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What's In The Handbook?

Below is a selection of what is available:-

- Biochemistry
- Haematology & Blood Transfusion
- Cellular Pathology
- Bereavement
- Medical Microbiology
- Medical Microbiology – Specimen Collection
- Policies
- Collecting, Handling & Transport of Samples
- Phlebotomy Service
- Laboratory Supplies
- Delivery of Reports
- Pathology Computer System
- Pathology Users' Newsletters

Lithium—How are we doing?

In Dec 2009 the National Patient Safety Agency (NPSA) published a report (NPSA/2009/PSA005) entitled "Safer Lithium Therapy" based on the fact that within 5 years the NPSA had received 567 incident reports relating to lithium use. An audit referred to in the report suggested that the NICE guidance was frequently not being complied with.

The NICE guidance suggests that for a patient on stable lithium therapy, dosing should be checked by measuring lithium concentration at 3 monthly intervals, and thyroid and renal function tests at 6 monthly intervals.

The question is: how well does North Devon comply with this guidance? During the recent 18 month interval, this laboratory analysed 1240 lithium samples, on 256 patients from 23 general practices. The average score for full compliance with the guidelines per practice was a lowly

18% (a range of scores with one practice not achieving full compliance with any patient to practices achieving 50% compliance; the one practice with only one patient on lithium was 100% compliant).

It was expected that each patient would have had at least 6 tests during the measurement period, but this ranged from 1 to 19 tests. Three patients had 19 tests (more than one per month) but none of these had abnormal or widely fluctuating results.

More worrying was the 25 (10%) patients that only had lithium level checked once during the period. Given that statistic, is it possible there are patients on lithium who were not checked at all during the period? In view of the guidance given in the BNF that the full prophylactic effect of lithium may not occur until 6-12 months after chronic oral dosing, were all these patients

on a very short term trial of lithium?

A further 37 (14%) of patients did not have their thyroid checked and 38 (15%) did not have their renal function checked during the period of the audit. Most, almost 80% of these patients were non-compliant for both thyroid and renal screening.

Obviously there is room for improvement, and I would welcome suggestions on this aspect. I am looking at electronic means to alert us when a lithium test is requested which has not had renal or thyroid function test within the last 6 months, but the onus remains with the requestor. As I understand it patients are provided with an alert card, an information booklet and a record book to track blood levels and record relevant clinical tests. Further supplies can be obtained via NPSA.

We will audit this service again in the future, hoping to find an improvement in compliance with the NICE guidelines.

References 1. National Institute for Clinical Excellence. Bipolar disorder: The management of bipolar disorder in adults, children and adolescents, in primary and secondary care. Clinical Guideline38, 2006. www.nice.org.uk

2. Prescribing Observatory for Mental Health. Topic 7 baseline report. Monitoring of patient prescribed lithium: baseline. Prescribing Observatory for Mental Health, CRTUO69 (data on file), 2009.

Andrew Lansdell
Principal Clinical Biochemist

01271 322419

Pathology Handbook

The Pathology Handbook should now be easily accessible to all users of the service, (provided they have access to an internet ready PC), as it has recently been moved from Tarkanet to the NDHT website. The address is: see link 1 below.

In the past, about 50% of Users

1 www.northdevonhealth.nhs.uk/pathology/

2 www.northdevonhealth.nhs.uk/pathology/contact-us/

reported that they could not access the Handbook for various reasons, this improvement should allow all Users access.

Please take time to have a look and tell us what you think by using the 'Contact Us' e-form, link 2 below.

Causes of Artificially Raised Potassium Levels

Cell membranes contain a sodium (Na) - potassium (K) pump or Na/K-ATPase, which functions much like a revolving door. Its main job is to keep sodium ions outside of the cell and keep potassium ions inside of the cell. It is powered by energy from an ATP molecule, moving three sodium ions out of the cell and two potassium ions into the cell with each cycle, against a concentration gradient.

When a specimen of blood has been taken, the blood cells are no longer supplied with (i) the correct temperature for ATPase enzyme activity to occur and (ii) fresh supplies of oxygen - needed to produce the energy (ATP) molecules to power the pump. With dwindling supplies of energy and lower temperatures, the Na/K pump slows down and eventually stops, K diffuses out of the cells into the surrounding serum, artificially raising the concentration of potassium.

