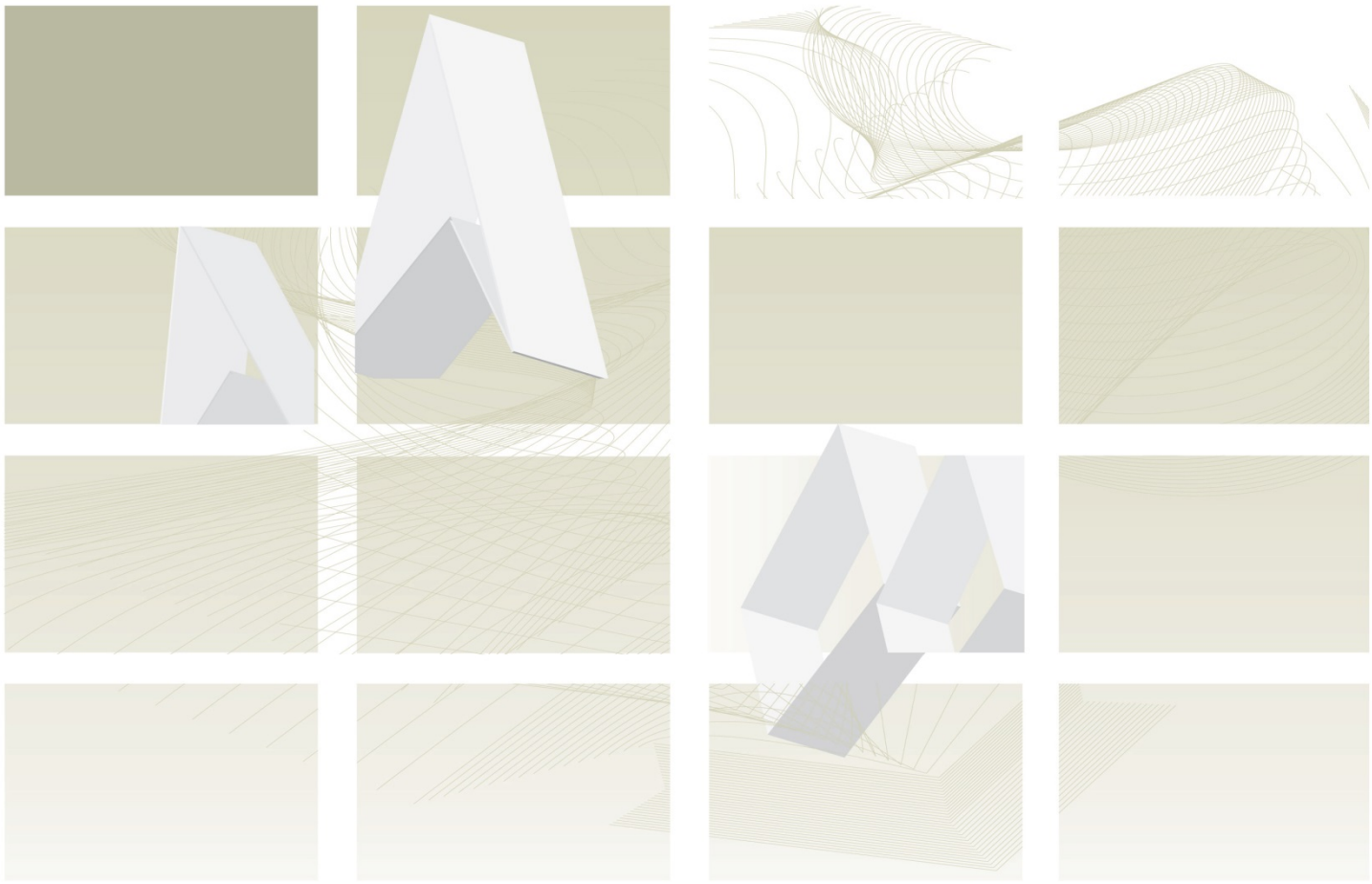
Public Health England

Protecting and improving the nation's health

# UK Standards for Microbiology Investigations

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

## B 4 Investigation of superficial mouth samples



NICE accredited
www.nice.org.uk/accreditation

NICE has accredited the process used by Public Health England to produce Standards for Microbiology Investigations. Accreditation is valid for 5 years from July 2011. More information on accreditation can be viewed at www.nice.org.uk/accreditation.

For full details on our accreditation visit: www.nice.org.uk/accreditation.

