

# NZMSJ

## New Zealand Medical Student Journal

Te Hautaka o ngaa Akongaa Rongoaa

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how conceivable is it?
- + **GLOBAL DISASTERS**  
coping with the aftermath
- + **CUSTOMISED FOETAL GROWTH CHARTS**  
improving the diagnosis of macrosomia



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Disasters can strike at any place, any time, to anybody. If a disaster happened now, would you be ready? The recent Christchurch earthquake reminds us that due to its location and environment, New Zealand faces many potential disasters. The devastating physical impact a disaster can have is easily seen, but what about the economic and social consequences? The Christchurch earthquake prompted Sultan Al-Shaqsi to write about the impact of global disasters. Our thoughts go to those in Christchurch, recovering from the earthquake and involved with rebuilding the city.

Our special feature this issue examines medical student selection policies. The policies and 'controversy' surrounding medical student selection is a pertinent issue for students already in the medical programme. Certainly the topic of selection tools and the over representation of particular ethnic groups has been bandied by sensationalist New Zealand media, (cf North & South magazine's September issue: 'The disappearing white male doctor'). However, the topic is not simply black and white. Selection tools have to serve multiple purposes that ultimately 'result in specialists prepared to work in areas of greatest health need in the future'. It has also been noted that 'changing models of care will see greater emphasis on the role of the general practitioner and the generalist'. What are the implications for the future medical workforce? What will the future medical workforce (of which we will all be part of) look like?

In this issue we reprint a New Zealand Medical Journal article by Poole et al. (2009), which looks at medical student selection policies in New Zealand and their implications for the future. The rationale for certain selection tools is discussed, as well as the current New Zealand situation. We have also sought additional commentary from Dr John Adams and Professor Peter Crampton, the Deans of the Dunedin and Wellington Schools of Medicine respectively. Special thanks to them both and to the NZMA for permitting us to reprint the article in its entirety.

Learning opportunities are aplenty for medical students. We highlight some of the ways in which students can further enrich their learning outside of medical school, whether it be attending a conference or volunteering off the beaten track. Felicity Williamson writes about her experience volunteering for the One-2-One Charitable Trust. Her trip to Cambodia was an eye-opening experience and there are opportunities for students to be involved with similar trips in the future.

We also continue our series of articles on the BMedSc(Hons) programme, with some additional hints on how to make the most of the programme!

The Journal is proud of our work in publishing the writing of medical students. Issue 11 of the NZMSJ was awarded the Best New Student Initiative by the New Zealand Medical Student Association. This award was given in recognition of the excellent contributions the NZMSJ has made in furthering and promoting medical student research. We would like to thank all the contributors for this issue.

We hope that you find the twelfth issue of the Journal informative, and invite you to submit your views and opinions for publication in our next issue.

The NZMSJ Executive

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Dear Sirs,

Your article by Lisa Barneto ("When does tobacco become more than just tobacco?" NZMSJ May 2010) highlights an increasing phenomenon in Anglophone jurisdictions such as New Zealand. Szasz<sup>1</sup> warned against the 'therapeutic tyranny' over a quarter of a century ago and John Stuart Mill<sup>2</sup> as long as one and a half centuries ago, but it seems Anglophone societies have experienced for so long the benefits of liberty that they have forgotten, unlike Germany, how zealously it must be guarded: "the price of freedom is eternal vigilance". Levin<sup>3</sup> most eloquently illustrates this.

There is little doubt that the impact of tobacco companies adversely affects health, but this has mainly been by poor policies such as mass advertising and low tobacco taxes that do not defray the cost tobacco imposes upon society. This has been largely remedied, however, the great pity is that government lacks the resolve to extend this to alcohol, especially to restrict the control of unwarranted mass advertising.

The success of tobacco taxes and advertising restriction looks set to continue as new generations are not exposed to tendentious messages of advertising. The tobacco and alcohol industries spend fortunes on advertising because they know it promotes consumption and so they try hard to resist advertising restrictions.

It is all the more regrettable that these successes are threatened by the zeal of public health officials who, not satisfied with steady success, would start down the road of bans, ultimately leading to prohibition. The lesson of the drug prohibition should deter any clear thinker from embarking on this disastrous route but, unfortunately, emotion climbs on the band-wagon until public health policy approaches religious zeal with all its intolerant side-effects for which religion is notorious. Graham's<sup>4</sup> compelling philosophical plea for tolerance is the remedy for such misfortunes but there is little sign of this learning in Barneto's article.

Yours faithfully,

John Marks FRANZCP,

Gisborne

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# Holding a mirror up to society

Professor Peter Crampton

Dean  
Wellington School of Medicine  
University of Otago

Professor Crampton is a specialist in public health medicine. He has served on numerous advisory panels in a variety of policy areas related to public health, health services and medical education, and has taught both undergraduate and postgraduate courses related to public health, health systems and health services management.

Ideally the make up of medical classes should be equivalent to holding a mirror up to society. The purpose of medical education is to produce a medical workforce equipped to meet the needs of society; this is at the heart of the social contract between medical schools and society. In order to achieve this, the gender, ethnic and socioeconomic composition of medical graduates should roughly reflect the social reality of diverse communities in Aotearoa. The Australian Medical Council recognises this in its guidelines for the accreditation of medical schools (which apply to medical schools in New Zealand):<sup>1</sup>

In Australia and New Zealand, inequalities remain in the health status of various social and cultural groups. Medical schools have a responsibility to select students who can reasonably be expected to respond to the needs and challenges of the whole community, including the health care of these groups. This may include selection of students who are members of such groups. The medical curriculum should also provide opportunities for cultural education programs, and opportunities for training and provision of service in under-served communities.

Indigenous health is an area of special responsibility. New Zealand's two medical schools, acting as agents of government, have dual obligations: to honour both the contractual obligations defined in the Treaty of Waitangi and to correct the inequitable health outcomes experienced by Māori populations.

As things stand, the mirror is distorted. In New Zealand and around the world, medical schools struggle to achieve a balance of students which reflects the ethnic and socioeconomic reality of the societies they serve.<sup>2</sup> In sociological and historical terms this is explicable as our elite educational institutions have developed within the context of socially and ethnically stratified public. Furthermore, in spite of best intentions for improvement, there often are inequalities in access to high school educational opportunities for many groups in our population.

Selection policies should, therefore, attempt to counter some of these historical and social forces. Methods of selection are hotly debated. Tests of cognitive ability dominate, but alongside these, other methods such as aptitude tests, psychological tests, student interviews, and random selection have been, and are, used.<sup>3,4</sup>

How does this apply in practice? By way of example, the University of Otago has a common First Year Health Science programme in the first year at university which allows many students to improve their knowledge base

in subjects appropriate to the study of medicine. This programme enables students from diverse educational backgrounds to compete equally for places in medical school. The University assists its selection process by identifying students who are believed to have aptitudes (as measured by UMAT) and academic abilities (as measured by grade point average) to successfully complete its long and demanding medical programme.

Amongst students who meet the aptitude and academic threshold, other selection decisions are made: Māori and Pacific students are given priority. Sadly, there still are a few such applicants above the academic threshold to match the demographic make up of society. Various additional strategies have been adopted to redress this imbalance which include a school-leavers' bridging programme for Māori students, and in the future for Pacific origin students.

The graduate entry pathway provides further opportunities for 'selecting in diversity' from a pool of academically able students. Special consideration, as part of a government initiative also, is given to students from rural backgrounds who would not otherwise achieve entry, and there is the ability to provide special entry for those with a demonstrable commitment to pursuing a career in mental health.

This process results in a student cohort at Otago which, in 2010, is comprised of 51.8% female, 27.8% of graduates, 9.0% Māori (compared with a national proportion of 15%), 1.3% Pacific (nationally about 7%), and 20.5% from rural backgrounds. This is not the perfect mirror of society we hope for, and we strive to improve our selection processes within the constraints and limitations of the available selection tools.

If medical schools are to fully achieve their mission to serve the needs of society, ongoing effort is required to refine their medical student selection tools. In addition, the process of selecting medical students must continually adapt to meet the changing needs of society.

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# Medical school admission and workforce: “Which crystal ball?”

Dr John Adams

Dean

Dunedin School of Medicine

University of Otago

Dr Adams is the Dean of the Dunedin School of Medicine and current Chair of the Medical Council of New Zealand. A psychiatrist by training, Dr Adams has a long interest in professionalism and ethics. He teaches professionalism in the undergraduate course in Dunedin, and as Dean has taken a vital interest in the development of the undergraduate curriculum, especially in the further development of general practice and rural programmes.

How many doctors will we need in 20 years time, where will they be needed and with what skills and qualities? Which of these parameters can be manipulated by admission policies into Medical School?

Answering these questions depends on 20 year plus predictions of health need, models of care, migration patterns, financial resource and community expectations. Putting any plan into operation is bedevilled by the at least 11 - 13 years that it takes for someone to acquire a vocational qualification from the time that they enter Medical School.

There is no doubt that we will need increased numbers of doctors. There will be growing health needs with an ageing population, doctors are working less hours, and there is the looming retirement of a significant portion of our aging workforce.<sup>1</sup> The Medical Training Board in 2008 recommended another 100 students a year be admitted to medical schools by 2012.<sup>1</sup> The present government went further than this and promised 200 additional medical students per year. The medical schools are well advanced in planning to admit this increased number of students. 80 of these additional places will be funded by next year. A challenge will be maintaining and improving quality with increasing numbers. Essential to the success of the plan for greater self sufficiency will be training posts to retain these young doctors in New Zealand.

But who to select? Do we have an agreed definition of a 'good doctor' – and which admission processes can preferentially select people who will meet the definition? The answer is unfortunately no. Academic success in medical school can be predicted by academic grades before admission, but less clear is whether those with higher grades make better doctors after medical school. In addition, academic grades only may selectively disadvantage those from less academically strong secondary schools. Australasian medical schools are using, in addition, a variety of selection methods including interview and UMAT in an attempt to select students with characteristics that are thought compatible with the requirements of modern doctors. The answer as to whether this is successful awaits research that is underway on future progress at medical school, and the long term tracking project of outcome for medical students that has been initiated across Australasia.

Unpublished 2009 MCNZ workforce data shows that our workforce continues to age.

