# THE HAWKE'S BAY MEDICAL RESEARCH FOUNDATION INC.

## 54th Annual Report 1st April 2014 – 31st March 2015

**MEDICAL RESEARCH WITH A HAWKES BAY EMPHASIS**

HBMRF
HAWKES BAY MEDICAL RESEARCH FOUNDATION

## WELCOME TO THE ANNUAL REPORT FOR 2015

The financial year saw the retirement of Andrew Wares, President of the Foundation, with Kirsten Westwood being appointed in his place, validated at the 2014 Annual General Meeting. On behalf of foundation members; I wish to thank Andrew for his generous service. The Foundation has benefitted greatly from Andrew's involvement over many years and his contribution is greatly appreciated.

The financial year saw an improvement of the financial performance of the investment portfolio which has bolstered our net surplus. This is has been an important counter to a reduction (as expected) in bequests and donations. We also managed to keep our expenses in line with the previous year. All of this resulted in an operating surplus of over $147,000, an improvement of approximately $30,000 from the position at the end of 201`4. We are encouraged by this as financial challenges exist and continue to be a concern for all charities. Donations and bequests income saw a significant drop on previous years which highlights our reliance on the performance of our portfolio of investments. I am grateful to our members and others who make donations to help our work.

Positively, the financial year saw the Foundation approved grants in excess of $45,000, nearly twice that of the previous year ($23,000). With the research we fund (as reported in this Annual Report) the Foundation is continuing a proud tradition of making a difference in our community. We are indebted to the members of our scientific committee led by Cath Kingston for their expert and professional work in assessing the applications for funding.

This is my first year as President and I am excited to be involved with a team of generous and highly skilled council members who aspire for the advancement of medical research. I am grateful for the assistance of all the members of Council and, in particular, Mrs Judy Baxter (Secretary) and Mr Michael Jackson (Treasurer) for the assistance they provide.

Kirsten Westwood - President

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## COUNCIL AND OFFICE BEARERS 2015

**President:** Mr Andrew Wares, retired President Nov. 2014
Replaced by Mrs Kirsten Westwood

**Council:**

| | |
|---|---|
| Cr Kirsten Wise | Nominee, Mayor of Napier City Council |
| Mrs Judith Baxter | Nominee, Mayor of Hastings District Council |
| Mrs Di Petersen | Nominee, Mayor of CHB District Council |
| | Nominee, Mayor of Wairoa District Council |
| Dr D M Barry | Appointed by Members of the Foundation |
| Ms Cath Kingston | Appointed by Members of the Foundation |
| Mrs Helen Francis | Hawke's Bay District Health Board |
| Dr P Hendy | NZ Medical Assn – HB Branch |
| Dr Rob. Leikis | Staff H.B. Hospital |
| Prof Bob Marshall | Appointed by Council |
| Mrs Brenda Fine | Appointed by Council |
| Mr Andrew Wares | Appointed by Council (Resigned Nov. 2014) |

**Solicitors:** Carlile Dowling – Napier

**Medical Director:** Dr D M Barry

**Secretary:** Mrs Judith Baxter

**Treasurer:** Mr Michael Jackson

## MEMBERS OF COMMITTEES

**Scientific and Health Services Committee**

Dr D M Barry
Dr Paul Hendy
Dr M Arnold
Cath Kingston (Chair)
Prof B Marshall
Dr Rob Leikis
Judith Baxter (Secretary)

**Finance and Investment Committee**

Kirsten Westwood
Mr Michael Jackson
Cr Kirsten Wise
Mrs J Baxter (Secretary)

## DONATIONS AND BEQUESTS

For the Year Ended 31st March 2015

D R Atkinson
C M August
P C H Baker
M E & N G Bayliss
J T L Beaumont
R A & A Benjamin
G Broadhurst
J D & A P Dine
M Dine
P Dunkerley
W Foster
R G H Harris
P Hendry
F A B Hosking
M S C Jolly
A Lopdell
J & M A McLeod
J McConnochie
I McQuilliam
D G L Millar
A E McIntosh
A G H Parker
D & C Patterson
D Petersen
R Povey
B Ritchie
V Roberts
A Sheppard
B Starck
D Taylor
J K Titchener

