ISSN 1176-5178

NZMSJ

New Zealand Medical Student Journal

Te Hautaka o ngaa Akongaa Rongoaa

ISSUE 14 | NOVEMBER 2011

+ **ELECTION 2011**
health policies from the political parties

+ **CHILD POVERTY**
have we reached tipping point?

+ **DANCE AND DANCE THERAPY**
a new frontier in psychiatry

Seeking long-term relationships with students

For financial advice, nobody knows students like MAS. We are with you from orientation to graduation (and beyond) offering a range of products and services. When you add up all the benefits of MAS, it's a no-brainer. Here's a taste:

- A full (yr). discount* on contents insurance for your belongings. No matter how old it is, we'll replace it with new*.
- We offer a discounted interest rate* on our unsecured revolving credit facility (CreditLine) so your debt won't cost you too much.
- For savings, our high interest rates can help you to reach your goals faster.
- Socialise with other students and Members at regular MAS sponsored events.

MAS

CONTENTS

EDITORIAL

4 General election 2011:
Social inequity and the importance of engaging in political dialogue
Mariam Parwaiz, Benson Chen

GUEST EDITORIALS

5 Ages and stages:
Is New Zealand about to deliver a developmental milestone for its children?
Timothy Hopgood

8 Why must medical students be climate change action heroes?
Rennie Qin

NZMJ ARCHIVE

10 Inequities in health and the Marmot Symposia:
Time for a stocktake
Tony Blakely, Don Simmers, Norman Sharpe

ACADEMIC

13 Mechanisms of memory deficit in temporal lobe epilepsy
Rohit S Aiyer, Jaidev R Nath

16 Changing the shape of the nation:
Should bariatric surgery be publicly funded in New Zealand?
Shuichi Suetani

ELECTION 2011: PARTY HEALTH POLICIES

20 National Party
Tony Ryall

21 Labour Party
Grant Robertson, Annette King

22 ACT New Zealand
Robyn Stent

23 Green Party
Metiria Turei

24 MANA Party
Richard Shortland Cooper

FEATURES

25 Echoes from Timaru
Victor Kong

26 Dance and dance therapy for the treatment of psychiatric disorders
Sheng-Tsung (Dominique) Chiu

29 Why did Western countries attempt to impose their medicine on indigenous societies in the nineteenth century?
What were the results?
Ruth Bollen

BOOK REVIEWS

33 The Spirit Catches You and You Fall Down
Camelia Soo

34 Netter's Cardiology (2nd edition)
Zoe Dyer

35 AUTHOR GUIDELINES FOR SUBMISSIONS

CREDITS

EDITORIAL BOARD

Editor-in-Chief:	Benson Chen (Auckland)
Deputy Editor:	Mariam Parwaiz (Christchurch)
Academic Editor:	Amelia Shin (Auckland)
Academic Sub-Editor:	Karen Chiu (Auckland)
Features Editor:	Almond Leung (Auckland)
Features Sub-Editor:	Camelia Soo (Auckland)
Book Reviews Sub-Editor:	Emily Shine (Dunedin)

Reviewers:

William Ha (Christchurch)	James Heaton (Queenstown)
Rebekah Jaung (Auckland)	Leesa Pfeifer (Christchurch)
Michael Plunkett (Auckland)	Anna Ritchie (Christchurch)

COMMERCIAL BOARD

Design and Production Manager:	Ashleigh Brown (Wellington)
Design and Production Assistant:	Noella Ahn (Christchurch)
Finance Manager:	Andrew Robertson (Wellington)
Advertising Manager:	Clement Tan (Dunedin)

Thanks to:
Higher Education Development Centre, University of Otago
Medical Teaching Support Unit, Faculty of Medicine,
Dunedin School of Medicine
New Zealand Medical Association

Opinions and viewpoints published in the New Zealand Medical Student Journal are those expressed by authors and contributors. The Editor and Editorial Board of the New Zealand Medical Student Journal do not endorse these views in any way but respect the author's right to voice his/her opinion. © 2011. The New Zealand Medical Student Journal Society. All Rights Reserved.

Cover images courtesy of stockxchng® www.sxc.hu

General election 2011:
Social inequity and the importance of engaging in political dialogue

Mariam Parwaiz
5th Year Medical Student
Christchurch School of Medicine
University of Otago

Benson Chen
Trainee Intern
Auckland School of Medicine
University of Auckland

In this post-exam malaise that most medical students are experiencing right now, we can sometimes forget about the wider world around us; but some events are too big to ignore and the upcoming general election falls into this category. Whether or not you actively engage in New Zealand politics, come election time it is almost impossible to avoid. Why should we care about the elections, and for that matter, politics in general? As future health professionals the policies that the incoming Government decides upon will have a major impact on the health and wellbeing of the patients we will care for and alters the way health resources are distributed.

Health is often a major issue around election time and the general population is always keen to know what different political parties will do to improve the healthcare system. Political parties of various persuasions have all been guilty of engaging in emotional politics such as promising to fund certain drug therapies or extra operations. Additionally, policies that some may perceive as impinging on an individual's rights are often dropped because of fears of voter backlash – for instance healthy eating policies in schools or raising the alcohol purchasing age. Yet any health professional can tell you that such policies, when implemented successfully, have the potential to generate millions of dollars of savings for the taxpayer.

The different health policies that political parties put forward have had a significant impact on the landscape of the New Zealand health system and this has affected both medical professionals and the general population that they serve The New Zealand Medical Student Journal approached all the major political parties to write about their various health policies, and you can read what their responses were on page 20 and onwards. Nevertheless in these tough economic times it is becoming increasingly clear that with finite resources and an ever increasing demand for services, there needs to be a fundamental shift in the way health services are delivered to New Zealanders. Politicians need to look beyond the short and medium term objectives and begin adopting a holistic long-term perspective.

When adopting a holistic perspective, it is clear that policies from education, welfare, justice, housing, transport et cetera can all have an impact on the health outcomes experienced by our patients. There is insurmountable evidence regarding the various social and economic factors that cause inequalities in health outcomes. Hence, we all need to be well-informed of the stands of different parties on all the different issues that will affect the patients we aim to serve.

Professor Sir Michael Marmot, Chair of the Commission on Social Determinants of Health at the World Health Organization, recently led a review of what needs to be done to address health inequities. The review formulated six strategies that have been found to be effective based on the evidence. The underlying theme of these strategies is proportionate universalism; that is, the focus should be on lifting everyone up so that everyone has a chance at living a healthy life. These strategies are:

- Give every child the best start in life
- Enable all children, young people and adults to maximise their capabilities and have control over their lives
- Create fair employment and good work for all
- Ensure healthy standard of living for all
- Create and develop healthy and sustainable places and communities
- Strengthen the role and impact of ill health prevention

As future doctors, we can help by intervening with the individual patients. However we are in a unique position to do much more. We can also use the evidence and the influence our position grants us to have a positive impact on health inequalities. We can advocate on behalf of our patients to political parties and other funding bodies. To do this, we need to also make ourselves aware and informed of the various non-medical factors that can play a part in health outcomes. When deciding who to give your vote to this election, take these strategies into consideration and think further about how the policies the parties proffer fit with the type of society you want to see.

Regardless of your political leanings it is vital that you participate in the upcoming general election. Commentators on both sides of the political spectrum have called this year's general election to be a critical point in defining New Zealand's near future. Up to a quarter of people under 25 years of age are not enrolled to vote. We need to be active agents in our society, as the effects of the policies the upcoming Government formulates will be felt as we are starting in our profession.

We hope you find this issue of New Zealand Medical Student Journal thought-provoking. We are keen to hear your thoughts on the issues that matter to you the most. We welcome your letters to the editor, academic and feature articles, case reports, elective reports and book reviews. We trust you have an enjoyable summer.

Ages and stages:

Is New Zealand about to achieve a developmental milestone for its children?

Timothy Hopgood
Paediatric Trainee
Starship Children's Hospital
Auckland District Health Board

Dr Timothy Hopgood is a junior paediatric trainee at Starship Children's Hospital, ADHB, and researcher with the FMHS at the University of Auckland. His goal is to be a general paediatrician. He is the former founding chair of the Paediatric Interest Group at the University of Auckland and has won awards for his studentships in paediatric health. His research areas of interest are chiefly paediatric health and Pacific health.

The vying for position associated with the New Zealand General Election 2011 has the capacity to be a watershed moment for children's health in New Zealand. Several parties, including the current opposition, the New Zealand Labour Party, have released plans with specific details to target child poverty.[1] Further, three political parties have signed a declaration to end child poverty – one of which, the Maori Party, forms part of the incumbent Government.[2] It has been well established that poverty has a pervasive negative effect on a child's environment and has long term negative outcomes. Thus, the fact that political parties are showing the will to acknowledge and tackle this growing issue is welcome news.

Jesuit monks within the Roman Catholic Church state "give me a child until the age of seven and I will give you the man"; in agreement with this principle, that a child's early exposures shape their later life, this editorial shall approach children's health effects within a framework of three hypothetical domains– home, school and community – with emphasis on the latter two. It is however, not possible within the constraints of this editorial to approach these issues in appropriate depth. Of the quality New Zealand and international research and publications available, the Child Poverty Action Group have, with experts in their respective fields, produced a scholarly effort which covers these excellently.[3]

THE NEW ZEALAND CONTEXT

This campaign trail has seen much talk made of increasing national debt, perhaps because it is tangible and easy to quantify. Precious little is made of the consequences of increased child poverty – which will be financially and socially expensive. Even if little is said, it is established that child poverty is a problem in New Zealand, with some authors being frank in their article titles: 'how poverty hurts our children'.[4]

The Child Poverty Action group has demonstrated that the percentage of children living in poverty in New Zealand, particularly children of Maori and Pacific ethnicity, increased dramatically with the political reforms in the 1980s and 1990s, illustrating their vulnerability to issues played out in the capital. Ironically, a 'wealth' of New Zealand research exists showing that these inequalities predict morbidity. While reversing inequalities has been suggested to close these gaps,[5] this has proved difficult under both left- and right-wing led coalition governments. At the time of writing, these gaps, which had been closing, may be widening again.[4, 6] Poverty sets harmful trajectories for these children – increased rates of 'community disease' such as rates of crime,[7] and more medical morbidity with higher occurrence and,[8, 9] once established, more frequent exacerbations of chronic illness.[4] It is therefore imperative to close these gaps.

HOME

Children who grow up in poverty are exposed to unique risk factors and, these negative exposures can largely predict their future health and health behaviours. That is not to say these children are 'doomed to fail' but, rather they face more than average hurdles to achieve any positive outcomes. Child poverty is statistically significant in predicting future smoking,[10] exposure to second hand smoke,[11] and higher rates of childhood suicidal ideation and risk. Furthermore,[12] household poverty and overcrowding predicts rheumatic fever.[13]

Rheumatic fever is a condition referred to in many paediatric textbooks as a subject for historical reference – in developed countries acute rheumatic fever can be entirely prevented with appropriate oral phenoxymethylpenicillin or intramuscular penicillin.[14] New Zealand however has had to revise the diagnostic criteria used in New Zealand as the international standards were 'too good at excluding and not good enough at including' the high prevalence and burden of rheumatic heart disease experienced in our community.[14-16] These barriers in access and treatment are at the very least exacerbated by socio-economic disadvantage. This has led to calls to diminish child poverty, which is contended to be a strong driver behind these high rates.[17]

SCHOOL AND COMMUNITY

Families with the least financial means in New Zealand are the least likely to provide their children with nutritious meals.[18] This probably reflects that poverty restricts a family's choices, and in some instances, the choice itself may be only theoretical. Provision of nutritious food in New Zealand requires significant expenditure for low income families.[19] Malnutrition during childhood, particularly iron deficiency, a condition common amongst Maori and Pacific children, is known to affect development.[20] Lack of breakfast has been associated with poor educational participation and absenteeism. Conversely, breakfast provision by schools has been associated with improved attendance.[21] One study contends that, however, by itself, such provisions may not be an answer to sustained behavioural change.[22]

It is reported that 55,000 New Zealand students do not eat breakfast each morning. Several schools within the Auckland region provide small programmes funding breakfast for their students. Presently, a University of Auckland led research is underway to quantify the effect of breakfast in the New Zealand context in 26 randomised schools across the North Island, involving 400 students aged 5 to 13 years old.[23] This is significant research, as results may provide robust results to guide future intervention. Prior to this, many arguments against any such intervention have been made, with people questioning where a family's funds go. These points are firstly pejorative of the excellent budgeting skills of lower income families and, secondly somewhat miss the point: children, who often have no choice in the matter either way, should never be in a position where they are disadvantaged in cross fires of political rhetoric.

CONCLUSION

New Zealand is at a critical crossroads, yet a familiar one; for two decades the issue has remained the same but has been articulated in different ways. Measures to try and address this may have, at best, slowed the rate of deterioration, but the problem is far from mitigated let alone solved.

DISCUSSION

It is promising to see political parties engaging with this issue, and this editorial remains hopeful that action will follow from whoever forms the next government. This editorial acknowledges the other barriers in place for socio-economically deprived children and their families – such as awareness, accessibility and appropriateness of services. This editorial however contends that poverty is at the very least an exacerbating factor for these barriers, and at worst mediates or compounds these.

Further research within the coming years may guide efforts. Should these suggest effective measures are available to address known undesirable consequences for children of poverty, then the question becomes precisely how much children are valued by that Government. 2011 may indeed be a watershed moment for New Zealand children.

REFERENCES

1. New Zealand Labour Party.
"It's about our kids". Labour's children's policy. A six-year Agenda for Change.
Wellington: New Zealand Labour Party; 2011.

2. Burr L.
Greens, Labour, Maori Party sign child welfare pledge.
Auckland: 3 News; 2011 [updated 2011; cited November 14th 2011]; Available from: http://www.3news.co.nz/Greens-Labour-Maori-Party-sign-child-welfare-pledge/tabid/419/articleID/231972/Default.aspx.

3. Dale MC, O'Brien M, St John S., editors.
Left Further Behind: How New Zealand is failing its children.
Auckland: CPAG; 2011.

4. Free S, Howden-Chapman P, Pierse N, Viggers H, the Housing Heating and Health Study Research Team
More effective home heating reduces school absences for children with asthma.
J Epidemiol Community Health. 2010 May;64(5):379-86.

5. Blakely T, Wilson N.
Shifting dollars, saving lives: what might happen to mortality rates, and socio-economic inequalities in mortality rates, if income was redistributed?
Soc Sci Med. 2006 Apr;62(8):2024-34.

6. Fletcher M, Dwyer M.
A fair go for all children. Actions to address child poverty in New Zealand.
Children's Commissioner and Barnardos; 2008.

7. Fergusson D, Swain-Campbell N, Horwood J.
How does childhood economic disadvantage lead to crime?
J Child Psychol Psychiatry. 2004 Jul;45(5):956-66.

8. Edwards EA, Asher MI, Byrnes CA.
Paediatric bronchiectasis in the twenty-first century: experience of a tertiary children's hospital in New Zealand.
J Paediatr Child Health. 2003 Mar;39(2):111-7.

9. Wickens K, Crane J, Kemp T, Lewis S, D'Souza W, Sawyer G, et al.
A case-control study of risk factors for asthma in New Zealand children.
Aust N Z J Public Health. 2001;25(1):44-9.

10. Fergusson DM, Horwood LJ, Boden JM, Jenkin G, Fergusson DM, Horwood LJ, et al.
Childhood social disadvantage and smoking in adulthood: results of a 25-year longitudinal study.
Addiction. 2007 Mar;102(3):475-82.

11. Thomson G, Wilson N, Howden-Chapman P, Thomson G, Wilson N, Howden-Chapman P.
Smoky homes: a review of the exposure and effects of secondhand smoke in New Zealand homes.
N Z Med J. [Research Support, Non-U.S. Gov't]. 2005 Apr 15;118(1213):U1404.

12. Fleming TM, Merry SN, Robinson EM, Denny SJ, Watson PD, Fleming TM, et al.
Self-reported suicide attempts and associated risk and protective factors among secondary school students in New Zealand.
Aust N Z J Psychiatry. 2007 Mar;41(3):213-21.

13. Jaine R, Baker M, Venugopal K.
Acute rheumatic fever associated with household crowding in a developed country.
Pediatr Infect Dis J. 2011 Apr;30(4):315-9.

14. The National Heart Foundation of New Zealand.
New Zealand Guidelines for Rheumatic Fever.
Auckland: The National Heart Foundation of New Zealand; 2006.

15. Jaine R, Baker M, Venugopal K, Jaine R, Baker M, Venugopal K.
Epidemiology of acute rheumatic fever in New Zealand 1996-2005.
J Paediatr Child Health. 2008 Oct;44(10):564-71.

16. Lennon D, Craig E, Lennon D, Craig E.
Re: Epidemiology of acute rheumatic fever in New Zealand 1996-2005 by Jaine R et al. 2008;44:564.
J Paediatr Child Health. [Comment Letter]. 2009 Dec;45(12):764.

17. Kerdemelidis M, Lennon DR, Arroll B, Peat B, Jarman J, Kerdemelidis M, et al.
The primary prevention of rheumatic fever.
J Paediatr Child Health. Sep;46(9):534-48.

18. Ministry of Health.
NZ Food NZ Children. Key results of the 2002 National Children's Nutrition Survey.
Wellington: Ministry of Health; 2003.

19. Hopgood T, Asher I, Wall CR, Grant CC, Stewart J, Muimuiheata S, et al.
Crunching the numbers: The affordability of nutritious food for New Zealand children.
Nutrition & Dietetics. 2010;67(4):251-7.

20. Grant CC, Wall CR, Brunt D, Crengle S, Scragg R.
Population prevalence and risk factors for iron deficiency in Auckland, NZ.
J Paediatr Child Health. 2007;43(7-8):532-8.

21. Basch CE, Basch CE.
Breakfast and the achievement gap among urban minority youth.
J Sch Health. 2011 Oct;81(10):635-40.

22. Ashfield-Watt PA, Stewart EA, Scheffer JA.
A pilot study of the effect of providing daily free fruit to primary-school children in Auckland, New Zealand.
Public Health Nutr. 2009 May;12(5):693-701.

23. Ni Mhurchu C, Turley M, Gorton D, Jiang Y, Michie J, Maddison R, et al.
Effects of a free school breakfast programme on school attendance, achievement, psychosocial function, and nutrition: A stepped wedge cluster randomised trial.
BMC Public Health. 2010;10:738.

Medical Indemnity insurance for

New Zealand Medical Students

Free of Charge

Visit our Website **www.medicus.co.nz** for further information and application forms

Or Contact: **John Martin, Aon New Zealand**
☎ **04-819-4000 Fax: 04-819-4106**
Email: nz.medicus@aon.com

Medicus
Indemnity New Zealand Inc
Doctors Supporting Doctors
Tākuta tautoko Tākuta

Why must medical students be climate change action heroes?

Rennie Qin
Second Year Medical Student
Auckland School of Medicine
University of Auckland

Rennie Qin is the National Coordinator for the Medical Students for Global Awareness' (MSGA) climate change campaign. She is also the International Federation of Medical Students' Associations' Asia Pacific's Policy, Education and Advocacy coordinator. She has a strong background in campaigning and an interest in the role of health professionals in advocacy.

Tobacco smoking, HIV/AIDS and cholera are among the great health challenges of the past that have compelled the healthcare sector to speak up in the name of beneficence and to lead society in action. Today, the biggest global health challenge of our century is climate change. Likewise, climate change is calling today's new generation of doctors to step up and adopt the essential role of advocacy, in particularly at the time of election.

