NHS
Great Ormond Street Hospital for Children
NHS Foundation Trust

Bacterial and Fungal PCR Service

ABOUT OUR SERVICE

Our molecular bacteriology service aids in the diagnosis of bacterial infection by detecting bacterial DNA present in biological specimens or isolates.

Details of the assays we offer can be found in the Microbiology User Guide.

Samples must be accompanied by a completed Bacterial & Fungal PCR Request Form.

Results are accessed via the Outreach Results Portal.

SPECIMEN REQUIREMENTS

We accept any fluid or tissue from a normally sterile site, including formalin-fixed paraffin embedded (FFPE) tissue and blood culture fluid. Blood culture fluids are only suitable if they have flagged positive or if organisms have been seen on gram stain.

Specimens should be sent in a sterile, dry container with no added fluids or transport media.

Sample type	Minimum volume required
Fluids (excluding blood culture fluid)	500 µL
Tissue	50 mg
FFPE tissue	10 rolls (10 µm)
Blood culture fluid	1 mL

Please note that samples from non-sterile sites, including sputum, bronchoalveolar lavage and skin biopsies are not suitable for broad-range bacterial PCR and will not be processed. Alternatively targeted real-time PCR or broad-range fungal PCR can be performed on these specimen types if requested.

TURNAROUND TIME

Our turnaround time (TAT) for 16S, 18S, Mycobacterial and Enterobactericeae spp PCRs is 7 days. All other targeted real-time PCRs have a TAT of 72 hours. FFPE and blood culture fluid samples are batch-processed weekly, therefore TAT is increased for these sample types. Please note that our service runs Monday-Friday.

OUR TESTING STRATEGY

Broad range bacterial PCR is a powerful technique that can detect an extensive range of bacterial pathogens, however it has reduced sensitivity compared to targeted real-time PCR. For this reason our testing strategy combines broad-range and targeted bacterial PCRs to maximise the diagnosis of infection. Specimens for which broad-range bacterial PCR is requested will additionally be tested by relevant targeted PCR depending on specimen type and/or clinical history, including where available real-time PCR targeting the most common causative organisms. This combined approach benefits from the broad range nature of 16S rRNA gene PCR and the sensitivity of targeted real-time PCR; using them together increases the diagnostic yield for bacterial infections (Harris & Brown, 2022).

Harris KA and Brown JR (2022). Diagnostic yield of broad-range 16S rRNA gene PCR varies by sample type and is improved by the addition of qPCR panels targeting the most common causative organisms, Journal of Medical Microbiology¸71 (12). (https://doi.org/10.1099/jmm.0.001633)

If you do not require additional targeted real-time PCRs, for example if you have already performed these in-house, please indicate this clearly on the request form.

CONTACT US

Results report requests: gos-tr.Bacteriology@nhs.net

General queries (specimen receipt, availability of results):
Microbiology lab: 020 7829 8661 (ext 8661)

Technical queries (specimen and test selection, results interpretation):
Clinical Scientists: laura.atkinson@gosh.nhs.uk (Ext. 0437)
julianne.brown@gosh.nhs.uk (Ext. 5929)

Clinical queries (clinical advice, results interpretation):
Microbiology consultants: surjo.de@gosh.nhs.uk (Ext. 8661)
james.hatcher@gosh.nhs.uk (Ext. 4583)