Recommendations are listed as ACCEPT/ PARTIAL ACCEPT/DEFER/ NONE or PENDING

**1st Consultation: 25/02/2013 – 20/05/2013**

**Version of document consulted on: B 4dc+**

**Proposal for changes**

| | | | |
|---|---|---|---|
| **Comment number** | 1 | | |
| **Date received** | 05/05/2013 | **Lab name** | St Georges Healthcare NHS Trust |
| **Section** | General, page 16 | | |
| **Comment** | | | |
| General comments:<br>A lot of laboratories reported that they do not examine mouth swabs unless there are details of recurrent infection ie candidiasis.<br>Mention that pus is received from the parotid gland then this should be processed a pus specimen and refer to the SMI.<br>Page 16 - Vincent's organisms should be included in the flowchart. | | | |
| **Recommended action** | **ACCEPT**<br>These issues were addressed when the document was rewritten. | | |

| | | | |
|---|---|---|---|
| **Comment number** | 2 | | |
| **Date received** | 14/05/2013 | **Lab name** | Glasgow Royal Infirmary |
| **Section** | All | | |
| **Comment** | | | |
| On behalf of the Association of Clinical Oral Microbiologists we have multiple comments and revised flowchart for this SMI and have e-mailed the revised document. | | | |
| **Recommended action** | **ACCEPT**<br>These issues were addressed when the document was rewritten. | | |

**2nd Consultation: 23/12/2013 – 20/01/2014**

**Version of document consulted on: B 4dj+**

**Proposal for changes**

| | | | |
|---|---|---|---|
| **Comment number** | 1 | | |
| **Date received** | 23/12/2013 | **Lab name** | University of British Columbia |

| | |
|---|---|
| **Section** | All |
| **Comment** | |
| With respect, in my opinion this is a document of obsolete microbiology. I think that the standard should consist solely of the following: The collection of Superficial Mouth Samples for microbial analysis is discouraged. | |
| **Evidence** | |
| Mouth flora is a dense mix of aerobic and anaerobic bacterial and fungal and viral flora. Some is resident, much is transient. Some is commonly thought of as pathogenic much is thought of as benign. The impact of the collective flora taken in is impossible to interpret. The interpretation of any single organism regardless of quantity is impossible. Treatment of superficial mouth sores with antibiotics or antifungals is questionable more effective that oral washes. Adding in antibiotics may contribute to altered flora illness (such as *C. diff*) In some instances use of anti-candida lozenges may appear to be beneficial even if thrush is not materially present. | |
| **Financial barriers** | |
| No. | |
| **Health benefits** | |
| Yes. See section 6. | |
| **Recommended action** | **NONE**<br>Although we agree with essence of the comment in certain circumstances and certain patient groups it is still a useful method. |

| | | | |
|---|---|---|---|
| **Comment number** | 2 | | |
| **Date received** | 24/12/2013 | **Lab name** | past clinical microbiology laboratory Careggi Hospital Florence |
| **Section** | 4.5.1 | | |
| **Comment** | | | |
| Pag. 12 tab. 4.5.1 Oral candidosis and fungal infections are not clinical conditions but microbiological diagnosis. | | | |
| **Financial barriers** | | | |
| No. | | | |
| **Recommended action** | **NONE**<br>The table states clinical details/conditions and is standard in all UK SMIs. | | |

| | | | |
|---|---|---|---|
| **Comment number** | 3 | | |
| **Date received** | 14/01/2014 | **Lab name** | University Giessen (JLU), Dept. of Periodontology, Germany |
| **Section** | Various | | |
| **Comment** | | | |
| To assure that the preconditions of the sampling are comparable for all patients it seems reasonable that patients before sampling:<br>1. didn't eat or drink within 2 hours<br>2. did not brush their teeth within 2 hours<br>3. did not use any mouth rinse of disinfectant within 2 hours prior to sampling If possible samples should be taken in the morning under fasting conditions | | | |
| **Recommended action** | **ACCEPT**<br>This text has been added to the document. | | |

| | | | |
|---|---|---|---|
| **Comment number** | 4 | | |
| **Date received** | 19/01/2014 | **Lab name** | Glasgow Royal Infirmary |
| **Section** | Section 4 | | |
| **Comment** | | | |
| ORAL RINSE An example of a method used to process oral rinses;<br>Centrifuge at 3200 rpm for 10 minutes.<br>Decant supernatant into disinfectant and resuspend the deposit in 1 ml PBS.<br>This is now the neat sample<br>1. Inoculate 50ul onto a CCA plate and use a hockey stick to spread out<br>2. Inoculate 50ul onto a CNA plate and plate for single colonies<br>3. Dilute neat sample 1:100 (0.1 ml + 9.9ml PBS). Inoculate 50ul onto a CBA and use a hockey stick to spread out.<br>Incubate CBA CO2 and CCA/CNA O2 | | | |
| **Financial barriers** | | | |
| No. | | | |
| **Health benefits** | | | |
| No. | | | |

| | |
|---|---|
| **Recommended action** | **ACCEPT**<br>The document now has a more detailed method. |

| | | | |
|---|---|---|---|
| **Comment number** | 5 | | |
| **Date received** | 20/01/2014 | **Lab name** | University of Iceland |
| **Section** | Various | | |
| **Comment** | | | |

a. Introduction

Change: Usually these give rise from the colonising oral flora but can also result from a flare-up of a chronic low-grade infection.