We know that there are some demographic requirements for our workforce into the future. For instance, we need more doctors in our rural and provincial areas, and we also badly need more Maori and Pacific Island doctors. There is some limited evidence that assessing personal qualities

prior to admission may result in a greater spectrum of students more representative of the community.<sup>2</sup>

Affirmative action policies exist in both New Zealand schools to increase numbers of Maori and Pacific Island students. Both are well under represented in our workforce demography compared to the general population. The initiatives have been successful, but more so in improving the number of Maori students.

Can we predict at the time of admission which people will go on to train in specialties where those skills are or will be in greater demand? Of all the pre-selection characteristics, coming from a rural background has consistently proved the only real predictor of future rural practice.<sup>3</sup> New Zealand already has 40 places across the two schools tagged for those from rural environments, and next year's increase of 20 places will also be reserved for those from a rural area.

It is less well known that the original 40 ROMPE places were also available for those who might follow a mental health career choice. The problem has been how to define any pre-admission characteristics in the absence of any clear evidence. The consequence has been that this facility has been seldom used.

More doctors are not only required in psychiatry and rural medicine. Changing models of care will see greater emphasis on the role of the general practitioner and the generalist. How do we select students who are likely to want to enter these disciplines? Presently, we do not know.

One group is advocating a very comprehensive approach including career self-assessment, academic ability, cognitive and personality assessment and interview.<sup>4</sup> A recent excellent review of student selection in New Zealand concluded that increasing the numbers of students admitted from rural areas and of Maori and Pacific island decent would have “a positive effect on the future workforce”, noting that other links remain unproven and do not justify any changes to current policy.<sup>5</sup>

Watch this space.

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# Medical student selection in New Zealand: Looking to the future

## Phillipa Poole

Head  
Medical Education Division  
School of Medicine  
University of Auckland  
Auckland

## Helen Moriarty

Senior Lecturer  
Department of Primary  
Health Care and General  
Practice  
University of Otago  
Wellington

## Andy Wearn

Director  
Clinical Skills Resource  
Centre  
University of Auckland  
Auckland

## Tim Wilkinson

Associate Dean  
(Medical Education)  
University of Otago  
Christchurch

## Jennifer Weller

Director  
Centre for Medical and  
Health Sciences Education  
University of Auckland  
Auckland

Poole et al. Medical Student Selection in New Zealand: Looking to the future. *NZ Med J* 2009 Nov 20;122(1306): 88-100. Reproduced with permission. The *NZ Med J* is published by the New Zealand Medical Association.

## ABSTRACT

**Aims** To review whether current New Zealand (NZ) medical student selection policies are likely to result in specialists prepared to work in areas of greatest health need in the future.

**Method** This paper describes approaches used to select medical students, with some details about NZ medical student cohorts. It then discusses the evidence linking selection and career choice.

**Results and Conclusions** Selection processes have to serve multiple purposes and no tools are ideal. The NZ medical student population is more diverse than previously with more females than males, and higher proportions of students who are Māori, Pacific, rural, Asian or born overseas. Tracking projects are already underway to obtain data to better understand the effect of student factors on career choice. The Māori and Pacific Admission Scheme and Rural Origin Medical Preferential Entry affirmative action pathways have been successful, but to increase the number of doctors who identify as Māori or Pacific will require a larger pool of students with strong educational backgrounds from which to select. The strongest evidence between selection and future practice exists for students from rural backgrounds – they are more likely to practice in rural areas and to enter general practice. Therefore, increasing the numbers or rural students, or broadening the definition of 'rural', should be considered.

## INTRODUCTION

New Zealand (NZ) medical students starting their programme in 2010 will enter the specialist workforce from 2022 onwards. Healthcare delivery will be very different then if NZ is to meet the challenge of providing quality healthcare to an aging population in the face of static financial and human resources.<sup>1</sup>

Having a strong primary care sector, and an increased proportion of 'generalist' specialists who work over traditional primary, secondary and tertiary boundaries may provide the best strategy to maintain quality and keep costs down.<sup>2,3</sup> For example, a recent Ministry of Health review of how best to configure agencies in the mental health and addictions sector concluded there is a need for more doctors working in both psychiatry and general practice.<sup>4</sup>

After years of piecemeal growth, medical student numbers in NZ are about to increase significantly.<sup>5</sup> A fundamental step in shaping the future workforce is the selection of medical students, making this an opportune time to review how future doctors are chosen.

This paper describes approaches used to select medical students, with some details about the current NZ medical student cohorts. It then outlines evidence between selection and career choice for the types of doctors NZ will need in the future.

## SELECTION TOOLS AND THEIR RATIONALE

The ideal medical student selection tool would predict future performance in medical school and beyond, so that those selected progress through a rigorous programme and graduate as effective medical practitioners. Additionally, this tool would address issues of equity and diversity, 'screen in' those with desirable qualities that can't be taught, and 'screen out' those with unfavourable traits for medicine.

Finally, an ideal selection tool would select those attributes that are desirable in a doctor but which cannot be learnt in medical school. As there is no such tool, medical schools use a variety of approaches. These range from nihilism (relying on lottery alone), to measuring the easily measurable (such as grades or aptitude scores), to best guesses (where selection is based on what seems to have high face validity).

Evaluating the effect of these different approaches is problematic, due mainly to restriction of range where those with the lowest scores are not admitted and are thereby excluded from further analysis.

Although academic grades are the single best predictor of academic success in the early years of medical school,<sup>6</sup> the correlation is only moderate except in the case of very high grades and very low grades. Academic grades are less predictive of assessment measures after graduation.<sup>7</sup>

A reliance solely on grades for selection to medical school preferentially rewards those with prior educational advantage and ignores issues of social equity, fitness for the task, community expectations and the desirability of a diverse medical workforce.<sup>8,9</sup>

To address some of the aforementioned areas, tests of non-cognitive

attributes are used in medical student selection.<sup>10</sup> However, personal references and statements have been shown to be of no predictive value.<sup>11 12</sup> Traditional interviews have low reliability characterised by low agreement between raters, interview bias based on non-relevant candidate attributes and potential for candidates to adopt socially desirable stances in response to questions.

More structured interviews show higher reliability,<sup>13</sup> and seeking examples of past behaviour ("tell me a time when...") may produce more honest responses than asking candidates what they would do if faced with a particular scenario.<sup>14</sup> A recent development is the Multiple Mini Interview (MMI)<sup>15</sup> during which candidates pass through a range of stations, each testing for specific attributes considered desirable in doctors. Stations may include interviews, standardised patient stations or video clips. The principal advantage of an MMI is the ability to sample across more areas of interest (increasing validity) and to aggregate the scores of a number of assessors (increasing reliability).

Other advantages include fewer problems with security violations,<sup>16</sup> being less expensive to run than traditional interviews,<sup>17</sup> and less subject to influence by coaching.<sup>18</sup> Disadvantages include the time and expense to develop the MMI process.

The attributes to be tested will depend on local circumstances and require stakeholder consultation. There is emerging evidence supporting reliability, validity and potential to predict future performance of the MMI process,<sup>10, 19, 20</sup> but as the MMI is a process and not a test in itself, the validity and reliability are dependent on how the MMI is constructed in each individual location.

Aptitude tests such as the Undergraduate Medical Admissions Test or UMAT (©ACER, Melbourne) are increasingly used in Australasia and beyond. The UMAT requires no previous scientific knowledge and is designed to measure logical reasoning and problem solving, interaction skills and non-verbal reasoning. There is some evidence supporting the ability of these tests to predict future performance in medical school, but as only those with high scores gain entry, it is difficult to investigate the predictive validity of these instruments.<sup>18</sup>

Commercial coaching courses for UMAT purport to influence scores but the only evidence is of a very small effect on non-verbal reasoning tasks.<sup>18</sup> The personal qualities assessment procedure (PQA) is a portfolio of psychometric tests that may offer an advance in predicting performance in medical school and professional progress.<sup>21</sup>

The use of the scores on these tests varies among schools. Some schools use all of them in ranking; others set thresholds for certain tests, with final selection decisions based on other data. Lotteries are appealing to some, and may be weighted towards region of origin or demographic characteristics. They may, however, perpetuate cognitive selection bias as the initial cut is still based on examination results.<sup>22</sup>

Another problem is that students selected using a lottery system are more likely to drop out of their medical programme than those selected using a combination of academic and non-cognitive tools.<sup>22</sup>

Faced with the paucity of robust data and the 'high stakes' consequences of declining a candidate a place in medical school, it is little wonder this area is controversial.

Selection tools are usually combined by schools based on their own assessments of the fairest way to select the most appropriate population of medical students.

## STUDENT NUMBERS AND SELECTION PRACTICES

Medical students in NZ are selected after one year at university, or following completion of a degree. Those who are not graduates must undertake a health sciences first year at the same university to which they intend to apply for medicine; this is then credited to their six year programme. In recent years, there were 190 domestic medical student places available in Year 2 at the University of Otago and 135 at the University of Auckland, with another 20 domestic places allocated to each school for 2008.

There will be an additional 60 medical student places available nationally in 2010 with more likely over the next few years.<sup>23</sup>

At Auckland, all applicants are ranked using a combination of Grade Point Average (GPA), and scores from the UMAT. To be invited to the next stage which is a semistructured interview, the GPA across the eight courses undertaken must be a B+ or higher. With the exception of a small number of students included or excluded directly as a result of interview performance, the GPA, interview and UMAT are weighted 60:25:15 respectively towards the final ranking for selection.

For undergraduates applying to Otago, ranking decisions are based upon GPA and UMAT in a 66:34 weighting, provided the designated academic and UMAT thresholds are met. Graduates must meet the UMAT threshold and, thereafter, ranking is based on GPA alone. In contrast to Auckland, no interview is undertaken. In both NZ schools there are over three eligible applicants for every one place offered. As such, decisions may be based on very small differences in scores, and many who would otherwise be fine doctors are declined entry.

The attrition rates within both schools are low, suggesting that either method is satisfactory in screening out people with low potential for completion of the programme. However, the relative merits of the two methods in predicting students who may require additional assistance during the course is less clear.