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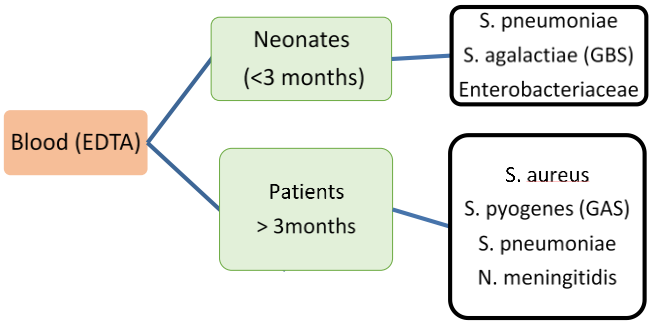
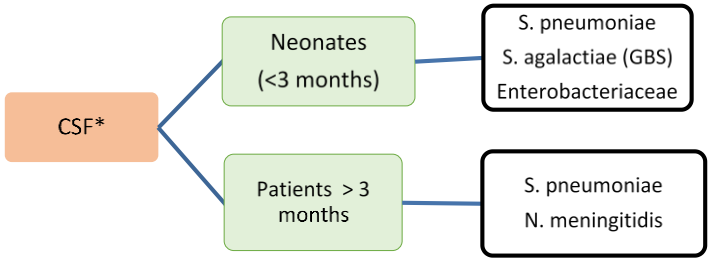
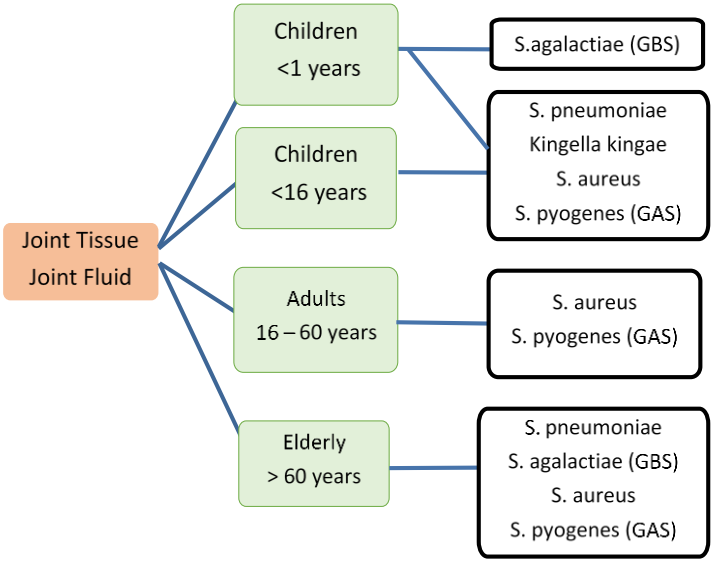
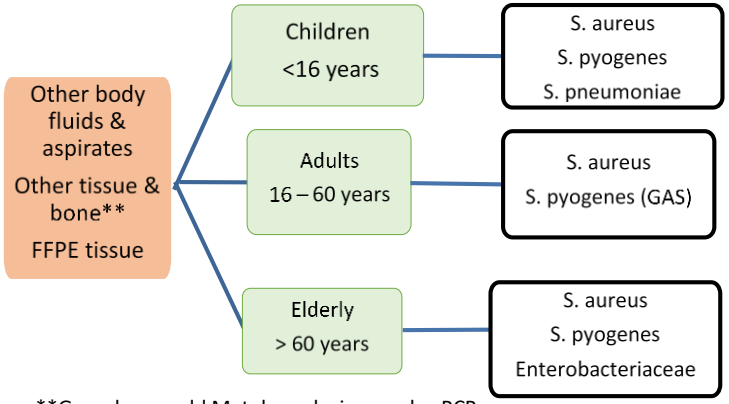
Bacterial PCR service targeted testing algorithm additional to broad range 16S rRNA gene PCR, defined by specimen type and patient age.





*Discitis: add M. tuberculosis complex PCR; Post neuro surgery: add S. aureus





**Granuloma: add M. tuberculosis complex PCR

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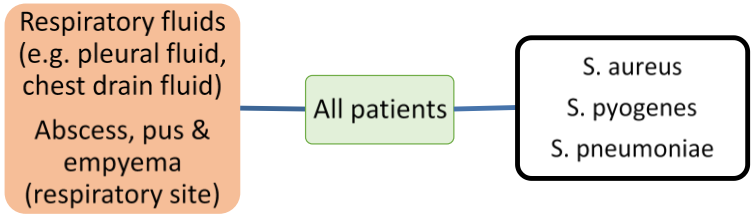
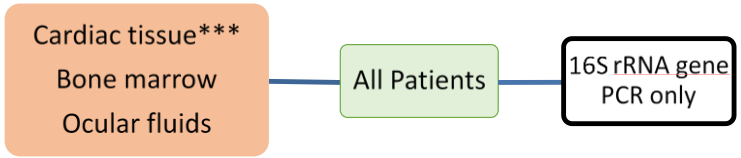


NB. No 16S on BAL, sputum or NPA



***Endocarditis: add S. aureus, Kingella kingae and Tropheryma whipplei