To: Usually these arise from the colonising oral flora but can also result from a flare-up of a chronic low-grade infection.

b. Introduction - Oral Mucositis

Oral mucositis is a painful complication of chemotherapy or head and neck radiotherapy, caused by direct cytotoxicity of the treatment regime. Super-infection, usually with yeasts and oral bacteria, can exacerbate the problem and microbiological examination can help to guide symptomatic treatment.

c. Erythematous and Pseudomembranous Candidosis

Atrophic candidosis (denture stomatitis) may occur in the palatal mucosa below the fitting surface of dentures, especially when patients sleep with their dentures in place &/ or have xerostomia.

d. Angular Cheilitis and Peri-Oral Infections

It is common for dentate patients with angular cheilitis to have infection with both *S. aureus* and *C. albicans* in the labial commissure region.

e. 4.5 Culture and Investigation

Saliva samples may be collected for microbiological investigation and for other types of assessment. Increasingly saliva is being used as a sample for new diagnostic techniques, but also for assessing xerostomia and caries risk Care is needs to avoid contamination of these specimens and cross infection from these specimens. Sometimes culture is done with an exact volume of saliva in order to assess the count of a particular organism (eg *S. mutans* or lactobacilli per mL of the original saliva sample.

f. 5.1 Microscopy

Perhaps this is still useful for diagnosis acute necrotizing ulcerative gingivitis, not least in a suspected HIV positive patient.

| | |
|---|---|
| **Recommended action** | a. **ACCEPT**<br>b. **ACCEPT** |

| | |
|---|---|
| | c. **ACCEPT**<br>d. **ACCEPT**<br>e. **ACCEPT**<br>f. **NONE**<br>Gingivitis is not covered in this SMI. |

| **Comment number** | 6 | | |
|---|---|---|---|
| **Date received** | 20/01/2014 | **Lab name** | PHE, Mycology Reference Laboratory |
| **Section** | Introduction, 1.3, 4.4, 4.5, 4.6, 4.9, 5 and appendix | | |
| **Comment** | | | |

Final comments from the UKCMN

a. Introduction Infection of Salivary Glands Should the SMI covering these infections be referenced in this section? In the subsequent section there is the number and name of the SOP covering the process.

b. 'Non-albicans Candida species and non-albicans yeasts should be described as Candida species other than C. albicans or Yeasts other than C. albicans throughout.

c. Section 1.3 - Statement needed re containment level 3 for Histoplasma (and other relevant dimorphic pathogens causing oral ulceration) risk.

d. Section 4.4 - A comment is needed under the microscopy section to suggest that direct microscopic examination with Calcofluor staining may be helpful if Histoplasma or mould infection is suspected.

e. Section 4.5 referred to SOP Q 5 “Inoculation of culture media”. Section 4.3 of this SOP recommends centrifugation for liquid specimens prior to plating with a loop but does not cover the quantitative procedure for oral rinses as set out in the Introduction under erythematous and pseudomembranous candidosis. Should a quantitative or, more appropriately, a semi quantitative procedure be added (ie scanty, +, ++, or +++).

f. Section 5 - reporting procedure. Although the introduction mentions quantitative culture of oral rinses the quantitative aspect is not followed up in Section 5.

g. Section 4.5.1 plates are only kept for 40-48 hours. This would not be long enough for Histoplasma to grow. Histoplasmosis is mentioned under oral ulceration so there needs to be a proviso for extending the incubation (under cat 3 conditions) if this is suspected. This incubation time might also be too short for potential moulds to develop if they are suspected. Incubation temperature of 35-37C might be too high for some of the rarer moulds causing palate infection. Perhaps if an unusual infection is suspected a second Sab plate should be set up at 30C. Rarer moulds were referred to under the section describing erythematous and pseudomembranous candidosis so perhaps an addition is needed here.