When I ask you of your vision of the future, you'll probably think of a world full of prosperity, peace, health, ample resources and amazing medical technology, or perhaps of nano-robots and hover cars. What is opposite of that are natural disasters, mass migration, food and water scarcity and a sick populace of millions; all caused by climate change. Unlike science fiction, the impact of climate change is a real threat in our world. The real heroes in the climate battle are ordinary citizens among which doctors, bearing the professional duty of care, play a crucial role.

THE SCIENCE, THE DOOM AND THE GLOOM

The Lancet, the World Health Organization (WHO) and the World Medical Association unanimously agree that climate change is the biggest threat to human health in the 21st century.[1,2] Globally climate change is estimated to affect billions through increased rates of natural disasters, changing patterns of infectious diseases, food and water insecurity and mass population displacement.[3] A report published by the WHO Western Pacific region predicts that climate change will affect New Zealanders through increased rates of skin cancer, spread of dengue fever, floods and landslides and photochemical pollution.[4] The situation is more dire in the Pacific as climate change is already causing rising sea levels and water shortage. Inevitably New Zealand will become a home for thousands of climate change refugees from the Pacific Islands.

Climate change will undermine the basic determinants of health by causing water and food insecurity, air pollution, displacement from shelter, loss of livelihoods and economic meltdown. The health impacts of climate change will be devastating in the future. We must act now to prevent them and be ready for them. The WHO Director General, Margaret Chan said 'For health, climate change will be a high consequence event. We need to make clear that in a rapidly changing environment, it is not just the animals and plants, but humans that need protection.'[5]

The good news is that there are huge health incentives to mitigate and adapt to climate change. Encouraging public transport, active transport and physical exercise are all good for mitigating climate change, and these actions are also hugely beneficial for reducing health burdens. The same win-win situation applies to home insulation, decreasing consumption of red meat and reducing fossil fuel pollution.[6,7]

THE CALLING, THE DOCTORS AND THE HEROES

The question now is why should health professionals act? Why must doctors be climate change heroes? The answer is simple. First of all, healthcare professionals are citizens – special citizens who have the duty of compassion, guidance and leadership in the community. Secondly, we bear a professional and ethical responsibility to protect our patients' health and act in the name of beneficence. As health professionals, our role involves diagnosing and treating disease in patients, and also preventing preeminent health threats among future patients and their families. Our professional duties keep us not far from political advocacy. Indeed, in the past, we've stood up against smoking, leaded petrol, nuclear war and much more.

The health workforce is gifted with the ability to analyse and evaluate scientific evidence and to communicate complex scientific ideas and evidence in simple terms. With the respect our profession affords us in the community, we have access to power and the listening ear of our political leaders. In a situation where the 'ambulance at the bottom of cliff' is not affordable or feasible, doctors can and must be leaders in climate change health advocacy. Like cholera in the 19th century which gave birth to modern epidemiology and public health, climate change is the health threat that will define our age and shape a new generation of doctors equipped in advocacy.

THE POLITICS, THE NEW ZEALAND PERSPECTIVE AND THE ELECTION

Bearing 97% consensus among the scientific community[8] and robust evidence, there is no doubt that climate change is happening and poses a significant impact on health; we must act now. What we have to consider now is whether our country is doing enough to combat climate change and its health impacts?

Despite the government's assertion that New Zealand is a world leader in climate change action epitomized by our Emissions Trading Scheme (ETS),

New Zealand has one of the largest increases in gross emissions since 1990.[9] We are ranked 4th in the OECD countries in terms of emission per capita.[11] Officials like to focus on New Zealand's relatively small contribution to global emission – 0.2%[10] whilst ignoring the fact we only have 0.063% of the world's population. New Zealand bears a moral responsibility to the global community and must do its fair share in reducing emissions. Despite being gifted with ample renewable energy sources such as hydropower and geothermal energy, the government is looking into increasing coal mining and exploitation of fossil fuels at great costs to the health and environment.

Economy is at the centre of this election. The National party recently announced its policy to defer the entry of the agricultural sector into the ETS, claiming that inclusion into the scheme would impose a cost or tax on our export industry. Climate change and health issues are often sidelined by economic concerns, and short term financial gains by long term benefits. We must bear in mind that the Stern Review proposed that taking early action on climate change will outweigh the huge cost of economic instability caused by climate change.[12] Economics aside, human health is the highest stake of climate change. Health, education, welfare, equality, environment are core values of our society and they should be a focus of this election alongside economy.

Furthermore, climate change action also offers the opportunity to strengthen our public health system, to improve efficiency, sustainability and reduce wastage. New Zealand has been a world leader in terms of its nuclear free stance; we can be a world leader in climate change action too, keeping to the clean and green image that defines our country. The recent Rena disaster gives us much to think about. With climate change estimated to hit hard in the Pacific, we have to take leadership in combating the health effects of climate change in our region.

WHAT YOU CAN DO

To any medical students accepting the professional responsibility of beneficence and the respect afforded to us by society, while juggling climate change action with daily medical school workload, I congratulate you for taking the path of a climate change hero. There are three things you can do: first personal action, second political action and third public action. Personal action includes first of all self-education about the impact of climate change on health. I would strongly encourage reading the WHO or The Lancet's reports as well as some of OraTaiao's publications. Personal changes also include driving less, biking more, have meat-free days, recycling and using less hot water, which are not difficult and are good for health too.

Political action involves directly engaging with our country's leaders. Medical Students for Global Awareness has written a declaration on the impact of climate change on health and gathered signatures from hundreds of medical students to send to each party's spokespeople on climate change and health. Alongside OraTaiao - an organisation of senior health professionals concerned about the impact of climate change on health, we have sent medical students and doctors around the country to meet members of parliament. We have also written a comprehensive report on the impact of lignite mining in Southland on health. Visit Generation Zero's website www.electwho.org.nz to find out what your local candidate think about climate change.

Last but not least, political action cannot happen without public awareness. Medical students must get into the community and educate the public about the impact of climate change on health, as well as raising media attention and awareness on the issue of climate change in general.

Medicine, at its core, is about social justice and the health of humanity. We are stewards of society and must act for a cause larger than ourselves. I want to challenge you with this quote, 'Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has.'

MSGA is currently strategising our climate change and health campaign for next year. If you have any questions or ideas, please feel free to email me at **climate@msga.org.nz**. Visit us at **www.msga.org.nz** or 'Like us' on **www.facebook.com/msga.nz**.

REFERENCES

1. Costello A, Abbas M, Allen A, Ball S, Bell S, Bellamy R. et al.
Lancet and University College London Institute for Global Health Commission. Managing the health effects of climate change.
Lancet 2009,373:1693–1733.

2. Chan M.
Climate change and health: preparing for unprecedented challenges.
The 2007 David E. Barmes Global Health Lecture, Bethesda, Maryland, USA, 10 December 2007.

3. World Health Organization
Protecting health from climate change. Connecting science, policy and people.
Geneva, Switzerland: WHO press 2009:6-7

4. World Health Organization Western Pacific Region
Country profiles on climate change: New Zealand.
Bali, Indonesia: Regional Workshops 2007:2

5. Chan M
Climate change and health.
Accessed 11 Nov 2011. Available online: http://www.youtube.com/watch?v=NaPxgp-l-Uk

6. Roberts I.
The health co-benefits of climate change policies: Doctors have a responsibility to future generations.
Joint Research Collaboration Program 2009;9:212-213.

7. McMichael AJ, Powles JW, Butler CD, Uauy R.
Food, livestock production, energy, climate change, and health.
Lancet 2007;370:1253–63.

8. Anderegg WR, Prall JW, Harold J, Schneider SH.
Expert credibility in climate change.
Proc. Natl. Acad. Sci USA 2010;107(27):12107-12109.

9. Ministry of Economic Development (Energy Information and Modelling Group),
Energy Greenhouse Gas Emissions 2009.
Accessed 11 Nov 2011. Available online: http://www.med.govt.nz/upload/68779/Energy%20Greenhouse%20Gas%20Emissions%202009.pdf

10. United Nations Statistics Division
Environmental indication: Greenhouse gas emissions
Accessed 11 Nov 2011. Available online: http://unstats.un.org/unsd/environment/air_co2_emissions.htm

11. Word Resources Institute.
Climate Analysis Indicators Tool (CAIT) Version 6.0. Analysis of table **'Total GHG Emissions in 2005 (excludes land use change) CO2, CH4, N2O, PFCs, HFCs, SF6'**
Washington, DC: World Resources Institute, 2009. Available online: http://cait.wri.org. , http://cait.wri.org/cait.php?page=yearly.

12. Stern N.
Stern Review: The economics of climate change.
UK HM Treasury 2006.

NZMA
New Zealand Medical Association

Inequities in health and the Marmot Symposia: Time for a stocktake

Tony Blakely
Health Inequalities Research Programme
University of Otago
Wellington

Don Simmers
New Zealand Medical Association Board
Chair, NZMA Wellington Council

Norman Sharpe
Medical Director
Heart Foundation

Blakely T, Simmers D, Sharpe N. Inequalities in health and the Marmot Symposia: Time for a stocktake. NZ Med J 2011 Jul 08;124(1338);7-14. The NZ Med J is published by the New Zealand Medical Association. Article reprinted with permission from the NZMA.

Text Boxes 1 and 2 referred to in the editorial have not been reprinted. They can be accessed online via http://journal.nzma.org.nz/journal/124-1338/4754/

Given the prospect of the general election in November, it is timely for a stocktake on what has been done, and what we should do next, to address inequities in health in Aotearoa New Zealand. To heighten the relevance of this stocktake, Sir Michael Marmot is being hosted by the New Zealand Medical Association (NZMA) next week (12 to 14 July 2011) for a series of activities and symposia (convened by the Heart Foundation, and University of Otago, Wellington) to discuss health inequities and 'what next'.

Marmot has a long pedigree as one of the world's leading researchers on, and advocates to reduce, health inequities. He chaired the World Health Organisation's Commission on Social Determinants of Health,[1] led the recent 'Marmot Review' of health inequalities in England and Wales,[2] and has just finished his tenure as the President of the British Medical Association (BMA).

Following the BMA's direct focus on health inequities, the NZMA is now currently making this a major focus of its activity, and has recently put out its position statement on health inequities.[3] The hosting of a visit by Marmot is the next major step in the NZMA's activity, with the purpose of increasing public and professional awareness of inequities in health and considering what concerted actions should occur next, especially those led by Government.

This paper builds on position papers or 'fact and action sheets' that the authors (and other colleagues) have prepared for two symposia during Marmot's visit, with the purpose of generating discussion and debate. In particular, we focus on what we (i.e. New Zealand as a whole, through the actions of Government, civil society and professional groups) have done to address health inequities in recent decades, and what we should do next. To that end, and to stimulate debate, we have identified a top 10 list under each heading (Text Boxes 1 and 2).

We welcome debate on, and improvements to, our listings—especially 'what to do next' (Text Box 2). (Comments can be registered at www.uow.otago.ac.nz/HIRPinfo. html.) In addition, as part of the symposia activities, participants will be invited to submit their own ideas on the next 10 most important steps this nation needs to take to reduce the unacceptable and unjust burden of health inequities.

What has been done to address health inequities in recent decades?

There have been many activities, policies and programmes that address health inequities in recent decades (Text Box 1). Many of these are around processes, such as policies[4-7] that flow through to affect health services provision and day to day practice. Importantly, deprivation and ethnicity are now routinely used in funding formulae for DHBs and primary health care. The Maori development kaupapa since the 1970s, flowing through into Maori health providers and influencing mainstream health service practice, has been critical.

Pacific health provider development has also progressed in leaps and bounds. Many—if not just about all—major health promotion programmes and screening programmes include tailored components for Maori and Pacific audiences, for example Maori language components of Quit campaigns. The One Heart Many Lives Programme has been a particular success in heart health promotion focused primarily on Maori men. Specific tailoring of programmes for lower socioeconomic groups, in addition to Maori and Pacific (and Asian), is not as readily identifiable. Nonetheless, by using tools such as the New Zealand Deprivation Index to target more deprived places, activities such as service placement have been altered.

Whilst the recent Government has downplayed an explicit focus on inequities (e.g. initiatives such as "better sooner more convenient" and the push for integrated family health centres), it has been possible to retain likely pro-equity initiatives such as "services to increase access", PHO funded and coordinated mental health services (such as Wellington's Compass Health "Primary Solutions"), and the recent push on rheumatic fever prevention.

A big push has been made on research, monitoring and evaluation – although perhaps not as much on programme evaluation as is desirable. A big ticket item on intersectoral activity has been the retrofitting and insulation of New Zealand's housing stock—especially among lower socioeconomic groups, and a programme that has enjoyed bipartisan support as a win-win addressing both health (including health services demand[8]) and energy efficiency. However, it is challenging to identify other prominent intersectoral activities. Perhaps the concept of Whanau Ora will help in breaking down much of the current siloed thinking around the provision of healthy development and wellbeing.

Times change—and Governments change—as in demonstrated by visiting the Ministry of Health's website on health targets (www.moh.govt.nz/healthtargets; visited 8 June 2011). Three out of the six targets (immunisation,

quitting smoking, and better diabetes and cardiovascular disease services) are clearly relevant to reducing inequities in health. However, the targets are reported by DHB only—not by sociodemographics. You have to search the website archives back to 2008-09 to find targets reported by ethnicity.

Much of the health workforce is acutely aware of the need to address inequities, and likewise the backroom funders and planners, but ceasing routine reporting on trends by sociodemographics leads to invisibility of the issue, and eventual disappearance off policy and practice radars.

So what should we do next?

Progress has been made. The gap between Maori and non-Maori life expectancy has fallen back to 7–8 years—the same level as in the early 1980s, and less than its peak of a nearly 10-year gap in the late 1990s.[9] But ongoing and concerted policy effort will be required if we are to see both good improvements in non-Maori life expectancy and even faster improvements in Maori (and Pacific) life expectancy so as to close gaps. (For those interested in closing gaps between New Zealand and other OECD countries, the answer is still likely to be the same—maximising reductions in inequities may be the best way to lift the average faster.)

Premature cardiovascular disease mortality has fallen approximately 80% since 1970—but more rapidly in relative terms among non-Maori so that the relative differences between Maori and non-Maori have actually increased during this period.[9,10] Cancer inequalities are slowly growing, in part a function of tobacco influences on incidence but also generally worse survival among Maori across multiple cancers.[11–13]

Diabetes, and its incubator obesity, and in turn its progenitor of obesogenic environments, is the growing curse of our times—and if unchecked will be a driver of widening inequalities. Mental health and youth converge as a major issue for New Zealand, as evidenced by our high youth suicide rates—again more so for Maori and lower socioeconomic groups. A recent comprehensive report by the Chief Scientific Advisor to the Prime Minister includes the following observation:

> "New Zealand is a temperate, peaceful, ethical and developed nation in which children should flourish, yet it is actually one in which they experience some of the highest rates of adolescent morbidity and mortality in the OECD." (p.54,14)

New Zealand is notorious for high child poverty rates and poor social outcomes (including health) among our children and youth—especially among a long tail of disadvantaged children and youth.

What to do? The above report[15] also comprehensively canvasses the range of interventions in early childhood and adolescence to improve outcomes, and notes that many interventions that we currently fund are (based on evidence) likely to ineffective.[15] For example, single issue education campaigns in schools around drugs. Thus, improved programme evaluation, more skilful scaling up of interventions that appear successful at pilot stage, and redeployment of resources from ineffective to effective programmes, are all ways to increase our "bang for our buck"—and consistent with the ethos of the current political and financial climate.

Moreover, quality early child programmes are often even more effective among lower socioeconomic groups (e.g. family visiting programmes with structured skills development for parents to manage and enhance child behaviour). So, this is a potential win-win; redeployment of existing resources to more effective programmes that also reduce inequities.

Second, and building on the word 'quality' that is a priority of the current Government's agenda (witness the Health Quality and Safety Commission), lifting the quality of health service delivery could be pro-equity. For example, there is some evidence of higher adverse events in healthcare for Maori [16], that may be addressed by quality systems.

Likewise, worse survival from cancer among lower socioeconomic groups and Maori [11-13,17,18] hint at the likely role of improved access to health care as one way to reduce inequities in health status. As treatments continue to improve in effectiveness, the role of health services will probably increase in importance in the future. And inequalities arising from, or failing to be prevented by, health services are considered by most as being more of an inequity than an inequality (i.e. more unfair), and therefore of higher policy importance to tackle. That all said, the biggest gains in reducing health inequities are still likely to occur outside of the treatment arms of health services.

Tobacco is one— if not 'the' example. Making New Zealand tobacco-free is probably the single most important activity to reduce inequalities in health. And such a goal is no longer considered just the pipe dream of academics and radicals. Rather, the New Zealand Parliament (in response to Maori Affairs Select Committee Report) has committed to a goal of making NZ tobacco-free by 2025.[19 20] We have estimated that achieving this goal, compared to 2006 smoking rates continuing unabated into the future, might result in 5 years gain in life expectancy for Maori, 3 years for non-Maori, and a 2-year reduction in the life expectancy gap – a triple win-win-win.[21]

The future is also going to require joining up the sustainability, climate change and health equity agendas. This will be challenging. Nevertheless, substantial gains on multiple social bottom lines could be achieved simultaneously. For example, improving the walkability of neighbourhoods, reducing our reliance on the automobile, and shifting our agricultural production to a lower saturated fat and lower carbon/methane footing could generate many co-benefits.

The posturing and sabre rattling leading up to the next general election is now well underway. We are being fed a diet of austerity, echoing TINA ("There is no alternative") of the 1980s. Some reprioritisation is possible, need not lead to widening inequalities, and may even be pro-equity.

For example, and deliberately off the two main Party's manifestos, by far and away the largest expenditure on welfare benefits in New Zealand is that on superannuation—60% or $8 billion of the $13 billion total welfare expenditure budget in 2009.[22] Yet the age of entitlement to government superannuation, 65 years, is the same as that in 1899 when life expectancy was 25 years less! And we live in a society with one of the highest child poverty rates in the OECD.[23]

As a society we want to celebrate and protect the success of our superannuation scheme, but not to the point of gross inequity compared to younger (and more brownfaced, to be frank) people. Fair go— it is time that the age of entitlement for superannuation is lifted (as it has in other OECD countries), and allow some redistribution to other sections of our society, particularly younger people.

Thus it is indeed timely for a stocktake to address health inequities in Aotearoa New Zealand. We hope this Editorial will achieve the objective of stimulating debate. We encourage the public and health professionals to join in the discussion and debate at this opportune and crucial time about 'what to do next' to improve the health of all New Zealander's, **and** reduce inequities.

Acknowledgements

We acknowledge the suggestions and comments on the 'fact and action sheets' underlying this editorial (and Text Boxes 1 and 2 abstracted for this Editorial) received from numerous colleagues.

Organisations supporting the visit of Marmot and related activities include: the NZMA; Heart Foundation; University of Otago, Wellington; School of Population Health, University of Auckland; Health Inequalities Research Programme, UOW; Public Health Association; New Zealand College of Public Health Medicine; and the Prior Centre.

Correspondence

Tony Blakely, Health Inequalities Research Programme, University of Otago – Wellington, PO Box 7343, Wellington, New Zealand. Fax: +64 (0)43895319; email: tony.blakely@otago.ac.nz.

REFERENCES

1. Commission on Social Determinants of Health.
Closing the Gap in a Generation: Health equity through action on the social determinants of health.
Geneva: The World Health Organization, 2008.