## HONORARY MEMBERSHIP

Dr I McPherson
Mr A Train
Mr H Verry
Mr M Collett

## LIFE MEMBERS

Mrs M Amyes
Dr P Bannister
Dr D M & J Barry
Dr G Beacham
Dr J T L Beaumont
Mr D E Bennett
Mr S Bentall
Mr & Mrs Brownlie
City Medical Napier
Dr D Doig
G Duncan
Dr C H Dykes
Dr J D Eames
Dr R M English
E I T Hawke's Bay
Dr S Foote
Mrs W Forster
Dr B L Gare
Hastings District Council
H.B. Regional Council
Dr M J Houliston
Dr R Henderson
Dr R Janes
Dr S Jessop
Dr J Kerr
Mr L J Knight
Dr D A Lawson
Dr A Luft
Dr T J Mason
Napier Lions Club
Napier City Council
Dr R G Neal
Dr N W Nicholson
NZ Nurses Assn
N.Z Dental Assn
Dr P O'Brien
Dr C Proehl
Dr J A Rose
Dr M J Short
Dr L Smales
St Pauls Presb Thrift Shop
Dr I Taylor
The Doctors Hastings
Mrs M Travis
Mr R H Thompson
Dr P Twigg
Dr B J Van den Heaver
Dr J S Wakeman
Dr R Wills
Dr M G Wiggins
Mrs M Wilson

## MEMBERS

Dr D R Atkinson
Mr C M August
Dr P Baker
Dr J Bannister
Mr & Mrs N G Bayliss
Dr R & J Benjamin
Mr G Broadhurst
Mr & Mrs B Lopdell
Mr & Mrs J P Dine
Mrs M Dine
Mr A H Duncan
Mr P Dunkerley
Dr C J Fan
Mrs B Fine
Mr P Gibson
Mrs E D Glenny
Dr E W Gush
Mrs S Hansen
Dr R G H Harris
Dr P Hendy
Mrs F Hosking
Dr M S C Jolly
Mrs J McConnochie
Mrs A E McIntosh
Mr & Mrs B J McLeod
Dr I W McQuillian
Mr & Mrs D Millar
Mr A G H Parker
Mr & Mrs D Patterson
Mrs D Petersen
Mrs R Povey
Dr J Pratt
Dr B Ritchie
Dr V Roberts
Mrs A Sheppard
Dr B Stark
Mrs D Taylor
Mrs C K Tatum
Taradale Medical Centre
Dr W Thompson
Dr D K Titchner
Mrs J Young

## THE FOUNDATION

In November 1960 a small number of people in Hawke's Bay met and discussed the importance of medical research in New Zealand and the feasibility of carrying out worthwhile research in Hawke's Bay.

In particular it was noted that the doctors in Hawke's Bay who had undertaken specialist training overseas found, on coming home, a partial vacuum because of the lack of research facilities available locally. It was agreed that there was a need for facilities to be made available.

The first meeting to establish the Hawke's Bay Medical Research Foundation was held on 16th March 1961 and the Foundation was registered shortly thereafter under the Incorporated Societies Act 1908. The objects of the Foundation are to promote, initiate and support research in all health related fields including medical and health education, knowledge and understanding.

A Governing body was set up comprising representatives of the Hospital Board, the medical profession, local authorities and Members of Parliament.

Anyone could become a life member on payment of 100 pounds or a subscribing member on paying 1 pound annually. These rates converted to $200 and $2 by introduction of decimal currency, but from 1 April 1994, became $150 and $10, with corporate membership being $200.

