Trends of Chlamydia infection and related complications in New Zealand, 1998-2008

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Aim: To compare trends in Chlamydia testing and detection with trends in hospital discharge rates of Chlamydia-related diseases in the upper north island of New Zealand during 1998-2008.

Methods: Analysis of time trends in regional Chlamydia testing and detection rates and regional age-specific hospital admission rates per 100,000 females for pelvic inflammatory disease, female infertility, ectopic pregnancy and per 100,000 males for male epididymo-orchitis.

Results: Laboratory Chlamydia testing volumes increased steadily, from a total of 3732 tests per 100,000 population in 1998 to 9801 tests per 100,000 population in 2008. The highest detection rates and greatest increase over time were noted amongst women aged 15-24 years, at 773 reported cases per 100,000 in 1998, increasing to 8819 cases per 100,000 in 2008. Over the same period, for women aged 15-24 years, the rate of hospital admissions for PID and Chlamydia-related pelvic infections declined during 1998 to 2004 but rose from 2005-2008, the rate of publicly funded infertility admissions fell and the ectopic pregnancy rate was unchanged. The age-specific rate for epididymo-orchitis admissions amongst 15-44 year old men remained stable.

Conclusion: Chlamydia testing volumes from the upper north island have trebled since 1998, as have reported rates of Chlamydia infection, whilst disease complication rates do not appear to have increased. Ecological data must be interpreted with caution. Nonetheless, current high levels of chlamydia testing and detection appear consistent with greater detection of prevalent asymptomatic infection.

Presenting tumour features of Waikato women with newly diagnosed breast cancer from 2005-2008


The Waikato Breast Cancer Register (WBCR) was established in 2005 to audit all Waikato women diagnosed with breast cancer. The primary goal is to establish the nature of breast cancer presenting in a defined regional population to examine inequalities in presentation and outcome. The population has the highest regional
population of Maori women in New Zealand enabling detailed comparisons and analysis.

All women residing in the Waikato region at the time of diagnosis are eligible for WBCR after informed consent. Detailed data of mode of presentation (screening or symptomatic), ethnicity, diagnostic and surgical procedures undertaken, pathological findings, adjuvant treatments and follow up are prospectively collected.

From 2005-2008, 998/1008 (95%) eligible women consented for entry into the WBCR. The majority of patients (~80%) were of European origin with Maori women making up approximately 15%. Of the women diagnosed with breast cancer who were within the screening age, only 54% were screen-detected cancers. Maori and Pacific Islanders were less likely to present with a screen-detected cancer. Invasive cancers comprised 86% of the total. Maori and Pacific Islander women had larger tumours and a higher proportion of node positivity. They also had a higher proportion of Her 2 positive tumours.

Significant variation in breast cancer presentation by ethnicity occurs in the Waikato. The extent of this variation is likely to lead to significantly worse cancer outcomes for these ethnic groups.

8 is Great! Cognitive Outcome of Very Low Birth Weight Infants at age 8

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Infants born very early and very small are at increased risk for development problems. Infants born weighing less than 1250g, and discharged from Waikato Hospital New Born Unit, are routinely followed up at the Child Development Centre, at 1 & 2 years (age corrected for prematurity) and at age 4. The aims of this study were to: (1) assess the cognitive outcome of these children at 8 years of age and compare to the normative data on the WISC IV, and (2) determine the potential value of the preschool cognitive assessments in predicting school-age outcomes.

Sixty-one infants born, weighing less than 1250g, in 1998 and 1999 were identified for the study. Of this group 4 children had been previously identified with an Intellectual Disability (ID) so were excluded, a further 21 were excluded for a variety of reasons. Thirty-six children were included in the final analysis (59%). Twenty-one (58%) were male. The mean age was 100.65 months (8yr 4mths) and the mean birth weight was 892.04gms (range 510g – 1202g). The Wechsler Intelligence Scale for children, Fourth Edition (WISC IV) was used to assess cognitive ability. The sample was normally distributed and individual scores were placed within a normal distribution for comparison (WISC IV, mean 100, SD 15).

