Welcome to our winter edition of Aotea News. The winter season has been a busy time for us, and we have been pleased to see several new initiatives progressing well.

Good progress is being made to bring you electronic ordering of laboratory tests. I mentioned it in my previous editorial earlier this year, and since then we have worked on further developments in collaboration with our project partners and we look forward to being able to report on the pilot phase of the project by the end of the year.

We process almost 10,000 tests on 3000 patients every day (including taking blood samples from about 1900 patients). Giving you the option of ordering your tests electronically will help us improve the end-to-end process to get results back to you even more efficiently and accurately.

Currently, 90 per cent of our routine tests are reported to you within 48 hours and 83 per cent of urgent tests are reported within three hours of receipt. They’re very good numbers and we are sure that electronic ordering will mean that we are able to do even better.

How we organise the home visits system
Aotea Pathology visits about 100 patients in their own home or care facility every day to collect blood samples.

On average two to three of these patients are not in when we visit. Many requests are for us to visit at particular times because of appointments outside the home.

Visits are co-ordinated from the main laboratory by our domiciliary co-ordinators who:
- take bookings
- prioritise requests – taking into account urgency, fasting patients and those with medication
- allocate visits – some geographical areas have specific days of the week for service with routine visits done on those days.

Our domiciliary co-ordinators’ phone may receive more than 80 calls a day, so if your call is not answered immediately please leave a message. There will be someone at the desk but they will probably be busy with other calls.

Messages are cleared many times each day, and staff will contact you if they need further information.

When to request a home visit
The guidelines for domiciliary visits can be found on our website under ‘Doctor Information’, or download the document from here: http://apath.co.nz/BULLETINS/Housecall_Web_Info.pdf.

Important points to remember:
- The request for a phlebotomy home visit must be made by the referring medical practitioner or their authorised representative (eg, senior practice nurse). We are unable to accept requests from patients or their families.
- The patient must be housebound or have seriously impaired mobility due to a medical condition. We are unable to provide this service for non-compliance or transportation needs.
- The patient must be physically or mentally impaired and have no support person to transport them to our collection rooms.

How to request a home visit
There are several ways to organise a home visit for your patient.
- Phone: 381 5900, option 3.
- Fax: 381 5937. This pops out straight on the domiciliary desk. Make sure all the information needed is on the lab request form (including patient phone number) and write the date required.
- Email: collections@apath.co.nz. This is quick and easy, and we can easily reply to confirm the booking. We will still need a lab request form, so scan and email, or fax, the form through to us with your request.

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We know that a quick turn-around is also important to our patients, not just with test results, but in waiting times when they come to see us.

More than 70 per cent of patients wait fewer than 10 minutes and 90 per cent are attended to within 15 minutes. When we surveyed patients, we found that those who waited more than 15 minutes — and who indicated a time of attendance — had arrived during our peak time: 7.00am–11.00am.

Please let your patients know that the secret to quicker service at Aotea Pathology is avoiding that peak period!

If you have patients in Wellington’s eastern suburbs, please note that our collection rooms moved on 2 August from Miramar to Kilbirnie.

Following the end of our lease in Miramar, we took the opportunity to move to newly renovated rooms at 68 Bay Rd, Kilbirnie. They are large, sunny, very comfortable and conveniently located in the main shopping area, near bus routes and parking.

There is no change to the medical services we provide; hours remain the same: 7.30am–4.30pm, Monday to Friday; and the rooms have payment facilities for patients required to pay for their tests.

Payment for testing where patients are referred by specialists in private practice is set to become a thing of the past later this year. You’ll be aware that the government has made permanent its moratorium on District Health Boards charging patients for laboratory services ordered by private specialists.

This means when our current contract with the Wellington region DHBs expires on 31 October 2011, pathology tests will be provided free of charge to both public and private specialist referred patients.

Charges for patients referred by private specialists will, however, continue until which time, as specified in our existing DHB contract.

We look forward to working next year with all our private referrers to provide the same quality care at no cost to their patients, as we currently do with our publicly referred patients.

Dr Karen Wood
AOTE A PATHOLOGY, CHIEF EXECUTIVE

A CUTANEOUS CRISIS, A TOXIC TROPICAL PATHOGEN AND A PUBLIC HEALTH ALERT

The Illness
In October 2009, a 44-year-old Samoan man returned from Samoa after receiving a traditional tattoo to commemorate the death of his wife. A few days later, the tattoo wound became infected.

His GP submitted a swab for culture and prescribed a course of Erythromycin but this was not taken.