## DIVERSIFICATION OF THE MEDICAL STUDENT POPULATION THROUGH AFFIRMATIVE ACTION

Māori and Pacific Admission Scheme (MAPAS)—Until about 20 years ago, the predominant medical student characteristics were being white, male, coming from a higher socio-economic group, and having university-educated parents, including one in eight with a parent in medicine.<sup>24 25 26</sup>

Until recently, medical schools have tended to focus on preparing students to function as PGY1 interns and for any branch of speciality training. Internationally there have been calls for medical schools to provide more evidence of their impact on the public good.<sup>27</sup> One aspect is the expectation that the population of doctors reflects the social and ethnic diversity of the community it serves.<sup>28</sup> This expectation is underpinned by two main principles. The first is based on social justice and equity of access for minority groups; the second, because a diversified student population may be more disposed towards addressing priority areas of need.<sup>29 30</sup>

A study of the practice registers of black and Hispanic doctors in California, for example, found that doctors from these minority groups were more likely to take care of patients from their own ethnic groups as well as uninsured and Medicaid patients.<sup>31</sup>

For many years each school has had a MAPAS affirmative action pathway to provide equitable access for students who are Māori or Pacific with potential to undertake medical training. The majority of Māori and Pacific medical students enter via this pathway and to graduate, they must meet the same educational standards as other students.

It should be noted that a MAPAS pathway is far more than a selection process – there are specific recruiting and student support initiatives. The MMI is being piloted for MAPAS admissions at Auckland with one driver being to better understand individual academic and pastoral needs at entry.

Of the 155 domestic places available at Auckland, up to 30 may be offered to MAPAS students, however Otago does not have a fixed quota. Currently 3% of doctors identify as Māori, and 1.8% as Pacific<sup>32</sup> compared with the population percentages of 15% and 7% respectively.<sup>33</sup> While there are encouraging increases in the numbers of Māori and Pacific medical students (see Table 1), the levels are nowhere near high enough to redress the shortages of Māori and Pacific doctors.

Table 1. Self-identified ethnicity MBChB domestic students, compared with NZ population at 2006 census

Ethnicity	Auckland 2008 All MBChB, n = 703	Otago 2009 All MBChB, n = 1391	New Zealand population overall	NZ ages 15-39 years
Māori	9.8%	5.0%	15%	17%
Pacific Islands	7.1%	2.7%	7%	13%
Asian (including Indian)	34.6%	33.3%	10%	8%
European and other	48.5%	59%	77%	71%

**Rurality** — Following a government initiative, the Rural Origin Medical Preferential Entry (ROMPE) pathway was established in 2004. Since then each school has admitted 20 students per year who meet the following criteria:

- Undertaken a significant proportion of their pre-secondary education while living in a New Zealand rural area; or
- Spent at least three years at a secondary school in a New Zealand rural area; or
- Have equivalent New Zealand rural experience

Note: a rural area includes those towns in New Zealand with a population or 20,000 or fewer.

It has been shown repeatedly that a rural background is associated with increased likelihood of practice in a rural setting, although most rural doctors have not grown up in rural areas.<sup>34,35</sup> A systematic review based mainly on US data found that characteristics at admission were more likely than curriculum experiences to result in doctors working in rural settings. The number needed to 'teach' in a rural immersion curriculum to result in one extra rural practitioner was 17, compared with six as the number needed to be 'admitted' under revised admission criteria.<sup>35</sup>

A recent study of the intentions of 4112 Australian medical students at entry to medical school confirmed rural practice intentions were more likely in students from rural areas.<sup>36</sup> Other predictors were plans for a generalist career, and being bonded, or in receipt of a scholarship.

A census of all NZ medical students in 2001 found under-representation of those from smaller towns and rural settings compared with the general population.<sup>37</sup> Four years after the introduction of the ROMPE pathway, a quarter of all students entering MBChB at Otago fulfilled ROMPE rural entry criteria, and 20% of Auckland Year 2 students reported coming from a provincial centre with 8% from smaller towns. Data from the 2006 and 2007 Auckland graduating classes showed 58% intended to work in a city and 15% in a regional/rural area, with the latter significantly more likely to be Māori and less likely to be Asian.<sup>38</sup>

Nothing is known about which students are more likely to work in outer metropolitan and regional centres, although based on hospital sizes and comparative populations, some regional centres in NZ would be regarded as 'rural' in Australian and US literature.

## OTHER TRENDS

**Feminisation** — For about 15 years the proportion of women in medical programmes in NZ, Australia and the UK has been between 50 and 65%.<sup>39</sup> A detailed review of the effect of gender on specialty choice in Britain found women graduates consistently more likely than men to choose general practice, obstetrics and gynaecology, paediatrics and pathology.<sup>40</sup>

Feminisation has implications for the medical workforce given that women work on average around seven fewer hours per week than men.<sup>32</sup> Concerns have also been raised about the status of the profession once the majority of specialists are women.<sup>41</sup> On the other hand, women have already demonstrated a readiness to provide care to underserved populations and to work in teams with a focus on the broader aspects of health.<sup>42</sup>

**Graduate students** — Up to a quarter of the medical students in the two NZ undergraduate programmes have a prior tertiary degree. Older

entrants including graduates are more certain of their career choice and use more desirable learning styles<sup>43</sup>; they also have more diverse backgrounds than school leavers. Most of the new programmes in Australia are four year graduate programmes and a separate graduate pathway within a medical programme in NZ has been considered.<sup>44</sup>

This would shorten the medical school portion of training for graduates to around four years, but does not take into account the time taken for the first degree, or that the medical academic year would need to be lengthened.

Despite the appeal of graduate programmes, increasing the proportion of medical students who are graduates may not result in higher numbers of doctors working in areas of need than the current system for the following reasons:

- Graduates perform at a similar level in medical school and internship to their school leaver colleagues;<sup>45</sup>
- Even though they are more professionally and altruistically motivated on entry to medical school, graduates as a group enter the same medical careers as other medical students;<sup>46</sup>
- Having to complete a degree prior to selection for medicine may create a significant barrier to Māori and Pacific students, and those from lower socioeconomic groups.

On the other hand:

- Graduates may be more likely to be in a permanent relationship and may therefore be more likely to be committed to work in New Zealand;
- Having undertaken a previous degree may 'even out' inequities related to secondary schooling, thereby advantaging students from less advantaged schools;
- Graduates may bring useful attributes resulting from skills acquired in obtaining their prior degree.

**Migration** — Around 40% of Auckland's current domestic medical students were born overseas, most commonly in South Africa or Asia (including India and Sri Lanka). While most have NZ citizenship, a significant proportion (11%) has permanent resident status.<sup>39</sup> This contrasts with the situation in Otago where only 9% of the domestic students were born outside NZ.

Why overseas-born students do so well in the multi-faceted selection process at Auckland has not been studied in depth. As the majority of Auckland students come from the greater Auckland area, reasons for the difference may include the rapidly changing demography of Auckland and the emphasis placed on educational achievement by the immigrant parents of these students.

**Priority specialty areas** — In 2009 the NZ government offered \$30,000 scholarships for medical graduates prepared to work for 2 years in health board areas with shortages, then enter training in one of five discipline areas – general practice, general medicine, general surgery, pathology or psychiatry.<sup>47</sup>

Data from the Auckland 2008 graduating class showed varying levels of interest in these careers (see Table 2). Over 50% of the class had 'some' or 'strong' interest in general practice, general medicine and general surgery. While far fewer were interested in psychiatry and pathology, levels of interest still exceeded the proportion of these specialists in the workforce in that year.

Table 2. Level of Auckland graduate interest in the priority discipline areas compared with current proportions on MCNZ register

Variables	General Practice	General Medicine	General Surgery	Psychiatry	Pathology
Strong Interest	31.6%	27.5%	19.7%	10.7%	2.3%
Some Interest	45.1%	48.9%	34.1%	22.9%	7.6%
No Interest	23.3%	23.7%	46.2%	66.4%	90.1%
Current MCNZ proportion (house officers excluded) <sup>32</sup>	35%	14%	4%	8%	3%

\*Whole of internal medicine, not just general medicine.

**General practice** — Student factors associated with an increased likelihood of entering general practice include a desire for varied scope of practice,<sup>48</sup> being female and older,<sup>49</sup> and having a rural home town address.<sup>49,50</sup> There is a strong association between wanting to work in general practice and to work in a regional-rural setting.<sup>38</sup> In NZ, the proportion of women entering general practice training (53%)<sup>32</sup> is about the same as the proportion of women medical students.

**General medicine** — In NZ, general physicians are consultants usually in secondary care. This is in contrast to the situation in the USA where general internists may be involved in primary or secondary care. Data from one USA study found that desiring an intellectual challenge and having an affinity for the continuity of patient care were determinants of a general medicine career choice.<sup>51</sup>

There was a slight preponderance of males in that study. In NZ, there is no gender difference in preference, and those interested in general medicine did not have any greater interest in general practice. Instead, they were more likely to express interest in a medical subspecialty.<sup>52</sup>

**General surgery** — Traditionally, surgery has been a male-dominated specialty although this is changing as more women move into surgical careers.<sup>53</sup> Those women who chose surgery, though, are less likely than other women to value flexibility in regard to training and work.<sup>54</sup> As a balanced lifestyle is increasingly important for most doctors regardless of background,<sup>55</sup> for more trainees to choose general surgery will likely require attention to surgical work patterns and incentives, rather than a change in medical student selection per se.

**Psychiatry** — When it was introduced, a secondary intention of the ROMPE pathway was to increase the numbers of psychiatrists in regional and rural NZ. Evidence is scarce, however, as to what selection methods are most useful in this regard. One older study found that doctors entering psychiatry were less likely to have studied science in their first degree, had wider intellectual interests and better developed social skills than their fellow students.<sup>56</sup>

Since 2004, several students with a background in mental health have been offered preferential entry to Otago, but it is too early to say whether or not they will enter a career in psychiatry. The reason for the relatively high number of Auckland students interested in psychiatry is unknown. Auckland has made no specific changes to select students for a career in psychiatry, however the interview process might allow evaluation of some relevant attributes.

**Pathology** — Medical students interested in pathology are reportedly not concerned they will have limited patient contact, and may view it as a scholarly and isolated specialty.<sup>57</sup> This specialty has the highest proportion of female trainees in NZ (63%).<sup>32</sup> As there are relatively small numbers of doctors in this specialty and career choices are often made in the early post graduate years, it is difficult to see how selection policy will solve workforce issues in this specialty.

## CONCLUSIONS

Selecting medical students is a complex and 'high stakes' endeavour, yet

the tools available are limited in number and predictive ability. The current selection tools, processes and pathways have been arrived over time through iterative review including input from a range of stakeholders. The only major change to the selection tools in recent years has been the introduction of UMAT which is not known to differentiate among students with different demographic characteristics or career intentions.