Current rates are as follows: Life Membership $200. Annual Subscription $10. Corporate membership equates to: Gold: $10,000. Silver $5,000 and Bronze $2,000. A framed certificate is presented in appreciation of the grant or donation. Donations over $5, and gifts and bequests are eligible, within limits, for tax exemptions and rebates.

The Foundation receives the wholehearted support of the Local Authorities, Service organisations and people of Hawke's Bay, and continues its role in medical research. Over the years the funds not used for research have been built up by donations, bequests, wise investments and recognition as a charitable organisation for taxation purposes.

Funds have been made available for research into many areas and these include asthma, arthritis, cancer, cot deaths, diabetes leukemia, heart disease, mental health and community health.

It is important that the existence of the Foundation should be widely known and that the funds are available to encourage and assist health research and training.

Enquiries as to membership of the Foundation are available by going on-line, click on the Home page (Donate Now) button and information on membership, the paying of subs and donation to the Golden Jubilee Fund is available.

The bank account number is included for people wishing to make a direct bank deposit.

Bequests have been significant in the building up of funds and it can be of advantage to make a gift or legacy for research. A bequest may be made in the following form:

*I give and bequeath to the Hawke's Bay Medical Research Foundation the sum of (or description of property or assets given) for the general purpose of the Foundation (or other specified purpose) for which receipt of the Secretary of the Foundation shall be a good discharge to my trustee.*

Remember donations in lieu of floral tributes are acknowledged by the Foundation and next of kin or executors can be asked to specify that donations in lieu of floral tributes be made to the Foundation on death. This can be done by including a suitable request in the obituary notice.

### Information is available on request to:

The Secretary
Hawke's Bay Medical Research Foundation
P O Box 596
NAPIER Website: hbmrf.org.nz Phone and Fax: 06 8799199

## TRUST FUNDS ADMINISTERED BY THE FOUNDATION

### HAWKES BAY ELECTRIC POWER BOARD - JUBILEE CHILDREN'S FOUNDATION TRUST

This Charitable Trust was formed in 1974 for the purpose of financing and encouraging research Into illnesses and handicaps of children, whether caused by disease or accident and financing the care and treatment of children.

In August 1999 the Hawke's Bay Medical Research Foundation was appointed Sole Trustee of The Hawke's Bay Electric Power Board Jubilee Children's Foundation Trust.

The visiting speaker at the 2014 AGM Professor Peter Lewindon from Australia was sponsored for $5,000.

More recently a donation of $27,165 was made to Dr Oliver Grupp and his team at HBDHB to look at hPOD-hypoglycaemia Prevention in New-Borns with oral Dextrose.

### GEORGE FORSTER MEMORIAL TRUST

This Charitable Trust was established in 1993 in memory of the late George Forster. The purpose is to further the education of medical and allied staff in Hawke's Bay.

The main aim of the Trust is to sponsor lectures conducted by experts or specialists organized by the Trustees to be held in Hawke's Bay or elsewhere in New Zealand. The lecture or seminar held is known and promoted as the George Forster Memorial Lecture.

A further aim is to support educational programmes and attendance at such programmes by the medical and allied staff (full or part time).

## RESEARCH FUNDED BY THE FOUNDATION

### Examining the neuropsychological profiles of children who have pre-natal alcohol exposure

**HBMRF $15,000**

Andi Crawford

**Introduction**

Fetal Alcohol Spectrum Disorder (FASD) is one of the leading causes of intellectual disability and learning difficulties around the world. FASD has detrimental effects on a person's ability to learn, live independently, and FASD individuals have a propensity toward criminal behaviour and co-morbid mental health issues. New Zealand research suggests that maybe 60% of women are binge drinking prior to pregnancy recognition and 28% continued to drink alcohol throughout their pregnancy. Our New Zealand culture indicates that we have a population of people who have been exposed to alcohol prenatally and may be at risk for an unrecognized FASD diagnosis. The neuropsychological profile of FASD children typically suggests adaptive behaviour (communicating, self-care and social skills) is lower than what we would expect from their Intellectual Functioning, IQ. The international literature suggests this discrepancy has been linked to the significant executive functioning (ability to plan, organize, reason and regulate emotions) deficits found in FASD. Higher order tasks, such as executive functioning and social cognition are at the core of increasing social demands and may help explain the discrepancy between IQ and adaptive behaviour.