"The question was, why was this patient's potassium level so very high?"

Specimen Acceptance Policy

Request Forms must be labelled with 3 key identifiers

Specimens must be labelled with 2 key patient identifiers (transfusion specimens need 3)

Key patient identifiers are:

Full name (not initials or preferred names), DOB, and unique number (NHS, hospital, A/E, F. Planning or GUM)

Specimen and request form information must match and be correct. Transfusion forms must be signed.

For more details or a copy of the full policy, contact the Pathology Quality Manager—see back cover for contact number.

Case Study: Leaking Like a Sieve

Once upon a time long, long ago, (well ok, not all that long ago), a person could go to their GP's surgery and have blood taken for testing. The sample would be collected by the courier and delivered pronto to the laboratory where it was analysed. Should the result be abnormal it could be telephoned to the surgery before the surgery closed for the day and the GP could take any action necessary.

However the need for public services to become more cost effective and improve efficiency is an ongoing necessity. One change made as a result, was a trial of a new schedule for the courier service used for collection of samples from GP surgeries and transportation to the lab. Unfortunately there were unexpected consequences to these changes and further improvements were initiated.

Shortly after the trial started, Pathology internal quality systems highlighted an increase in the number of mildly raised potassium results. One of a number of possibilities for this could be due to the increased transport time for specimens but it couldn't be taken as a

definite cause so some repeat samples were requested via Devon Doctors, to check.

Now there was one particular patient whose potassium level was exceptionally high, higher than would be expected for a sample slightly delayed in processing. Devon Docs were duly called and a fresh sample obtained from the patient with the apparently life threatening potassium level. This was sent to the lab, processed urgently and the result returned NORMAL! This patient continued to require bloods to be taken every few weeks and each time the same thing happened. The GP queried why this was happening, the patient had been having bloods taken for years and never had this problem before. It was explained to the GP about the factors which affect raised potassium levels, including in a delay in processing, due to the serum being in prolonged contact with the red cells, (see article, left) but the question was, why was this patient's potassium result so very high?

It turns out that the patient is polycythaemic and this meant

that the vastly increased number of RBCs were leaking potassium into a small volume of plasma, hence giving a hugely elevated potassium level.

Meanwhile, all parties involved had been working on an improved courier timetable and ironing out the problems, resulting in a much better system, which is continually being monitored and improved upon. The samples now arrive in the lab earlier, the work is being completed before GP surgeries close so there are fewer calls to Devon Doctors and we have also noticed there are fewer raised potassium results. So ends our tale,

...and everyone lived happily ever after.. R. Clyne, Biomedical Scientist

In polycythaemia, the concentration of red blood cells in the blood is higher than normal. This may be because there are actually more red blood cells than usual (absolute erythrocytosis), or because the amount of plasma is less than normal (apparent erythrocytosis).

The main problem caused by polycythaemia is an increase in the blood's 'thickness' (viscosity). Blood flow to organs is reduced and, rarely, blood clots can form.

Introducing:- Dr Mary Alexander, Consultant Histopathologist

Dr Mary Alexander has just joined the Histopathology department as a new consultant. Some of you may remember her as a GP trainee and retainer at Brannam Medical centre between 1995 and 2001. She was also a locum in Torrington and South Molton. Since 2003 she has trained in histopathology at Exeter and Taunton while continuing to live in South Molton. She is particularly interested in gynaecological pathology.

NDDH Emergency Pathology Supplies

Beside the Pathology main doors is a chest of drawers containing a selection of supplies such as blood tubes, request forms and other frequently used consumables.

These are for emergency use only, e.g. at nights or weekends and are for the whole of NDDH. If you need to use this service, please only take enough to overcome your immediate shortage.

Complete an order form (found in the top drawer), and post it in the box on top. Your full order will then be delivered ASAP. Requests for

supplies from GPs and other external locations can be telephoned (01271 322342) or faxed (01271 322328 on order forms) to the department.