2. Marmot M, Allen J, Goldblatt P, et al.
Fair Society, Healthy Lives: The Marmot Review.
The Marmot Review, 2010.

3. New Zealand Medical Association.
Health equity position statement.
N Z Med J 2011;124(1330).

4. King A.
The New Zealand Health Strategy.
Wellington: Ministry of Health, 2000.

5. Ministry of Health.
Reducing Inequalities in Health.
Wellington, NZ: Ministry of Health, 2002.

6. Ministry of Health.
He Korowai Oranga.
Wellington: Ministry of Health, 2001.

7. Minister of Health.
The New Zealand Cancer Control Strategy.
Wellington: Ministry of Health and the New Zealand Cancer Control Trust, 2003.

8. Jackson G, Thornley S, Woolston J, et al.
Reduced acute hospitalisation with the healthy housing programme.
Journal of Epidemiology and Community Health 2011.

9. Tobias M, Blakely T, Matheson D, et al.
Changing trends in indigenous inequalities in mortality: lessons from New Zealand.
Int. J. Epidemiol. 2009;38(6):1711-22.

10. Blakely T, Tobias M, Atkinson J, et al.
Tracking Disparity: Trends in ethnic and socioeconomic inequalities in mortality, 1981-2004.
Wellington: Ministry of Health, 2007.

11. Jeffreys M, Stevanovic V, Tobias M, et al.
Ethnic inequalities in cancer survival in New Zealand: linkage study.
American Journal of Public Health 2005;95(5):834-7.

12. Blakely T, Costilla R, Tobias M.
The Burden of Cancer: New Zealand 2006.
Wellington: Ministry of Health, 2010.

13. Cormack D, Ratima M, Robson B, et al.
Access to cancer services for Maori: A report prepared for the Ministry of Health.
Wellington: Te Ropu Rangahau Hauora a Eru Pomare, University of Otago, 2005.

14. Poulton R.
Chapter 3: Self-control. In: Office of the Prime Minister's Science Advisory Committee, editor. **Improving the Transition: Reducing Social and Psychological Morbidity During Adolescence. A report from the Prime Minister's Chief Science Advisor.**
Wellington: Office of the Prime Minister's Science Advisory Committee, 2011.

15. Office of the Prime Minister's Science Advisory Committee.
Improving the Transition: Reducing Social and Psychological Morbidity During Adolescence. A report from the Prime Minister's Chief Science Advisor.
Wellington: Office of the Prime Minister's Science Advisory Committee, 2011.

16. Davis P, Lay-Yee R, Dyall L, et al.
Quality of hospital care for Maori patients in New Zealand: retrospective cross-sectional assessment.
Lancet 2006;367(9526):1920-25.

17. Jeffreys M, Sarfati D, Stevanovic V, et al.
Socioeconomic inequalities in cancer survival in New Zealand: the role of extent of disease at diagnosis.
Cancer Epidemiology, Biomarkers and Prevention 2009;18(3):915-21.

18. Hill S, Sarfati D, Blakely T, et al.
Survival disparities in Indigenous and non-Indigenous New Zealanders with colon cancer: the role of patient comorbidity, treatment and health service factors.
Journal of Epidemiology and Community Health 2009;64(2):117-23.

19. New Zealand Parliament.
NZ Parliament. Government Response to the Report of the Maori Affairs Committee on its Inquiry into the tobacco industry in Aotearoa and the consequences of tobacco use for Maori (Final Response).
Wellington: New Zealand Parliament, 2011.

20. Blakely T, Thomson G, Wilson N, et al.
The Maori Affairs Select Committee Inquiry and the road to a smokefree Aotearoa.
N Z Med J 2010;123(1326):7-18.

21. Blakely T, Carter K, Wilson N, et al.
If nobody smoked tobacco in New Zealand from 2020 onwards, what effect would this have on ethnic inequalities in life expectancy?
N Z Med J 2010;123(1320):26-36.

22. Ministry of Social Development.
The Statistical Report.
Wellington: Ministry of Social Development, 2010.

23. Gleisner B, Llewellyn-Fowler M, McAlister F.
Working Towards Higher Living Standards for New Zealanders. New Zealand Treasury Paper 11/02.
Wellington: The Treasury, 2011.

Mechanisms of memory deficit in temporal lobe epilepsy

Rohit S Aiyer
Fifth Year Medical Student
University of Birmingham
United Kingdom

Jaidev R Nath
Fifth Year Medical Student
University of Birmingham
United Kingdom

Rohit S Aiyer is a final year medical student at the University of Birmingham (UK) who will be graduating next May. He has an interest in oncology. He is looking forward to commencing post-graduate education in either London, England or Canada next year. He completed his BScH in Canada in Life Sciences, at Queen's University.

ABSTRACT

Epilepsy is a condition that is caused by disruption in the normal electrophysiological functioning of the brain and therefore there are numerous types that can affect an individual. Temporal lobe epilepsy (TLE) can cause severe life changing deficits in a patient, particularly from a memory perspective, which can then impact on their functional abilities. Several research articles have demonstrated the negative effects that TLE has on patients, and this paper intends to investigate and review studies that illustrate the neurological impact of TLE on patients.

Analysis of models, studies and graphs give strong evidence that there are certain mechanisms involved that play a role in neurological deficits, especially since it is apparent that neuropathology is a major cause for this. As a result, TLE patients are unable to perform cognitive and memory tasks to their best ability.

INTRODUCTION

Epilepsy is a neurological disorder that is based on the recurrence of seizures in an individual. These seizures tend to create a disturbance in brain activity which can lead to eccentricities in behaviour, emotions and convulsions. There are two main types of seizures: focal (partial) and generalised.

In 1985, the International League Against Epilepsy described temporal lobe epilepsy (TLE) as a condition which involves recurrent unprovoked seizures that originate within the lateral or medial areas of the temporal lobe. Seizures classified as focal can be simple (involving no loss of consciousness) or complex (involving loss of consciousness).[1]

In 60% of TLE patients the medial area of the temporal lobe is the epileptogenic zone, which is primarily due to pathology of the hippocampus. Other causes of TLE include tumours, viruses, infectious diseases and trauma.[2]

This paper will investigate temporal lobe epilepsy and analyse the mechanisms for memory deficits in patients with this type of epilepsy.

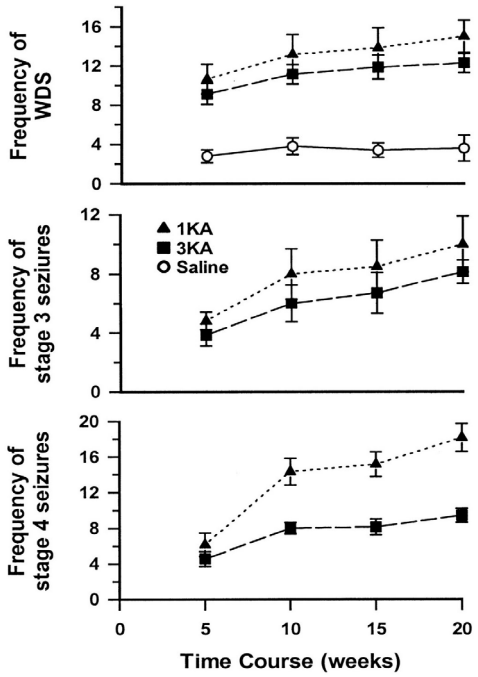


Figure 1: Illustrates the increase in frequency of seizures in 1KA and 3KA rats as well as increase in severity over a 20 week period.

Source: Zhang X, Cui S, Wallace AE, Hannesson DK, Schmued LC, Saucier DM et al. Relations between brain pathology and temporal lobe epilepsy. *The Journal of Neuroscience. 2002, 22*(14):6052–6061.

NEUROPATHOLOGY OF TEMPORAL LOBE EPILEPSY

An area that will be investigated in this paper is the neuropathology involved in TLE, which will help provide background information behind why memory deficits occur in these epilepsy patients. As discussed earlier, the region most commonly affected in TLE is the hippocampus, and pathology is often broadly referred to as hippocampal sclerosis or atrophy. The hippocampus is important since it plays a role in memory. This memory loss can be attributed to a loss of neurones in the CA3 and CA1 regions of the hippocampus.[3]

A hypothesis that has been quite popular amongst researchers is that the pathology and degeneration of the hippocampus is due to neuronal loss and mossy fibre sprouting, leading to chronic progression of TLE. A study conducted by researchers at the University of Saskatchewan in Canada helped give evidence for this. The scientists induced epileptic like symptoms in rats with kainic acid (KA) and compared them with saline injected control rats over several weeks. The occurrence of seizures was then compared with neuronal loss and mossy fibre sprouting to see if there was any correlation. Results indicated that there was in fact a relationship,

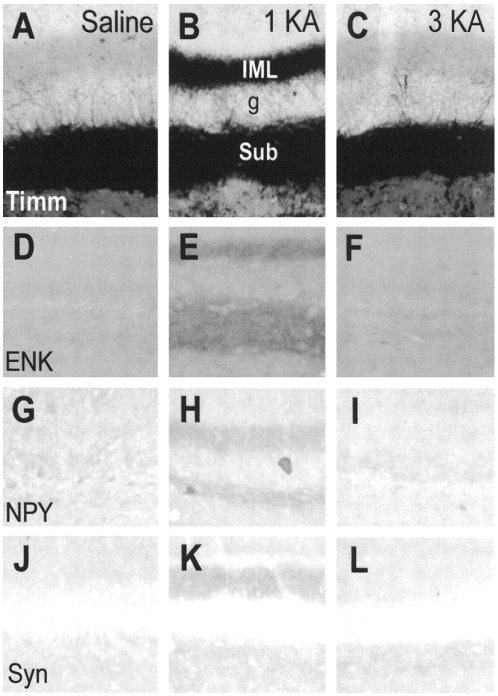


Figure 2: Shows a presence of mossy fibre growth and neuronal cell loss in the 1KA rats (particularly inner molecular layer of hippocampus), but an absence in the saline and 3KA rat groups.

Source: Zhang X, Cui S, Wallace AE, Hannesson DK, Schmued LC, Saucier DM et al. Relations between brain pathology and temporal lobe epilepsy. *The Journal of Neuroscience. 2002, 22*(14):6052–6061.

particularly in the severity and frequency of chronic seizures later on in the epilepsy.[4]

This correlates with the immuno-histochemistry findings that demonstrate the mossy fibre sprouting in the inner molecular layer of the dentate gyrus in both ventral and dorsal areas of the hippocampus (Figure 2).

However, it is important to note that this correlation is only true for the 1KA rats compared to the controls, as the 3KA (three times the quantity of kainic acid) rats do not display any mossy fibre sprouting or neuronal loss.[4]

Pathologically, there are two types of damage that should be highlighted in TLE. The first, as mentioned before, is hippocampal sclerosis or atrophy, and the other is corpora amylacea. Sclerosis of the hippocampus involves gliosis, loss of pyramidal neurons and granule cell dispersion. Corpora amylacea on the other hand involves the presence of hyaline masses which are derived from degeneration of neural cells. A group of neuropathology researchers in South India conducted an extensive study on over 100 temporal lobectomies from TLE patients that took place over a 3 year period. The results showed that over 58% and 54% of patients had Ammon's horn sclerosis and corpora amylacea, respectively.[5]

The study also demonstrated that other forms of pathology can be present in the temporal lobe, particularly neoplastic and non-neoplastic lesions. The sample group of 16 surgical specimens from TLE patients illustrated that 35% had tumours and 23% had non-neoplastic lesions such as vascular malformations and heterotopias.[5]

MEMORY DEFICIT

Another experiment analysed 25 patients with TLE, 14 with seizures originating from the left temporal lobe and 11 who had seizures originating from the right side. To assess memory, the Autobiographical Memory Interview (AMI) was utilised, as this test helps to obtain an objective measure of the patient's semantic and episodic memories. Furthermore, this study wanted to see which theory would be supported in their research: the consolidation theory or multiple trace theory (MTT). The consolidation theory states that any damage to the hippocampus should result in equal levels of decline in episodic and semantic memories. However, the MTT

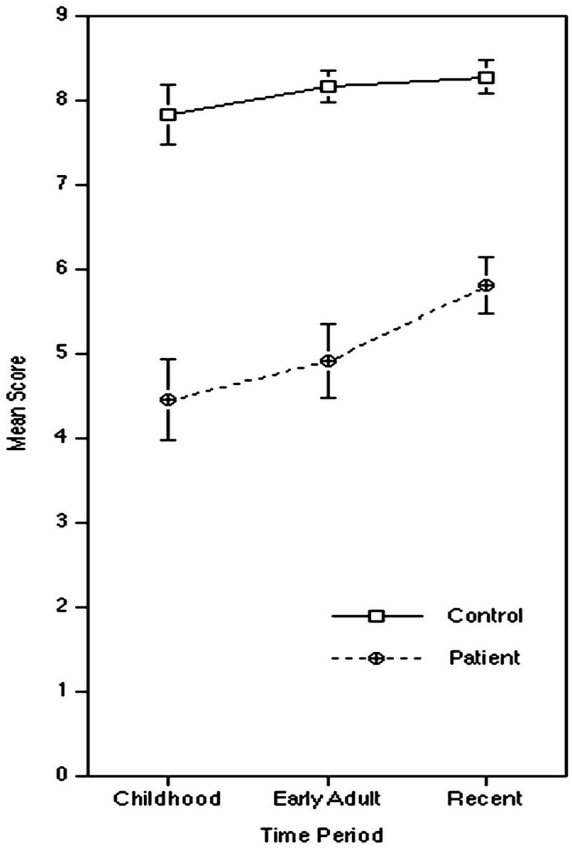


Figure 3: Lower mean score in TLE patients with regards to episodic memory recall.

Source: Viskontas IV, McAndrews MP, Moscovitch M. Remote episodic memory deficits in patients with unilateral temporal lobe epilepsy and excisions. *The Journal of Neuroscience. 2000;20*(15):5853-5857.

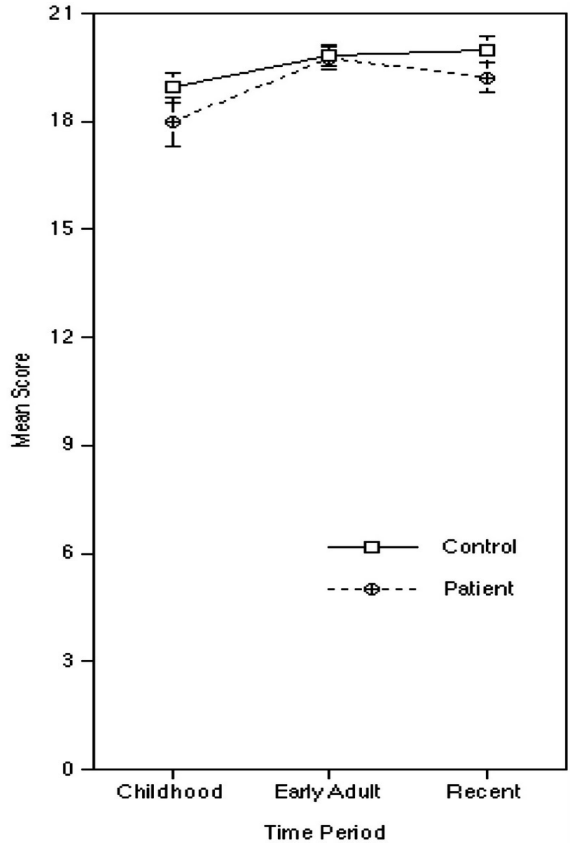


Figure 4: No difference in mean score between TLE and control patients with regards to semantic memory.

Source: Viskontas IV, McAndrews MP, Moscovitch M. Remote episodic memory deficits in patients with unilateral temporal lobe epilepsy and excisions. *The Journal of Neuroscience. 2000;20*(15):5853-5857.

proposes that the hippocampus puts together pieces of information and encodes memories with the help of extra-hippocampal neocortical neurons, meaning that the hippocampus is not responsible for both types of memory, only episodic.[6]

According to Figures 3 and 4, episodic memories suffered a decline in TLE patients whereas there did not seem to be any significant difference between the control and TLE patients with regards to semantic memories.[6]

A neuropsychological study conducted by a group in London helped to illustrate the differences between short term and long term memory deficits seen in TLE patients. That study showed a significant difference in TLE patients with regards to delayed recall. The research looked at TLE patients who had either left or right hippocampal pathology and their success on memory tests including: logical memory stories, and word list learning, subtests taken from the Wechsler Memory Scale. When performing these memory tests, the research results showed no differences in immediate recall when both left and right TLE patient groups and the control group were compared. However, when analysing the delayed recall results, the left TLE patients performed significantly worse than the other two groups.[7,8]

It is clear that TLE patients do in fact suffer from memory decline and that there are diverse approaches to explore the deficits experienced by the epilepsy patients.

MEMORY

A group of researchers carried out analysis on TLE and the effect it has on memory, particularly the learning processes. Effects of TLE on learning and recall of newly learned information were demonstrated by carrying out experiments with rats in a water maze. One particular experiment had control and TLE induced rats that had learned where to swim to in order to find a platform among four quadrants in a water chamber. The platform allowed the rats to get out of the water and into a more hospitable environment. After 4 days of training, the rats were timed to see how long it would take them to use their newly learned ability to find the platform. Figure 5. illustrates the results and shows that it took much longer for the TLE rats to find the platform when compared to the control rats.

It should also be noted that even within the training days, the rats with induced temporal lobe epilepsy performed relatively poorly in response times when compared to the control group.[9]

Other studies also helped illustrate the presence of intellectual decline in TLE patients. Research conducted by two German scientists involved a series of tests on 209 TLE patients to see if they were affected with regards to the Full Scale Intelligence Quotient (FSIQ), measured by using the Wechsler Adult Intelligence Scale (WAIS-III). The patients were divided into three groups based on how long they had had TLE for: <15 years, 15-30 years and >30 years. The patients all completed psychometric testing that determined the FSIQ. Statistical analysis took into consideration confounding variables such as educational background, and the results demonstrated that there was a statistically significant decrease in FSIQ in individuals with TLE for over 30 years in the higher socio-economic group.

These outcomes were obtained using ANOVA statistical analysis, since there were several variables to consider, namely: duration of epilepsy, side of seizure origin and presence of temporal lesions.[10]

CONCLUSION

Looking at the research on this subject, it is evident that there are neuropathological changes that occur in temporal lobe epilepsy patients which impact on those diagnosed with the disorder.

This article has surveyed some of the research into the pathology that underlies and causes TLE, as well as some of the research that has investigated the memory deficits and general intellectual decline that is experienced by some people in this clinical population. There is evidence that both memory and intellectual functions generally can be negatively affected, and this can cause significant functional difficulties for some people with TLE, which thereby impacts adversely on their overall quality of life. Different areas of knowledge were considered in this paper, ranging from neuropsychology to neurophysiology. This was done to show that TLE is a disorder that affects the individual in many different aspects, and thus needs to be researched by a multi-disciplinary team to achieve better results.

It has been shown that research on this issue dates back to the 1950s, but even today scientists continue to inquire and make inroads into understanding the role of pathology and the outcomes it creates for TLE patients. As medical technology improves in the relevant fields, researchers will continue to understand the disorder better, thereby making the medical and surgical treatments of the epilepsy much more feasible and realistic.