A collaborative predictive validity study is now being undertaken by the two schools to study its value. The current selection processes are generally accepted and feasible, although interviews will be more problematic with increasing numbers. On the other hand, having more places on offer will hopefully reduce competition and the need to use tools that are able to separate candidates with similar attributes.

Despite the shortcomings, the selection processes and pathways used in NZ to date have generated a more diverse and representative range of medical students than previously. Women now slightly outnumber men and there are increasing proportions of students who identify as Māori or Pacific, or come from rural backgrounds.

Predictions for the population profile of NZ in 2026 show that 17% of the population will be Māori, 10% Pacific and 16% of Asian descent.<sup>33</sup> As yet the numbers of Māori and Pacific students are insufficient to ensure the medical workforce mirrors current, let alone future population demographics. As there are relatively small numbers of Māori and Pacific peoples with sufficiently strong science education backgrounds for medicine, greater efforts must be directed towards increasing the level of educational attainment at high school and promoting health as a career.

An important area of future study is to look at career patterns and support needs of doctors who entered via MAPAS pathways<sup>58</sup> in order to maximise participation of these valuable practitioners in the health system. Specific pathways for students from lower socioeconomic groups have been introduced in Britain, however there is little evidence yet that this approach will provide better servicing of patients with the greatest health need.<sup>59</sup>

The current over-representation of students of who identify as Asian is multifactorial.

As this sector of the population is growing, this overrepresentation will not be as marked in the future and another research priority is to understand better career patterns of Asian students.

While there are slight differences in how data have been collected, it is notable that Otago admits a higher proportion of students from rural backgrounds (25%) while Auckland admits significant numbers of domestic students born overseas (40%). The only major difference in the selection process is that Otago does not have an interview, whereas Auckland does.

These findings support the notion of a contrast in the nature of the applicants between the two schools that may be due to catchment population differences, or differential student preferences for medical school location. In terms of developing a medical workforce that mirrors the community it serves, these differences are positive and offer opportunities for evaluation and research.

NZ data suggest that the correlations among a rural background, likelihood of practice in rural area and a career in general practice, apply in NZ. This would support the case to increase the numbers of ROMPE students significantly in order to increase the rural and regional workforce<sup>20,21</sup> and the number of NZ-educated GPs.<sup>25,26</sup>

As there is not a large pool of applicants who meet the existing definition of 'rural', a review might consider whether rural criteria need to be broadened to include smaller regional centres where workforce shortages are also marked. It is encouraging that the majority of medical students at entry are interested in general practice.

As with other medical careers, translating this interest into practice likely requires conducive learning experiences and a relative valuing of general practice compared with other specialties; a discussion that is outside the scope of this paper: It highlights the more general research need to understand better the multiple and interacting factors that affect career choice.

Both schools are mindful of the dilemma created by the long lead time in medical training: there is a need for careful evaluation of any changes in selection policy, yet prompt implementation of changes in response to anticipated workforce needs. Further efforts to quantify the complex interplay among the effects of student characteristics, undergraduate curriculum and early post graduate experience on career choice are already underway.

Since 2006, entering and graduating University of Auckland medical students have been enrolled in a longitudinal investigation of the characteristics, study and career patterns of undergraduate medical, nursing, pharmacy and health science students.

Over the past two years, both medical schools have joined the Australasia-wide Medical Student Outcome Database project that has similar aims.<sup>60</sup> Already the project has been valuable in providing data about students and their intentions, however, the most useful data will come from 2011 onwards once entry and exit data from the same cohort can be analysed, and the original exit cohorts are differentiating by speciality and location of practice.

The main conclusion that may be drawn about medical student selection and the future workforce in NZ is that an immediate increase in the numbers of medical students entering through the ROMPE and MAPAS pathways would have a positive effect on the future workforce. Other links between student characteristics at entry and career remain speculative, and not robust enough to justify major changes in selection approaches. As new evidence comes to light through the tracking projects, medical schools might be joined by the broader health community in the debate as to how the future medical workforce should be chosen.

#### Practice points

- Health care delivery in 2020 and beyond will be very different owing to health needs of the ageing population and constrained financial and human resources.
- Medical student selection practice has to predict future performance, rank among many with the capability to succeed, and address issues of equity and diversity. It should select those attributes that are desirable in a doctor but which cannot be learnt in medical school. There is a very long lag time to evaluate the effects of any change in selection policy on workforce.
- The NZ medical student population now has more females than males, and higher proportions of students who are Māori, Pacific, rural, Asian or born overseas.
- The MAPAS and ROMPE affirmative action pathways have been successful, but to increase the doctors who identify as Māori or Pacific will require a larger pool of students with strong educational backgrounds from which to select.
- The strongest evidence between selection and future practice exists for students from rural backgrounds – they are more likely to practice in rural areas and to enter general practice. Thus, increasing the ROMPE numbers or broadening the definition of 'rural' should be considered.

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#### CORRESPONDENCE:

Assoc Prof Phillipa Poole, Head, Medical Education Division,  
Faculty of Medical and Health Sciences, University of Auckland,  
Private Bag 92019,  
Auckland 1142, New Zealand.  
Fax: +64 (0)9 3737555; email: p.poole@auckland.ac.nz

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# Customised foetal growth charts have the potential to predict more accurately macrosomia in women with diabetes than standard population charts.

## Alicia Mulligan

3rd year Medical student  
Dunedin School of Medicine  
University of Otago

Alicia Mulligan is currently a 3rd year medical student in Dunedin. She graduated from the University of Otago in 2008 with a Bachelor of Biomedical Sciences with first class honours prior to commencing her medical degree. Some of the research Alicia completed as part of her honours thesis was published in a paper entitled "Leptin Indirectly Regulates Gonadotropin-Releasing Hormone Neuronal Function". Alicia has research interests in obstetrics, gynaecology, endocrinology and neuroendocrinology.

## ABSTRACT

**Background:** Babies born to women with diabetes have a tendency to be bigger than average (macrosomic). Customised growth charts have been found to identify small for gestational age babies in women with type 2 diabetes, but it is not known whether these charts are useful in identifying macrosomic babies.

**Aim:** To determine whether customised foetal growth charts better predict macrosomia than the standard population chart in women with diabetes.

**Methods:** This was a study of pregnancies in women with diabetes (type 1, type 2 and gestational) who delivered at Christchurch Women's Hospital between January 2007 and July 2009. Maternal characteristics were collected and used to construct individual customised growth charts for each baby. Foetal growth and birth weight were plotted on the customised chart and compared with the standard population chart. Babies were classed as macrosomic if they were over the 90th percentile for a given gestational age. Any discrepancies between the charts were noted and further investigated.

**Results:** Of the 226 pregnancies reviewed, 58 (26%) babies were classed as macrosomic at birth by the standard population growth chart. Ten of the 58 (17%) were reclassified at birth, changing from being classed as macrosomic by the standard chart, to being classed as 'appropriate for gestational age' (AGA) by the customised charts. Of these, two babies were born to Samoan women, two to Maori women and six to Caucasian women. Three babies were classified as macrosomic at birth only by the new customised charts; two were born to Caucasian women and one to an Indian woman. This means that 18% of babies born to Samoan women, 12.5% born to Maori and 4% born to Caucasian women were wrongly classified as macrosomic using the standard chart. In addition, macrosomia was missed in 11% of Indian and 1% of Caucasian babies.

**Conclusions:** In this study, the customised growth charts diagnosed fewer babies as macrosomic at birth in women with diabetes of Samoan and

Maori ethnicity. Therefore there may be a lesser need to induce labour in women before term which decreases the risk of complications at birth to both mother and baby. In addition, the customised charts identified three cases of macrosomia at birth that otherwise would have been missed. A prospective study with a larger cohort of women should be undertaken to confirm these findings.

## INTRODUCTION

Women with diabetes in pregnancy whether it be type 1, type 2 or gestational (a form that only occurs or is recognised for the first time in pregnancy) have an increased risk of delivering big babies.<sup>1</sup> This is because more nutrients cross the placenta, affecting foetal growth and metabolism. These babies have an increased risk of morbidity and perinatal mortality.<sup>2</sup> Currently the growth of the baby is plotted on the standard population growth chart, which only takes into account ultrasound scan (USS) measurements. Babies classed as big (macrosomic) on the standard chart, are often delivered several weeks before their due date in order to reduce risks such as shoulder dystocia and still birth.<sup>2</sup> However, early delivery may pose other risks to the baby including respiratory distress secondary to underdeveloped lungs, and may result in the mother having to undergo induction of labour and/or caesarean section.<sup>2</sup> At present, the USS data and findings at delivery often do not match up, meaning that some babies thought to be macrosomic from the USS data are not macrosomic at delivery, and had been unnecessarily delivered early. Others that are macrosomic at birth have been missed according to the USS data, posing risks to the baby before, during and after birth.

Different ethnicities have normal variations in birth weight and a baby classed as macrosomic in one population may not be classed as macrosomic in another. Maori and Polynesian women tend to have larger babies whereas Asian women generally have smaller babies.<sup>3</sup> The standard population charts that are currently used to predict macrosomia (weight over the 90th percentile for a particular gestational age) do not take into account our multi-sized, multi-ethnic population. Customised growth charts are based on maternal characteristics including booking weight, height, ethnicity, age and past obstetric history. The customised growth charts have already been found to identify more babies at risk of complications than the standard growth charts for small for gestational age babies.<sup>3</sup> Therefore there is a need to investigate whether the customised charts are more effective in diagnosing macrosomic babies in women with diabetes.

## METHODS

### Study Design

This was a retrospective observational study carried out at Christchurch Women's Hospital (CWH). Ethical approval was not required and confirmation of this was sought from the Upper South B Regional Ethics Committee. Women with diabetes in pregnancy that reside in the Canterbury region were encouraged to deliver at CWH in case any unforeseen complications arise. Women with diabetes who delivered a baby between the 1st of January 2007 and the 31st of July 2009 were assessed for inclusion in the study.

