should be referred to the Reference Laboratory.

It may be helpful to state Regional Mycobacteria Reference Laboratory

c. Section 4.1 Taxonomy / Characteristics

Listeria monocytogenes

A serious infection caused by eating contaminated food contaminated with the bacterium

Would the authors consider providing examples of such food?

d. Page 5

L. ivanovii

This species has been divided into 2 subspecies. These are; *Listeria ivanovii* subsp. *ivanovii* and *Listeria ivanovii* subsp. *Londoniensis*. They are facultatively anaerobic and has also been isolated from healthy animal and human carriers from the environment.

“has also” should be replaced with ‘have’

e. Page 5

L. welshimeri

They are, aesculin hydrolysis, Voges-Proskauer and methyl red tests, and negative for oxidase, urea

- This is not clear – should the word ‘positive’ or reactive be included to describe the VP and MRT.

- They have been isolated from decaying plants and soil. ‘This species’ should be used for consistency and accuracy.

f. Page 6

L. grayi

L. grayi peritrichous rods which are motile.

A fragment sentence – they are motile due to peritrichous flagella.

g. Page 7 *Cellulomonas* species

Cellulomonas species, - should be in italics

h. Page 8

Trueperella species

Cells are, non-motile, non-spore-forming coccobacilli and. Cells vary in shape and size (0.2–0.9 x 60.3–2.5µm) in different media.

This needs re-wording.

i. Page 9

Turicella otitidis

The genus comprises a single species, *Turicella otitidis*. Microscopically it resembles a coryneform but has longer cells. It may be distinguished by colonial morphology from *Corynebacterium* afermentans and *Corynebacterium auris*. compared with the flat, grey-white and non-haemolytic colonies of *C. afermentans* and the convex, dry, adherent, yellowish colonies of *C. auris*. *T. otitidis* is non-fermentative and occurs either alone or with Gram negative rods. Isolates exhibit a strong CAMP reaction and are DNase positive and catalase positive. *T. otitidis* may be misidentified, often as *Corynebacterium* species, by some commercial identification systems.

- Does this mean biochemical identification systems or MALDI TOF? Consider rewording.
- This is whole section is difficult to follow would the authors accept the following suggestion

  The genus comprises a single species, *Turicella otitidis*. Microscopically it resembles a coryneform but has longer cells – state the size and that it is a GPR. It may be distinguished by colonial morphology from *Corynebacterium afermentans* and *Corynebacterium auris*. compared with the flat, grey-white and non-haemolytic colonies of C. afermentans and the convex, dry, adherent, yellowish colonies of *C. auris*.

  - A description of what the colonies of *Turicella* look like should be included.

  - *T. otitidis* is non-fermentative and occurs either alone or with Gram negative rods. This is unclear – does this refer to the fact that it is frequently isolated with other GN organisms in clinical samples?

j. Section 8.3 Colonial appearance. Should *Cutibacterium* be listed in this table?

k. Section 9 Identification of *Listeria* species and other non-sporing Gram positive rods (except *Corynebacterium*). *Cutibacterium* is also missing table.

Evidence

c. Recent deaths linked to pre-prepared sandwiches.	
Financial barriers	
It is the view of the panel that is no potential organisation or financial barriers in applying the recommendations in ID 3.	
Health benefits	
l. Section 6, page 9, safety considerations Staff unknowingly pregnant may be at greater risk. How could this be mitigated?	
Are you aware of any interested parties we should consider consulting with on the development of this document?	
Not completed.	
Recommended action	a. **NONE**. The UK SMI follow the PHE Style guide which states that name of person should be capital. b. **NONE** The link for the regional reference laboratory has already been added in section 10 of this document. c. **ACCEPT** The different types of food have been updated in the document accordingly. d. **ACCEPT** This has been updated in the document. e. 1. **ACCEPT** This has been updated in the document. 2. **ACCEPT** This has been updated in the document. f. **ACCEPT** This has been updated in the document. g. **ACCEPT** This has been updated in the document h. **ACCEPT** This has been updated in the document i. **ACCEPT** This has been updated in the document j. **ACCEPT** *Cutibacterium* species has been updated in the document

	k. **ACCEPT** *Cutibacterium* species has been updated in the document. l. **NONE** This is a difficult scenario to predict therefore section 9 Safety Consideration stands.