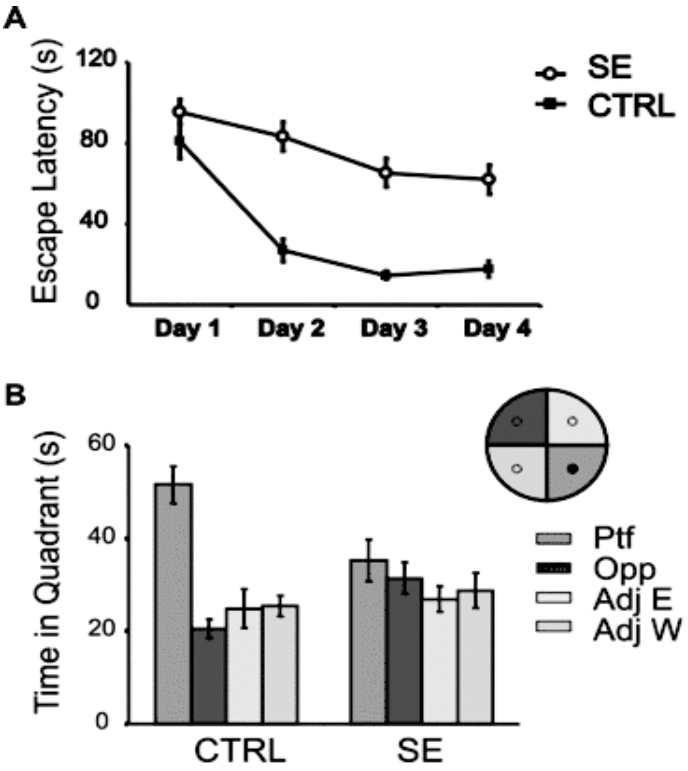


Figure 5: TLE rats performing worse on returning to platform quadrant, much slower time in seconds both on the final day and during training days (Days 1-4).

Source: Lenck-Santini PP, Holmes GL. Altered phase precession and compression of temporal sequences by place cells in epileptic rats. *The Journal of Neuroscience. 2008;28*(19):5053-5062.

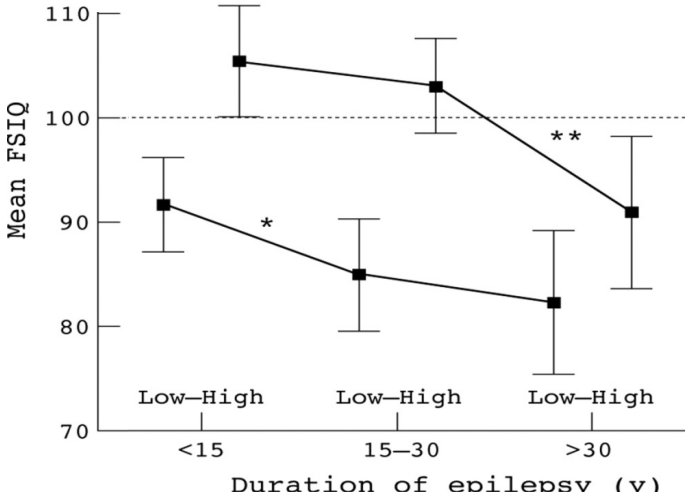


Figure 6: TLE patients, divided according to Low-High socio-economic levels, showing a statistically significant difference in the reduction of FSIQ in the High socio-economic group of patients, compared to the Low socio-economic group when duration of epilepsy is 30 years or more

Source: Jokeit H, Ebner A. Long term effects of refractory temporal lobe epilepsy on cognitive abilities: a cross sectional study. *Journal of Neurology, Neurosurgery & Psychiatry. 1999; 67*: 44-50.

REFERENCES

1. National Institute of Health.
Seizures and Epilepsy: Hope Through Research.
National Institute of Neurological Disorders and Stroke. 2010.

2. Kapur K.
Is mesial temporal sclerosis a necessary component of temporal lobe epilepsy?
Epilepsy Currents. 2006; 6(6):209-209.

3. Richardson MP, Strange BA, Duncan JS, Dolan RJ.
Preserved verbal memory function in left medial temporal pathology involves reorganization to right medial temporal lobe.
Neuroimage. 2003; 20:S112-S119.

4. Zhang X, Cui S, Wallace AE, Hannesson DK, Schmued LC, Saucier DM et al.
Relations between brain pathology and temporal lobe epilepsy.
The Journal of Neuroscience. 2002, 22(14):6052–6061.

5. Radhakrishnan V, Rao MB, Radhakrishnan K, Thomas SV, Nayak DS, Santoshkumar B et al.
Pathology of temporal lobe epilepsy: An analysis of 100 consecutive surgical specimens from patients with medically refractory epilepsy.
Neurology India. 1999; 47(3):196-201.

6. Viskontas IV, McAndrews MP, Moscovitch M.
Remote episodic memory deficits in patients with unilateral temporal lobe epilepsy and excisions.
The Journal of Neuroscience. 2000; 20 (15):5853-5857.

7. L H Goldstein.
Neuropsychological investigation of temporal lobe epilepsy.
Journal of The Royal Society of Medicine. 1991; 84 (8):460-465.

8. Wechsler D, Stone CP.
The Wechsler Memory Scale.
New York: Psychological Corporation, 1945.

9. Lenck-Santini PP, Holmes GL.
Altered phase precession and compression of temporal sequences by place cells in epileptic rats.
The Journal of Neuroscience. 2008; 28(19):5053-5062.

10. Jokeit H, Ebner A.
Long term effects of refractory temporal lobe epilepsy on cognitive abilities: a cross sectional study.
Journal of Neurology, Neurosurgery & Psychiatry. 1999; 67:44-50.

ACADEMIC: REVIEW

Changing the shape of the nation:

Should bariatric surgery be publicly funded in New Zealand?

Shuichi Suetani
First Year House Officer
Modbury Hospital
Adelaide, South Australia

Dr Shuichi Suetani is a first year medical officer in Adelaide, South Australia. He graduated from Otago University in 2010 with a Bachelor of Medicine and Bachelor of Surgery. His other publications include 'Mother Teresa', 'Annika's First Baby' and 'Shine a Light'. Among other things, he is interested in politics, finance and obesity.

ABSTRACT

Obesity is a growing health problem and bariatric surgery promises to be an effective treatment. Both medical and economic evidence seem to support the effectiveness of bariatric surgery. New Zealand can benefit greatly from more publicly funded bariatric surgery if given appropriate political support.

INTRODUCTION

In November 2009, Tariana Turia, a co-leader of the Maori party, underwent a gastric bypass operation at Wakefield hospital in Wellington.[1] She has since shown strong support for more publicly funded bariatric operations in New Zealand. Turia claims that as well as losing nearly 20 kilograms within three months, she stopped taking her diabetic medications almost instantly.[1]

The issue of publicly funded bariatric surgery has multiple dimensions. It is not only a medical issue but a social, economical and political issue as well. Through literature research, this article has attempted to answer the question; should bariatric surgery be publicly funded in New Zealand?

BACKGROUND

Epidemiology

There are more than one billion people in the world who are clinically obese at present.[2] In 2008, for the first time in history, there were more

obese people than malnourished people in the world.[2] Not surprisingly, obesity is the second leading cause of preventable deaths in developed countries, second only to smoking.[3 4 5]

Statistics from the United States of America (USA) estimated that 20 to 35% of Americans are obese.[6 7 8] This is a considerable increase compared to the obesity rate of 13% in the early 1960's.[8] Obesity has affected both the richest and the poorest, with the gap between obesity rates in different socioeconomic groups narrowing in recent years.[8] In Canada, the prevalence has increased from 5.6% in 1985 to 14.8% in 1998.[3] Reports from the United Kingdom (UK) estimated that by 2050, 60% of male and 50% of female adults in the UK will be obese, as well as 25% of children under the age of 16.[2]

In New Zealand, the prevalence of obesity has increased from 11% in the 1970's to 26.5% in 2007. Unlike in the USA, obesity has hit our lower socioeconomic group disproportionately, with 40% of those living in the most disadvantaged regions classified as obese.[9]

Effects

Effects of obesity are not only restricted to the well-known health-related problems such as cardiovascular diseases, Diabetes Mellitus (DM), obstructive sleep apnoea (OSA), arthritis and lowered life expectancy.[3 4 7] Obesity has significant impacts on patients, both socially and psychologically. Obese individuals have higher rates of unemployment and benefit claims.[2 10] Traditionally, societies attributed two of the Seven Deadly Sins to obesity: sloth and gluttony.[9] In more recent years, however, major public opinions have been that obesity is the result of self-neglect and an individual's problem, not something that tax payers have to pay for.[10]

Currently, there is no dietary, behavioural or medication therapy that has been shown to be effective in long-term weight control for clinically obese individuals.[2 10 11 12]

Economics

Obesity has been estimated to cost over $90 billion per year in the USA, which is almost 10% of their total healthcare expenditure.[5] In the UK, obesity costs the National Health Service £5 billion per year, and is expected to double to £10 billion by 2050.[2] Here in New Zealand, at least $125 million, or 2.5% of the total healthcare cost, was estimated to be attributed to obesity in 1997.[10]

There is little doubt that obesity is a major health problem that has multi-dimensional implications on the patient as well as the public. It is also clear that the problem is getting worse. So, the question arises: is Turia right? Is publicly funded bariatric surgery the answer to obesity in New Zealand? There are two parts to this question: Firstly, is bariatric surgery medically effective? Secondly, is bariatric surgery economically effective?

SURGICAL EFFECTIVENESS

More than 170,000 bariatric surgeries are performed in the USA each year.[7 9] In fact, bariatric surgery has become the most common elective abdominal operation performed in the USA.[2]

Procedures

The National Institute of Health in the USA recommended in 1991 that bariatric surgery should be considered for patients with BMI over 40 (35 with co-morbidity). The National Institute of Clinical Excellence (NICE) in the UK adopted the same recommendation in 2002. This guideline is gaining more and more acceptance in the Western medical world.[10]

Gastric bypass and gastric banding operations are currently the two most commonly practiced procedures for bariatric surgery in the world.[2] The former seems to be slightly more successful in weight loss and resolution of co-morbidity.[2] However, there have been few randomised trials conducted to directly compare these two. Most surgeons feel that randomisation is neither ethical nor realistic, given that patient/surgeon/cultural preferences have strong influences on deciding which procedure to undergo.[2] As such, the author has made a deliberate attempt not to distinguish between different types of procedures in this essay.

Weight Loss

Adams et al[13] compared three groups of morbidly obese patients: surgical (n=420), non-surgical (n=415) and non-intervention groups (n=321) in Utah, USA. The non-surgical group was defined as those who were willing to have bariatric surgery but were denied, mainly due to financial reasons. The non-intervention group was recruited from the community and consisted of those who have not had or wanted to have bariatric surgery. At the two year follow up, the surgery group had a mean weight loss of 44.83kg (31.1%) which was significantly greater than the non-surgical group (2.23kg or 1.5%) and non-intervention group (0.29kg or 0.2%).

In Canada, Christou et al[4] at the McGill University Health Centre (MUHC) performed an observational cohort study comparing mortality and morbidity of 6781 morbidly obese patients. The surgery group consisted of 1035 patients who underwent bariatric surgery with 5746 patients matched for in the controlled group. In this study, the surgery group had an initial mean percent weight loss of 67.1% and a mean percent BMI reduction of 34.6% (both at $p < 0.001$). This percentage corresponded to 47.6kg of weight loss in the first year following operation. The percentage weight loss was shown to have been sustained at the level above 60% for at least 15 years in this study. Unfortunately, the paper failed to report the weight reduction rate for the control group.

In a non-randomised, intervention study titled Swedish Obese Subjects (SOS) Study[12], Sjostrom et al compared the surgical group (n=851) and the control group (n=852) at two and ten year follow up points. The management of the control group was not standardized and ranged from strict lifestyle changes to no instruction at all. At the two and ten year points, the surgery group had a mean percentage weight loss of 23.4% and 16.5% respectively. Although these reductions were not as remarkable as the two other studies cited above, they were nevertheless significant as the mean percentage weight loss for the control groups were -0.1% and -1.6% at those respective points, meaning that participants in the control group actually put on weight.

Additional Benefits

Adams et al[13] found that, in addition to the weight loss, the surgery group had significantly more favourable outcomes for hypertension, dyslipidaemia and DM. Resolution of hypertension, dyslipidaemia and DM occurred in 37.6%, 54.2% and 78.7% of the surgical group compared to 1.3%, 7.2% and 0% in the non-surgical group, and 3.7%, 13.9% and 4.7% in the non-intervention group respectively.

Likewise, Christou et al[4] found that the surgery group had significantly lowered relative risks ($p < 0.05$) in all but one of the complications compared. Reductions were most significant in cancer, cardiovascular disease and endocrine conditions. The only complication that did not show a significant reduction ($p = 0.230$) was haematological conditions.

However, the additional benefits were not as remarkable in the SOS study.[12] Reductions in hypertriglyceridaemia, DM and hyperuricemia incidents were statistically significant at both two and ten year follow up points. A reduction in HDL cholesterol level was statistically significant at two year follow up point, but not at ten year point. Reductions in hypercholesterolemia and hypertension were not significant at either follow up point.

Complications

Welbourn et al[2] quote the mortality rate of bariatric surgery to be less than 0.5%. However, they stress that this number depends on the technique, pre-operative risks and the surgeon's experience. Christou et al[4] found the mortality rate in the surgical group to be significantly less than the control group (0.68% v 6.17%) at five year follow up point.

In the SOS study[12], 5 out of 2010 patients who underwent surgery died

postoperatively (0.25%). In total, 153 patients (13.0%) had postoperative complications. These included pulmonary complications (6.1%), deep infection – leakage or abscess (2.1%), wound complications (1.8%), embolism or thrombosis (0.8%) and bleeding (0.5%). Re-operations were required in 2.2% of the patients.

New Zealand

He and Stubbs[10] audited 310 consecutive patients at Wakefield Hospital who underwent bariatric surgery between 1990 and 2002. The mean follow up period was 3.5 years.

Mean weight loss percentages at one, two, three, four and five years post operation were 72.7%, 73.1%, 66.1%, 63.9%, and 58.9%.[10]

Out of 52 patients who had type II DM prior to the operation, 49 were cured (92.4%) post operatively – meaning they no longer required treatment for diabetes as their fasting glucose and HbA1c levels fell back within the normal range. Furthermore, there were statistically significant improvements in dyslipidaemia (in 214 patients: 48.3% cured and 38.6% improved), high blood pressure (in 114 patients: 62.2% resolved and 24.3% improved), asthma (in 82 patients: 61.8% cured and 27.6% improved) and OSA (in 60 patients: 85.0% resolved and 13.3% improved).[10]

Serious post operative complications included pulmonary embolism (0.3%), congestive heart failure (0.3%), deep vein thrombosis (0.3%) and chest infection (2.3%). Re-operations were required in 15.8% of patients during the follow up period.[10]

Another bariatric surgery programme has been running at North Shore Hospital since 2001. No paper has been published so far, but these data will show patient outcomes in the public system where the patient characteristics may differ from Wakefield Hospital.[14]

Limitations

In a strict epidemiological sense, the evidence for bariatric surgery is not of the highest quality. There is no randomised control study conducted to date.

Clearly, one could not perform double blinded studies on bariatric surgery. Also, single blinded studies – putting patients under anaesthetic and not telling them whether or not surgery has been performed – will be unethical. Randomisation of patients into surgical and non-surgical groups is again, unrealistic and unethical due to the importance of the patient selection for bariatric surgery and other influencing factors such as public funding and private insurance. For these reasons, the evidence for bariatric surgery relies heavily on non-randomised intervention studies or observational studies.

ECONOMIC EFFECTIVENESS

The 2002 NICE Guideline for bariatric surgery estimated the cost per quality adjusted life year (QALY) of bariatric surgery to be between £6,289 and £8,527, well below the £30,000 mark which they considered as a cost effective intervention.[2] Similarly, Salem et al[5] simulated a deterministic, payer-perspective model to assess the cost-effectiveness of different types of bariatric surgery in the USA. Using case scenarios, they estimated the cost of bariatric surgery to be between $8,878 and $18,547, much less than the $25,000 per QALY mark they considered to be a cost effective intervention.

Sampalis et al[2] at the MUHC looked at both the average total cost per 1,000 patients per year and the cumulative cost at each year of the 5 year follow up. They found that although the initial cost of the surgery group was much larger ($12,461,938 v $3,609,680 at year one), from year two onwards the average cost for the surgery group became consistently less than the control group. This was mainly due to the initial steep decline in the cost for the surgery group between year one and year two, as well as the continuous decrease in cost thereafter for this group, while the cost for the control group remained relatively unchanged. In terms of the cumulative cost, the surgery group was more expensive than the control group up until the three year follow up point. At the four year follow up point, the absolute difference swayed towards the control group and the gap increasing at the five year point, making the surgery more than $5 million per 1000 patients cheaper than the control group.

Cremieux et al[7] identified 3,651 patients who underwent bariatric surgery from more than 5 million medical claims between 1999 and 2005 in the USA. They estimated the health care cost of the study subjects by looking at health insurance claims from 6 months before the surgery date until the end of their enrolment. Due to privacy issues, the control patients were matched based on age, sex, residential state, co-morbidities and healthcare cost claim, rather than body weight or BMI. They calculated the peri-operation cost of bariatric surgery to range from $17,000 to $26,000. Cremieux et al observed that it took 25 to 53 months to fully recover the initial increase in cost of the surgery group owing to the savings from decreased health care claims when compared to the control group.

On a much smaller scale, Gallagher et al[6] evaluated the cost effectiveness of bariatric surgery in the Veterans Administration (VA) healthcare system, a non-profit organisation in the USA. A group of 25 veterans were included in the study: 18 of them were male with the average age of 52 years and the average BMI of 52. These patients underwent bariatric surgery and the health care cost before and the peri-operation costs were compared. Before the surgery, the mean health care cost per person was $10,558. Peri-surgery expenses per person, including the cost for the surgery itself, amounted to $23,600 in the first year. After surgery, the number of annual outpatient clinic visits reduced significantly from 55 per patients to 18 after surgery ($p<0.001$), reducing the cost by almost $8,000. Gallagher et al[6] concluded that the bariatric surgery was a cost effective treatment for morbid obesity and recommended the initiation or maintenance of such service in the VA health system.

There is no cost effectiveness study on bariatric surgery in New Zealand to date.

DISCUSSION

The Ministry of Health currently recommends 915 bariatric procedures per year in New Zealand.[9] Given that more than one million of us are classified as clinically obese, this recommendation only reaches 0.5% of the severely obese population.

Should bariatric surgery be publicly funded in New Zealand to a much larger extent? Let us first answer the two sub-questions.

Is it medically effective?

The evidence shows that bariatric surgery is effective at losing weight which ranged between 16.5% and 73.1% in the studies cited above, and the results are consistent up to 15 years following surgery. Furthermore, the improvement in or the resolution of obesity-related diseases such as dyslipidaemia and DM have consistently been established after surgery. Like any other medical intervention, bariatric surgery carries with it many risks and complications, but the mortality rate is less than 1%.

Is it economically effective?

Bariatric surgery is deemed cost effective under both the NICE guideline and the American insurance simulation model. Studies show that the initial cost of surgery is completely recovered in two to five years. In the long term, improved general heath leads to less health care cost.

So, should bariatric surgery be publicly funded in New Zealand to a much larger extent? This author believes so, at least in an ideal world where the medical literature can convince the politicians and the public.

There are three major issues to overcome before extensively public-funded bariatric surgery becomes reality. First is the funding. But as we have seen, cost effectiveness studies show that if we think in a time frame that goes beyond a Government term, we can in fact save tax payers' money by doing

more bariatric surgery. The second issue is the lack of surgeon training. It is tricky, but the fact remains that the surgical trainees will not have adequate exposure to this type of procedure unless there are more procedures performed in the public system. The last and the most challenging issue, is to change the public's opinion about bariatric surgery. To convince those who think that there is no need for hard working tax payers to help lazy, greedy and fat people to lose weight. Such issue is outside the scope of this article and needs more than a trainee intern to find a convincing evidence for the solution.