Review of SW Pathology Services

www.peninsulapathology.co.uk

Information relating to the review of pathology services being carried out jointly by the five NHS Trusts in the South West Peninsula can be found by following the website link shown above.

The website includes the latest news, alongside a number of related documents available to download.



PRODUCT CHANGE— FEBRUARY 2011

The Point of Care Testing team want to inform you of a change over from Accu-Chek Performa to Accu-Chek Inform 2 test strips to take place during February 2011. These strips are used in the hand-held glucose meters, pictured below. Please continue to use up any current strips you may have. New test strips can be ordered direct from the N.D.D.H. Pharmacy.



If you have any queries concerning the above please contact Point of Care on Ext 3114.

Auto Immune Profiles

Many requests for auto-antibodies lack sufficient clinical details to enable the correct choice to be made, and until now the Immunology depart-

ment has provided a full screen as the default. In today's current financial climate this will no longer be the case. Requests for auto-immune profile will receive just an ant-

nuclear antibody which is suitable for suspected connective tissue disease screening. In order to obtain a full auto-immune profile for auto-immune liver disease a supporting clinical summary is essential.

Pathology Reports—Additional Comments— A Game of Hide & Seek?

Lots of pathology reports are issued with important additional comments attached, which may relate to a single test or group of tests, (example 1, below). Other comments may relate to the whole report, as is the case for many microbiology results, (example 2, below).

Where Pathology reports are printed on paper, the comments are clearly shown beneath the results. On the pa-

thology computer system, they will appear in the Laboratory Comments box. Where electronic Pathology reports are sent to GP surgeries, comments are always sent with the results, but we have had feedback from GPs stating they are unable to view the attached comments.

Such comments may not always be displayed with the results when using a GP system, they may be in a separate

'tab', e.g. 'Specimen Level Comments', or held on a different screen.

There are a number of different GP computer systems currently in use, all of which hold and display the comments in a different way.

If you are unsure how to view these additional Pathology comments from a GP computer system, please ask your system administrator for advice.

Example Lab Comment 1—HDL specific.

Reference Ranges for HDL and Triglyceride apply to FASTING specimens only.
RR. HDL-Cholesterol (male): greater than 1.1 mmol/L.
RR. HDL-Cholesterol (female) : greater that 0.9 mmol/L.
LDL-Cholesterol results are only valid on FASTING specimens & where the Triglyceride is <4.6 mmol/L.

Example Lab Comment 2—Microbiology request specific.

"This Strep pneumoniae is not fully sensitive to penicillin but should respond to high dose penicillin. Happy to discuss."

Cover Photograph

The image under the 'Testing Times' title shows a collection of human gallstones.

Gallstones are lumps of solid material that form in the gallbladder. They usually look like small stones or gravel and can be as small as sand or as large as pebbles, sometimes filling the gallbladder and may take years to grow. The most common stones are made up of cholesterol, a type of fat. Others are known as pigment stones and consist of calcium and red blood cells, which have broken down and solidified.

Approximately one in ten people will develop gallstones or another gallbladder disease. It is not fully understood why some people have them and others don't but gallstones are more common in the following groups of people: Overweight women, women who have been pregnant and people who have recently lost weight.

Tea Break Teaser

Questions—true or false

1. Shivering attacks can be a symptom of gallstones.
2. An Ultrasound scan can be used to diagnose gallstones.
3. Gallbladder removal is the most usual treatment for gallstones that cause symptoms.
4. Animal gallstones are used in as an ingredient in Chinese medicines.



Answer: page 6



Pathology computer system user guides are also available in the NDDH Library.

Glycated HbA1c Tests

In order to improve efficiency and simplify sample xxx, these are now assayed by the Haematology Department.

Therefore only one EDTA (purple top) sample is required even if a FBC is also requested.

Result units and reference ranges remain unchanged.

Sample Under filled—Please Repeat...

All sample tubes have fill levels marked on them. These fill levels need to be adhered to in order for the sample to be of optimum quality. It is standard policy within the Haematology department to reject incorrectly filled citrated tubes. This is particularly important for coagulation tests such as INR where sample tubes have a liquid anticoagulant which must be in a ratio of 1 to 9 with the blood sample to produce a meaningful result.