The wound deteriorated and the patient developed signs of sepsis with a cardiac arrhythmia. He was admitted to Hutt Hospital and received intravenous antibiotics and intense monitoring in ICU.

He was discharged after five days to complete antibiotics at home. His wounds had healed well but there likely be residual scarring.

The cause of infection
A gram stain of the swab showed pus cells, Gram-positive cocci and many Gram-positive rods arranged in palisades and “Chinese letter” configurations – an appearance typical of “tropical ulcer”. Culture yielded heavy growths of Staphylococcus aureus, Corynebacterium diphtheriae (var gravis) and normal skin flora – the classical isolates from “tropical ulcer”.

The “diphtheria bacillus” was referred to ESR for urgent testing for the presence of the diphtheria toxin gene by PCR.

This was positive, confirming the diagnosis of toxigenic cutaneous diphtheria in this patient – an exceedingly rare event in New Zealand with the significant public health implication of an impending outbreak of pharyngeal diphtheria in susceptible contacts.

Public Health response
Despite cutaneous diphtheria not being a notifiable disease in New Zealand, this case was urgently referred for Public Health appraisal and epidemiological assessment.

We decided to embark on urgent screening of contacts – mainly close family members and health care contacts of the index case.

A total of 27 contacts were screened for C. diphtheriae carriage through nasal

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and throat swabbing onto “Tinsdale’s medium” on which C. diphtheriae grows as black colonies.

The only isolate was obtained from a young, close family member who had developed an infected lesion on her arm, confirming contact transmission had occurred with a second case of toxigenic cutaneous diphtheria. She was withdrawn from school, treated with oral Erythromycin and made an uneventful recovery.

Some contacts were given prophylaxis with either Erythromycin or Penicillin G. All contacts who had not received a diphtheria vaccine booster in the last five years were given a diphtheria vaccine. No secondary cases of pharyngeal diphtheria have been identified.

**Lessons learned**

Humans are the only known reservoir for diphtheria and contact with an infected person or fomites is the usual means of transmission.

The index case likely acquired the organism from contaminated tattoo instruments at the time his tattoo was performed but he did not develop symptoms until several days after arriving back in New Zealand.

Rapid air travel has redefined the borders of what are traditional tropical diseases.

Cutaneous diphtheria is rare outside the tropics and toxigenic strains are exceedingly rare in New Zealand, but it is the diphtheria toxin which probably caused the arrhythmia and cardiac toxicity in this patient’s early illness.

An early Public Health response is vital to prevent secondary transmission. Vaccination offers the best protection, especially when epidemics occur.

Finally, careful evaluation by the GP and good communication with the laboratory is essential in order to decide how to process specimens and to interpret the significance of the cultures.

In this case, being told the patient had been tattooed in Samoa provided us with the vital clue as to what to look for in the bacterial cultures.

**Why do histology specimens take several days to be reported?**

For optimal processing even the smallest tissue piece requires at least six hours fixation, most of which is achieved through overnight processing of the tissue.

After overnight processing, the earliest a tissue section slide can be produced and viewed by a pathologist is around midday the day after specimen receipt.

If the case is relatively simple a report can be done at that time. However, many cases are complex and require further sectioning and/or special stains, which will add further days to the reporting time.

Please be patient for histology results, particularly in complex cases.

**Who should I speak to about a histology test?**

All specimens are assigned to pathologists based on a monthly roster. If you have a question regarding a particular case, contact the assigned pathologist through the Aotea Pathology medical secretaries.

If the assigned pathologist is unavailable, it is possible for other pathologists to comment on the case. In complex cases, the assigned pathologist is in the best position to provide a final diagnosis as they have seen and described the original specimen. Other pathologists will only have a description of the specimen and the slides.

**How can I help improve histology reporting?**

Clinical details are very useful and appreciated.

Correlation between the details and the histology findings can prevent irrelevant diagnoses being included in a differential diagnosis list that may be reported with a complex case. Please include clinical details with your histology requests and please use legible writing.

Please also ensure the specimen pot labelling is adequate and correct (including patient name and a further identifier such as date of birth, NH and site of specimen). Reporting delays will occur if we need to confirm labelling.

Clear indication of the type of specimen is important:

- The term “biopsy”, to pathologists, is usually regarded as sampling of part of a lesion – for example, incisional biopsy or punch biopsy.
- “Excisional biopsy” is a poor term that can lead to confusion. If a lesion is removed in its entirety it is best termed an ‘excision specimen’ and the term biopsy should not be used.

Use orientation of specimens with sutures appropriately:

- Orientation of specimens with sutures should be used only where a lesion present at a particular margin would result in a further limited excision.
- Orientation of all specimens is not appropriate and creates additional work that will slow the reporting process.
- A final reminder that, for the most part, punch biopsies of melanocytic lesions are not appropriate.