CONCLUSION

It may not be the magic wand that Turia promises, but patience and a long term vision, New Zealand as a nation may be able to benefit from publicly funded bariatric surgery both medically and economically.

REFERENCES

1. **Turia still pushing for Govt funded stomach stapling.**
Campbell Live 2010 Feb 09 [cited 2010 May];
Available from: http://www.3news.co.nz/Turia-still-pushing-for-Govt-funded-stomach-tapling/tabid/817/articleID/140955/Default.aspx

2. Welbourn R, Pournaras D.
Bariatric surgery: a cost-effective intervention for morbid obesity; functional and nutritional outcomes.
Proc Nutr Soc 2010; 64(9):528-535

3. Sampalis JS, Liberman M, Auger S, Christou NV.
The impact of weight reduction surgery on health-care costs in morbidly obese patients.
Obes Surg 2004;14(7):939-947.

4. Christou NV, Sampalis JS, Liberman M, Look D, Auger S, McLean AP et al.
Surgery decreases long-term mortality, morbidity, and health care use in morbidly obese patients.
Annals of Surgery 2004;240(3):416-423.

5. Salem L, Devlin A, Sullivan SD, Flum DR.
Cost-effectiveness analysis of laparoscopic gastric bypass, adjustable gastric banding and nonoperative weight loss interventions.
Surg Obes Relat Dis 2008;4(1):26-32.

6. Gallagher SF, Banasiak M, Gonzalvo JP, Paoli DP, Allwood J, Morris D et al.
The impact of bariatric surgery on the veterans administration healthcare system: A cost analysis.
Obes Surg 2003;13(2):245-248.

7. Cremieux PY, Buchwald H, Shikora SA, Ghosh A, Yang HE, Buessing M.
A study on the economic impact of bariatric surgery.
Am J Manag Care 2008;14(9):589-596.
8. Finkelstein EA, Strombotne KL.
The economics of obesity.
Am J Clin Nutr 2010;91(5):1520S-1524S.

9. Foo J, Toomath R, Wickremesekera S, Bann S, Stubbs R.
Bariatric surgery: A dilemma for the health system?
NZ Med J 2010;123(1311):12-14.

10. He M, Stubbs R.
Gastric bypass surgery for severe obesity: What can be achieved?
NZ Med J 2004;117(1207):U1207.

11. Schauer DP, Arterburn DE, Livingston EH, Fischer D, Eckman MH.
Decision modeling to estimate the impact of gastric bypass surgery on life expectancy for the treatment of morbid obesity.
Arch Surg 2010;145(1):57-62.

12. Sjostrom L, Lindroos AK, Peltonen M, Torgerson J, Bouchard C, Carlsson B et al.
Lifestyle, diabetes, and cardiovascular risk factors 10 years after bariastric surgery.
N Engl J Med 2004;351(26):2683-2693.

13. Adams TD, Pendleton RC, Strong MB, Kolotkin RL, Walker JM, Litwin SE et al.
Health outcomes of gastric bypass patients compared to nonsurgical, nonintervened severely obese.
Obesity 2010;18(1):121-130.

14. Samson P, Booth M.
Bariatric surgery in New Zealand.
NZ Med J 2005;118(1213):U1420.

All political parties represented in the 49th New Zealand parliament were invited to submit an article outlining their health policies. The Maori Party and United Future did not respond to our request. All views expressed are those of the political party. The NZMSJ Editorial Board does not endorse any particular view.

Election 2011: Party health policies

NATIONAL PARTY

National will continue to make health a top spending priority. Despite the worst economic conditions in 70 years, we have put an extra average $500 million each year into our public health service.

Our investment has helped deliver an extra 800 doctors and 2000 extra nurses, all cancer patients ready for radiation treatment are receiving it within four weeks, 91% of all two year olds are immunised and now, we're delivering an extra 27,000 elective surgeries a year.

National will continue to strengthen the health workforce, provide even faster access to elective surgery, shorter waits in Emergency Departments, faster cancer treatment and ensure even more children are immunised.

Workforce

There are now 800 extra doctors and 2000 extra nurses working in our District Health Boards compared to 2008.

We have introduced the very successful Voluntary Bonding scheme, with around 1800 medical graduates enrolled.

The scheme makes payments against a medical student's loan for every year they spend working in a hard to staff region or speciality.

Initiatives like the Rural Immersion Scheme and will help keep health professionals in our rural communities.

Health Workforce New Zealand will continue to work with the health sector to address shortages and plan for the future.

Population health

Three of our six health targets are focused on health prevention and health promotion.

Reducing smoking, lifting immunisation rates and ensuring better checks for cardiovascular and diabetes will help improve the health of hundreds of thousands of New Zealanders.

We're rolling out the $12 million Rheumatic Fever scheme to help reduce this third world disease in our most vulnerable communities. This will benefit around 22,000 children and reduce long-term health effects like heart problems.

Keeping people healthier goes beyond the health service. Almost 130,000 homes have been retrofitted with heating and insulation since 2008. And Whanau Ora is bringing important social services together to help provide better and more tailored support for our communities.

Maternity

Safer maternity services are a priority for this Government – that's why we put an extra $103m over four years into improving maternity services in our first Budget, and we announced $54 million in this year's Budget.

The Government's Maternity Quality Initiative is a major piece of work involving collaboration and strong support between the maternity sector (DHBs and clinicians, mothers and their families and colleges) and the Ministry of Health to improve safety and quality.

And, from 28 March 2012 all midwives joining the voluntary bonding scheme will be required to complete the Midwifery First Year of Practice programme.

Child health

We recently announced that free visits to the doctor for children aged under six will be extended to after-hours. This will slow the numbers of young children presenting to our busy hospital emergency departments with illnesses their GP clinic could have treated.

We have made other improvements in child health, including improved immunisation rates, better support for mothers and new babies, restoring Plunketline, more Plunket visits for first time Mums, and a strong move against rheumatic fever.

Primary care

We have increased funding for primary care by $100 million since 2008, and National will continue to bring healthcare closer to home.

This includes increasing the number of direct referrals from GPs for diagnostic tests, engaging GPs to perform more minor surgeries and encouraging development of Integrated Family Health Centres.

National will work with the sector to ensure there is access to afterhours medical care.

We are currently trialling a scheme in Kapiti, Rangiora and Levin were ambulance services provide urgent care at home. We look at the success of these pilots with a view to rolling them in other communities.

Coordination of services

We are already working to provide greater regional and national coordination of services.

DHB's are working together on regional plans to share services; clinical leaders are driving improvement in areas like emergency departments and cardiac services. And DHBs are moving towards shared IT systems to improve services for the patient and efficiencies in our hospitals.

Health Benefits Ltd has also been established to improve procurement.

We will work to ensure even greater regionalisation over the next three years.

Authorised by Tony Ryall MP, 184 Devonport Road, Tauranga

LABOUR PARTY

Keeping Kiwis Healthy: Labour's health policy

Labour is committed to enhancing the well-being of all New Zealanders, so they can live longer, healthier lives. To do this we need to shift thinking away from seeing health policy in isolation, and from seeing healthcare as something that begins in a hospital or doctor's surgery, and ensure that all our policies enhance the well-being and health status of New Zealanders.

Good health is something that begins in our homes, schools, workplaces and communities. If a house is overcrowded, cold and damp, then it is hard to stay healthy. If parents lose their jobs they find it hard to put healthy food on the table or afford a visit to the doctor. If people do not have adequate income, then they find it hard to afford the basic necessities of life.

These are examples of what are sometimes called the social determinants of health. We must address the inequities that are contributing to poor health outcomes. This will require particular attention to policies in terms of education, income equality, housing, taxation and social development and how they impact on health.

A focus on addressing the social determinants of health and access to healthcare will not only improve health outcomes, but will also prove cost-effective and good for economic growth over time as the need for expensive interventions and treatments reduces. There is not a bottomless pit for expenditure, but investments now in proven early interventions should reduce the need for expenditure not only in the health system but in other areas of government including social development and corrections.

Labour will also ensure that all core government policy initiatives face Health Impact Assessments, to make sure that all policy helps improve New Zealanders' health.

Our Core Commitments

1. A commitment to funding the sector so it can manage changing demographics and health status of New Zealanders.
2. Ensuring that innovations and efficiencies within the health system are encouraged by launching the Health Innovation Project to drive nationwide application of models of good practice in the delivery of health services.
3. A re-invigorated Primary Health Care strategy that emphasises accessibility, affordability and coordinated services.
4. Agenda for Children – It's About Our Kids, including extending free access for under sixes to after-hours medical services, meaning 24 hour, 7 day a week free access for under 6 year olds.
5. Develop nationwide tools for elective surgery prioritisation based around timeliness, equity and quality.
6. A 10 year plan to increase access to primary oral health care services, beginning with young people and pregnant mothers.
7. The development, retention and recruitment of a high quality health workforce that sees the right skills used in the right place at the right time, with gives enhanced roles for nurses and community health workers.
8. Adequate and sustainable funding for aged care that allows "ageing in place" but also provides safe, properly staffed residential care.
9. A co-ordinated approach to address the obesity epidemic that is costing New Zealand millions of dollars a year.
10. Ensuring mental health is restored as a priority for District Health Boards with appropriate targets to restore and improve mental health services.

Agenda for Children - It's About Our Kids

The health of our children reflects the complex nature of our society and the interactions they have within it. The outcomes for today's children will determine the future success or failure of our nation. The period of childhood shapes an individual more than any other time in life. We must ensure we do everything we can that children enter adulthood as healthy and happy as they can be.

The true measure of a nation's standing is how well it attends to its children – their health and safety, their material security, their education and socialization, and their sense of being loved, valued and included in the families and societies into which they are born.[1]

In order to give every child the best start in life it is essential that government focuses on reducing inequities in the early development of physical and emotional health, and cognitive, linguistic and social skills.

We need to ensure that there are high quality maternity services, parenting programmes, childcare and early years education to meet need across all communities.

We need to build the resilience of young children and enable them to control their own lives and health status. We need to ensure that schools, families and communities work together to reduce inequities and promote well-being for all children.

We need to strengthen the leadership in the health sector to promote the needs of healthy children, and ensure there is a whole of government approach for children. This must be backed by the capture and dissemination of high quality data about the health status and outcomes of children.

We have seen a number of reports in recent times that the cost of accessing primary healthcare is meaning that some children are not getting the treatment that they need. This is particularly so in terms of access to affordable after-hours care.

Labour will make child health a priority, and increase the proportion of health sector spending on services for children aged up to six years.

Labour will extend free access for under sixes to after-hours medical services, meaning 24 hour, 7 day a week free access for under six year olds.

Extended access will be in place across New Zealand and will be delivered through mechanisms based on the best evidence from around the country.

Labour will also do everything we can to ensure children are free of or are receiving quality care for debilitating health conditions when they enter school at 5 years old, by providing adequate funding of outreach services to reach vulnerable children, supporting and enhancing B4 School Checks and providing a "mop-up" service at school to capture those children who start school who have not accessed a B4 School Check.

Labour will require District Health Boards to adopt child health implementation plans with nationally agreed measurable outcomes and targets that are monitored by the Ministry of Health.

Labour will develop systems during pregnancy to identify children who are vulnerable, and then ensure that the relevant levels of support are in place to support and optimise parenting.

Labour will create a seamless transition from maternity services to health care services for infants and young children.

Labour will strengthen the Health in Schools Programme, including social workers, starting with low decile schools, with the aim of expanding the programme to higher decile schools as resources allow.

Further information about Labour's Health Policy can be found here: **www.ownourfuture.co.nz/health**

Authorised by Grant Robertson, 160 Willis St, Wellington.

[1]. UNICEF, Child poverty in perspective: An overview of child well-being in rich countries. Innocenti Report Card 7. 2007, Florence

ACT NEW ZEALAND

The New Zealand health system suffers from a severe productivity problem. Despite huge increases in funding from successive governments, we are actually getting less efficient. Between 1999 and 2008, health funding more than doubled in real terms yet the outputs from our medical facilities did not keep pace with this funding increase. We still have far too many New Zealanders dying on waiting lists and not getting vital treatment such as chemotherapy quickly enough. The National Government has made a small amount of progress but we need ACT as part of the next government to push for further change.

In the next government ACT will continue to push for major health reform. We will:

- Encourage competition between public and private sector health providers to encourage productivity gains;
- Reduce back-room bureaucracy so more resources can be spent on front line healthcare;
- Target primary healthcare subsidies at those on the lowest incomes rather than wasting resources on subsidies for the rich;
- Reduce taxes so individuals can pay for their own day to day health needs as well as take out comprehensive health insurance for them and their families. This will encourage competition between health providers to provide value for money services that patients want. It will also put the power in the hands of patients and encourage people to make good decisions about their own health;
- Review health regulations including occupational licensing, in order to allow providers to respond more flexibly to patients' requirements and hire qualified overseas expertise
- Reduce taxes and simplify regulation to create the kind of economic growth necessary to pay for world class health care

Medical workforce

ACT believes that increasing competition between the public and private sectors will have the greatest effect on the delivery of services to New Zealanders. It puts the power in the hands of the consumer. Likewise our commitment to reducing back-room bureaucracy to allow more resources on the front line will give the medical workforce more time to focus on medicine rather than paperwork.

ACT believes that those who receive tertiary education are fortunate. Typically, they have gone to a good school, they have been motivated, they have received good grades, and they have earned the opportunity to study in a tertiary institute. Their rate of unemployment is lower. They receive much higher wages. The main person who benefits from a tertiary education is the individual who receives it. In general terms, approximately 75 per cent of tuition costs are covered by taxpayers. We are, in effect, taxing the people who leave school at 17 and find a job, in order to fund the tertiary education of those who will end up far wealthier than them. ACT would end interest free student loans. Medical students typically pay back their loans faster than many other students. Additionally, they receive greater remuneration as their career progresses. ACT supports lower taxes – allowing the individual to keep more of their own money. In the long term this will net out any increase to interest on student loans.

In terms of workforce, NZ competes with all countries (but Australia in particular) for skilled workers such as healthcare professionals. With Australians earning over thirty-five per cent more than New Zealanders, they are able to pay more in taxes and private fees for medical treatment than we are. In turn, we see a loss of healthcare professionals to Australia, and less ability to attract and retain healthcare professionals from the wider world.

Health equity

ACT believes that the social determinants of health, and indeed inequity across the social spectrum, are related to the economy. In the ten years to 2010 we lost 260,000 people to Australia, even allowing for those who came back. This creates a downward spiral effect. As we lose citizens overseas, they take their skills and education with them. If we are to maintain first world services, then those who remain must be taxed harder still. In turn, the incentive to leave grows stronger. New Zealand must take decisive action to stem this tide, or gradually become a backwater over the coming generation.

Governments cannot create economic growth. What they can do is create the right conditions for people to grow the economy. When the economy grows, all New Zealanders become wealthier and we can afford the kind of first rate medical services enjoyed by countries like Singapore and Hong Kong.

Health structures

ACT supports regional autonomy – allowing local communities to decide the importance to which they hold the services offered by their local DHBs. However there are huge efficiency gains that can be made through greater rationalisation/national coordination of services. Hutt and Capital Coast DHB, for example, duplicate many of the same services over the region when, by integration or centralisation of services, the reduction of back-room regulation would allow for more efficiency and free up funding for frontline services.

Gains in productivity could occur through workforce management. A simple example would be a review of the roles of nursing/diagnostic/pharmacy to reduce GP workload and improve patient costs and throughput eg Patients with permanent diagnosed conditions accessing pharmacy without the need to visit doctors and routine diagnostics occurring directly with results being added to the central database and advised to GP.

Other productivity gains can be achieved in the co-ordination and alignment of the health services provided at a local, regional and national level and between public and private sectors.

Gains can also be achieved in the better use of information technology – eg sharing of patient data/ files etc between primary and secondary care as well as public and private practices. An effective centralised patient information system would also improve efficiency by reducing duplication, improving communication with patients (avoiding constant repetition of data within and between services), improving outcomes (as all critical information would be available), This will also result in risk minimisation and co-ordinated care between the various agencies, from primary to tertiary and all the diagnostics , pharmacy etc in the process. The savings across the sector would be enormous and while some patients would be concerned about confidentiality, a centralised file with the history of allergies, operations, medications etc would benefit all and privacy issues could be managed in accordance with patients' requirements.

I should also make it clear that while ACT supports individual choice we do believe it is the role of Government to take an active role in public health, particularly in regards to issues such as vaccination and epidemic prevention.

Clinical research

ACT's policy on science and technology is to facilitate an environment conducive to growth and risk, to success and innovation, and to leave the day-to-day work to the experts. ACT believes that clinical research is vitally important to the industry but does not believe that compulsory research is the answer. By removing much of the restrictions imposed by

the government, DHBs and the like will have the freedom to allow greater scope for clinical research.

Strategies

Any reviews in primary health will be focussed on improving outcomes and reducing inefficiencies.

In the short term ACT would encourage greater use of the private sector by District Health Boards so that people can get treatment as soon as they need it. We also support moves by the National Government to put more resources into front line staff rather than back room bureaucracy and we believe primary health care subsidies should be targeted at those on low incomes rather than subisidising the wealthy. In the longer term ACT supports lowering taxes so people can keep more of their own money and fund more of the costs of their own health care. This means people will have greater autonomy and choice and it will drive efficiency gains in the sector as health providers

Economic Growth must be the focus

ACT sees the most important heathcare policy as economic growth. The New Zealand economy is stagnating and if we don't commit to serious economic growth policies we won't be able to fund the kind of world class health system New Zealanders deserve. In addition to the loss of our workforce to Australia and difficulties in recruitment mentioned above, NZ's ability to afford world class equipment and pharmaceuticals depends on our wealth compared to other first world countries. ACT is focussed on improving the economy as a top priority.

Authorised by Robyn Stent, 309 Broadway, Newmarket

GREEN PARTY

The Green Party wants the best possible health for everyone, with high quality services that are fair. We believe in a holistic approach to health and well-being that is focused on promoting good health, reducing the risk of illness, and improving quality of life. We are committed to a public health care system that provides the same access and level of care regardless of wealth or income. All the evidence shows that a more equal society is better for everyone.

This election our top priorities are addressing child poverty, cleaning up our polluted waterways and a programme to create green jobs for New Zealanders. One in four of our children grow up in poverty. They are our friends' children. They are our neighbours' children. They are the children of our colleagues and our acquaintances. They are our nieces and nephews, they are our mokopuna. They are our children, and they deserve better.

We know that children living in poverty are more likely to experience illness. Illness impacts on their health, especially in extreme cases involving rheumatic fever and meningitis. Bad health, even an increase in the number of days off school due to sickness damages their education potential. Parents taking time off work to care for sick children is a drain on productivity.

We have developed four simple solutions that will bring 100,000 children out of poverty by 2014. Making working for families work for every low income family will address the discrimination against non-working parents. Providing better study support for sole parents and beneficiaries will help to lift parents out of poverty faster which will have a real impact on their children. We shouldn't be making it hard for people to access education especially in times of high unemployment. We want to raise the minimum wage to $15 an hour. This will have a positive impact on the working poor as well as stimulating the local economy with the extra money received by low wage workers - they are more likely to spend this locally. Finally we want to extend the Warm Up NZ programme, insulating more houses to provide a warmer, drier and healthier environment for our children to grow up in.