## Study Population

The hospital records of 266 women with diabetes who delivered during the two and a half year study period were obtained and reviewed to determine their eligibility for the study. The inclusion criteria were pregnant women with a diagnosis of either type 1, type 2 or gestational diabetes who delivered at CWH. From the original cohort, 33 were excluded: seven sets of twins, eight miscarriages, one termination, six women who did not have confirmed diabetes, two with missing notes, four with missing maternal characteristics needed to construct the customised growth charts, four who moved cities part way through their pregnancy with no follow up details and one in which no ultrasound data from her pregnancy could be found. In total, 233 women with singleton pregnancies and confirmed diabetes were analysed. In addition to the hospital records of these women, the medical records of their babies were also obtained.

## Study Protocol

Information was collected from maternal hospital records. This included characteristics needed to construct the customised growth charts such as age, ethnicity, booking weight, height and past obstetric history. For the purpose of this study, women were classed as Chinese if they identified

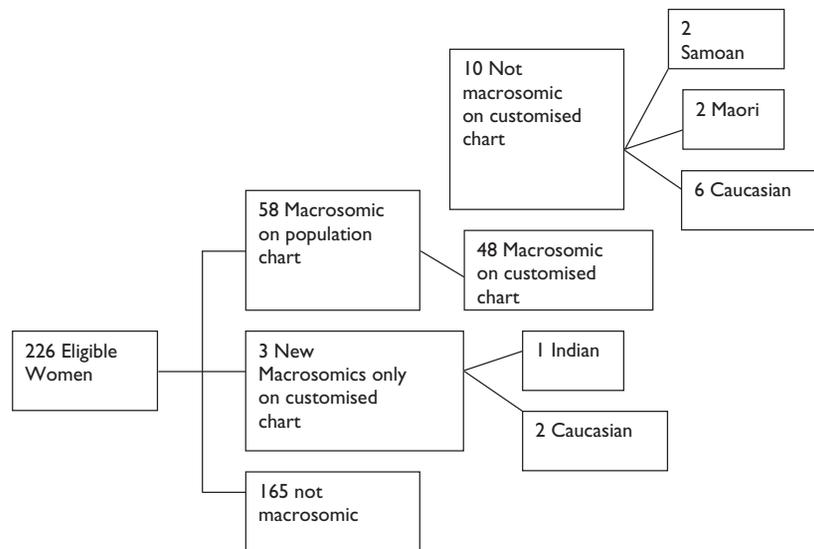
themselves as Chinese, Japanese, Korean, Malaysian or Asian. Ultrasound data for the third trimester was also collected; this included the estimated foetal weight, which was also noted as a percentile. Each baby's medical record was examined for delivery data including delivery method, induction and birth weight.

Customised growth charts were constructed for each woman<sup>4</sup>. Birth weight was plotted on the customised chart and compared with the standard population chart. Population birth weight centiles had been previously calculated using a standard chart constructed by JM Thompson of the Department of Paediatrics, University of Auckland School of Medicine<sup>5</sup>. Babies were classed as macrosomic if they were on or above the 90th percentile for weight on either chart. Any discrepancies between the charts were noted and further investigated.

## RESULTS

From the original population of 233 singleton pregnancies, four had no medical record available for the baby and three had no recorded baby birth weight. Both of these measures were needed for the study, therefore these pregnancies were excluded. The final eligible population analysed consisted of 226 women with singleton pregnancies and diabetes.

Figure 1. Flow chart showing cases of macrosomia



Of the 226 pregnancies reviewed, 58 (26%) were classed as macrosomic at birth by the standard population chart. Ten of the 58 (17%) babies were reclassified at birth, changing from being classed as macrosomic by the standard chart to being classed as 'appropriate for gestational age' (AGA) by the customised chart. Of these babies two were born to Samoan women, two to Maori women and six to Caucasian women. This means that 18% of babies born to Samoan women, 12.5% born to Maori and 4% born to Caucasian women were wrongly classed as macrosomic using

the standard population charts.

Three babies were classified as macrosomic at birth only by the new customised charts. Two of these babies were born to Caucasian women and one to an Indian woman. This suggests that in Indian women, the customised charts are more sensitive in detecting macrosomia than the standard chart and may pick up an extra 11% of macrosomic babies in this ethnic group.

Table 1. Correlation between ethnicity, macrosomia and maternal BMI

Ethnic Group	Total Number	Macrosomic on either charter	Mean BMI	Standard Diviation
Caucasian	158	50	31.7	7.4
Maori	16	3	40.5	1.7
Samoan	11	4	32.3	2.8
Tongan	6	2	37.8	-
Chinese	20	1	18.4	-
Indian	9	1	22.9	-
African	2	0	-	-
Fijian	4	0	-	-

Table 2. Relationship between ethnicity and BMI in those women who delivered non-macrosomic babies

Ethnic Group	Total Number	No Macrosomic	Mean BMI	Standard Diviation
Caucasian	158	108	29.3	6.9
Maori	16	13	30.6	4.9
Samoan	11	7	37.2	6.7
Tongan	6	4	39.2	4.6
Chinese	20	19	22.6	3.2
Indian	9	8	27.6	5.8
African	2	2	35.5	-
Fijian	4	4	30.5	8.9

When correlating Body Mass Index (BMI) to macrosomia, it was found that Maori women who had macrosomic babies had a mean BMI of 40.5 and Tongan women had a mean BMI of 37.8. The Indian woman that had a macrosomic baby had a BMI of 22.9, and the Chinese woman that had a macrosomic baby had a BMI of 18.4. When comparing these numbers to those in the same ethnic groups that had non-macrosomic babies (Table 2), a relationship between ethnicity, BMI and macrosomic babies born to women with diabetes can be seen.

## DISCUSSION

Every year more and more women are diagnosed with diabetes. In particular, there has been an increase in the number of women diagnosed with gestational diabetes.<sup>6</sup> For these women, there is an increased chance that they will give birth to a macrosomic baby; therefore accurate prediction of macrosomia in pregnancy is important. This was the first study done in New Zealand looking at the accuracy of macrosomia detection in diabetic women, comparing detection by the standard population chart to the new customised growth charts.

In the population studied, fewer babies were classified as macrosomic at birth by customised growth charts compared with the standard population chart. Because the customised growth charts take into account various maternal characteristics, they may better predict macrosomia. Those thought to be macrosomic on the USS throughout the pregnancy are more often than not delivered early as there is an increased risk of complications (such as shoulder dystocia) and death in utero.<sup>2</sup> By more accurately predicting macrosomia, customised charts may stop unnecessary preterm delivery of some babies, thus decreasing the risks associated with prematurity such as respiratory distress. Early delivery also increases the risk to the mother, with invasive interventions such as induction of labour and/or caesarean section.

Previous research has suggested that the customised charts better predict small for gestational age babies born to women with type 2 diabetes.<sup>3</sup> This research suggests that they may also better predict macrosomia in New Zealand's multi-ethnic, multi-sized diabetic population. The standard population charts can over-predict macrosomia in babies born to Samoan and Maori women, where in fact these babies are classed as being appropriate for gestational age on the customised growth charts. This suggests that the customised charts may be useful in determining true macrosomia in these ethnicities. Samoan and Maori women tend to have larger body mass indexes (BMI) and the customised charts take this into account.<sup>7</sup> Conversely, Indian women generally have smaller BMIs<sup>7</sup> and so macrosomia is often missed in these women on the standard population chart. This confirms that maternal BMI and ethnicity play a strong role in the birth weight of the baby, and should be taken into account when predicting babies' growth and birth weight.

It is known that babies born to women who are diabetics are often macrosomic. It is also known that different ethnicities have different thresholds for when a baby is classed as macrosomic. In this study we looked at the relationship between maternal BMI and macrosomia. A woman with a larger BMI is more likely to have a bigger baby, as BMI is itself a risk factor for developing diabetes in the mother (and hence lead to macrosomia). By correcting for BMI on the customised charts we are able to identify those babies that are macrosomic due to the effects of the diabetes, independent of the mother's weight. Therefore there is an interrelationship between ethnicity, BMI, diabetes and macrosomia, and these variables should be taken into account when assessing the mother's risk of delivering a macrosomic baby.

Obesity is a growing problem in the western world and the correlations between obesity and diabetes play a role in the increasing number of macrosomic babies.<sup>8</sup> Therefore it is especially important to detect macrosomia early in large ethnic populations to prevent complications and reduce the risk of the baby developing obesity and/or diabetes later in life.

Another potential benefit of the customised charts is to more accurately assess the risk of hypoglycaemia in macrosomic babies. It is already known

that babies born to diabetic women have an increased chance of developing hypoglycaemia after birth, especially if those babies are macrosomic.<sup>2</sup> If the customised charts can more accurately predict macrosomia, then the further increased risk of hypoglycaemia in these babies can be more accurately determined.

## CONCLUSIONS

The customised growth charts diagnose fewer babies as being macrosomic at birth in women with diabetes. Therefore there may be a lesser need to induce delivery in women before term, decreasing the risks of intervention to the mother and baby. The customised charts also picked up three cases of macrosomia that otherwise would have been missed. The customised growth charts have the potential to prevent over diagnosis of macrosomia in women of Samoan and Maori ethnicity and under diagnosis in Indian women. We would like to undertake a larger prospective study to confirm these findings.

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# Global disasters: Patterns, impacts and Angelina Jolie

## Sultan Al-Shaqsi

MBChB/PhD student  
Dunedin School of Medicine  
University of Otago

Sultan is in his 5th year of an intercalated MBChB/PhD programme at the University of Otago. He is now in his second year of research focussing on the preparedness of New Zealand's emergency, surgical and intensive care services to deal with mass casualty incidents.

On Saturday the 4th of September 2010, Canterbury woke up to a devastating 7.1 magnitude earthquake. It transformed New Zealand's second largest city into a ghost town in seconds. Call it a disaster; catastrophe, mass emergency, whatever; it is a clear example of "chaos, disorder and trauma". Add this to a long list of events that have occurred this year: Haiti, Chile and Yushu county, China, all experienced massive earthquakes; Pakistan is flooded with over 22 million people displaced; the Icelandic volcano, Eyjafjallajökull, erupted, disrupting worldwide air travel for days; the Gulf of Mexico leaked oil for weeks at a rate faster than New Zealand can produce it; planes have crashed killing hundreds; an aid ship to Gaza was attacked; and a stampede at Berlin's Love Parade killed and wounded many. These are just a few global events that interested the media enough to report them. Hundreds of similar events did not feature in our selective media channels.

