

# PATHOLOGY NEWSLETTER DECEMBER 2016

## PATHOLOGY UPDATE – for GP's

### Patient Blood Management and Pre-operative Anaemia in Primary Care

Patient Blood Management (PBM) is a multidisciplinary and evidence-based approach when optimising the care of patients who might need blood transfusion.

Transfusion of blood components incurs a small but significant risk to patients. Despite this, audits show that 15-20% of red cells and 20-30% of platelets/plasma transfused are avoidable.

In addition, it is a waste of this valuable resource.



Even superheroes may benefit from pre-operative iron supplementation – and not a leaf of spinach in sight!

As our colleagues on the frontline you are often best placed to identify and treat anaemia and its underlying causes before blood product intervention is needed. The recent NICE guidelines on blood transfusion give recommendations on the optimisation of pre-operative anaemia- an area where we can do more to help avoid unnecessary transfusions:

The guidelines stipulate that pre and post-operative oral and intravenous iron are indicated, with iron deficiency anaemia (IDA) and functional iron deficiency (FID) respectively. Below is a typical diagnostic contrast in the context of hypochromic anaemia.

	Favours IDA	Favours FID
1 <sup>st</sup> Line	↓↓ MCV & MCH (correlates with severity)	↓ or ↔ MCV & MCH
2 <sup>nd</sup> Line	↓ Serum Ferritin	↔ or ↑ Serum Ferritin
3 <sup>rd</sup> Line	↓ Serum Iron ↓ Transferrin Saturation (↑ TIBC)	↓ Serum Iron ↔ Transferrin Saturation (↓ TIBC)

Note that serum ferritin is raised during periods of inflammation; therefore when viewing a hypochromic picture it is important to consider inflammatory markers (e.g. C-Reactive protein) before excluding iron deficiency on ferritin result alone.

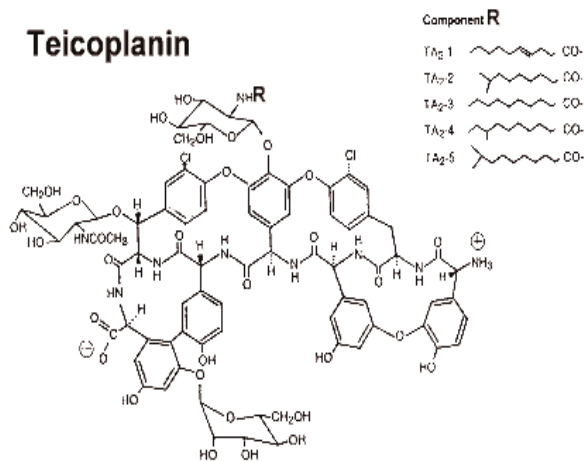
References available on request

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## DECEMBER 2016

### Teicoplanin: how to take and interpret levels

#### Teicoplanin



Teicoplanin is a commonly used antibiotic in patients with bone and joint infections, especially prosthetic associated infections. These are serious infections that require prolonged treatment and good penetration in bone tissue to achieve cure.

Teicoplanin is used because of its broad gram positive cover and its practical once daily dosing.

However, one of the main challenges is to achieve sufficient serum levels to ensure good penetration in tissue. Failure in the treatment of infections caused by susceptible organisms is very often due to sub-therapeutic levels.

All patients planned to be on Teicoplanin for over 2 weeks should have levels taken to ensure they are within therapeutic range. Teicoplanin takes a few days to reach a steady level; **therefore levels should be taken on day 5-7 of treatment.**

To correctly interpret a result, **levels should be taken just before the dose is due (pre-dose levels)**. Random or post-dose levels cannot be interpreted and must not be sent.

**Target pre-dose Teicoplanin level is 20-60mg/L.** If levels are below 20mg/L or above 60mg/L the dose should be adjusted and the level repeated 7 days after dose change. If the pre-dose level is within therapeutic range, no further levels are required unless the patient has abnormal renal function

**When sending a request for Teicoplanin levels please include the following:**

- Date and time of sample
- Date and time of last dose
- Current dose
- Date Teicoplanin treatment started or dose last modified
- Clinical indication

Please note that to ensure correct interpretation of a result the laboratory will not process a sample unless all the above information is included in the request.

For advice on dose adjustment, please contact a Consultant Microbiologist

Dr Grace Sluga, Lead Consultant Microbiologist

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The **Zika virus** got its name from Zika forest in Uganda, Africa. It was first detected in Rhesus monkey in 1947 and was reported in humans in 1952. It is transmitted by the *Aedes aegypti* mosquito

Dr Grace Sluga



Since 2015, an outbreak of Zika virus infection has been occurring in the Caribbean, Central and South America, Oceania (Melanesia, Micronesia and Polynesia) and some parts of Asia.

Zika virus usually causes a self-limiting syndrome characterised by fever, arthralgia, rash, conjunctivitis, headaches, myalgia and retro-orbital pain. These symptoms are similar to Dengue and Chikungunya. Zika has been associated with some cases of Guillan Barre syndrome but is mainly a concern in pregnancy as it has been linked to birth defects, specifically microcephaly. Most infections are acquired through mosquito bites; however it can also be transmitted through sexual contact. It is unclear how long the virus remains in semen, but it has been obtained 93 days after symptom onset.