We are committed to a publicly funded healthcare system that provides the same access and level of care regardless of wealth or income. All the evidence shows that a more equal society is better for everyone. This is why we are committed to our practical economic plan that creates decent jobs, adds resilience to our economy, and protects our natural environment. It is a plan for clean green prosperity for all New Zealanders. Our plan will create 100,000 new jobs through direct government investment in housing, by ensuring our state-owned energy companies capture the massive export opportunities in the renewable energy sector, and, most importantly, by shifting the drivers for green jobs in the private sector.

We believe in promoting health, keeping people well and treating illness early. These are also the most cost effective health services, but are currently underfunded and being cut further. If we invest more in public health, and preventative measures and primary care we can improve health outcomes. This is why we want to rebalance the Health budget. Increasing spending on the services designed to keep people well from the current 2% of the total Health budget to 10%.

Primary health services are central to improving the health of New Zealanders and tackling inequalities in health. Primary Health Organisations (PHOs) are a good starting point for primary health services, but are limited by the cost of treatment and their focus on general practitioner provided health care. We want to ensure primary healthcare services are accessible and affordable for everyone, to facilitate early diagnosis and treatment.

Health funding is and will always be a question of prioritisation, how we can best divide up the pie? We want to engage New Zealanders in a national conversation to work out how government should make hard decisions about which services are and are not publicly funded. This will always be a political decision - it is at the heart of what politics is - but it is important that we do so in conjunction with the public to ensure that everyone can take ownership of the decisions.

We do not agree with the current government's plan of prioritising spending on bigger roads and tax cuts for the already wealthy. Education and health care are more important than roads with little or no economic benefit especially when there are better solutions that can be found utilising active and public transport and our railway network.

This election we have the opportunity to decide about what kind of electoral system we want to use to elect our representatives. We support keeping and improving MMP. Under MMP the amount of votes a party gets determines how many seats it gets. It is a proportional system which means that there is no chance of an unfair or undemocratic election result. MMP works. It has provided stable and effective Government since its introduction - where the majority of New Zealanders are represented in a coalition government. MMP makes our Parliament truly representative of the people, and brings with it a more diverse range of political voices. It has increased representation for women and Maori, Pasifika and Asian people. If people vote to retain MMP - it will be reviewed so that any niggles with it can be ironed out (like the appropriate threshold/coat tailing)

We hope to be a part of improving health outcomes in New Zealand. Our vision is one of a holistic approach to health and well-being that is focused on promoting good health, reducing the risk of illness, and improving quality of life. A well-funded health system, with a focus on quality and safe care, which everyone can access in a timely way regardless of their ability to pay. A nation with equitable health outcomes, including life expectancy and health status measures, for all where everyone can access healthcare services, regardless of their ability to pay.

Authorised by Metiria Turei and Russel Norman, Parliament Buildings Wellington

MANA PARTY

WHANAU ORA MAORI ORA

Kia whai kaha whai mana painga ki nga kawenga oranga iwi ki tua o rangi
Whanau Inspired, Enabled, Resourced and In Control of Their Own Health

A key focus of the MANA Movement is to improve the standard of living of low income Whanau in terms of Well Being, Quality Education, Full Time Employment, Quality Housing and Descent Income.

Over the past 5 years working in the Health Sector and in a region of Aotearoa where health issues and poverty are so closely linked we are faced with these issues like alcohol, smoking , drugs, Chronic illnesses, unemployment, education from early childhood to adult learning and not enough housing and overcrowded homes.

The priority topic I have selected to write about is "Why this epidemic of chronic illnesses like Heart Disease, Lung Cancer and Diabetes are killing our Whanau and what can the MANA Movement do to help prevent this from happening."

Unfortunately if you smoke, drink alcohol, take drugs and eat unhealthy kai you will die early. From the 2006 statistics Ministry of Health Maori Male live to 70 compared to non Maori Male who live to 79 and Maori Female live to 75 compared to non Maori Female who live to 83.

One out of every five Maori will get Diabetes.

Contributing factors to these illnesses are lack of Exercise and Obesity. Our Whanau are eating too much unhealthy food especially when they are tempted with so many options of Fast Food shops in their neighbourhood. The price of Vegetables is too expensive. It seems to be a lot easier to buy a $10 special of three fish, three sausages, four potato fritters and chips to feed the Whanau.

Alcohol is a huge problem that destroys our Whanau like Violence, Abuse, Murder, Drink Driving Assaults and Suicide. Again when there is so many liquor outlets in our neighbourhoods the temptation is so easy. Instead of buying food alcohol tends to take priority.

Another big problem is that too many of our Whanau get DNA did not attend their appointment. From past experience some of the barriers that stop our Whanau from going to their Doctor are communication. They don't understand the language because of the different accents and all the big words they use. Some cannot get time off work. They feel embarrassed and rushed through their appointments and many cannot afford to pay for their visit.

I have developed some firm views on what the MANA Movement will do to help prevent our Whanau from these illnesses.

I need to note that because the MANA Movement is only a new Party we are still developing our Policies. I also need to note that some of these views are my own personal views.

My four main points are:

Tino Rangatiratanga - complete responsibility

MANA will:

1. Ban advertising of ALCOHOL and SMOKING
2. Get rid of POKIE MACHINES AND LIQUOR OUTLETS in the neighbourhoods
3. Get rid of GST from all food (and everything else) but introduce a tax on unhealthy fast foods and soft drinks.
4. Expand on the support for more physical activity for our children and Rangatahi by reviving traditional Maori games like Ki o rahi and Poi toa in our communities and at school. (my own view).
5. Support more community vegetable gardens which could also provide employment and income (my own view).

Kaitiakitanga - Guardianship

MANA will:

1. Encourage research for traditional natural Maori medicines, Romiromi and Mirimiri (my own view).
2. Resource a Kaitiaki program for mentors and role models to help in life skills like budgeting, hygiene, alcohol and smoking cessation (my own view).

Whanaungatanga – We are all Whanau

MANA will:

1. Free quality education from Early Childhood Education, adult learning to Tertiary Education.
2. To build 20000 new homes which will create full time employment, apprenticeship training and comfortable and healthy living.
3. Incorporate two nutritious meals per day for school aged children (so they can concentrate, learn, participate and add value to their class). The parents can help prepare and serve the meals which will build a unity amongst the community.
4. Build on existing schemes to include free after hours health care for children under 16yrs old and senior citizens as part of general health rights.

Manaakitanga – All hands on to help

MANA will support:

1. Introduce plain language information for users of health services to improve health literacy.
2. Include health care services for teeth, eyes and ears within the subsidised primary health care system.
3. From feeding our children just watch what happens to our national health bill when we do this. Why do we live in such a land of plenty and seem unable to lift 200,000 children above the poverty line? This is a community health issue which, when solved, will solve many other social problems.
4. Self Management Education Programs for Chronic Care Management (my own view).
5. A Kaitiaki program will help Whanau in been self reliant, independent and confident (my own view).

The impact this will have on Medical students as the future of the health workforce are that they will be able to concentrate on their studies rather than the huge debt they would've had to pay back for their student fees.

They will be able to learn Maori values having a holistic approach and been able to apply to their practice.

Taawhiti rawa toou haerenga ake te kore haere tonu. Nui rawa oou mahi te kore mahi nui tonu.

We have come too far not to go further. We have done too much not to do more.

Na Sir James Henare

Authorised by Dr Richard Shortland Cooper, 3 Multose Drive, Flat Bush

Echoes from Timaru

Victor Kong
Surgical Registrar
Trauma Unit, Edendale Hospital
Pietermaritzburg
South Africa

Dr Victor Kong completed his MBChB at the University of Otago and internship in Timaru Hospital. He continued surgical training in Ireland and South Africa. Currently Victor is a registrar in trauma surgery in South Africa.

Many of you reading this will know that starting out as a junior doctor is arguably the most stressful rite of passage taken by every new intern in the first stages of their medical career. Every doctor's memories of this time are unique and everyone has their own special story to tell. My own story is no exception and, for me, starting work at Timaru Hospital in South Canterbury, New Zealand, was an incomparable, valuable, and exhilarating experience. When you train as an intern, there are two types of hospital setting you can choose from as your new place of work, either a large urban hospital or a smaller rural hospital. Traditionally, the latter option is less popular due to a perceived lack of senior support. I chose the latter option.

Timaru Hospital is a 150-bed rural general hospital and has all the major specialties on site, including general surgery, medicine, paediatrics, obstetrics, gynaecology, and psychiatry. However, what is different at Timaru is that there are no practising registrars in any specialty. All clinical services are directed and administered under the leadership of a group of highly dedicated consultants; no middle-grade doctors work at Timaru at all.

Of course, you will think this is a very out of the ordinary arrangement, but I feel I can speak for all medical staff who have worked at Timaru, to say that we never regretted our decision to train there. Other practitioners may have pondered our choice with scepticism and questioned how we would manage to survive this unusual structure. However, many generations of doctors have undertaken the same learning curve at Timaru, and one characteristic that we now all possess is the confidence to meet challenges head on, because we were taught the right attitude required to be able to venture in at the deep end. At the time, what seemed to us like a baptism of fire developed a resilient and competitive spirit, and taught us how to think on our feet. I decided to choose a different route of training from those chosen by my fellow graduates, many of whom decided to settle for the security of working at urban centres, but I trusted my judgement. At Timaru every call was a challenge, every decision I made ignited my passion for surgery further, and every battle I fought in the theatre taught me invaluable skills. It was in this way I felt I became a true doctor.

One day, about twelve months into my time at Timaru and just after I had undertaken a series of major resuscitations, a new intern asked me, "What is the worst night shift you've ever had to cope with here?" This was a difficult question to answer and one that remains fixed in my mind, not only because every night at Timaru brought new challenges, but the intern's question reminded me of how I had felt when I first joined the hospital. The question made me realise just how far I had come in the short time I had been working there.

Working the 'night shift' at Timaru meant that you were the only doctor on site to cover the entire hospital and the only casualty officer working in the Emergency Department. You were in charge of all the medical and surgical wards, as well as every speciality provided at the hospital. On-call consultant support was always available, but at night the consultants were based off site, so it was easy to feel as if you were alone. Routinely you were the first doctor patients would see after 11 pm, therefore it was not hard to understand why many of my graduate colleagues had been reluctant to take on this kind of responsibility at such an early stage in their careers. Instead they preferred the comfort zone of the 'my registrar will handle this' mentality.

My twelve months as a junior doctor at Timaru went by very quickly, mainly because there was never an uninteresting moment. Typically the types of situations pushed forward were such things as: thrombolysing patients with acute myocardial infarctions, resuscitating patients with massive upper GI haemorrhage, dealing with a ruptured aortic aneurysm in front of your eyes, the swift decompression of a tension pneumothorax, and of course, the cardiac arrest calls. The adrenaline surge never failed to return every night I walked through the main hospital door, as I wondered what challenge I would face next. However, what I gained from my experience at Timaru went far beyond the expectations of my imagination. I emerged as a confident doctor with a broad general experience, and a practitioner comfortable with a high level of responsibility. I became proficient in a wide range of practical procedures and matured as a competent doctor with a focused mind, sound clinical acumen, and a clear awareness of when to seek help. When I completed my internship at Timaru it was with a sense of immense pride, pride in knowing that the training I had received distinguished me from other doctors.

Internship is undoubtedly an exciting but stressful phase in every junior doctor's career. Sometimes it feels like a lifetime since my internship at Timaru Hospital. I now work as surgical registrar over ten thousand miles across the ocean, but whenever I find myself with my hands deep in a patient's chest in the middle of an emergency thoracotomy, my thoughts are often transported right back to the time I spent at Timaru. I feel as if I can still hear the distant echo of the voice of the young intern innocently inquiring, "What exactly is the worst night shift you've ever had to cope with here?"

Drama and dance therapy for the treatment of psychiatric disorders

Sheng-Tsung (Dominique) Chiu
Fourth Year Medical Student
Auckland School of Medicine
University of Auckland

Dominique is a fourth year medical student at the Auckland School of Medicine, University of Auckland. She completed this essay as part of the MBChB 311 Medical Humanities paper, while in third year.

INTRODUCTION

Within contemporary medicine, therapy for psychiatric disorders has been a field of growing interest. Such disorders of the mind can be broadly classified into: affective, psychotic, anxiety and personality disorders. The progressive decline, though not yet eradication, of stigma associated with psychiatric disorders has risen with the emergence of new therapies developed as a supplement to the conventional psychotherapy. The possibility that art therapies - art, dance/movement, drama and music - could help people adapt to, or recover from, mental ailments has caught the attention of the public in the last few decades. These therapies have been described as an application of a creative medium to psychotherapy, based on the idea that self-expression and self-awareness are promoted and catalysed by creativity.[1] Creative processes thereby enhance one's psychological wellbeing. This essay will initially give an overview of how drama and dance/movement therapies have been used as part of treatment processes for psychiatric disorders. Examples of important concepts and techniques of dramatherapy will be discussed. The field of psychodrama, as a different entity to dramatherapy, will be considered and significant differences and similarities between psychodrama and dramatherapy will be outlined. Finally, an example of the use of dramatherapy in treating women who suffered from the traumatic experiences of domestic violence will be examined and conclusions will be drawn on the effectiveness of drama as therapy.

DRAMATHERAPY

"Drama, by its very nature induces empathy and perspective"[2]

Dramatherapy utilises aspects of dramatic processes to help people identify problematic issues in their lives in order to explore alternative ways of dealing with them. Dramatherapy has been applied in many contexts; such as in the treatment of children, adolescents, addiction, eating disorders, post-traumatic stress disorder, personality disorders and victims of sexual abuse.[3] It can be done in a group setting or individually and is always under the guidance of a facilitator or dramatherapist. Story telling, story making, role-playing, role reversal, improvisation, narrative, imagery, props, masks and so on are used as stimulation for dramatisation.[3] Jones explains in his book "Drama as Therapy", that the underlying theory of dramatherapy is that drama and theatre are more than imitations of life and are essentially ways for people to actively participate in the world.[4]

While drama and its potential healing powers have been recognised for many years, dramatherapy did not emerge as a specific professional discipline until the 1930s, and it was shaped and formed to the dramatherapy we see today by influential leaders such as Peter Slade, Billy Lindkvist and Sue Jennings in the United Kingdoms.[4 (p 82-83)] Dramatherapy emphasises creativity and spontaneity, which allows a participant to go on a journey in rediscovering their physical and emotional being. It is meaningful in many ways as the participants' life experiences are given validity by dramatic reenactments and the witnessing of these by others. It is important for the participants to feel that they have been heard and are empathised with and responded to by other group members.

Within the realm of dramatherapy, several dramatic processes are focused on to ensure the participants reach a state of wellbeing. Jones explains that through dramatic projection, where a participant's inner personal conflicts are externalised through the use of theatrical techniques such as enactments, change occurs through the creation of new perspectives, as the inner emotional states are played out onto the outer world.[4 (p 100-102)] On the other hand, distancing is important in two different ways. Aesthetic distancing (through the use of role-playing or acting out fantasies in a metaphorical or symbolic way) is useful in closed situations, as a way for participants to explore sensitive issues that may have been difficult for them to discuss.[5] It does so by offering the safety net of exploring the problem in the context of a story. The other aspect of distancing is the idea that it aids reflection. Unlike in real drama, an actor in dramatherapy does not allow him or herself to be completely transformed into another character.[4 (p 104)] They remain an actor that is 'acting', so that they are able to identify and reflect on the role that they are playing.

Jones describes in his book the importance of embodiment in dramatherapy, or ways in which an individual relates to their body through dramatic processes.[4 (p 112-115)] The way that the body communicates consciously and unconsciously could raise important issues for the individual and their dramatherapist to work on. For example, Jones explained that one particular woman in his group chose to enact someone who was severely debilitated and constantly fell backwards.[4 (p 163)] During the reflection, she became distressed as she realised that the character she played out had many similar bodily aspects as her mother. She noticed how familiar it felt to have her mother present inside her body. The woman was able to then conclude that she must own her body more thoroughly without the influence of her mother. This physicalised way of knowing and being marks a crucial difference between the dramatic representation of an issue in dramatherapy and the verbal description of a participant's problem in psychotherapy.

The relationship between fantasy and reality is a recurrent theme in dramatherapy. This is based on the paradox "what is fictional is also real", where real events and emotions are occurring on a fictional stage.[4 (p 10)] That is, there is an intimate connection between life and drama. Participants need to bring their real life experiences into dramatherapy and the dramatic

experiences should be taken out of their sessions so that they can utilize what they have learned in their lives outside. In this way, Jones explains that dramatherapy is "a form of theatre as living rather than theatre as an escape from life".[4 (p 11)] Finally, therapeutic transformation is one of the most vital concepts of dramatherapy, as the participants' perception of their problems are changed by the dramatic experiences encountered and the relationships formed with the dramatherapist and other group members.[4 (p 11-12)]

PSYCHODRAMA

"The body remembers what the mind forgets"[6]

The word psychodrama is derived from the words "psyche" (soul/spirit) and "drama" (action) thus implying the process of utilizing actions to present the soul. Psychodrama was developed by Jacob Levy Moreno in the early 1920s and the first professional psychodrama society was founded in 1942.[3] In many ways, psychodrama employs the same theories and basic concepts as dramatherapy. In psychodrama, the main protagonist is the participant whose concerns are to be dealt with in that particular session. The protagonist would enact scenes from the past, inner conflicts, fantasies, dreams and so on, much like in dramatherapy. Other roles in the situation are filled in by other members or inanimate objects.

Bradshaw Tauvon, in "The Handbook of Psychodrama",[7 (p 33)] gives a detailed description of the important principles emphasised in psychodrama. One example of these principles is the idea of tele. Tele is a way of measuring two-way empathetic relationships between people. The concept of relationship is important especially in the context of "inter-psyche" where something experienced jointly by two or more people (for example, families or friends) must be reenacted jointly to achieve the same emotions.[7 (p 38)] This illustrates the importance of an auxiliary ego (another member of the group who plays a role that represents a significant other in the life of the protagonist) and the network of relationships that are necessary for the success of the therapy.[6 (p 7), 7 (p38)] Moreno believed that the existence of 'roles' is of great importance to a person's psychosocial wellbeing.[8 (p 286)] The way in which a person takes on and perceives a role will influence others. As in the example where the way a mother brings up her daughter will alter the way the daughter partakes in parenting later on in life. Roles are interactive and it was suggested the more roles one had in the society (for example, that of a son, a father, a boss, a friend) the better the quality of life due to the increased relationships inherent within these roles.[8 (p 266)] Psychodrama focuses on this idea and aims to extend, create or modify roles and reassess a person's perception of these new and old roles.

