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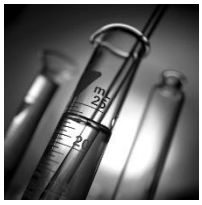

May 2019

Pre-Requisite Clinical Details on all Microbiology Request Forms: Further Consultation

Background

An initial consultation was released on this topic in 2017. There was only a small amount of feedback but what we received was generally positive. Given the time period that has passed since the last consultation it was decided that a further consultation should be held, describing in more detail the rationale. This proposal would make clinical details compulsory on all microbiology samples, however we have illustrated how it might affect some of the main sample types; e.g. wound swabs, urines, sputa. (See appendices A, B & C).

Elsewhere in New Zealand, clinical details are pre-requisite for microbiology requests in Dunedin and its catchment areas, as well as Wellington Hospital.

Our objective is to receive brief but pertinent clinical details on all diagnostic microbiology samples, which we believe will optimise the quality of the results that we release. We also believe that such an approach will have positive effects on antimicrobial stewardship.

Rationale for Pre-requisite Clinical Details

The rationale for clinical details can be split into three areas of the testing process; pre-analytical, analytical and post-analytical. There will however be overlap between the three areas:

Pre-analytical:- Clinical details allow us to decide if the test is appropriate for a given clinical situation and whether extra or alternative testing may be indicated.

Analytical:- This area is particularly important for samples which are processed for bacterial culture. Clinical details can (and often do) affect any of the following steps in the bacteriology culture process:

- Whether other tests in addition to culture are indicated.
- Whether a Gram stain/microscopy is performed.
- What incubation conditions are used (aerobic/CO2/anaerobic) for the culture plates.
- Which culture media are set up on the sample.
- Ascertaining the relative significance of different culture isolates and deciding further workup.
- Whether susceptibility testing should be performed, and what antimicrobials to test against.
- Which culture isolates should be reported to the requestor.
- Which antimicrobial susceptibilities are released to the requestor.
- Whether an interpretative comment is added to the final report.

Post-analytical: This allows us to decide whether the culture findings are consistent with the clinical details, which antibiotics should be reported, if any, which interpretative or management comments should be added.

Which samples would be covered by this policy?

It is anticipated that this policy would be extended to apply to all "non-critical" microbiology samples. Such a policy would not be appropriate for "difficult to obtain", or "critical" specimens, e.g. theatre samples (including minor surgery), blood cultures, cerebrospinal fluid (CSF) and other sterile site fluids. Ironically, these are samples for which clinical details are of the greatest importance and are still strongly recommended.

For microbiology samples submitted to Pathlab, clinical details are already pre-requisite for certain sample types; enteric samples, vaginal swabs, ear swabs, and infectious serology.

CLINICAL UPDATE

How appropriate & detailed do clinical details need to be?

It is accepted that the appropriateness and extent of clinical details is a very subjective area. Therefore such a policy would be implemented with a strong degree of leniency as to what is acceptable with regards to clinical details. A brief summary of the clinical reason for testing is paramount. Current antibiotics, allergies, and immunocompromising conditions should be included, along with any other key information that would be useful to the laboratory dependent on the clinical situation. Examples might be travel or occupational history, pets, history of trauma, history of multi drug resistant organisms (MDROs), co-morbid conditions, etc.

Would such a policy involve microbiology samples from both the hospital and the community setting?

Yes, it is envisaged that such a policy would apply to microbiology samples from both hospital and community settings, and throughout all the regions that Pathlab covers (Waikato community, Bay of Plenty hospitals and community, Lakes hospitals and community).

Are there any potential disadvantages to having clinical details as a pre-requisite for testing?

- **Delay in results:** If clinical details are not provided initially, then the time taken for the laboratory to receive appropriate clinical details may cause a delay in the test result being produced. It should be noted however, that if clinical details are not provided, a comment requesting these will go immediately back to the requestor from registration. The sample will then be stored for a short period, the duration of which will be dependent on the sample type.
- **Extra work for requestors/clinicians:** It is appreciated how tight the time frames are that clinicians need to work to, particularly for patient consultations in the clinic setting. However we believe that the small amount of time needed to provide useful clinical context to the laboratory is entirely justifiable in terms of optimising the quality of the result.