Here, we are dealing with our own sorrow and devastation after the Canterbury Earthquake. This article will briefly review the pattern of global disasters and discuss such events in terms of their human and economic impact. Such global events are a trigger for humanitarian missions. The topic of global disasters is vast, with many political, economic, and emotional issues attached to it. To look at all the facets of global disasters would be a daunting task. This article will be a brief introduction to global disasters, and will present two lessons to be learnt from recent humanitarian responses to the Haiti Earthquake and the Pakistan Floods.

### What is a disaster?

The term "disaster" derives from the French *désastre* and Old Italian *disastro*, which, in turn, come from the Greek pejorative prefix *δυσ-* (*dus-*, meaning "bad"), and *ἀστρον* (*aster*, meaning "star"). The root of the word disaster ("bad star" in Greek) is believed to originate from the ancient astrological sciences, in which the Greeks referred to the destruction or deconstruction of "bad stars" as disasters<sup>1</sup>.

In spite of these deep roots, the modern "disaster" has no unified definition and different disciplines define the term differently. A widely accepted definition used by the World Health Organisation and the United Nations is as follows:

*"the result of vast ecological breakdown in the relationships between man and his environment, a serious and sudden (or slow, as in drought), disruption on such a scale that the stricken community*

*needs extraordinary efforts to cope with it, often with outside help or international aid"*<sup>2</sup>.

This definition implies that it is the impact and consequences of the event that constitute a disaster, rather than the event itself. It is important to appreciate that the classification of disasters into "man-made" and "natural" is specifically for the event itself, rather than the impact. For example, the Canterbury earthquake is a natural disaster; but the impact of the event depends on the interplay between natural factors (such as the location of the quake) and man-made factors (such as the level of preparedness for earthquakes). In short, the trigger for a disaster can be natural or man-made, but the impact is almost always a result of mixed factors. Furthermore, this broad definition clarifies that a specific number of casualties does not define a disaster; rather it is the negative impact and magnitude of disruption resulting from the initial event. Additionally, the concept of "disaster" is relative to the context in which the event manifests. For example, a Motor Vehicle Crash (MVC) with multiple casualties in a large metropolitan hospital may go relatively unnoticed; meanwhile the same crash in a small rural Emergency Department (ED) will probably mandate the activation of the hospital disaster plan. Regardless of the exact definition, a sense of disruption, chaos, trauma, and suffering resounds.

### The pattern of global disasters

The impact of disasters on the global community is beyond comprehension. In the last 50 years, more than 10,000 disasters are reported to have affected over five billion people<sup>1,3</sup>, and have an estimated death toll in excess of 12 million people. In the year 2009 alone, 335 natural disasters were reported. 10,665 people were killed as a direct result, and the disasters impacted on the lives of 119 million others. The overall reported direct economic cost of natural disasters in the last 50 years is estimated at more than US\$1 trillion.<sup>2</sup> However, this is a huge under-estimation, as only 24% of natural disasters have an economic cost reported.<sup>3</sup> Thus, the actual cost would be nearer to US\$4 trillion.

Four main features of the current global pattern of disasters are of great concern. Firstly, there is an increasing frequency of disasters. Secondly, there is an associated alarming increase in the cost of these disasters<sup>3</sup>. Thirdly, natural disasters are affecting more and more people, in spite of a decline in mortality attributable to the same disasters. Lastly, in contrast, the number of people reported to be killed in technological disasters, it is showing the opposite pattern, as deaths are increasing in the face of a decline in the total numbers affected.

<sup>1</sup> The number of affected people appears inflated since many societies have been victims of repeat disasters.

<sup>2</sup> This data must be viewed with caution as it is not known how many of the actual disasters have been reported and only 24% of the reported disasters have an indication of direct economic costs. Furthermore, this figure only represents natural disasters. Therefore man-made disasters such as the Sudanese and Afghan conflicts do not feature in the estimates.

<sup>3</sup> Given the lack of a standardised reporting system for global disasters, the non-availability of a robust database and the absence of universal definitions, it is essential to assume that the statistics used in this discussion are, at best, underestimations. Nevertheless, the general trends of global disasters are apparent.

Figure 1. Global natural disaster pattern (1975-2009)

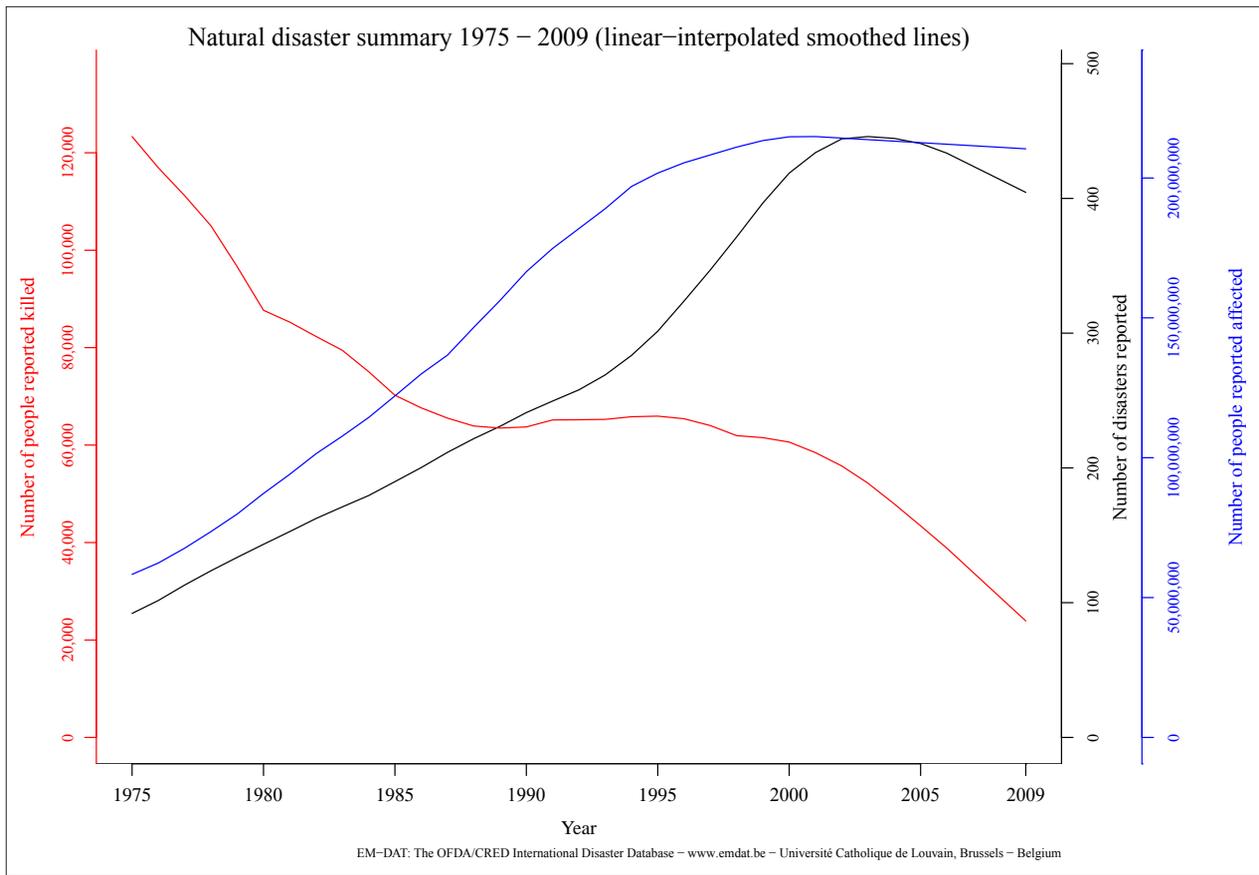
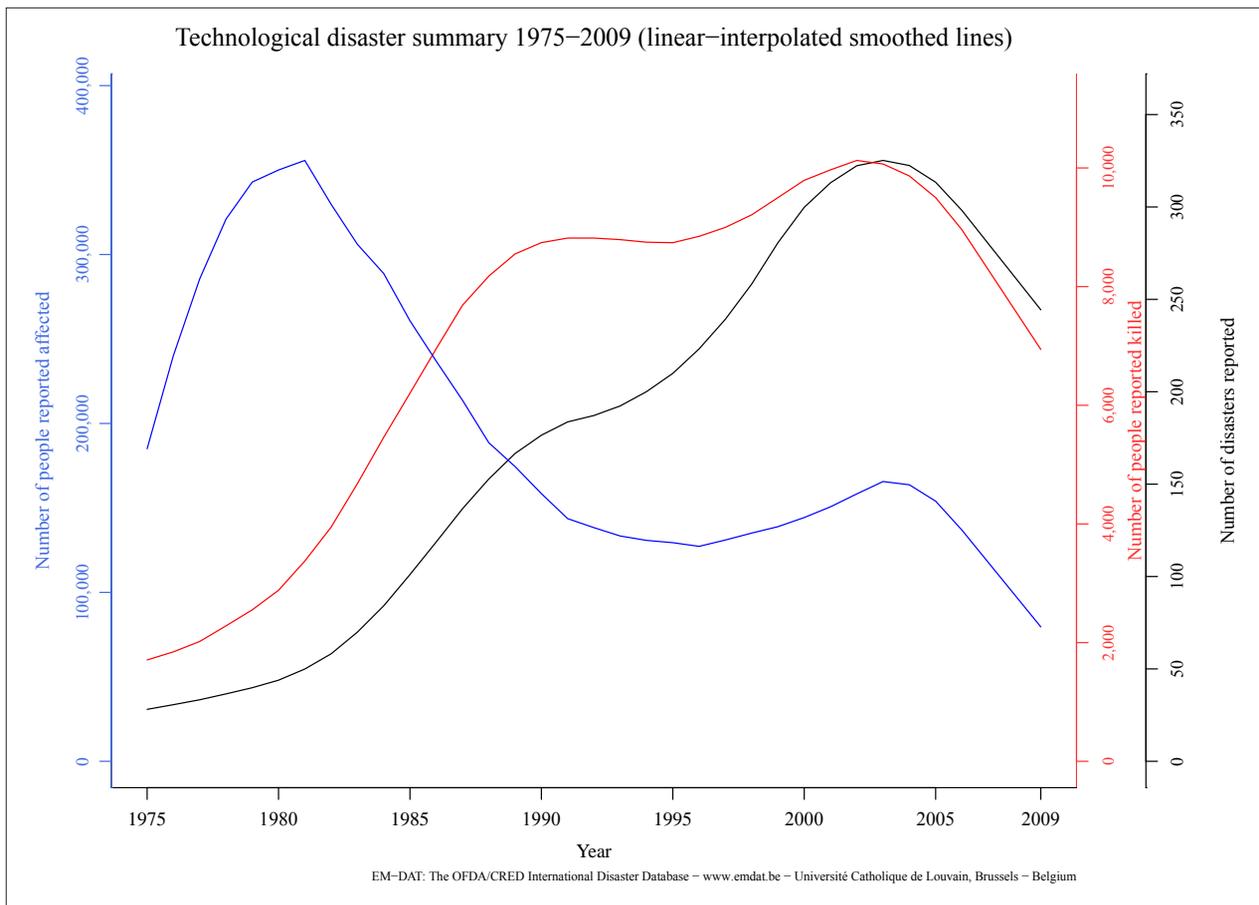


Figure 2. Global technological disaster pattern (1975-2009)



## The human impact of global disasters

In terms of human cost, the effects of disasters are usually calculated by the number of people killed by the initial incident. For example, in 1993, more than half a million people were killed in the civil war in Rwanda<sup>4</sup>; an earthquake in China in 1976 killed at least 225,000; in Bangladesh, 300,000 people were killed in 1970 and 135,000 others in 1991, from flash floods<sup>5</sup>.