### Essential clinical information to be provided in the request form:

- Clinical details (symptoms, if pregnant or trying to conceive)
- Date of onset of symptoms
- Date of travel (from UK)
- Date of travel (to UK)
- Countries and areas visited

### Which samples to collect from patients:

- Pregnant woman or male partner of pregnant women:
  - Current symptoms: serum, EDTA plasma and urine
  - Previous symptoms: serum and urine (if within 21 days of symptom onset)
- Other returned traveller not in the above group:
  - Current symptoms: serum and EDTA plasma
  - Previous symptoms: serum only

**Please note: the Zika virus testing is currently NOT available for individuals who had no symptoms suggestive of Zika infection. This includes asymptomatic pregnant women, asymptomatic returned male travellers whose partners are currently pregnant and asymptomatic returned male and female travellers trying to conceive.**

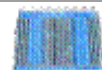


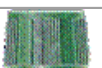
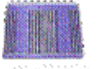



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### High Potassium's

Some practices have reported false positive high potassium concentrations in their patient's samples. Biochemistry are also aware of this issue and have identified a number of steps that can be taken in order to reduce the risk of this occurring. Please see the below points which should be taken for patients who have chronic kidney disease (stages 3-5) and any patient with previous high potassium result:

1. There is an order of draw which should be followed (See below) as some tubes contain potassium salts as a preservative
2. If also undertaking an EDTA, please ensure this is taken after the potassium sample as it can cause contamination.
3. Ask the patient not to clench and relax their fist a lot while the blood is being taken as this can make the potassium concentration in the blood rise
4. Bleeding a patient too fast or too slowly can cause blood cells to burst and release potassium into the blood
5. Patient should be bled as close to courier pick up of samples as possible (please arrange appointments accordingly).
6. Please do not refrigerate the samples.
7. Please do not use a centrifuge on the samples.

Order of draw	Tube Lid Colour	Tube	Description	Notes
1		Citrate (blue)	3.5ml coagulation Sodium Citrate	
2		Plain clot (red)	Biochemistry: 4 ml Serum Clot Activator without gel. Microbiology: 9ml Serum Clot Activator without gel	Note: where plain clot is specified, Gel Clots are not suitable.
3		Gel Clot (Gold)	4 ml Serum Sep. Clot Activator	If patients are difficult to bleed a PLAIN CLOT (red) may be used.
4		LITH HEP (Green)	4 ml Lithium Heparin	
5		EDTA (purple)	4 ml EDTA	
6		Xmatch EDTA (pink)	6 ml EDTA	
7		FLU OXA (grey)	4 ml Fluoride Oxalate	
8		TRACE (dark blue)	6 ml Sodium Heparin Trace Elements	
9		any other		

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## **Q. Why can't we get rid of the Microbiology request form?**

A. The clinical details are used to select different agars eg 'dog bite' would result in special agars incubated for up to 10 days. The details are printed on the request and manually transcribed onto separate fields in the Telepath laboratory system because the electronic message is too long for the normal designated field. Please provide relevant clinical details – we read them!

## **Q. Why can't Microbiology highlight abnormal results?**

A. The Microbiology result is textual rather than numerical (as in Blood Sciences) and the Telepath laboratory system is unable to differentiate different textual values.

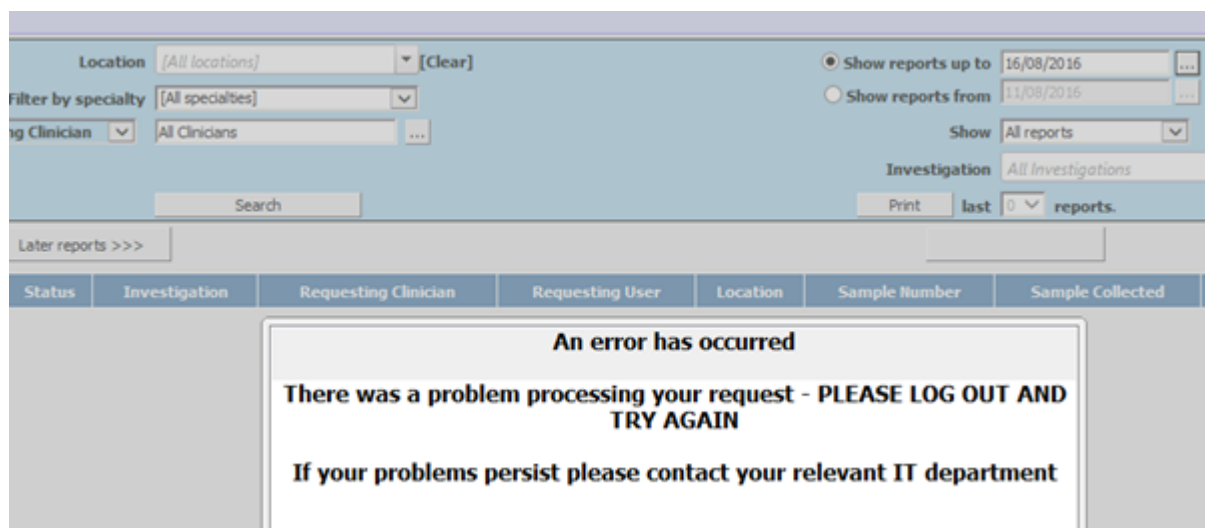
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## ICE Update

