

Welcome to a special newsletter focussing on the Microbiology aspects of PREVAIL. We hope you will find this a useful resource to encourage improved rates of PICC tip cultures and Rifampicin resistance testing at each site.

Why do we need to culture the PICC tip?

PICC tip cultures are crucial for PREVAIL as the culture of the same organism on both the PICC tip and in a blood culture can indicate catheter-related BSI.

PICC tip cultures are also important in helping us examine whether there is a change in the type of organisms isolated from BSI related to the use of the AM-PICCs over the S-PICCs.

Tip for your Team

Always remember to record the time of insertion and removal of the PICC line in baby's notes!

When might we not culture the PICC tip?

If the baby sadly passes away with their PICC in situ you would **not** be expected to culture the tip.

We would however hope that, if clinically appropriate, a blood culture could be taken prior to death if baby's condition is noticeably deteriorating.

You might also not wish to culture a PICC tip from a line that had fallen out of the baby as it might pick up skin flora etc. from the cot. This situation would normally be noticed almost immediately so use your discretion to decide whether to send the tip for culture or not.

What tests should we invoice for?

All PICC tip cultures should be invoiced for at a rate of £10 for a negative culture and £30 for a positive culture.

Blood, CSF and other samples are taken only when clinically indicated and therefore should not be invoiced for.

Tip for your Team

Make sure all your clinical colleagues know to label samples from PREVAIL babies with the stickers and/or any sample system numbers (e.g. ILOG) your site use.

Rifampicin resistance testing

All bacterial isolates from positive blood, CSF and PICC tip cultures from PREVAIL babies, taken between 72hrs prior to randomisation and 48hrs after line removal, should be tested for Rifampicin resistance.

We have provided e-test strips to use when testing for Rifampicin resistance but we are aware that some centres use automated methods such as Vitek or Phoenix. These methods are acceptable for use in PREVAIL as long as a numerical MIC value is reported. Unfortunately if you choose to use Vitek or similar systems, we are not able to provide reimbursement for the costs of these systems as we have provided the e-test strips for the purposes of testing.

Why do we need to do resistance testing?

Concerns about antibiotic resistance are a key reason why there is a lack of adoption of antimicrobial impregnated lines in the UK. It is therefore important as part of PREVAIL that we address these concerns by testing isolates from any positive blood, CSF or PICC tip cultures for Rifampicin resistance.

Do we test Gram-negative organisms too?

All bacterial isolates from cultures in the trial window, **including Gram-negatives**. Although Rifampicin is far more active against Gram-positive organisms we believe that the Rifampicin concentration in the lines might be high enough to prevent at least some Gram-negative infections.

What about anti-fungal resistance?

Although the AM-PICCs are impregnated with Miconazole, as well as Rifampicin, we are not asking for Miconazole resistance to be assessed as current testing methods only indicate resistance to the class of antifungals that includes Miconazole.

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PICC Tip Culture & Resistance Testing

Site	% of responses to "PICC tip sent for culture?" on CRF 6		
	Yes	No	Unknown
Site A	79%	21%	0%
Site B	100%	0%	0%
Site C	83%	17%	0%
Site D	45%	55%	0%
Site E	85%	13%	2%
Site F	83%	17%	0%
Site G	92%	8%	0%
Site H	83%	17%	0%
Site I	83%	17%	0%
Site J	100%	0%	0%
Site K	100%	0%	0%
Site L	76%	24%	0%
Site M	93%	7%	0%
Site N	72%	28%	0%
Site O	83%	17%	0%
Site P	69%	31%	0%
Site Q	64%	36%	0%
Site R	90%	10%	0%
Total:	83%	17%	<1%

These figures are based on Form 6—Removal that have already been returned and entered into the database to allow for analysis. 'Unknown' reflects a missing response to the question "Confirm PICC tip send for culture" on Form 6—Removal, and is most likely the result of a baby transferred with their line in situ. CCS are being queried for missing information.

Some "no" responses will be due to babies sadly passing away with their PICC line in situ, when the tip does not need to be cultured. A "no" response could also indicate a baby who has been transferred to a CCS with their line in situ and they have not been able to culture the tip.

As you can see, most culture rates are above 80% which is great, but there is quite a bit of variation between sites. Have a look at the chart and try to guess which site you are. To find out your anonymous site letter please email and we can let you know!

Chloe will also be contacting centres separately with low rates of resistance testing as we cannot present this data publically due to any possible reflection of the rates of BSI.