

Cardiff Study Centre

NEWSLETTER

www.dutystudy.org.uk

Issue 2

December 2010



**Welcome to new
recruiters!**

- Clifton Surgery
- West Quay Medical Centre
- Highlight Medical Centre
- Fforestfach Medical Centre

How are we doing?

By the end of November, **251** patients had been recruited across Wales. Due to your amazing efforts, we're ahead of target - let's stay ahead of the curve!

With **223** urines, we're achieving a **89%** successful sample return rate.

For the best outcome we need to keep the number of urine samples as high as possible, so please don't stop **going for GOLD!**



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Welcome to the second edition of the Cardiff DUTY Study Newsletter!

Recruitment in our centre has been hotting up, and we're delighted to say that, along with the Bristol Southampton and London centres, DUTY has now recruited over 1000 patients in total - over 15% of our overall target. This month's issue includes a special article about what happens to DUTY samples at the Cardiff Research laboratory.

The DUTY study team wishes you a very Merry Christmas and a Happy New Year, and we look forward to seeing all your lovely recruits in 2011!

Introducing James Sadler, Option 2 Recruiter, Bellevue Surgery, Newport.

James is currently top of the DUTY charts, with the highest number of recruits so far!



Q: What role do you play in the study? Myself or my colleague Donna recruit, take consent and then go through most of the paperwork with the parents, apart from the clinical examination. We then package and send off the sample, I upload the information to the Duty website, and pull up the lab result when it comes back to us.

Q: How will DUTY help you in the future? The Duty study is a systematic process with a distinct chronology, but in order for this to run smoothly there are many details which need to be considered. As we have recruited and processed a significant number of Duty recruits at Bellevue, I have had to find my own way of recording and tracking each part of the process, which should stand me in good stead for future projects.

Q: What do you think are the main challenges for this study? I think the main challenge above all else is making sure a urine sample is returned if the child is unable to provide one while they are on the premises. On the whole we have managed to encourage most parents to return samples, but it only takes a few who fail to do so to make it a frustrating experience, as the study hinges on us getting those samples in!

Q: What is your top tip for successful recruitment? I find that once I explain that we are actually finding a minority of kids with UTI which would have gone undetected had they not participated in Duty then they can see the logic of taking part. Many parents are also interested in helping out future clinical practice once they know exactly why the Study is running.

Q: What do you do when not at work? I write and play live music with two different acts, once an acoustic project and one a fairly heavy punk project!



Why is it so important to get a urine sample in DUTY?

- If we don't get a urine sample for a child, the precious time spent on recruitment by practitioners and by parents has negligible value for developing the decision rule that is the primary goal of this study. (NB if you don't get a urine please don't reverse recruitment - the child is still enrolled into the study.)
- Missing urine samples could threaten the validity of the study results.
- The NHS investment in the DUTY study works out at over £600 per urine sample.

Option 1 recruitment with the support of NISCHR CRC research staff is reimbursed at £60 per patient and Option 2 recruitment is reimbursed at £100 per patient.



Research Lab Special

Mandy Wootton, Operational Manager/Lead Biomedical Scientist (Bacteriology) at the Cardiff Research lab explains what happens to the DUTY research samples that you send off in the Royal Mail safeboxes.



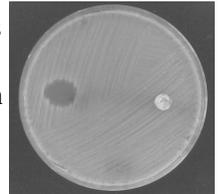
Here in the Central Lab (Specialist Antimicrobial Chemotherapy Unit of the Public Health Wales Laboratory at University Hospital Wales, Cardiff) we perform microscopy to look for red blood cells, white blood cells, epithelial cells (cells that line the bladder), casts (cylindrical protein structures which are formed in the renal tubules of the kidney and are present in the urine in certain disease states) and bacteria. Presence of any of these over a certain level possibly indicates the presence of infection.

Urine results

As soon as all laboratories are online with the database, hopefully by next month, we will no longer need you to chase up NHS reports. We'll get in touch to let you know. In the meantime, please continue to fax results to 02920 687 612 .



For this study the patients are required to NOT have taken antibiotics ("antimicrobials") and so to confirm this we perform an "antimicrobial substance assay". This involves dropping a small amount of the urine on an agar plate covered in a bacterium susceptible to all antimicrobials. If the urine kills the bacterium then it is noted that there is an antimicrobial substance in the urine.



The picture on the right shows an antimicrobial substance assay. The blank patch on the left of the plate is what we see if the result is positive, i.e. this patient HAS in fact been taking antibiotics. This can happen sometimes because parents may not always realise that a medicine that they have given their child is actually an antibiotic.



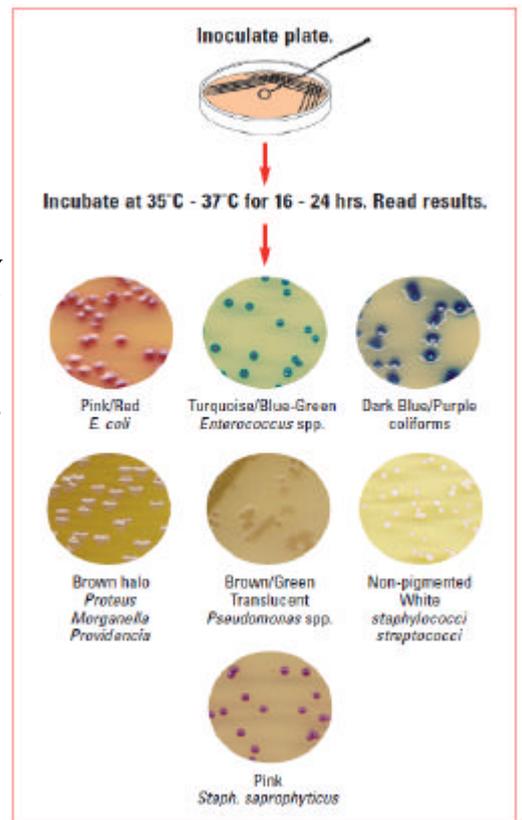
We then culture the urine using a "spiral plater" (left). This machine draws up a small amount of urine then dispenses it in a spiral fashion on the surface of a special agar plate. The plates are incubated at 37°C overnight and the following day reveal growth of any bacteria present in the urine. The special agar contains ingredients that allow us to identify the type of bacteria present, according to the colour of the bacterial colonies. This method also allows us to calculate accurately the number of bacterial colonies present per mL of urine because the spiral plater dispenses a

specific amount of urine onto each agar plate.

If the bacteria are present in significant numbers (greater than or equal to 10,000 colonies per mL of urine) and the microscopy result suggests infection then it is possible that the patient has a UTI.

The illustration on the right shows the different types of bacteria found in urine which can cause UTI. In DUTY so far, the most common bacteria isolated by the Cardiff Research Lab have been *coagulase negative staphylococci* (CNS). CNS are different from other staphylococcal bacteria (such as the methicillin resistant *Staphylococcus aureus*, otherwise known as MRSA) as they do not produce the enzyme coagulase. CNS are normal inhabitants of the human skin and mucous membranes and were, in the past, considered to be urinary contaminants. However it is now recognised that they can cause UTI. *E. coli* is currently the second most common bacterial species isolated by the Cardiff Research Lab in culture positive urine specimens, which is not surprising as it is recognised to be the most common organism involved in UTI.

With thanks to Mandy Wootton and Kathy Tonks for their help with this article.



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