Comment number	3		
Date received	12/06/2019	**Lab name**	Member of the Public
Section	Please see Comment section (6)		
Comment			
a. I wasn't able to spend much time on this but some of the minor things that I noticed were commas and strokes, although this could be personal preference. b. However on some pages, I also noticed that hour was abbreviated as 'hr' rather than 'h' and I'm more used to seeing h i.e. 24 h for 24 hours. If I get time, I might drop by the office, as it's easier to show you some of the minor amendments.			
Financial barriers			
Not completed.			
Health benefits			
Not completed.			
Are you aware of any interested parties we should consider consulting with on the development of this document?			
There was a CPD presentation by Joe Vincini at IBMS on 4th June on QC data monitoring and how this was relevant to UK National Standard Methods, which may be relevant. Also I'm responding in a personal capacity, therefore as member of the public.			
Recommended action	a. **ACCEPT** This has been corrected in the document. b. **NONE**. The UK SMIs follow the official PHE Style guide for writing.		

Comments received outside of consultation

Comment number	1		
Date received	17/07/2019	**Lab name**	Microbiology Scientific and Technical Advisory Group
Section	All		

Comment

a. Page 5 - 6th Line states “Listeria species are oxidase negative and ferment carbohydrates, they. are widely distributed in the environment; some species are pathogenic for humans and animals.”

b. Page 5 - 6th Line L. monocytogenes 3 states “They are oxidase negative”.

   Suggest that catalase is also suggested as a first line test.

   Page 9

c. There is a section on Turicella otitidis identification however Turicella infections are not detailed in the SMI and should be

   General Comments

d. UK SMI ID 03 “Identification of Listeria species, and other non-sporing gram positive rods (except Corynebacterium)” is a useful “textbook type” document, worth having and excellent for training and educational purposes but members of the MSTAG did not think that this UK SMI was very useful practically for identification and suggested that the title of the UK SMI be changed to reflect its value as an educational UK SMI rather than a practical one as most laboratories do not struggle with identification and would use Catalase and the MALDI-TOF which easily identifies isolates.

e. In general the group felt that the UK SMI would benefit from more clinical details for each organism.

f. It was felt that the SMI should also cover how to identify isolates without the use of a MALDI-TOF and to discuss other commercially available identification systems such as API which are not mentioned.

g. Motility is in the text and in the chart but it does not mention tumbling motility at room temperature and not 4 or 37oC which is the test laboratories may employ.

h. Laboratories were not using Listeria Selective agar for isolation of the organism from HVS samples.

i. It was discussed that some laboratories use a pre-homogenisation step in peptone water before plating onto culture media however this would require validation.

Financial barriers

Not completed.

Health benefits

Not completed.

Are you aware of any interested parties we should consider consulting with on the development of this document?	
Not completed.	
Recommended action	a. **ACCEPT** This has been corrected in the document. b. **ACCEPT** This has been corrected in the document c. **ACCEPT** This has been corrected in the document d. **NONE** It was the opinion of the working group the title and content of this document is accurate for an identification UK SMI. e. **NONE** It was the opinion of the working group that for identification documents mentioning clinical aspects for each organism is not relevant. f. **NONE** This UK SMI includes information on commercial identification systems therefore mentioning API specifically is not necessary, laboratories can use any kit as long as it is validated prior to use. g. **NONE**. This UK SMI includes information on tumbling motility h. **NONE** Comment not relevant to this UK SMI i. **NONE** For clinical samples pre-homogenisation stage is not necessary.

Respondents indicating they were happy with the contents of the document

Overall number of comments: 02			
Date received	05/06/2019	**Lab name**	Lusaka Apex Medical University, Lusaka, Zambia
Health benefits			
Not completed.			
Date received	11/06/2019	**Professional body**	The Society for Applied Microbiology
Health benefits			
N/A			