**Aims**

The general objective of this research project is to further understanding of neuropsychological profiles and adaptive behaviour of children with FASD. The main aim is to analyse the relationships between performance on tasks of executive functioning, social cognition and adaptive functioning. The specific measures to be used will be derived from tools that are commonly in use to assess FASD internationally with key additional measures of social cognition. More specifically, the primary aim of the proposed research is to examine whether measures sensitive to processes underlying social functioning, such as measures of social cognition, can help explain the deficits in adaptive ability evident in FASD children. Results will have both clinical and academic relevance and extend current understanding of the neuropsychological and functional profiles of children with prenatal alcohol exposure.

In summary the aims of this research are to answer the following questions:

- Do children with and FASD diagnosis have a larger and significant discrepancy between IQ and adaptive behaviour when compared to children with neuro-typical development?
- What aspects of executive functioning and social cognition are related to adaptive functioning scores in children with prenatal alcohol exposure?

**Progress to Date**

This doctoral research is conducted on a part time basis through the University of Auckland, Centre for Brain Research. Full candidacy was achieved in November 2014 with presentation to the faculty regarding progress to date. Data collection continues through the Child Development Service and the wider community. To date 25 children with prenatal alcohol exposure have been assessed as part of the clinical group. A further 17 children have been assessed to form the comparison group. Comparison group children are matched on age, gender, ethnicity and maternal education. Many thanks to Pat Watson, Principal of Camberly Primary School for his assistance in recruiting well matched children. A research partnership has been formed with Maori Health and Querida Strickland-Whatuira and Laurie Te Nahu have been integral in creating open dialogue for data collection and future information dissemination. The theoretical underpinnings of this research was presented the first 'Australasian FASD conference in Brisbane' in November 2013.

**Future Goals**

Data collection is to be completed by early-mid 2017. The goal is to recruit and assess 40 pre-natal alcohol exposed children and 30-40 comparison children. Preliminary data is to be presented at the international conference on FASD in Vancouver, Canada March 2017. Dissertation is to be submitted mid-2018.

**Physical Healthcare of People with Serious Mental Illness (SMI): The Role of the Community Mental Health Nurse** (CMHN).

**Lyn Wiffin (Registered Nurse)**

**HBMRF $1235**

**Introduction:**

The objectives of this study was to explore and describe CMHNs' views on their role in the physical healthcare of people with SMI, and promote reflection by CMHNs and others, in how best to address the physical healthcare needs of people with SMI.

**Aims:**

A qualitative study using an exploratory descriptive design was undertaken. Purposeful sampling resulted in individual interviews with eight self-selecting CMHNs from three District Health Boards. (DHBs). Open coding was used to identify categories, themes and sub themes. The categories identified from the interviews were (1) Relationships. (2) Roles and Responsibilities. (3) Ways Forward. Participant's views were supported with direct quotes.

**Progress:**

The findings indicated an overall commitment by participants to ensure the physical healthcare needs of people with SMI were met, even when this resulted in having a 'hidden workload' outside their scope of practice, or feeling they were the 'only one' involved in the physical healthcare of clients. Demands on CMHNs' time and resources when providing physical healthcare were highlighted.

**Conclusion:**

Collaborative relationships with other health professionals such as GPs and practice nurses were described by participants as beneficial in getting the physical healthcare needs of clients met. When considering ways forward in their role in the physical healthcare of clients, some participants described potential changes in physical healthcare provision that they thought could help to clarify CMHNs' roles and responsibilities in regard to providing physical healthcare. Further training in physical healthcare for CMHNS, and in mental healthcare for practice nurses, was suggested. This may enhance collaboration between CMHNs and physical healthcare providers, and/or allow CMHNs to focus more on their specialist roles. Some participants suggested service integration and/or co-location and increasing resources and services technology interfaces. Such suggestions could prove effective in better utilisation of CMHNs' time and resources so that they could focus more on their speciality field while ensuring clients' physical healthcare needs.