Complex emergencies are events that cause unprecedented, massive human migration from one place to another. They are usually the result of a war or natural disaster. The number of Internally Displaced People (IDP; people who leave their homes, but stay within the national borders) is currently the highest recorded in human history, with 27.1 million IDP around the world<sup>6</sup>. The number of IDP is far larger than the number of refugees (people who flee their homes across national borders to other countries), which was estimated to be 15.4 million people in early 2009.<sup>7</sup> Such human movement exposes people to different hazards and increases their vulnerability to illness and injury. These global issues are complex and will not be resolved without global willingness and action.

Deaths are only a fraction of the total cost of disasters. Millions are physically and emotionally harmed because of such events. Nations can be left incapacitated for long periods, as generations of children grow up without families, but with terrifying memories of loss and trauma, and living with vast amounts of grief. The human cost of disasters extends well beyond the number killed or displaced; it includes things such as increased divorce rates, family instability, suicide rates, alcoholism, drug dependency, and inequalities in education and health care. The lasting human cost of disasters is beyond imagination's limits and is only partly due to the collapse of community services as a result of the disaster itself.<sup>6</sup>

## The economic impact of global disasters

Along with the human cost, comes an economic cost. The global economic impact of disasters is high and rising.<sup>3</sup> The cost of the Kobe Earthquake in Japan in 1995 was estimated to be more than US\$100 billion.<sup>8</sup> The estimated cost to the company responsible for the Bhopal gas leak tragedy of 1984 was approximately US\$470 million.<sup>9,10</sup>

It is important to appreciate that the economic cost of disasters does not reflect the devastation and suffering, or the death toll. For example, the Northridge California Earthquake in 1994 killed 33 people with a cost of US\$40 billion, while 300,000 people were killed in the Boxing Day Tsunami with an economic impact around US\$45 billion.<sup>11</sup> This shows a huge contrast, with 10,000 times more human lives lost for a similar economic cost. Furthermore, the cost of disasters is higher among under-resourced nations. For example, the impact of Hurricane Mitch on Honduras and Nicaragua was double the combined Gross Domestic Product (GDP) of both countries.<sup>3</sup>

## The global humanitarian response to disasters

Global disasters create an outpouring of humanitarian assistance to affected nations. This flow of goodwill reflects the universality of the "humanity" concept, which many humanitarian organisations subscribe to. The "humanitarian response" is the innate altruistic urge to assist fellow human beings in their time of suffering.<sup>12</sup> The strength of this response can be affected by multiple factors including: the distance between responder and sufferer (in the case of the Canterbury Earthquake, it is our own people who are suffering, thus we have a strong response); the suddenness of the event (for example, the dramatic and sudden impact of the Haiti earthquake); and the ability to empathise with the victims (for instance, the many Western tourists during the Boxing Day Tsunami in 2004). Furthermore, natural disasters are likely to elicit a larger humanitarian response than civil wars, because victims are viewed as blameless.<sup>13</sup>

The concept of a global humanitarian response to crises was observed to become an identifiable phenomenon sometime during the Rwandan genocide in the mid-1990s.<sup>4</sup> Since then, humanitarian response has developed very rapidly, as the frequency of international disasters increases in an unprecedented manner. Today, humanitarian response is complex and functionally complicated. Two lessons from the humanitarian response to the Haiti Earthquake and the floods in Pakistan are presented below.

## A lesson from Haiti

On 12 January 2010, a 7.0 magnitude earthquake crumbled Haiti's capital city to the ground. The global community watched as this devastating event resulted in an outpouring of international aid, and disaster relief teams raced to Port-au-Prince. Soon, however, questions were raised; was this all in the name of providing help for Haiti's people, or was it the emergence of a new industry called "medical disaster tourism"?

A story narrated by a South African response team exemplifies this:

*"One afternoon, out of the blue, two other international medical teams arrived in our location. While we welcomed the prospect of additional hands, the attendant media group was unexpected. Without any consultation with any parties on-scene, the new medics started to see patients, leading to unnecessary re-assessments, duplicating painful wound checks, and so on: all in the glare of the television cameras. Often stopping to be interviewed by the television crew or to pose for photographs, they eternalized their humanitarian deeds. The patients, unable to communicate due to language barriers, appeared to accept the care (after all, these foreigners are experts who travelled thousands of miles just to help them: who wouldn't be thankful?). Just then, an elderly man arrived with a badly injured leg. After our assessment, it was clear that his prognosis was very poor, and we suggested conservative management due to the extremely limited local resources. The other team, however, demanded that the man be operated on and that they will assist because of their "extensive surgical experience". The television crew captured every moment, including a dramatic last minute interview with the new "surgeon". As may be expected, everything that could go wrong went wrong, and the patient died. The "surgeon" subsequently informed us that he is actually a general practitioner who did some surgery about 20 years ago. The bus arrived, the medical crews got onboard with the media entourage, and after a last "did-what-I-could" shrug of the shoulders—we had our last view of the medical disaster tourists. Then, the deceased man's family arrived, being (understandably) very upset and angry. They demanded an explanation from us; what could we tell them? We had no reasonable answers to provide"<sup>14</sup>*

These sorts of acts clearly damage the reputation of the global humanitarian medical response and raise many questions. Surely, there are more good-doers than disaster tourists in Haiti. As medical professionals, however, we scrutinise our actions during peacetime and we must continue to do the same during disasters. Many disaster-medical "tourists" arrived in Haiti perhaps with the best of intentions, but without proper planning, they may have caused more harm than good. Lack of planning puts stress on already-scarce local resources, including water, shelter, and food.

Disaster medical tourism has huge legal implications and there is a pressing need to establish international laws for the accountability and credibility of international health responders. It is a medical shame to embark on a humanitarian mission for the sake of fame and the world's spotlight, and the risk of adding to a disaster's impact must be avoided.

## A lesson from Pakistan

Pakistan is a country well known for its history of natural disasters and continuous political conflicts. During the monsoon season this year, the country was submerged by one of its worst ever floods. The global community has failed to appreciate the magnitude of the disaster in Pakistan and aid is lagging behind the huge needs of the Pakistani people. The National Disaster Management Authority in Pakistan reports that at least 20 million people are affected. This is more than the 2004 Indian Ocean Tsunami, Kashmir earthquake, and Haitian earthquake combined, and the floods cover an area roughly the size of New Zealand. Around 1802 people have died, 2994 people have been injured and 1.9 million houses have been damaged.<sup>15</sup> In some areas the floods have destroyed over 87% of crops, leaving the potential for widespread famine to emerge as a serious secondary disaster.<sup>16</sup> The United Nations Secretary General Ban Ki-moon has asked the global community to step up and hasten the provision of relief operations. He has estimated that the initial rapid emergency response effort will cost NZ\$630 million. At time of writing, the support to Pakistan by the global community is only around 43% of the

estimated requirements.<sup>17</sup> In comparison, the donations after the Pakistan Earthquake in 2005 were over NZ\$7 billion, even though the total impact of the earthquake was only a fraction of that of the current flooding.<sup>18</sup> This global desensitisation is accompanied by media fatigue and a “just another boring disaster” attitude. A study conducted by the Project for Excellence in Journalism found that the floods in Pakistan took up only an average of four percent of the available global news for the week of August 16-22. In contrast, the Haiti earthquake took up 41 percent of the news stories for the week of January 11-17.<sup>19</sup>

There are many reasons why the global community's help to Pakistan is lagging behind the magnitude of the disaster. The first reason is purely political rather than humanitarian. The global community is hesitant to provide emergency funds to Pakistan that could potentially be used to fuel insurgent groups. This fear, however, does not justify the “wait and watch” strategy applied to such a human tragedy. Another reason is that the relatively insidious nature of floods, when compared with the sudden and abrupt nature of earthquakes, results in a global response fatigue.<sup>12</sup>

After the failed call of Ban Ki-moon to stimulate the global community to speed up the provision of aid to Pakistan, the UN tried another tactic, sending Hollywood stars to the disaster zone. These stars included Angelina Jolie, and their aim was to raise the profile of the disaster amongst the international community. Angelina described the situation in Pakistan by saying: “People have lost everything: their homes, their belongings, their crops and cattle, and their livelihoods. Long after the cameras have gone, people will be struggling to rebuild their lives”.<sup>20</sup> It is truly a heart-wrenching reality that the global community is blind to such a tragedy. Shame on the world and good on you Angelina!

In summary, global disasters are on the rise and so is their impact in terms of the human and economic cost. Global humanitarian responses must be more coordinated, accountable, and “humanity-driven”, rather than politically controlled. The earthquake in Canterbury was a timely reminder that disasters occur where, and when, no one expects them to. Thus, communities must be prepared to deal with such damaging events. Global aid cannot be totally relied upon, so integrating disaster preparedness into community development and daily activity is important to ensure the best possible outcomes when disaster strikes.