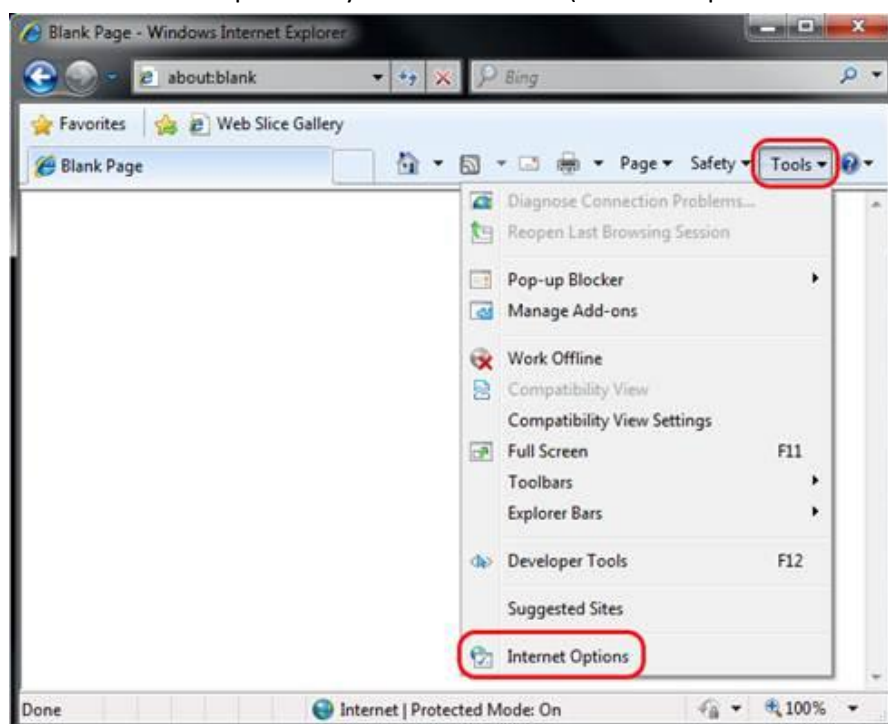
Recently, there was an update to the results messaging service. As part of the upgrade we have the latest version of ICE software. There have been one or two people who have come across an issue where they are unable to look up results in "Report View". This happens when the Internet Explorer cache becomes full and there is a quick fix here:

## ICE Version 6 Upgrade - Clear Internet Cache

If you receive this error message on the Reporting screen, please carry out the following steps.

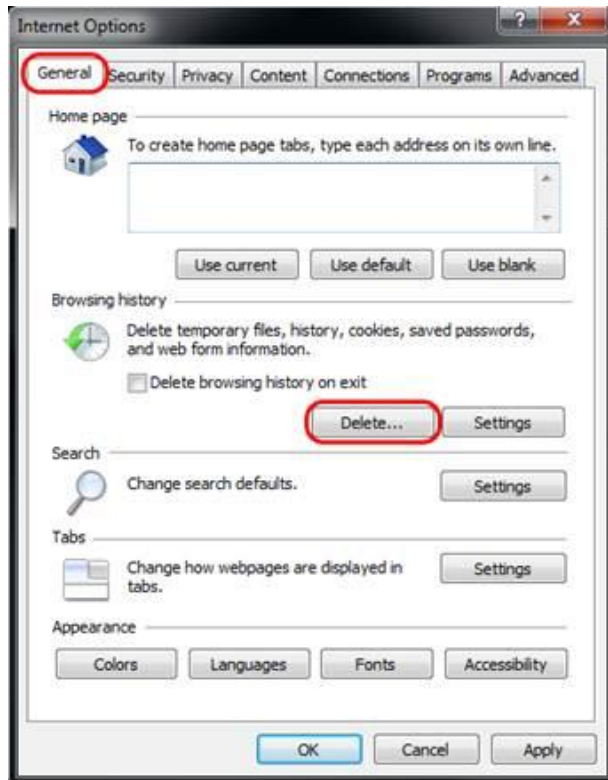


1. Go to Tools > Internet Options in your web browser (Internet Explorer 8 shown here):



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2. Click on the General Tab and then the Delete button.



3. Uncheck Preserve Favourites website data and check Temporary Internet Files and Cookies then click Delete both.



If you discover any further issues please contact Mark Turner or Nelson Eigbe as soon as possible.

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# Whos new in Path?

### **Biochemistry:**

Jenny Ireland is acting laboratory lead

### **IT:**

Nelson Eigbe is deputy IT manager

# ORDERING SUPPLIES?

e-mail supplies order sheet to:

[mtw-tr.pathsupplies@nhs.net](mailto:mtw-tr.pathsupplies@nhs.net)