Would such a policy apply to both electronic and manual request forms?

Pre-requisite clinical details for all microbiology samples would apply for request forms received in both the manual and electronic formats.

Electronic requesting has the future potential to facilitate a pre-requisite clinical details policy, with the gatekeeping in this area being performed during the requesting process and before the sample reaches the laboratory.

Who will be consulted on this proposed policy?

This consultation document will be circulated to all laboratory requestors and the Laboratory/Clinical governance committees for the BOP, Waikato and Lakes DHBs.

Conclusion

It is believed that this proposed move is an important step in optimising the provision of high-quality microbiology results from the laboratory. It would also seek to optimise the links and communication between clinicians and the laboratory, an area we are constantly working to improve.

All your feedback is welcome and strongly encouraged, positive or negative. Please direct such feedback by 14th June 2019 to ClinicalMicrobiology@pathlab.co.nz.

A further document will be produced summarising the results of any clinical feedback received, along with a decision as to whether to proceed.

The Clinical Microbiology Team at Pathlab

Appendix A: Superficial Wound Swabs

Identifying and managing infection in wounds is an important aspect of clinical practice. However, many issues relating to the aetiology of infection and the sampling of wounds remain controversial, with limited expert consensus.

The diagnosis of wound infection is essentially a clinical diagnosis, with laboratory testing used to provide further information to guide management, particularly when the use of systemic antibiotics is deemed appropriate.

It is generally only necessary to swab a wound if there are clinical signs of infection and the wound is deteriorating, increasing in size or failing to heal. Swabbing a wound that is not infected results in the unnecessary identification and analysis of organisms which are colonising the wound, rather than causing an infection.

The table below outlines what we would regard as acceptable and unacceptable clinical details:

Acceptable clinical details	Unacceptable clinical details
Symptoms • **New or increased pain** • **Swelling** • **Erythema** • **Purulent exudate** • **Localised warmth** • **Systemic signs (fever, tachycardia etc.)** **Diagnoses/Clinical Scenarios** **(when clinically infected)** • **Post-surgical wounds** • **Bite wounds** • **Superficial burns** • **Penetrating wounds** • **Diabetic foot infections** • **Skin grafts** • **Extensive eczema** • **Extensive impetigo** • **Cellulitis (only if associated skin break/wound)** • **Infected wounds that have not responded to standard management.**	• **No clinical details** (i.e. blank or just test request) • **Chronic wounds/ulcers** These chronic lesions are inevitably colonised with bacteria, so the positive predictive value of the culture result is low. These samples will **only** be accepted if accompanied by specific clinical details suggesting infection. • **Peri-anal and groin wounds** These are also low yield due to high contamination rate with enteric flora. These samples will **only** be accepted if accompanied by specific clinical details suggestive of infection. • **Unlabelled Site** Normal colonising flora differs at different sites of the body. If the site is unknown, the importance of isolated bacteria cannot be properly assessed.

References

- BPAC guidelines: Microbiological assessment of infected wounds: when to take a swab and how to interpret the results. Available from: https://bpac.org.nz/BT/2013/June/infected-wounds.aspx
- International consensus Update 2016, International wound infection Institute: Wound Infection in Clinical Practice: Principles of Best Practice. Available from: http://www.woundinfection-institute.com/wp-content/uploads/2017/03/IWII-Wound-infection-in-clinical-practice.pdf
- Benjamin A et al. Antimicrobial stewardship in wound care: a Position Paper from the British Society for Antimicrobial Chemotherapy and European Wound Management Association, JAC Vol 71, Nov 2016, Pages 3026–3035. Available at https://doi.org/10.1093/jac/dkw287

Appendix B: Urine Samples

The laboratory receives over 500 urine samples per day for microbiological testing. Often there are few clinical details on this particular sample type to provide a rationale for testing. Clinical details are particularly important amongst patient cohorts who have a high prevalence of asymptomatic bacteriuria such as older people, rest home residents, patients with long term urinary catheters. Reporting by the microbiology laboratory of urine culture results in patients who do not have specific symptoms drives unnecessary antibiotic prescribing and increased antibiotic resistance.