The mean full scale cognitive score of the 36 children in the final analysis was within the average range, but substantially lower than the mean on the WISC IV. The mean FSIQ was 86 (SD 18) and ranged between 48 and 117. Seventeen percent of children were within the extremely low range (2 SD below the mean and in the range consistent with Intellectual Disability), 28% were 1 Standard Deviation below the
mean and 53% were within the average range (+/- 1SD of the mean). One child achieved an above average score. A T test for dependent samples indicated no significant difference in cognitive scores between 4 and 8 years.

Overall, our sample of VLBW infants achieved substantially lower cognitive scores compared to normative data on the WISC IV. In-fact taking into account the children that were excluded due to ID, 28% of the children in the cohorts of 1998/1999 (N=40) had an intellectual disability. This is compared to 2.5% expected within the normal population. Furthermore, cognitive scores at the 4 year assessment were consistent with cognitive scores at 8 years suggesting the 4 year assessment may be an important indicator of later cognitive achievement and can provide information to support school entry. Further results, limitations and clinical significance will be discussed.

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Evaluation of the CoaguChek XS system & INR online for Warfarin Management at Pharmacy 547.

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Warfarin is an oral anti-coagulant used to reduce the risk of blood clots forming in high risk patients. Warfarin dose needs to be closely monitored by international normalised ratio (INR) blood tests. The current system in the Waikato involves patients having a venous blood sample collected at their local laboratory, with delayed results being sent to their general practice. The dose is then assessed and any changes are relayed over the phone. The CoaguChek XS is a hand held INR monitoring device which gives an instant INR result. INRonline is an online decision support software developed to manage warfarin dosing. A small number of general practices in New Zealand are using the CoaguChek XS and INRonline to monitor their warfarin patients in an anticoagulation management service (AMS).

Our aim was to demonstrate that CoaguChek XS & INRonline could be used by community pharmacy to provide warfarin management. We also wanted to compare the pharmacy model to the laboratory model and general practice AMS and collect participants satisfaction responses.

A pharmacy AMS was developed and data was collected over a six month period. The results showed that the pharmacy AMS increased time in therapeutic range from 55% to 76%. Patients attended the pharmacy AMS on time 92% of the time. 80% of patients believed the pharmacy AMS was better than their existing service.

This study was able to show that a pharmacy AMS could successfully manage warfarin patients. The results gathered compared favourably with existing systems. This study was only conducted at one pharmacy and further studies will be needed to evaluate the system at a greater number of pharmacies.
Acknowledgements: Dr Paul Harper, INRonline, Bronwyn Sheppard, Roche Diagnostics NZ, Prof John Shaw, University of Auckland School of Pharmacy, Elizabeth Plant, Pharmaceutical Society of NZ.

The Waikato Virtual Lesion Clinic: better, sooner and more convenient

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Skin cancer is very common in New Zealand and hospital lesion clinics struggle with the volume of referrals received. This results in long waiting times for diagnostic assessment leading to delayed treatment. Health Waikato is managing to reduce waiting times for skin lesion assessment and treatment using a private teledermoscopy service.

We analysed patient flow through the new service and compared it to traditional assessment clinics. Of the first 100 patients referred to the service, 97% did not require a hospital appointment to establish the diagnosis. Waiting times were reduced by two thirds. Eighteen patients with skin cancers or suspicious lesions were placed straight onto surgical waiting lists. Surveyed patients have been highly satisfied and confident with the service.

Virtual lesion clinics can allow hospitals to keep up with burgeoning referrals while providing a better, quicker and more convenient service. The new service will potentially provide cost savings, as teledermoscopy assessments can be cheaper than traditional assessments.

Use of device therapy in the outpatient management of congestive cardiac failure

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Device therapy in patients with severe systolic heart failure (HF), including cardiac resynchronization therapy (CRT) and implantable cardioverter-defibrillators (ICD), improves survival and functional status in selected patients\(^1\)\(^-\)\(^5\). This study aimed to assess the number of patients fulfilling criteria for device prescription, as outlined in the ACC/AHA/HRS 2008 guidelines\(^6\), in an outpatient cardiology clinic setting.

We ascertained the following data from 321 consecutive patients attending cardiology clinic during a one month period: Aetiology of HF, New York Heart Association (NYHA) Class, Left Ventricular Ejection Fraction (EF), QRS Duration and Prescription of CRT/ICD.