Accessing Pathology Results

(From NDHT Locations)

Pathology Computer System (LabCentre)

LabCentre is the computer system responsible for the storage and reporting of Pathology results.

Pathology Result Enquiry

Staff Requiring Access to Pathology Results

As a member of staff, you should already have access to :-

- (i) The NDHT hospital computer network
- (ii) The NDHT e-mail application (GroupWise)

Your line manager or Medical HR should have already requested access to the Pathology Computer System – (electronic staff registration (NDHT) or PT1 – PT6 forms (non-NDHT))

NDHT Medical Staff (Doctors) – on-line training

Log onto GroupWise and open the email from Julian Bishop with a subject heading of 'NDHT Pathology Computer Access'.

This email will contain the login and password information you will need to access the Pathology Computer System. On-line training is available using the 'Training Tracker' application.

Tutored training (1 – 2hr) is available – contact 'Workforce Development' – 01237 420261

All other staff – tutored training

Book a training session (1 – 2hr) through 'Workforce Development' – 01237 420261.

Login and password are supplied at the tutored training course ('Pathology Result Enquiry').

Access to results from the following NDHT departments are available:-

Biochemistry, Haematology, Microbiology, Transfusion, Histopathology and Cytology

[Result Enquiry User Guide](#) is available [here](#) and is also supplied at the training session.

Frequently Asked Questions

Q. I am a new member of NDHT staff, how do I get access to LabCentre?

A. Ask your line manager to complete an electronic staff registration request.

Q. I work for the Devon Partnership Trust, how do I get access to LabCentre?

A. Contact Julian Bishop on 01271 (32) 2324, who will then send you an application form.

Q. A LabCentre account is required before I can be trained, how do I know if I have one?

A. Contact Julian Bishop on 01271 (32) 2324, who will check the status of your application.

Q. I have forgotten my LabCentre password, what do I do?

A. Contact Julian Bishop on 01271 (32) 2324, who will reset your password.

Q. I would like to attend a LabCentre refresher training course, how do I do that?

A. Contact the Workforce Development Team on 01237 420261 with your request.

Q. How often does the LabCentre password require changing?

A. You will be prompted to change your password after 90 days. You will not be permitted to reuse any of your last three LabCentre passwords.

Q. Can I access Radiology results with my LabCentre password?

A. No. Radiology reports and images are held on a different system. Bleep 294 for info.

Q. How do I print copies of reports on the printer located in my work area?

A. Use the option 'PRT'. If this is not set up for your printer then contact Julian Bishop.

Dynamic Function Test Protocols

Don't wonder, it costs nothing to ask!

Trying to work out what needs to be done to collect specimens for non-familiar tests can be confusing and with such uncertainty there is a risk that specimens may not be collected correctly and invalidate the procedure.

The Biochemistry Department has a list of approximately thirty Dynamic Function Test (DFT) Protocols which can be sent out to users as required. These advice

sheets give information on the indications for performing the test, how to prepare the patient and how to interpret the results.

Examples of available protocols are shown, (right).

Please contact the Principal Clinical Biochemist, Mr. Andrew Lansdell, for advice on dynamic function tests, and/or to request a copy of the protocol(s) you require.



Dynamic function test protocols such as the Glucose Tolerance Test are available upon request from the Pathology Department.

Below: example, showing a selection of available DFT protocol information

- [ALDOSTERONE/RENIN](#)
- [AMMONIUM CHLORIDE LOADING TEST](#)
- [ANAPHYLAXIS INVESTIGATIONS](#)
- [CALCITONIN STIMULATION](#)
- [CAPTOPRIL SCREENING TEST](#)
- [CLONIDINE STIMULATION TEST](#)
- [CLONIDINE SUPPRESSION TEST](#)
- [DEXAMETHASONE SUPPRESSION TEST](#)
- [EXERCISE TEST](#)
- [FLUDROCORTISONE SUPPRESSION TEST](#)
- [FLUID DEPRIVATION TEST](#)
- [FRUSEMIDE \(1\) \(RTA\)](#)
- [FRUSEMIDE \(2\) \(HT\)](#)
- [GILBERT'S SYNDROME SCREENING](#)
- [GLUCAGON TEST](#)
- [GLUCOSE ABSORBANCE TEST](#)
- [GLUCOSE TOLERANCE TEST](#)
- [GONADOTROPHIN RELEASING HORMONE\(GnRH\)](#)
- [GROWTH HORMONE STIMULATION \(1.EXERCISE\)](#)