h. Section 4.6.1 - links to SMIs for organism identification do not lead to any

| | |
|---|---|
| recommendations for either Candida or Aspergillus and some organisms aren't linked at all!<br>i. Section 4.9 line 7 - small typo nation should be national.<br>j. Appendix - amend the flow chart in the appendix to include longer incubation on Sab agar to recover moulds and Histoplasma if suspected. A statement could be added regarding Sab culture at 30°C if invasive mould infection is suspected and possible identification. | |
| **Financial barriers** | |
| No. | |
| **Health benefits** | |
| No. | |
| **Recommended action** | a. **ACCEPT**<br>The relevant documents are currently under review and being restructured once it is known which document should be cross referenced it will be inserted.<br>b. **ACCEPT**<br>The changes have been made.<br>c. **ACCEPT**<br>Sentence has been inserted.<br>d. **ACCEPT**<br>The section has been amended.<br>e. **ACCEPT**<br>This information has been included.<br>f. **ACCEPT**<br>g. **ACCEPT**<br>h. **ACCEPT**<br>Where there are documents that can be cross referenced hyperlinks have been inserted. Where documents are missing from the repository a decision will be made as to whether they need to be written.<br>i. **ACCEPT**<br>j. **ACCEPT** |

**3rd Consultation: 02/06/2014 – 26/08/2014**

**Version of document consulted on: B 4do+**

**Proposal for changes**

| | | | |
|---|---|---|---|
| **Comment number** | 1 | | |
| **Date received** | 10/06/2014 | **Lab name** | Princess of Wales' Hospital |
| **Section** | All | | |
| **Comment** | | | |
| No changes/comments for consideration for submission. | | | |
| **Recommended action** | **NONE** | | |

| | | | |
|---|---|---|---|
| **Comment number** | 2 | | |
| **Date received** | 01/08/2014 | **Lab name** | Truro |
| **Section** | Page 16 and page 12 | | |
| **Comment** | | | |
| Page 16 - The use of blood agar should be dictated by appropriate clinical details on request not a standard for every mouth swab as indicated on the chart on page 12. | | | |
| **Recommended action** | **NONE**<br>Certain organisms are easier to recognise on a blood agar plate. | | |

| | | | |
|---|---|---|---|
| **Comment number** | 3 | | |
| **Date received** | 12/08/2014 | **Lab name** | PHE, Cambridge |
| **Section** | Sections 2-4 | | |
| **Comment** | | | |

a. The SMI notes that saliva and oral rinses are increasingly used as a method of microbiological investigation including to distinguish between colonisation or infection. Reporting is on clinically significant isolates or presence or absence of growth. Are there any recommendations on the quantitative or semi-quantitative reporting of cultures.

b. We currently do not culture or report the presence of coliforms, non-fermenters in immunocompromised patients with oral mucositis unless specifically requested. If routinely performed, it will lead to a large increase in workload and we are not sure of the clinical benefit.

c. We currently report the presence of yeasts in mouth swabs and identify yeasts to

| | |
|---|---|
| species level and perform susceptibility on clinical request usually when there is failure to respond to conventional therapy. The majority are likely to be Candida. Identifying all yeasts to species level will increase workload with unclear patient benefit.<br>d. Vincent's stain - this has not been mentioned - is this recommended elsewhere? | |
| **Evidence** | |
| Cochrane Database Syst Rev. 2010 Aug 4;(8):CD001973. doi: 10.1002/14651858.CD001973.pub4.Interventions for treating oral mucositis for patients with cancer receiving treatment. Clarkson JE1, Worthington HV, Furness S, McCabe M, Khalid T, Meyer S. | |
| **Financial barriers** | |
| Financial barriers as above. | |
| **Recommended action** | a. **ACCEPT**<br>This information has been inserted in to the document.<br>b. **ACCEPT**<br>The document has been amended to reflect this.<br>c. **ACCEPT**<br>The document has been amended to reflect this.<br>d. **ACCEPT**<br>This is referred to in the introduction. |

**Respondents indicating they were happy with the contents of the document**

| **Overall number of comments: 7** | | | |
|---|---|---|---|
| **Date received** | 02/04/2013 | **Lab name** | Dept of Clinical Microbiology, Royal Cornwall Hospital |
| **Date received** | 05/04/2013 | **Lab name** | Bristol |
| **Date received** | 18/04/2013 | **Lab name** | Golden Jubliee National Hospital |
| **Date received** | 13/05/2013 | **Lab name** | Spire Pathology Services |
| **Date received** | 16/01/2014 | **Lab name** | Golden Jubilee National Hospital |
| **Date received** | 19/01/2014 | **Lab name** | Sunderland |
| **Date received** | 02/06/2014 | **Lab name** | ex microbiology Careggi Firenze |