Fifty-seven (18%) had a diagnosis of HF documented; 22 (39%) had an EF≤35% and 4 (7%) had no EF measurement. Of those with EF≤35%, 9 (41%) patients had NYHA Class I symptoms, 6 (27%) Class II symptoms, 3 (14%) Class III symptoms and 4
(18%) had no functional class documented. Five (23%) patients had an ischaemic aetiology. Eleven satisfied criteria for an ICD on primary prophylaxis basis, 9 of whom were < 75 yrs old; of these a single patient with known ventricular tachycardia had an ICD. For those with NYHA Class 3 or more, 1 patient had a QRS duration of 178ms with atrial fibrillation.

From our sample of HF patients, we identified a significant number of patients who may benefit from device therapy for prophylaxis of sudden cardiac death but had not been referred. Continuing education for physicians on the criteria and availability of device therapy is essential.

References:

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Some overseas observational studies have shown an increased risk of cardiovascular morbidity and mortality in subjects with subclinical hypothyroidism1-4. This study aimed to examine CVD morbidity and mortality in a New Zealand population aged 20 years or older, comparing people with normal thyroid function with people with subclinical and overt hypothyroidism over a decade (1997-2006) by age, gender, ethnicity and deprivation score.

We utilised laboratory data of thyroid function tests to establish links with cardiovascular outcomes from the National Minimum Data Set for hospital events and National Mortality Collection. Data were linked by national health index (NHI) number. We defined subclinical hypothyroidism as having a TSH from 5-10 mIU/L with normal thyroxine levels.

A total of 61,935 individuals were included in the survival analysis, of whom 56,491 were classified as normal, 3,185 as having subclinical hypothyroidism and 2,259 as having overt hypothyroidism. 4,882 individuals had evidence of a cardiovascular event. The estimated overall unadjusted CVD event rate was 14.7 per 1000 person-years (95% CI = 14.3 to 15.1 per 1,000 person-years). When adjusted by age at entry in a Cox regression model, the rate of a CVD event was 15% higher in SCH and 36% higher in OH when controlled for gender, ethnicity and deprivation compared to normal thyroid function.
In this laboratory defined cohort, age, gender, ethnicity and deprivation were important factors in CVD event rates for individuals with hypothyroidism. CVD outcomes in patients within a tightly defined range of subclinical hypothyroidism have worse outcomes than euthyroid individuals. Whilst these differences are small they may have implications when deciding on treatment in general practice.

References:


Use of transient elastography for non-invasive monitoring of methotrexate induced liver fibrosis

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One of the long-term complications of methotrexate use is liver fibrosis. Transient elastography (FibroScan®; Echosens, Paris) is a non-invasive technique to detect liver fibrosis. Recent meta-analysis comparing transient elastography with liver biopsy has concluded that transient elastography (TE) has excellent diagnostic accuracy in detecting cirrhosis (AUROC of 99% with TE score>13kPa)\textsuperscript{1}. Transient elastography can also be used to exclude liver fibrosis in patients on methotrexate (negative predictive value 88% for TE score<7.1kPa)\textsuperscript{2}.

All patients in the dermatology department on methotrexate were offered transient elastography. Transient elastography scores were divided into no detectable fibrosis (0-7kPa), detectable fibrosis (7.1-13kPa) and cirrhosis (>13kPa). Patients with transient elastography scores of more than 13kPa were to be assessed by the Gastroenterology department and considered for liver biopsy.

132 patients underwent scanning. Of the 132 patients, 32 were unsuccessful due to obesity as accurate readings could not be obtained. Mean age was 52 and 56% were male. Psoriasis (59%) was the most common indication for methotrexate followed by eczema (25%). Mean methotrexate dose was 14mg per week, median cumulative dose was 510 milligrams and median duration on methotrexate was 9 months. 85 patients (85%) had TE scores of less than 7.1kPa (repeat scanning in 1 year). 15 patients (15%) had TE scores between 7.1-13kPa (repeat scanning in 3-5 years). No patients had TE scores higher than 13kPa. There was a slight correlation with TE scores and cumulative dose (Pearson correlation 0.233, p-value 0.03).
We successfully determined minimal fibrosis in the majority of patients obviating the need for liver biopsy. Longitudinal data are needed to observe the reliability of this test long-term.