Duplicate Testing

Greater restrictions are being introduced on the frequency of repeat testing of Biochemistry tests, (both to reduce costs and improve services).

Exceptions to this rules based system will occur but can only be overwritten if the clinical summary provides the detail.

I appreciate that in some instances problems may exist with results for in-patients not being available to GP's and

vice versa. To help alleviate this, I would encourage the use of the "copy to" option on the blood test request forms—see below:-



To discuss this further, contact the Principal Clinical Biochemist, Andrew Lansdell on 01271 322419, or ext. 2419 from within the hospital.

An On-Call Plea

...from the heart

If you are using the pathology out of hours service it would be greatly appreciated if you could inform the on-call Biochemist and Haematologist of a sample, by bleep, ONLY when the specimen has been collected from the patient and the porter has been called.

We ask so that we don't waste excess time waiting by the specimen reception room for samples to arrive, sometimes we can wait for over an hour for a specimen to arrive from the time of being bleeped.

Your cooperation will be greatly appreciated, thank you.

The On-Call Team

"...sometimes we can wait for over an hour for a specimen to arrive from the time of being bleeped..."



Infectious Diseases:- Guidance for Primary Care

<http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/PrimaryCareGuidance>

The Health Protection Agency has published a set of procedures with the following aims, (1) To improve the diagnosis of infectious disease in primary care

(2) To improve use of the microbiology laboratory in primary care

(3) To target the use of antibiotics and antifungals in primary care.

The guidance should lead to more appropriate antibiotic use.

The documents have been produced in consultation with GPs and specialists in the field and are in agreement with other guidance, including CKS, SIGN and NICE . The guidance is fully referenced and graded but is not all-encompassing, as it is meant

to be 'quick reference'.

If more detail is required they suggest referral to the websites and references quoted. The guidance is updated every two years; or more frequently if there are significant developments in the field.

To access these documents, click on the link above or type the address into the address bar of your internet browser.

HPA Primary Care Guidance Available

- Antibiotic Guidance and References
- Chlamydia
- Fungal Skin & Nail Infections
- Infectious Diarrhoea
- Helicobacter Pylori
- PVL-Staphylococcus aureus infections
- MRSA
- Urinary Tract Infection
- Vaginal Discharge
- Venous Leg Ulcers

Contact Details

Divisional General Manager, Diagnostics

Mr. Neil Schofield Tel: 2761 (322761)

Biochemistry Department

Dr John O'Connor, Consultant Clinical Biochemist Tel: 01392 402944
 Mr Andrew Lansdell, Principal Clinical Biochemist Tel: 2419 (322419)
 Mr. Tim Watts, Operational Manager } Tel: 3232 (370232)
 Biochemistry & Haematology Departments }
 General Biochemistry Laboratory Enquiries Tel 2345 (322345)

Haematology & Blood Transfusion Department

Lead Consultant Haematologist, Dr. Jason Coppell Tel: 3198 (349198)
 Mrs. Sally Williams, Haematology Secretary Tel: 3198 (349198)
 Melanie Bonnyer/Cathie Peters, Haematology CNS Tel: 3198 (349198)
 Mr. Tim Watts, Operational Manager } Tel: 3232 (370232)
 Haematology & Biochemistry Departments }
 Mrs. Maggi Webb, Blood Transfusion Manager Tel: 2327 (322327)
 Kathleen Wedgeworth I.V. Fluids/Transfusion CNS Tel: 2440 (322440)
 General Haematology Laboratory Enquiries Tel 2329 (322329)
 General Transfusion Laboratory Enquiries Tel 2327 (322327)