**An analysis of the mechanisms of change in families participating in the Fostering Security Training Programme for caregivers**

Bernice B. Gabriel. Senior Psychologist. Child, Adolescent & Family Service, HBDHB

**HBMRF $18,363**

**Introduction:**

The mental health needs of children in care and foster placement breakdowns are of significant concern. Caregiver training and support is recognised as a vital component of mental health interventions for children in care.

This is a report on a PhD research study to evaluate the effect of the Hawke's Bay-developed Fostering Security training programme for caregivers of children with attachment- and trauma-related problems. The Fostering Security programme is jointly facilitated by mental health and child welfare services to integrate interventions for children in care. The programme aims to develop the parenting skills of caregivers so that they are better able to understand and manage the child's behaviours, and understand and manage their own responses to the child's behaviour, with the long-term aim being the prevention of placement breakdown.

**Research:**

The aim of this study is to evaluate the effectiveness of the Fostering Security programme qualitatively and quantitatively, and to identify the mechanisms of change for caregivers. A modular analysis of the programme was also undertaken to determine the relative value of the different components.

Two groups of caregivers were studied at four time points: pre-programme; mid-programme; end-of-programme; and three month follow up. The order of training modules was reversed for the second group. Analysis of the quantitative data indicated the Fostering Security programme lead to improvement in: caregivers' ability to understand the child's mental state; caregivers' ability to consider more appropriate reasons for the child's challenging behaviours: the degree of stress and frustration caregivers felt in their relationship with the child; the child's behaviour at home and at school; and the caregiver-child attachment relationship. The quantitative and qualitative research data indicated that the Fostering Security programme results in positive changes for caregivers and children over time. In general, the order of programme modules did not appear to be important.

**Local and national development of the Fostering Security programme**

1. Presentation at the Paediatric Society of New Zealand's Annual Scientific Meeting in Hawke's Bay in November 2014.
2. Presentation at the 14th Australasian Conference on Child Abuse and Neglect 2015 in Auckland in April 2015.
3. The Fostering Security programme is being successfully delivered in 4 West Auckland areas and in Christchurch. There are also requests from CAFS/CYF teams in other NZ regions for information about how the FS programme can be delivered there.
4. To develop capacity in the Hawke's Bay NGO sector so that appropriate interventions for children in care and their caregivers are available, Fostering Security training was undertaken with staff from 3 local NGO's at the end of 2014: Family Works, Birthright and Te Taiwhenua o Heretaunga. A Te Taiwhenua o Heretaunga and CYF dyad is also now facilitating Fostering Security training programmes in Hawke's Bay.
5. The research study is currently being written up as a PhD thesis and will also be written up as journal articles.

**Perinatal vitamin D status, childhood respiratory infections and food allergy: A validation Study**

Cameron Grant
HBMRF $9,560

AIMS:

The aim of the project is to validate the measurement of 25-hydroxyvitamin D (25OHD), the main circulating form of vitamin D, on dried blood spots (DBS) collected as part of New Zealand's national newborn screening programme. This validation is necessary so that we can then measure 25OHD on dried blood spots collected at birth and determine if sub-optimal vitamin D status at birth is associated with an increased risk of respiratory infections during infancy and food allergy during early childhood.

Progress to Date:

With Canterbury Health Laboratories (CHL) we developed a protocol for the validation of the measurement of vitamin D concentration on dried blood spots. Ethical approval for this validation study was obtained and locality approval for the validation study completed. The desired number of subjects (n = 40) were recruited and both a venous blood sample and a capillary sample collected onto a newborn screening card from all 40 study participants.