A brief summary of the patient's specific symptoms, accompanied by any other useful information such as pregnancy, immunocompromising conditions, current antibiotics, allergies, etc. all contribute to how the sample is processed in the laboratory, what susceptibilities are performed and how the result is reported back to the requestor.

Acceptable clinical details	Unacceptable clinical details
Symptoms • **Dysuria / Frequency** • **Incontinence** • **Fever** • **Confusion (increased or new)** • **Flank pain** • **Suprapubic pain** • **Abdominal pain** • **Haematuria** **Diagnoses/Clinical Scenarios** • **Cystitis** • **Pyelonephritis** • **Sepsis** • **Delirium** • **↑PSA** • **Prostatitis** • **Pelvic inflammatory disease (PID)** • **Pregnant** • **Urology pre-op** • **Gynae pre-op** • **Post-renal transplant**	• **No clinical details** (ie blank or just test request) • **Smelly urine** • **Cloudy urine** • **Concentrated urine** • **Dipstick result only** • **Routine** • **Monitoring** • **Screening (unless pregnant)** • **Pre-op (except Urology/ Gynae)** • **Previous UTI ?clearance** • **Catheter urine – with no evidence of systemic symptoms**

"?UTI"/"UTI" or similar **will** be accepted for testing. However, this is essentially a diagnosis as opposed to relevant clinical details and we strongly discourage this practice. The patient's specific symptoms should be stated as detailed above. This helps the laboratory decide between an uncomplicated and complicated UTI and whether the upper renal tract may be involved. These decisions affect which antibiotics are tested, whether an antibiotic is interpreted as susceptible or resistant and which susceptibility results are reported back to the requestor.

References

- Choose Wisely, The New Zealand Microbiology Network. Available from, https://choosingwisely.org.nz/professional-resource/nzmn/
- SIGN 88 Management of suspected bacterial urinary tract infection in adults. Available from, https://www.sign.ac.uk/assets/sign88.pdf , Sections 1.4, 1.5
- Ninan S et al; Investigation of suspected urinary tract infection in older people BMJ 2014; 349 :g4070. Available from, https://www.bmj.com/content/349/bmj.g4070

Appendix C: Sputum Samples

Bacterial culture of sputum samples suffers from both poor sensitivity and specificity, leading to sub-optimal antimicrobial stewardship. Sputum samples undergo initial Gram stain evaluation, looking for the presence of leucocytes and epithelial cells, which will dictate whether the sample is suitable for culture. However, even with this preliminary step, the yield of pathogens from sputum samples is very low. Specificity is also poor because positive culture results may represent normal nasopharyngeal tract flora.

The following table shows the clinical circumstances in which sputum samples sent to the laboratory will be deemed acceptable or unacceptable:

Acceptable Clinical Details		**Unacceptable Clinical Details**
Hospital (incl. OPC)	**Community**	**Community**
All sputum samples *(clinical details are strongly recommended)*	• Infective Exacerbation of COPD *(recommended only if failing empiric therapy or resistant organism suspected)* • Exacerbation of bronchiectasis • Bronchiectasis monitoring (no more than every six months) • Immunocompromised patients • Failure to respond to initial antibiotic therapy • Pneumonia *(guidelines suggest moderate to severe cases only)* • Haemoptysis • Specialist request	• None • Cough/Productive cough • Acute bronchitis • Screening • Monitoring • "COPD"

In summary, sputum samples on immunocompetent patients from the community who simply present with cough with no other complicating factors will **not** be accepted. International guidelines do not support the use of sputum cultures in non-hospitalised patients with acute bronchitis or mild community acquired pneumonia.

References

- BPAC guidelines: Community Acquired Pneumonia https://bpac.org.nz/BPJ/2012/August/pneumonia.aspx
- NICE Guidelines: Community Acquired Pneumonia https://pathways.nice.org.uk/pathways/pneumonia#path=view%3A/pathways/pneumonia/assessment-of-community-acquired-pneumonia.xml&content=view-node%3Anodes-microbiological-tests
- Australia and NZ guidelines for the management of COPD 2018 https://copdx.org.au/wp-content/uploads/2019/02/COPDX-V2-56-Dec-2018-Web.pdf

Please ensure all members of your institution receive a copy of this clinical update.