In an article comparing psychodrama to dramatherapy, Kedem-Tahar and Kellermann suggested that there is more cognitive integration in psychodrama than dramatherapy.[3] For example, psychodrama focuses on the meaning of an expressed enactment, connecting experiences and awareness. It is often direct and confrontational in dealing with the protagonist's issues. Dramatherapy, on the other hand, allows for expressions to have value in themselves, while the particular experiences are not always dealt with. Participants in dramatherapy are able to manage their own issues in a much more subtle and indirect fashion. Psychodrama, as a therapy, is more theoretically based and the sessions are much more structured. In dramatherapy, however, spontaneity is encouraged and each session has a degree of flexibility incorporated. An interesting point is that psychodrama focuses on the protagonist's emotional involvement in dealing with problematic areas of their lives while dramatherapy allows for dramatic distancing of emotions.[3] As such, one can conclude that the effectiveness of psychodrama depends on a degree of a person's intellectual ability and emotional stability. On the contrary, dramatherapy is capable of benefiting participants of any levels of cognitive and behavioural functioning. Thus psychodrama could be more effective in treating alcoholics or addicts with confrontational methods of questioning. Conversely, dramatherapy is especially useful for children, adolescents, disabled and handicapped individuals. In many incidences, dramatherapy techniques are used as warm up exercises for psychodrama and psychodrama as a follow-up for dramatherapy as more personal issues are investigated.[3]

DANCE/MOVEMENT THERAPY

"If you can dance in your heart, you can dance"[9]

Dance and movement therapy is another form of arts therapy, which provides a "primary vehicle for non-verbal communication". Marian Chace, in the 1940s, was one of the pioneering figures in the field of dance and movement therapy.[10] She danced waltzes with psychiatric patients in the back wards of a hospital and soon found the therapeutic effects that dance had on the patients. Dance and movement therapy focuses on the mind/body connection and allows movement to become a medium through which the mind could be healed.[10] It is especially useful in patients who cannot use words to express their feelings. In dance/movement therapy, techniques such as mirroring, reflection and amplification are adopted and the space and objects around the participants are paid specific attention to.[9] Wethered explains in her book "Drama and Movement in Therapy", that in movement therapy, space is used as a "progression towards greater awareness" and objects to emphasise external reality.[11 (p 36-40)]

Anne Wennerstrand, a dance therapist in the United States explains: "dance/movement therapy can be used to bring body images closer to reality in eating disorders, to support remembrance and socialization in the elderly as well as to increase functioning in developing disorders."[10] Dance and movement therapy, like both dramatherapy and psychodrama, requires the participant to be fully engaged with the therapist and form relationships with one another using the movements as a means of communication. At the Maplewood nursing home of Cheshire County in Westmoreland, New Hampshire, dance and movement therapy was used as an adjunct therapy that complemented traditional therapy.[9] It was noticed that dance and movement therapy can promote meaningful interactions among participants, increase self esteem, support self-regulation and alleviated effects of depression. At this nursing home, participation in dance and movement therapy was encouraged for everyone, whether they were physically, sensory or mentally disabled, demented or handicapped. The philosophy of dance and movement therapy is that "if you can dance in your heart, you can dance".[9] Thus even the smallest movement was encouraged, as it still remained a significant form of self-expression.

DRAMATHERAPY AND VICTIMS OF DOMESTIC VIOLENCE

In the article "Voice of Pride: Drama Therapy with Incarcerated Women" by Leeder and Wimmer,[2] examples were given where dramatherapy assisted women who had suffered domestic violence in coming to terms with the past and bringing new hope for the future. The women of this article were residents of Project Pride, a facility built for the treatment of alcohol and drug disorders in West Oakland, California. These women were either serving the last portion of their sentences of their imprisonment at the California Department of Corrections or were referred to the facility from the community or sentenced to residential treatment as an alternative to county jail. The goal of the dramatherapy programme was to help these women build positive new relationships with themselves, develop a compassionate understanding of other women that were going through the same issues and become valuable contributors to the greater community. The women at Project Pride were diverse in their age, ethnicity, socio-economic and cultural backgrounds, education and literacy levels, emotional functioning and life experiences. Many of them suffered from past experiences of domestic violence, sexual abuse and many have been diagnosed with symptoms of depression, anxiety, post-traumatic disorders, eating disorders, psychosis and learning disabilities.

Dramatherapy was aimed at educating a group of these women about domestic violence and its implications and to help them make sense of their past and choose new paths for their future. Many of the important concepts of dramatherapy discussed previously were used in these sessions to help these women build self-esteem and trust. Enactments of "typical" abusive situations (for example, a stereotypical drunken abusive boyfriend) provided the aesthetic distancing required for the women to analyse scenarios that may be too difficult to discuss.

A concept of "Cycle of Violence" developed by Dr. Lenore Walker in 1979 was adapted by the dramatherapists and used in this group as an attempt to educate the women about domestic violence.[2] Phases of the cycle of violence: The Honeymoon Phase, The Tension Building Phase and finally The Violence Phase were acted out and were considered more powerful than simply discussing about domestic violence. The women were able to identify with the acted scenes and relate them to their own experiences. The fear of disclosure and judgment had initially inhibited the women from sharing personal stories. Techniques that helped overcome this included exercises such as "Step Into The Centre If…" which helped these women lower their guard and allow others to partake in their personal matters. This exercise would initiate with benign statements from the dramatherapist telling the women (who are standing in a circle) to step into the centre if the statements applied to them. Examples may be "step into the centre if you were raised by your mother…graduated from high school…" The statements would become progressively more personal and the women were encouraged to call out their own statements such as "step into the centre if you have ever been hit…if you have ever been raped…if you still love your abuser…" Guidelines were laid out at the beginning of the exercise and everyone could decide how much they wanted to disclose. Exercises like this proved to the women that they were not the only ones with these horrifying experiences. The universality of their pasts gave them a sense of relief and understanding, thus the fear of judgment from other participants was soon overcome by empathy and support from one another. They realised that they were not to blame for their victimisation and that being a victim itself was not a crime.

Another exercise was that of imaginary phone calls, where the women were able to pick up a disconnected cell phone and speak to an imaginary recipient. A woman pretended to call her abuser and was able to say the things she had always wanted to say to him, as she never had the chance to do that. Through this activity, a second chance was given to this woman and she was able to reclaim some personal power that was lost to her many years ago. Completing this exercise allowed her to release the tension, anger and regret she had carried with her throughout the years. This process had a powerful impact on the women because they could speak out what they wanted to say in a safe and supportive environment where their emotions were validated and acknowledged by their fellow group members.

Finally, dramatic reenactments and role reversal were useful for the participants to gain new valuable perspective. On one occasion, a woman cast another group member to be her 15-year-old-self while she spoke to 'her teenage self' directly explaining that she was not to blame for being stuck in an abusive situation and that she forgave her for the choices she had made. The roles were reversed and the other group member repeated what the woman had said directly to her as if she was back as her younger self. This technique of role reversal was important here as the woman was able to receive her own words of forgiveness.

In an unconditional atmosphere, dramatherapy helped these victims of domestic violence to regain their self-confidence through performance. They were able to build trust and teamwork: things that were missing in these women's lives, which played an important part in their healing process. They were given the chance to participate in a playful and spontaneous environment, which stimulated the stepping forth of their otherwise dormant innate creativity. Participating in dramatherapy allowed these women to see themselves in a different light independent of the stigma associated with being in prison. Through performances in the wider community, these women were benefited from the public's acknowledgement and recognition of how courageous they were in overcoming their troubled past. One participant of the domestic violence group stated that: "[the domestic violence group] made me feel stronger about myself…to not be afraid of this man and to stand up for myself." This demonstrates the positive therapeutic effects dramatherapy had and how it helped these women in finding their voices in the society.

CONCLUSION

Dramatherapy and dance/movement therapy, along with the other modalities of art therapies, have proven their value in the treatment of many psychiatric disorders over the years. Studies have been done in looking at the effect of art therapies in alleviating symptoms of detrimental disorders such as schizophrenia and post-traumatic stress disorders. Although it is difficult to quantify the benefits these therapies might have on the patients, it has been shown in most cases that arts therapies are generally helpful as part of treatments for psychiatric disorders. In the case of the group of women who were victims of domestic violence, dramatherapy was used to honour what they had to say. They were able to gain a different outlook of their futures and most importantly, they were recognised as more than women with traumatic histories, but talented women who had a lot to offer to the greater community. Dramatherapy has certainly changed lives and this can be best summed up by another woman in the domestic violence group: "…you get to express it, however, whatever, you want to say. No judging. That's what was really amazing for me, that your drama is your therapy."[2]

REFERENCES

1. Crawford MJ, Patterson S.
Arts Therapies for People with Schizophrenia: An Emerging Evidence Base.
Evidence Based Mental Health 2007,10:69-70.

2. Leeder A, Wimmer C.
Voices of Pride: Drama Therapy with Incarcerated Women.
Women & Therapy 2006,29(3):195-213.

3. Kedem-Tahar E, Kellermann PF.
Psychodrama and Drama Therapy: A Comparison.
The Arts in Psychotherapy 1996,23(1):27-36.

4. Jones P.
Drama as Therapy: Theatre as Living.
London and New York: Routledge; 1996.

5. Ruddy R, Dent-Brown K.
Drama therapy for schizophrenia or schizophrenia-like illnesses (Review).
The Cochrane Collaboration 2008;3.

6. Karp M.
An Introduction to Psychodrama. In Karp M, Holmes P, Bradshaw Tauvon K. (eds.). **The Handbook of Psychodrama.**
East Sussex and New York: Routledge; 1998:3-13.

7. Bradshaw Tauvon K.
Principles of Psychodrama. In Karp M, Holmes P, Bradshaw Tauvon K. (eds.) **The Handbook of Psychodrama.**
East Sussex and New York: Routledge; 1998:29-45.

8. Langley D.
The Relationship Between Psychodrama and Dramatherapy. In Karp M, Holmes P, Bradshaw Tauvon K. (eds.). **The Handbook of Psychodrama.**
East Sussex and New York: Routledge; 1998:263-274.

9. Hoban S.
Motion and Emotion: The Dance/Movement Therapy Experience.
Nursing Homes 2000, 11:33-34.

10. Wennerstrand AL.
Dance/Movement Therapy: Learning to use dance to help others.
Dance Magazing 2008, 12:86-88.

11. Wethered, A. G.
Drama and Movement Therapy.
London: Macdonald and Evans Ltd; 1973.

Why did Western countries attempt to impose their medicine on indigenous societies in the nineteenth century?

What were the results?

Ruth Bollen
Fourth Year Medical Student
Auckland School of Medicine
University of Auckland

Ruth is a fourth year medical student at the Auckland School of Medicine, University of Auckland. She completed this essay as part of the MBChB 311 Medical Humanities : History paper, while in third year.

Western countries would not have attempted to impose their medicine on indigenous societies in the nineteenth century without a strong, underlying belief in the superiority of the European race. Racial superiority was translated into cultural superiority, and Western medicine was considered to be a key part of this superior culture. The attempt to impose Western medicine can be viewed in a number of ways: as an attempt to establish the dominance of imperial powers, as trying to bring the benefits of civilisation to indigenous peoples, and/or as an attempt to protect Western interests from the threat of tropical disease. The results of this attempt at imposing Western medicine varied between countries, but were overall a disappointment to imperial powers. Indigenous people viewed Western medicine with suspicion, and it did not result in a radical improvement to the health of the masses, although it did have some limited localised benefits. Developments in the field of 'tropical medicine' brought benefits to medical science, but also contributed to the gaping health inequalities between developed and developing countries which persist to the present day. This essay will attempt to elaborate further on these points.

Western countries legitimised the attempted imposition of their medicine on indigenous societies on the grounds of racial dominance. Edward Said, a cultural theorist, notes the nineteenth century Western belief in "… them/us, inferior/superior, upper/lower, hence also ruler/ruled."[1 (p XIV)] The evolutionary ideas of Charles Darwin contributed to Western belief in a racial hierarchy, as Europeans felt themselves to be more evolved and thus superior to coloured races.[1 (p 6)] Non-Europeans were widely believed to be both biologically and culturally inferior.[2 (p 66)] Colonial doctors supported these views, depicting indigenous people as "dirty, ignorant and superstitious."[3 (p 15)] They believed different patterns of indigenous mortality and differences in anatomy such as brain size reflected the degree of evolution of the race.[4 (p 254)] This gave further credence to Western ideas of racial difference. The perceived inferiority of indigenous races explains why Western countries thought it was acceptable to impose their practices onto other nations.

Medicine was thought to be a powerful "tool of empire".[5 (p x)] It could be potentially effective at a number of levels. Firstly, it could be used to convince the indigenous population of the benevolence of the colonising power.[6 (p 16)] Colonists were outnumbered by the native population, and largely lacked the military presence to rule by force. Western medicine was one way to win over the population, convincing them that the benefits of foreign rule outweighed the more negative aspects. General Compte de la Rue in Algeria in 1836 was quoted as saying: "You can do much more for the Arabs with medicine ... than you ever could with cannons and guns".[7 (p 47)] Medicine provided a point of contact for colonists with the indigenous population. It was a way for colonists to get to know the natives, whilst hopefully establishing respect, and maybe trust. Western medicine helped to legitimise colonisation in the eyes of the imperial powers, who regarded health care as a prime example of the benefits indigenous peoples experienced through the presence of Europeans. Furthermore, medicine was a way of gaining further control over the population through reducing the power of local healers - often highly influential members of indigenous society. Control was taken from rebellious indigenous healers and given to Western doctors with allegiance to the empire.[8 (p 41)] Whilst the motives of individual Western doctors may have been more humanitarian, for colonial powers medicine was a way of consolidating their authority over a subject people.

Western powers believed they were bringing the gift of European civilisation to the primitive world. Western medicine was a "civilising vector" with power to "transform mentalities and traditions by importing a new way of life."[9 (p104)] An attempt was made to impose Western medicine on indigenous peoples in an effort to replace the perceived barbarity of their practices with progressive civilisation. Medicine was one of the aspects of 'civilised' culture that made the most rapid impression on indigenous peoples – a hospital could be set up and save lives much quicker than a new system of law or education would bring observable benefits.[7 (p 44)] Imposing Western medicine was a crucial part in replacing native traditions with the values of the imperial power.[10 (p 1)] Traditional healers were seen to stand in the way of progress towards civilisation.[10 (p ix)] Where the aim was assimilation of the indigenous people, getting them to adopt Western medicine was seen to be a key step in the 'civilising' process.

The late nineteenth century saw many advances in scientific medicine, further encouraging Western powers to attempt to impose their 'superior' medicine on indigenous populations. Early nineteenth century Western medicine had much in common with traditional indigenous healing practices, and recognised its inability to effectively treat diseases such as cholera.[11 (p 66)] This meant it was prepared to interact with and learn from

local healers. However, following Pasteur's discoveries and the development of germ theory, Western medicine grew more and more confident in its own abilities, and correspondingly more willing to dismiss indigenous medicine as nothing more than "charms, amulets and incarnations".[11 (p 69)] The harm native healers could inflict through misguided rituals appeared obvious to colonists. The attempted imposition of Western medicine and corresponding exclusion of other practices was justified on medicine's rational, progressive, and scientific basis compared to the "dogmatic, speculative and ineffective" other systems.[4 (p 256)] It was believed that the dangerous diseases in the colonies could only be brought under control through Western medicine and its unique and absolute truth.[6 (p 3)]

The attempt to impose Western medicine on indigenous peoples was certainly not motivated purely by a desire to improve native health. Colonists also faced a huge burden of mortality due to tropical diseases. As an example, in the first half of the nineteenth century in India only 6% of deaths occurring in the occupying British Army were as a result of conflict; the rest being due to fevers, dysentery, liver diseases and cholera.[12 (p 39)] Earlier in the colonial period, doctors generally focussed on treating the European population. It was soon recognised that Europeans could not be protected from disease unless attention was paid to the surrounding native population.[6 (p 14)] Science based knowledge of the disease vector that had been gained through the development of bacteriology was still often trumped by racial prejudice. Indigenous people were seen "not simply as mediators of disease, but sometimes as sources of disease in themselves."[13 (p 289)] Indigenous hygiene practices were deemed to be ineffective at cleansing their bodies of disease, lending a focus to 'civilising' efforts. Growing recognition that the apparent immunity of indigenous people to many endemic diseases was due not to their failure to be infected, but rather to the frequent presence of sub-clinical or silently carried disease fuelled Western desire to clean up the 'dirty' natives.[14] Protection of the Western world from indigenous diseases was also a motivating factor. With the increase in global travel and trade, diseases such as cholera from India threatened Europe.[6 (p 14)] Controlling epidemics in the colonies was seen to be of global importance.

Economic factors were also part of the reason why Western societies attempted to impose their medicine on indigenous peoples. Colonising powers required indigenous workers for mines, plantations and agricultural production. Unhealthy workers resulted in decreased productivity, and also posed a health risk to white employees. Medical activity tended to focus on those diseases which impacted most directly upon the ambitions of the imperial power, for example in East Africa malaria and sleeping sickness were identified.[15 (p 8)] In Indochina, indigenous people were used as cheap labour for building roads and railways. The economic viability of these construction projects was threatened by malaria. Consequently, workers were also used as guinea-pigs for Western medical research into the causes of the disease.[9 (p 112)] In order to maximally exploit the wealth of occupied nations, it was crucial to control the spread of illness. This was a motivating factor for Western powers attempting to control disease in indigenous populations.

The discussion of why an endeavour was made to impose Western medicine on indigenous societies would not be complete without mention of the role of the medical missionary. Missionary doctors were often viewed by indigenous people as being quite different to government doctors.[13 (p 295)] This was because the missionary tended to use Western medicine as a tool to assist in evangelism, rather than as a means of domination and empire expansion. Missionaries aimed to serve by bringing the benefits of Western scientific practice to native peoples, building trust and relationships, and spreading the gospel.[4 (p 254)] In Africa, up until the 1920s the majority of Western-style medical care was delivered to indigenous people by missionaries.[1 (p 12)] Missionaries thus made a large contribution to the spread of Western medicine in the colonies, but were motivated to do so more by the gospel than the empire.

By and large, the attempted imposition of Western medicine on indigenous peoples was less successful than had been hoped. Cultural understandings of sickness and medicine were frequently vastly different from the Western view. With the advent of germ theory, Western medicine prided itself on its rational and scientific explanations for disease. When an individual got sick, they went first to the doctor who issued a diagnosis based on physiological observations, and then prescribed a specific treatment for the disease. Indigenous understandings of disease attributed sickness to a much wider range of causes including curses and the will of the gods. Illness required a more communal response, and because causes were not always presumed to be solely medical, visiting the doctor was not necessarily a first reaction. The idea that the progression of symptoms might offer a key to diagnosis was not always recognised, and it was routinely expected that a single given treatment (if it was truly a good medicine), would be able to cure the various ailments of the entire village.[9 (p 106)] Western doctors struggled to get locals to come to hospitals rather than first try out native remedies. Indigenous people found the hospital structures, procedures and expectations completely alien to their cultural norms and thus did not utilise them.[9 (p 105)]

Western medicine in the early nineteenth century was limited in its capacity to cure. In many respects it was no more successful than local remedies. This meant that the benefits of conversion to Western medicine were not always obvious to native populations. Not only was Western medicine not seen to be of benefit, it was sometimes an area of conflict. An example of this was resistance to public health attempts to control the spread of smallpox and cholera. In India, vaccination of indigenous people against smallpox was necessary in order to prevent epidemics and thus protect European settlers. Indigenous medicine already practiced variolation, and the attempt to switch to vaccination met with resistance as it conflicted with religious views attached to the disease.[11 (p 85)] Attempts to control cholera outbreaks through restricting pilgrimages also caused tension. Such attempts as these were seen by the subject people as expressions of imperial domination and persecution, rather than as health measures.[4 (p 256)] Historian Megan Vaughan concludes that, in Africa, there simply were not enough Western doctors for indigenous people to see them as either saviours or oppressors.[13 (p 288)] The small number of health workers relative to the populations of colonised countries, combined with the lack of infrastructure and resources, in the face of wide cultural gulfs and huge health needs, meant Western medicine did not make much of an impact.

Despite the sometimes lofty intentions of colonial powers, by the end of the nineteenth century indigenous health overall had not improved. In India, public health measures were limited by a combination of insufficient resources and unwillingness by colonial leadership to shoulder responsibility. The 'success' or otherwise of Western medicine in India is reflected in the statistics showing that there were still 800 000 deaths due to cholera in 1900.[11 (p 86)] In Algeria, indigenous people accepted certain curative measures, but preventative measures such as smallpox vaccination were not taken up.[9 (p 107)] Overall, medical interventions tended to focus on urban areas and the health of workers essential to the economy, whilst neglecting rural areas and the health of women and children. Interventions tended toward a reactive form of medicine which responded to crisis (e.g. epidemics and acute illness) rather than concentrating on preventative medicine and endemic disease.[6 (p 15)] Some historians argue that not only did tropical medicine (the term by which Western medicine applied to the colonies came to be known) fail both in its attempts to make the colonies more suitable for European settlement and to improve the health of the native population, but it also "…reconciled professional health workers to providing a lamentable and inadequate service".[16 (p 134)] For that reason, overall indigenous health was not vastly improved, with inequalities established and persisting throughout the following century.