For the validation study plasma samples were run in duplicate and dried blood spot samples in triplicate. The mean (range) coefficient of variation for the dried blood spot samples was 11% (1-18%). A strong and positive correlation between vitamin D measurements on venous blood and dried blood spot sample (DBS) was evident with a correlation coefficient of 0.94.

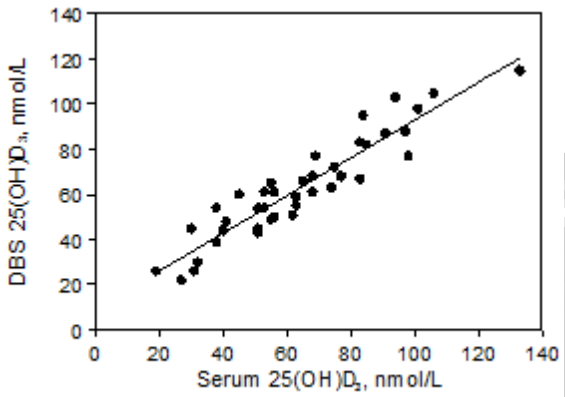


**Figure 1. Correlation of 25-hydroxyvitamin D concentration between paired serum and dried blood spot samples**

A Bland-Altman plot showed that that all observations were within the 95% prediction interval and there was little indication for an increase in difference between serum and DBS values with increasing serum concentration of 25-hydroxyvitmain D (Figure 2).[1]

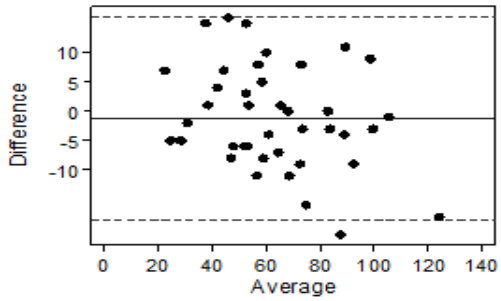


**Figure 2. Bland-Altman plot of serum 25-hydroxyvitamin D concentration (x-axis) versus difference in in 25-hydroxyvitamin D concentration in serum and dried blood spot samples**

Conclusion:

These findings from our validation study confirm that the dried blood spot assay is a valid method for measuring vitamin D status. With these data we are now proceeding with measurement of the vitamin D status of the *Growing Up in New Zealand* cohort using dried blood spots obtained from newborn screening cards. This validation study also now allows this assay to be available to other researchers. We are currently writing up the results of our validation study for publication in the peer reviewed literature.

With the excellent results from this validation study the National Testing Centre have begun to collate all of the DBS cards collected from the children enrolled in *Growing Up in New Zealand*. The National Testing Centre is punching 1 spot from each card and these spots are being sent to CHL. We have arranged with the National Testing Centre and CHL for the DBS from the 131 cohort children on whom we also have a cord blood sample to be analysed first. This will then enable us to compared 25OHD concentration on a DBS and a cord blood sample pair from each child. This comparison will allow us to determine whether storage (since the dried blood spot samples were collected in 2009 and 2010) has had any effect on 25OHD concentration. Based upon the published literature we are not anticipating that this will be an issue.

Once this second validation step is completed the National Testing Centre will give us the go ahead to measure 25OHD on all of the cohort children for whom consent was obtained. We are anticipating being able to complete this work during 2015. CHL have the capacity to analyse approximately 300 samples per week.

Establishing the validity of this dried blood spot assay represents an important advance for measurement of vitamin D status both for research and patient care purposes in New Zealand. It provides access to this assay within New Zealand which overcome any issues created by the need to send blood samples overseas. It allows vitamin D status to be measured on very small blood samples and allows sample collection directly onto a dried blood spot card thus removing the use of blood collection tubes and all of the technology and laboratory facilities that are associated with these.

I am most grateful to the Hawkes Bay Medical Research Foundation for their support of this project and enabling this project to be completed.