References:

Breast cancer treatments for Waikato women with newly diagnosed breast cancer, 2005-2008


Women in New Zealand face a 20% greater chance of dying from breast cancer compared to women in Australia\(^1\), and Maori women fare worse still. The Waikato Breast Cancer Register (WBCR) is a comprehensive regional population based database of breast cancer diagnosed since 2005. Using the WBCR, this analysis seeks to examine patterns of care in Waikato women overall and by ethnicity.

The database encompasses the breast cancer population from both screening and symptomatic presentations. Data is also collected relating to surgical procedures and adjuvant treatments including any chemotherapy, radiotherapy or endocrine therapies prescribed. From 2005-2008, information on 817 women with invasive cancer and 124 women with DCIS is reported.

50% of patients with invasive tumours had breast conserving surgery (BCS) as a primary surgical procedure compared to 65% of patients with Ductal Carcinoma In situ. BCS rates were higher for smaller breast cancers at 64% for T1 tumours. Maori and Pacific Islander women tend to present with more advanced tumours leading to a higher proportion of mastectomies (>60% for both, compared with 47% for European) and requirement for full axillary dissection. Consequently, they were also more likely to require adjuvant chemotherapy. 45% of Maori and 67% of Pacific Islander women required chemotherapy compared to 36% of European women. 50% of women who had a mastectomy received adjuvant radiotherapy compared to just over 90% of women who had BCS. Of women with endocrine responsive invasive cancers, 90% received endocrine therapy.

Waikato women are receiving the appropriate treatment for their cancer stage. This also applies to Maori women who despite having worse prognosis tumours are also receiving the appropriate treatment.

References:
Identifying Person-Specific Factors Associated With Health Change in an Intervention Programme for Chronic Pain

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A multi-disciplinary persistent pain programme (MDPPP, funded by ACC compensation scheme) has been developed using a holistic model of practice based on Health Change Process Theory. The psychometric instrument QEHS was developed out of this theory and is used to determine clients' health status and locus on the health change pathway. Both a total score and a patient profile is generated. Other validated psychometric measures used are Kessler 10 (K10, psychological distress), the Pain Self Efficacy Questionnaire (PSEQ, a subjective measure of function) and the Return to Activities of Daily Living Scale (RADL, assesses return to activities usual for the client).

Aims of the Study: 1: To examine the internal consistency, content and concurrent validity of the QEHS. 2: To identify person-specific factors related to degree of change occurring during a chronic pain intervention programme.

Method: Aim 1: 88 data sets prospectively gathered from 55 participants in MDPPP between 2008-2009 were used. Internal consistency of the QEHS was assessed using multivariate analysis (SPSS v17.0). Correlational analysis between QEHS Total Score, the individual components of the QEHS, and K10, PSEQ and RADL scores was used to explore concurrent and content validity. Aim 2: Two groups were identified as having either high or low change in QEHS Total Score between admission and discharge. Grounded theory was used to identify factors associated with programme success or poor outcome.

The QEHS Total Score was found to have high internal consistency with each of the subscales (p<0.01 for all); Anxiety (-0.946), Self Worth (0.956), Motivation to Change (0.872), Awareness to Possibility of change (0.951), Identity (0.949) and Sustainability (0.954). QEHS Anxiety score correlated strongly with K10 score (0.477, p<0.01), and QEHS Self-Worth score with PSEQ (0.403, p<0.01). QEHS Motivation to Change was negatively correlated with both K10 and QEHS Anxiety scores (-0.429 and -0.887 respectively, p<0.01). Themes identified in promoting programme success were ‘Length of time off work’, ‘Considering a return to work’ and ‘Full engagement and participation in the programme’; low change was associated with ‘Fixation upon a return to pre-injury functioning’, ‘Aims to return to previous work/a form of work that is too strenuous' and ‘Unable to maintain new techniques learnt during the MDPPP’.

The QEHS is a valid index of health status and of change in health. Person-specific factors are predictive of change in health status in a multidisciplinary pain management programme.