Microbiology Department

Dr Gail Speirs, Consultant Microbiologist Tel: 2798 (322798)
 Dr David Richards, Consultant Microbiologist Tel: 2320 (322320)
 Dr Tom Lewis, Consultant Microbiologist Tel: 2384 (322384)
 Microbiology Secretary Tel: 3199 (349199)
 Mr. Colin Parkin, Head Biomedical Scientist Tel: 3278 (370278)
 General Microbiology Laboratory Enquiries Tel 2347 (322347)

Cellular Pathology Department

Dr Nicolas Ward, Consultant Histopathologist Tel: 3197 (349197)
 Dr Jason Davies, Consultant Histopathologist Tel: 3197 (349197)
 Dr Andrew Bull, Consultant Histopathologist Tel: 3197 (349197)
 Dr Mary Alexander Consultant Histopathologist Tel: 3197 (349197)
 Histopathology Secretary Tel: 3197 (349197)
 Mr. Lee Luscombe, Head Biomedical Scientist Tel: 3754 (311754)
 General Cell. Path. Laboratory Enquiries Tel 2340 (322340)
 Mr. Michael Elton, Mortuary Manager Tel: 2302 (322302)
 Bereavement Support Office Tel: 2404 (322404)

Pathology Computer Manager

Mr. Julian Bishop Tel 2324 (322324)

Pathology Quality Manager

Mr. Bruce Seymour Tel 2324 (322324)

Point of Care Manager

Mr. David O'Neill Tel : 3114 (349114)

Pathology Office Manager

Mrs. Ruth Teague Tel: 2796 (322796)

Pathology Supplies/Consumables

Debbie Martinelli & Marcus Milton Tel: 2342 (322342)

N.D.D.H. Switchboard

Tel 0 (322577)
 Full contact details are available on the 'Contact Us' page of the Pathology Handbook on Tarkanet and the NDHT website.

Laboratory Opening Times

The laboratory is fully staffed from 09:00 to 17:30 Monday to Friday and on Saturday between 09:00 and 12:30 for all departments except:-

Cellular Pathology }
 Pathology I.T Dept. } 08:30 to 17:00 Mon-Fri only
 Mortuary/Bereavement—08:30 to 16:00 Mon-Fri only
 Point of Care Testing—08:30 to 17:30 Mon-Fri only

Outside of these times there is an on-call service in operation for Biochemistry, Haematology, Microbiology and the Mortuary departments. Contact the on-call staff via the N.D.D.H. Switchboard on ext. 0 (or 01271 322577 externally) - see below for more details on how to contact the on-call biomedical team.

Getting Advice Out of Hours

CLINICAL ADVICE:-

Biochemistry & Haematology & Microbiology

Clinical Advice from a Pathology Consultant can be obtained outside of normal hours by contacting the N.D.D.H. switchboard—dial 0 from inside the hospital or 01271 322577 and ask for the consultant you require.

GENERAL ADVICE

There are three on-call biomedical scientists (one each for the biochemistry, haematology and microbiology departments) .

The on-call staff request that you do not directly phone the laboratory during on-call periods as they are frequently unable to take calls due to being in other parts of the laboratory, collecting specimens for example.

However, on-call staff can be contacted as follows:

Biochemistry & Haematology: By bleep—ask switchboard to bleep the biomedical staff required.

Microbiology: Through Switchboard only.

And finally.....



We hope that you have found this newsletter interesting and helpful. If you would like to see information on a specific topic in the next newsletter, please contact the Pathology Quality Manager, Mr. Bruce Seymour on ext. 2324 (or 01271 322324), email bruce.seymour@ndevon.swest.nhs.uk with any requests.

Answers: 1. True. A sudden chill with severe shivering and a high temperature, similar to 'flu', are signs that infection is building up in a sympathetic gallbladder. 2. True. Most stones can be clearly seen on an ultrasound scanner. 3. True. Removal of the gallbladder is the most usual treatment for gallstones that cause symptoms. 4. True. Animal bile and gallstones are popularly used in traditional Chinese medicines. (Sources: 1, British Liver Trust, 2, Journal of Chromatography A.)