The results of the attempted imposition of Western medicine on indigenous medical practices varied between countries. Contrary to expectations, native healing systems did not disappear but rather continued to evolve, adapting elements of Western practice and often giving them new meanings.[13 (p 290)] In Xhosaland "the great contest between science and superstition…. never occurred", and instead in the early nineteenth century a "dynamic, therapeutic pluralism" occurred with Western and native practices learning from each other.[8 (p 42)] This interchange lessened with the

arrival of germ theory after which native practices were dismissed as being primitive. Additionally, as colonists' power over the country increased, they grew more confident in their own practices and needed to collaborate less with indigenous medicine. In some countries an effort was made to use indigenous people to deliver Western-style medicine. An example of this was in Algeria, however racist attitudes limited the opportunities available for indigenous Western-trained doctors and the attempt was unsuccessful.[7 (p 3)]

The field of tropical medicine developed as a direct result of Western medicine being imposed on the colonies. Western powers came to recognise that existing medical knowledge failed to provide answers to the specific health needs of inhabitants in the colonies in Africa, India, South-East Asia, and Latin America.[4 (p 258)] The London School of Tropical Medicine was established in 1899 in an attempt to better understand and treat the diseases encountered in tropical regions. The diseases that were focussed on tended to be the predominantly parasitic infections which were impacting on the growth of the empire – malaria, yellow fever and sleeping sickness.[4 (p 258)] Tropical medicine was driven by the interests of imperial powers. It was focussed on discovering the specific vectors responsible for disease, hence social factors influencing the disease were often neglected. The development and delivery of this peculiar form of Western medicine can be held at least partially responsible for the continued poor health outcomes in the developing world today. The reliance of health care in colonised nations upon Western resources and ideas has contributed to the continued failure of Western medicine to engage with and meet the needs of indigenous peoples worldwide.

Finally, the attempted imposition of Western medicine on indigenous people did have some beneficial results. Hospitals established during the colonial period in many cases still exist today. Certainly, many individual indigenous lives have been saved by the presence of Western medicine. Christopher Booth argues that colonial medicine created '...order out of the chaos…. [at] the corners of an Empire upon which the sun was said never to set.'[17 (p 146)] The exact impact varied between and within countries, with some groups within societies adopting Western practices widely, whilst others remained untouched by, rejected or took a selective approach to Western medicine. Variation existed between different geographic locations, genders and social classes.[3 (p 33)]

In summary, Western medicine was just one of many aspects of European culture which imperial powers attempted to impose on indigenous societies during the nineteenth century colonial period. It had a role in first asserting the dominance of the colonists, and then once their authority was established (and depending upon the individual country), helping either to assimilate indigenous people into Western culture, or at least begin to 'civilise' them. It also allowed European settlers to establish a permanent presence in the colonies, with spill-over benefits to native health in some regions. Western nations believed they had the right to impose their medicine based on a combination of their own racial superiority, and the 'scientific' basis of their medicine. Despite some benefits for select groups of indigenous peoples, the realities of limited resources, racist attitudes, cultural gulfs and indigenous suspicion meant that the portrayal of Western medicine as an effective imperial tool, and/or as a saviour of indigenous health was far from reality. Western countries failed to translate their medicine into a form which met the wider needs of indigenous peoples, contributing to persisting poor indigenous health in the post-colonial era.

REFERENCES

1. Manderson L.
Sickness and the State – Health and Illness in Colonial Malaya 1870-1940.
New York: Cambridge University Press; 1996.

2. Nicolson M.
Medicine and Racial Politics: Changing Images of the New Zealand Maori in the Nineteenth Century. In: Arnold D, editor. **Imperial Medicine and Indigenous Societies.**
New York: Manchester University Press; 1988.

3. Lal M.
'The Ignorance of Women is the House of Illness' – Gender, Nationalism, and Health Reform in Colonial North India. In: Andrews B, Sutphen MP, editors. **Medicine and Colonial Identity** [e-book].
London; New York: Routledge; 2003 [cited 2010 May 18]. Available from: NetLibrary.

4. Worboys M.
The Spread of Western Medicine. In: Loudon I, editor. **Western Medicine: an Illustrated History.**
Oxford: Oxford University Press; 1997.

5. Lewis M, MacLeod R, editors.
Disease, Medicine and Empire – Perspectives on Western Medicine and the Experience of European Expansion.
London and New York: Routledge; 1988.

6. Arnold D.
Introduction: Disease, Medicine and Empire. In: Arnold D, editor. **Imperial Medicine and Indigenous Societies.**
New York: Manchester University Press; 1988.

7. Gallois W.
The Administration of Sickness – Medicine and Ethics in nineteenth-century Algeria.
New York: Palgrave Macmillan; 2008.

8. Gordon D.
A Sword of Empire? Medicine and Colonialism at King Williams Town Xhosaland 1856-91. In: Andrews B, Sutphen MP, editors. **Medicine and Colonial Identity** [e-book].
London; New York: Routledge; 2003 [cited 2010 May 18]. Available from: NetLibrary.

9. Marcovich A.
French Colonial Medicine and Colonial Rule: Algeria and Indochina. In: Lewis M, MacLeod R, editors. **Disease, Medicine and Empire – Perspectives on Western Medicine and the Experience of European Expansion.**
London; New York: Routledge; 1988.

10. Trennert RA.
White Man's Medicine – Government Doctors and the Navajo 1863-1955.
Albuquerque: University of New Mexico Press; 1998.

11. Arnold D.
Science, Technology and Medicine in Colonial India [internet].
New York: Cambridge University Press; 2000 [cited May 19]. Available from: ebrary.

12. Ramasubban R.
Imperial Health in British India, 1857-1900. In: Lewis M, MacLeod R, editors. **Disease, Medicine and Empire – Perspectives on Western Medicine and the Experience of European Expansion.**
London; New York: Routledge; 1988.

13. Vaughan M.
'Healing and Curing: Issues in the Social History and Anthropology of Medicine in Africa'.
Soc Hist Med [serial on the internet]. 1994 [cited 2010 May 19]; 7(2). Available from: http://shm.oxfordjournals.org.ezproxy.auckland.ac.nz/cgi/reprint/7/2/283

14. Anderson W.
Immunities of Empire – Race, Disease and the New Tropical Medicine, 1900- 1920.
Bull Hist Med [serial on the internet]. 1996 [cited 2010 May 30]; 70(1). Available at: http://muse.jhu.edu.ezproxy.auckland.ac.nz/journals/bulletin_of_the_history_of_medicine/v070/70.1anderson02.html

15. MacLeod R.
Introduction. In: Lewis M, MacLeod R, editors. **Disease, Medicine and Empire – Perspectives on Western Medicine and the Experience of European Expansion.**
London; New York: Routledge; 1988.

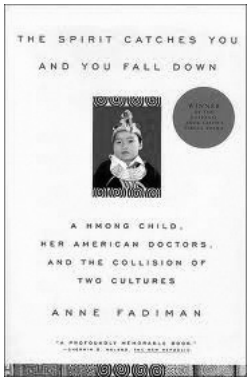
16. Denoon D.
Temperate Medicine and Settler Capitalism: on the Reception of Western Medical Ideas. In: Lewis M, MacLeod R, editors. **Disease, Medicine and Empire – Perspectives on Western Medicine and the Experience of European Expansion.**
London; New York: Routledge; 1988.

17. Booth CC.
The Origins of Colonial Medicine. In: Bryder L, Dow DA, editors. **New Countries and Old Medicine – Proceedings of an International Conference on the History of Medicine and Health.**
Auckland: Pyramid Press; 1995.

BOOK REVIEW

Camelia Soo
Fourth Year Medical Student
Auckland School of Medicine
University of Auckland

Camelia Soo is a fourth year medical student at the University of Auckland. She enjoys cross cultural literature and has Dr. Alison McFarlane to thank for introducing this book to her.



The Spirit Catches You and You Fall Down
Anne Fadiman, 1998
Publisher: Farrar, Straus and Girous

I've been sitting here for the past half-an-hour, pondering on what title to give this review. This isn't like me. Words tend to come easily and a play on words is what I love to do. After numerous attempts and many 'Backspaces', it strikes me. The book's title is special in its own right. *The Spirit Catches You and You Fall Down* is not your average book. Calls to make it required reading for students have been made; and being the winner of the National Book Critics Circle Award means this book is really something. So what is the fuss all about? And what can we, as current or future health practitioners, learn from it?

The book introduces three main antagonists: the American culture and health system in particular, the Hmong immigrants from Laos and a young sick Hmong girl, Lia Lee. In between alternating chapters Fadiman writes eloquently and without bias about each, capturing the intensity of how cross cultural misunderstanding can go so wrong, with the harrowing tale of Lia Lee at the centre of the cultural conflict.

At one end of this medical saga we have the American doctors, practicing in a health system not unlike our own. Wearing white coats, intelligent, overworked and ordering every test possible to reach the most likely diagnosis, they never seem to falter in their care of the sick. At the other end of the spectrum we have the Hmong people of America; strong- willed, hardworking, polite, loyal and never really fitting in with the Americans. In the centre of it all is Lia Lee, who becomes the prime focus of the two cultures when she battles epilepsy or as it is widely known by the Hmongs - the disease which the 'spirit catches you and you fall down'.

In the American's eyes, the Hmongs are perhaps the worst kind of immigrants - primitive, rude, not compliant with medication, growing herbs in carpark lots and slaughtering animals (much to the horror of animal advocates) as part of their sacrificial rituals. In the Hmongs' eyes, American doctors are bad - taking blood and depleting a person of their finite amount of blood, forcing medication down to make patients sicker, allowing student doctors to practice, doing lumbar punctures which suck the life or soul out and sending patients to specialists because doctors want a vacation.

If you're looking for cultural differences, challenges, barriers, clashes and conflict, this book is a must read. At the core of the problem are the uncontrollable fits that keep befalling Lia. The doctors attribute it to her parent's non-compliance with antiepileptic medication, while her parents attribute it to the doctor's lack of knowledge or healing powers; how can the Americans possibly know anything when who they trust are their own healers, txiv neebs? Something exceptionally hard for the Hmongs to come to grips with is how different the doctors and healers are. Txiv neebs are polite and never ask questions, doctors pry too much, often asking sexual and personal questions; txiv neebs give immediate diagnosis and remedies, doctors run tests and never reach a sound conclusion; txiv neebs never undress the patients, doctors lift up breasts to feel the apex beat…and the differences go on.

This book is more than cultural clashes and medical mystification though. Readers are given an enriching insight into the Hmong culture. Fadiman covers the culture almost perfectly, beginning with the birth, ways of life, traditional healing and touches on death. She traces the Hmong's precarious journey, by foot, from the mountains in Laos, crossing the Mekong River, scaling heights, covering enemy terrains, crossing borders before boarding their first ever plane into America. In America, she tells of how perplexing it was for them to fit in. Many Hmong people wore pyjamas in the streets, poured buckets of water over elements to extinguish the heat, washed clothes in public pools, cooked with motor oil and shot skunks, sparrows and bald eagles.

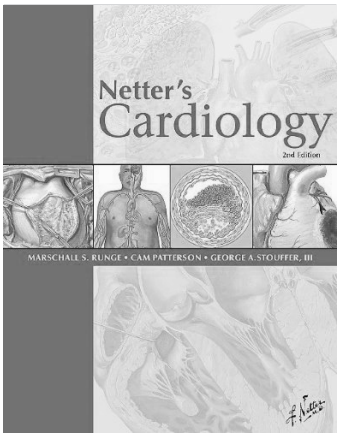
What does this book mean to us? The most important thing for me is how cultural barriers such as language, beliefs, and attitudes can be so detrimental in the care and management of patients. Sometimes even with the use of interpreters, meaning can be lost and an adequate history cannot be obtained. It may seem like health practitioners are at the losing end (not getting full histories and being frustrated over it), but this happens both ways. We have to also understand that the cultural barriers and challenges pose a difficulty for patients in understanding what their disease is and what each treatment is for. This was very evident in Lia's case. In medicine, we assume everyone has a similar level of health literacy and explain management plans expecting everyone to comply and their health will improve as a result. But it is these cultural walls that prevent meaning from being translated fully.

The Spirit Catches You and You Fall Down is about cultural collision and tells a poignant tale about the disastrous consequence of cross-cultural misunderstanding. Readers are given a wonderful insight into the Hmong culture - a culture incomprehensible to the Americans, shown by their seemingly bizarre beliefs and attitudes, yet Anne Fadiman has shown us that they are human all the same.

BOOK REVIEW

Zoe Dyer
Third Year Medical Student
Auckland School of Medicine
University of Auckland

Zoe is a third year student at the Auckland School of Medicine. She loves all areas of medicine but has ruled out specialities requiring practical nous or spatial skills. Any reader who can help to recover her left-rear hubcap would be much appreciated.



Netter's Cardiology (2nd edition)
Marschall S. Runge
George Stouffer
Cam Patterson
Publisher: Saunders
NZRRP: $192.30 (Hardcover)

If Barack Obama were a textbook, he would be Netter's Cardiology. This book is comprehensive in scope, communicates complicated ideas with clarity and is more aesthetically pleasing than its predecessors. Like Obama the book is relatively nascent, the first-edition being published in 2004.

Netter's Cardiology appears best suited to clinical students. It is not a beginner's textbook, as readers will require foundation knowledge of cardiac anatomy and physiology. Second-year medical students may require an additional text to cover the basics. Third-year students should find the book easy to follow, but Auckland students may be frustrated by the lack of pathophysiology detail (it isn't helpful for clinical problems).

The major strength of the book is clear descriptions of the clinical presentation, diagnostic steps and treatment options for each disease. Information is organised according to individual diseases like standard internal medicine textbooks. The book also includes sections discussing history taking and examination (although in less detail than Talley and O'Connor), imaging techniques and disease prevention. Common surgical procedures are discussed with the help of (highly simplified) step-by-step diagrams, which may help students navigate the mysteries of the surgical run.

Netter's Cardiology is easy to follow. Information is laid out in a systematic manner, with extensive use of flow diagrams and summary tables to break the flow of text. The writing is lucid, however technical terms are not always defined and there is no glossary; students may need to keep a dictionary or secondary reference handy.

This book has both beauty and brains. Its pages are glossy, its headings are brilliant shades of the rainbow and it is bedecked with beautiful illustrations throughout. For the most part, images are relevant and useful (including depictions of pathological specimens and clinical procedures) but others border on the ridiculous (images of naked patients with pained facial expressions are simply disturbing).

While well suited for students, the book lacks many of the elements that soothe one's mental state during exam time. Few chapters have summaries. Despite the heavy clinical focus there are no practice questions and no case examples.

One hundred and fifty dollars may seem a lot to pay for a textbook focussed on one specialty of medicine. Cheaper cardiology texts for students do exist. You may well be paying extra for a good brand name, pretty pictures and high-quality finish (with hardcover). The degree to which this matters will depend on the individual; if you are a visual learner or find textbooks generally daunting, Netter's may well convince you that 'yes you can' learn cardiology!

ELSEVIER OVERVIEW

Netter's Cardiology, 2nd Edition, by Marschall S. Runge, Cam Patterson, and George Stouffer, uses visually rich Netter artwork to efficiently provide you with a concise overview of cardiovascular anatomy, pathophysiology, diagnosis, and management. You'll rapidly access complete introductions to common issues in cardiology, including annotated references of the most important articles, guidelines, and available evidence. Netter - it's how you know.

New to This Edition

- Utilise annotated references to the most important resources and evidence-based studies.
- Benefit from expanded coverage of cardiovascular imaging including echocardiography, stress testing and nuclear imaging, and CT and MRI.

Key Features

- Efficiently review key details of anatomy, pathophysiology, and clinical presentation with detailed, crystal-clear artwork by Frank H. Netter, MD and other illustrators working in the Netter tradition.
- Apply dependable clinical advice from Marschall S. Runge, MD, PhD, Cam Patterson, MD and George Stouffer, MD and utilize diagnostic and therapeutic algorithms and clinical pathways developed by the many world-renowned chapter contributors.

Companion Products

Netter's Cardiology, Book and Online Access at **www.NetterReference.com**

NZMSJ author guidelines for submissions

All submissions to NZMSJ will be handled through our Electronic Submission System (ESS) at **http://www.otago.ac.nz/nzmsj**

Editorial Office

Email: **nzmsj@otago.ac.nz**

All other correspondence to:
New Zealand Medical Student Journal
c/- Medical Teaching Support Unit
Dunedin School of Medicine
PO Box 913
Dunedin
New Zealand

General Information

The Editors of the *New Zealand Medical Student Journal* aim to support medical student development, be a forum for opinions and discussion, and publish the educational writing of medical students. To this end, the Journal accepts submissions in the form of original research articles, academic review articles, feature articles including case reports and conference reports, book reviews and letters. The Journal commits to rigorous peer review and freedom from commercial influence.

Format Requirements

Use Microsoft Word
Include figures, legends and tables
Save as a word document (*.doc)
Photographs are to be included as separate files

Type of Submission

Original research articles
Academic review articles (<3000 words)
Feature articles (<3000 words)
Case reports (<1500 words)
Book reviews (<500 words)
Letters (<500 words)

Criteria for Submission

Submissions are of interest to medical students
Written approval from research supervisors is required
Author's email address for correspondence is necessary
Short blurbs about authors should be included
Completed article coversheet, available from:
www.otago.ac.nz/nzmsj

Style

The British Medical Journal house style is to be followed.
This is available at:
http://resources.bmj.com/bmj/authors/bmj-house-style
Use the Vancouver referencing style, insert numbers within the text using superscript, do not use brackets around the numbers
Abstracts are required for research articles

Electronic Submission

Access the ESS at:
www.otago.ac.nz/nzmsj
Register as an author
Follow the five step submission system
Upload article and completed article cover sheet

Manual Submission

Email articles and authors' blurb to:
nzmsj@otago.ac.nz
with "Article Submission" in the subject header
Post completed article cover sheet to:
New Zealand Medical Student Journal
c/- Medical Teaching Support Unit
Dunedin School of Medicine
PO Box 913
Dunedin
New Zealand

Process

All submissions will be subedited for spelling, grammar and clarity. They will then be sent for expert reviews. Authors will be required to revise their articles during this process.

Final article selection for publication will be made in conjunction with our academic advisors and editorial board once the review and revision process is completed to a professional publishing standard.

Acceptance of an article into the review process does not constitute a guarantee of publication. It is the intention of the NZMSJ to provide authors with the benefit of external review and revision processes that are standard internationally for published journals. This is in keeping with our educational aim to assist medical students in making the transition from writing for medical school to writing as a graduate.

In keeping with the NZMSJ's ethos of encouraging students to submit articles, we are proud to offer prizes to acknowledge excellent work.

Prizes are awarded under the categories of **Best Academic Submission** and **Best Features Submission**.

We are currently accepting submissions for Issue 15 due for publication in April 2012.

Submissions received before February 19, 2012 will be considered for Issue 15

NZMSJ

New Zealand Medical Student Journal

Te Hautaka o ngaa Akongaa Rongoaa

www.otago.ac.nz/nzmsj