**Why do we use formalin for fixation?**

All tissues for routine processing require fixation to stop life processes degrading the tissue and preserve morphology.

Formalin is inexpensive and does a good job of fixation including compatibility with special stains.

Other fixatives are available but are not as good. This includes ethanol, which shrinks tissues and introduces artefact.

Specimens should be placed in a volume of formalin approximately 10 times the volume of the tissue.

There are certain special circumstances where tissue should not be put in formalin. These are usually specialist requests such as lymph node studies for lymphoma and cytogenetics in certain tumours, particularly sarcomas.

Specimens for gout should ideally also not be placed in formalin but rather at least a part of specimen should be fixed in alcohol.

Formalin is provided to practices in prefilled pots and in brown 1 litre bottles. These bottles can be reused so please return empty bottles to the laboratory for recycling rather than discarding them.

If there is doubt about whether to put a specimen in formalin please contact a histopathologist, or the histology department, for guidance.

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ADRENAL INCIDENTALOMA — INVESTIGATION AND TREATMENT

An adrenal incidentaloma is an adrenal mass greater than 1cm in diameter, serendipitously discovered by radiologic examination in the course of investigating some other condition.

The prevalence has been stated to be around 3–4 per cent on abdominal CT but improved modern imaging may show a higher prevalence, as rates as high as 9–12 per cent have been noted in autopsy series.

**How to investigate an adrenal incidentaloma**

Two questions need to be answered:
- Is the mass malignant?
- Is there excessive secretion of hormones?

Imaging characteristics and size are pointers to malignancy. Tumours over 4–5cm are more likely to be malignant but even if the imaging characteristics suggest a benign adenoma these larger tumours should be considered for surgery. Nearly 90 per cent of incidentalomas are benign.

All patients should be evaluated for abnormal hormone secretion, irrespective of whether the imaging characteristics suggest carcinoma or benign adenoma. Even if there are no obvious clinical features, 10–15 per cent of adrenal incidentalomas will show abnormal secretion.

Phaeochromocytoma and subclinical Cushing’s syndrome are the most frequent endocrine problems in incidentalomas. In a hypertensive patient, primary hyperaldosteronism also should be considered. Hormonal hypofunction is very rare.

Investigation of hormonal secretion is as follows:
- For Cushing’s syndrome there is a range of possible investigations, but for adrenal incidentaloma the overnight 1mg Dexamethasone suppression test is the best. The Dexamethasone is taken at 11.00pm and serum cortisol is measured at 8.00am the following morning. Results: <50nmol/L exclude Cushing’s syndrome, 100–135 is equivocal and over 135nmol/L is consistent with Cushing’s syndrome.
- For phaeochromocytoma 24-hour urinary catecholamines and/or metanephrines remain the best initial tests. Plasma metanephrines may be useful in difficult cases but are not a first line test and should be ordered only after discussion. Plasma catecholamines are not a useful test.
- The plasma aldosterone, renin ratio, taken before 10.00am, is the best screening test for primary hyperaldosteronism. Aldactone or amiloride within six weeks invalidate the test. It is not absolutely necessary to stop ACE inhibitors and diuretics, although interpretation is easier if they can be stopped for two weeks before testing. Calcium channel blockers and alpha blockers do not affect the test. A ratio >800–1000 with aldosterone over 400 is strongly suggestive of abnormal secretion and referral for confirmatory tests is indicated.

Alternatively, leave the specimen fresh, don’t refrigerate and make sure the specimen reaches the laboratory within one to two hours. Any further delay will be detrimental to the specimen.

Please do not send fresh specimens at the end of the day.

**Is direct immunofluorescence (DIF) available for skin biopsies?**

We are able to perform DIF on skin biopsies (most useful in blistering disorders).

**What are the appropriate treatments?**

For proven phaeochromocytoma, surgery is the appropriate treatment, irrespective of the size of the tumour. The surgical option should be offered in primary hyperaldosteronism but medical management may be appropriate in some cases.

The optimal management of subclinical Cushing’s syndrome associated with adrenal incidentaloma is not established but if surgery is not offered long-term follow up is required.

The effectiveness of long-term follow up of non-secreting benign adrenal incidentalomas is not established but it is generally agreed that there should be repeat imaging at six to 12 months and thereafter according to clinical judgement.

If the original imaging is suggestive but not definite for malignancy, repeat imaging should be at three months.

Biochemical monitoring should be repeated annually for up to four years before it is concluded that the tumour will remain non-secretory.