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# My trip to Cambodia

## Felicity Williamson

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

Felicity Williamson is a 5th year medical student at the University of Otago, Christchurch School of Medicine and Health Sciences. She is currently the president of the Christchurch Medical Aid Abroad Programme (MAAP), 2010 Global Health representative at the NZMSA conference, NZ coordinator for 2010 AMSA Global Health Conference, and a medical student liaison to the One-2-One Charitable Trust, Cambodia. She can be contacted at felicity\_williamson@hotmail.com

During my 'get away from Med School' travels last November, I took a small detour into the world of voluntary medical care in Cambodia with Christchurch GP Dr Annie Chen-Green's One-2-One Charitable Trust. I had been to Cambodia before, but only for a few days to go to Siem Reap with my family so I did not know what to expect. This time Annie Chen-Green, Kath Burnell, another GP from Christchurch, Felicity Brown, a teacher from Melbourne, Nelly Kang, and I left for Cambodia. We had taken the bus from Ho Chi Minh City and arrived after dark in downtown Phnom Penh, the capital of Cambodia, with all our possessions on our backs. When we descended from the bus we were confronted by around thirty tuk-tuk drivers shouting at us in Khmer to hire them for the journey. We were relieved to find a driver a few blocks away. When we finally arrived, we met up with our new family for the week; a group of dentists, doctors and an accountant.

Day one started ridiculously early. We all went to the Rainbow Bridge Orphanage to pick up the mobile medical and dental equipment. This stop was definitely a highlight as we got to spend a little time with some beautiful children there who just want to be loved and cared for. We had a helper in this department by the name of Drake, the rescued retriever; he would sit with more than twenty children grabbing onto any piece of him they could get a hold of as a source of comfort. Annie always says, 'it takes an orphan to know one.' These kids were all HIV orphans, many of whom also have HIV, and it was a privilege to hold them and smile with them, even if only for a moment. It was reassuring to know that all the children receive retroviral medication.

The next day, we piled everything onto the bus and set off for our four-day visit to one of Cambodia's twenty-six provincial prisons. The dentists spent the entire week cleaning, extracting and putting in fillings for guards and prisoners alike (all equally in need); while the all female medical team of three set up a small clinic with the aid of our suitcase of medical supplies. Paracetamol really is a wonder drug/placebo! We were fortunate to have Cambodian dental students to translate for us. This proved invaluable as we were faced with useless bureaucracy and corruption of the prison system throughout our stay. I learnt a lot about diplomacy and dealing with corrupt government officials from Dr Annie, and that confidence was an effective tool when utilised with humility.

We spent one morning de-worming the entire prison population and staff, and also treated many prisoners for scabies. On two occasions the medical



Felicity doing general medical check-ups in a prison in Takeo Province, Cambodia.

team travelled on the back of motos and tuk-tuks into the country side to hold village clinics. Tragically we saw people suffering from conditions that could be easily treated in NZ, but because of the lack of adequate and affordable medical services in Cambodia, they were unlikely to survive.

Our last morning was spent at one of the four huge prisons on the outskirts of Phnom Penh where corruption has been taken to a whole new level. We were told that prisoners have to bribe their guards to spend time outside their cells and, disturbingly, even to see us. The food and medicines the prisoners' families brought in for them were often confiscated by the guards, who took it for themselves. Because of the large size of the prisons we had the chance to talk to quite a few foreign prisoners, while treating them, to gain an insight into real prison life.

Throughout the week, the patients we saw had a wide range of complaints but most were the results of chronic malnutrition, hard work, and worrying about survival. Heart murmurs were abundant, mainly due to childhood rheumatic fever, and constipation was a major problem due to poor, low fibre diets. There were a few chronic terminal conditions and some heart breaking situations where we wished we could have done more.

Reassurance, empathy, our limited medical supplies, and a few public health ideas, such as eating sugar cane as a natural laxative, were the most effective treatments we had. I learned a lot about humanity and that our needs as human beings are the same. Health and wellbeing can never be separated from having our basic needs met. My heart was repeatedly broken by my inability to cure things that could be fixed in the developed world, and how humble and grateful people were for a medical student to talk to them. I was often overwhelmed, hot and exhausted so I learnt a lot about the effectiveness and importance of my own coping strategies.

# The Bachelor of Medical Science (Honours) degree at the University of Auckland

Belinda May   Alison Mayson   Andrew Shelling

Belinda May is the Academic Systems Coordinator in the Medical Programme Directorate, the Faculty of Medical and Health Sciences at the University of Auckland. She works as part of the team which administers the medical programme and provides support for the BMedSc(Hons) programme. Belinda's background includes psychology, computer systems analysis, and primary school teaching. She is currently completing a Master of Education, in e-learning

Alison Mayson is the Manager of the Medical Programme Directorate which is responsible for the management of processes which support the curriculum. Originally a medical laboratory scientist, subsequent qualifications and experience in business education programme development have been brought together for this role. Alison has a lifelong interest in support for developing countries and their international students.

Dr Andrew Shelling is an Associate Professor in the Department of Obstetrics and Gynaecology in the Faculty of Medical and Health Sciences at the University of Auckland. He is head of the Medical Genetics Research Group, which is primarily interested in understanding the molecular changes that occur during the development of genetic disorders, focusing on infertility, breast and ovarian cancer. Andrew is currently Deputy Head of Department of Obstetrics and Gynaecology, and is involved in teaching reproduction, genetics and cancer at the University of Auckland. He has a life-style farm, and enjoys chainsaws, growing his own food, and running and multisport when he has time.

The Bachelor of Medical Science (Honours) degree is the intercalated research degree for medical students at the University of Auckland. It has recently been renamed from the old Bachelor of Human Biology (Honours) degree, which became an inappropriate title for the degree, when the undergraduate and graduate medical programme changed its name to the Bachelor of Medicine and the Bachelor of Surgery (MBChB). Students who undertake the BMedSc(Hons) are academically high achievers; and are often motivated to undertake research in a particular area of interest, because the programme may be used as a pathway to a PhD later in their career.

Academic clinical leadership positions need people with research backgrounds. So the Faculty of Medical and Health Sciences (FMHS) has an interest in investing in this programme, as they would like to see graduates from the qualification in these positions in years to come. With approximately one third of the medical students in the United Kingdom completing a similar qualification, any New Zealand medical student contemplating a career there may be wise to consider the competitive advantage obtained with this qualification.

The programme is designed to provide an opportunity for students to undertake a research project of their interest, and to develop skills in research and scholarship. The thesis component of the programme provides the opportunity to develop skills in critical appraisal, problem solving, study design and implementation, and writing for academic publication. Students can explore an area of personal interest within medicine in-depth, which they would not otherwise have the opportunity to do within the MBChB, and to contribute to the scientific body of knowledge. By completing the optional postgraduate papers during the course of the programme, students have an opportunity to pursue interests not taught in the medical programme, and to develop insight and skills important for their research project, such as medical statistics.

Students are often surprised about the range of research options available. They may choose to carry out research in one of a wide variety of areas including biomedical research, clinical research and public health research. Students with a particular area of interest may approach university departments or researchers directly, to talk about postgraduate research opportunities. For those who do not have a particular project in mind, researchers also advertise available projects on the University of Auckland FMHS research website. Sometimes students will choose a project that develops from a summer studentship project they have done, and may keep their summer studentship supervisor. Many students are interested in becoming involved in a research project, but are not sure where to begin or who to talk to first, and therefore, their first port of call is the Programme Director; currently Associate Professor Andrew Shelling.

A key to success is choosing a suitable BMedSc(Hons) supervisor, as this is an important relationship that can often be life-long. Students need to find someone who is able to help define the project, provide academic oversight and support for the student at the level expected of an Honours student project. In addition, if students are working in a laboratory and they do not have prior lab experience, they will need to have someone available to supervise them in the laboratory. This may not necessarily be the overall supervisor; it may be post-doctoral scientists, doctoral students or a lab technician; just someone who will be there on a day to day basis for support.

Students often report having the best experiences when they are part of a research group, with other postgraduate research students (e.g. Masters or Doctoral students), or academics who can support them and help them get up to speed in the area they are working. The opportunity for students to work collaboratively is regarded as a major 'draw card' for the programme, something students rarely get to experience within the MBChB.

At the University of Auckland, students completing the BMedSc(Hons) have two options; they can either complete two postgraduate papers across the year and write a dissertation based on their year-long research project, or write a thesis based just on their research project. Students choosing the papers and dissertation option may select papers to equip them with key background knowledge and enable them to 'specialise' in a particular topic. Students need to seek advice from a range of people including their supervisor when choosing their papers.

Jimmy Chong completed his BMedSc(Hons) at the University of Auckland in 2009, below he reviews his year's achievements and his future direction.

*The Bachelor of Medical Sciences (Honours) programme offered me a unique opportunity to pursue my interests in research through working with a team of dedicated and enthusiastic supervisors and support people. My decision to undertake the year long programme stemmed from the experience gained during a summer studentship at the end of my second year of the MBChB. This showed me that this area of work brings together patients, families and health professionals, combining both statistical and clinical meaning. As well as this, research involves an intellectual drive for understanding and developing questions, technical skills contrasted with broad thinking, and also the challenges of peer review and cross discipline involvement.*

*My focus was to take a collaborative approach to understanding the perspectives of children with cerebral palsy attending tertiary level orthopaedic services. This integrated a backbone of health psychology and introduced new methods (such as the use of drawings) as possible means for children to communicate their thoughts and emotions. This fresh outlook I believe contributed greatly to the overall success of the project.*

*During the year, I looked for chances to involve myself in clinical and research networks by attending conferences and submitting abstracts of our work. We achieved first place in the clinical category of the Healthex forum 2009, which led to eventually reaching the oral finals of the university wide Exposure Postgraduate event. Most recently, I also presented four talks at the Australasian Cerebral Palsy and Developmental Medicine conference. This has shaped my future direction towards a speciality in paediatric rehabilitation with a strong interest in academic medicine.*

#### **ACKNOWLEDGEMENTS**

Developed from an information sheet prepared by Anna Dare, and a report by Jimmy Chong.



# Conference report – General Practice Conference and Medical Exhibition (GP CME) 2010

## Puai Yee Shum

4th Year Medical Student  
Wellington School of Medicine  
University of Otago

Puai Yee grew up in Kuala Lumpur and is on a Malaysian government scholarship to study medicine in New Zealand. She has an interest in primary health care and would like to work as a GP in the future. She loves playing the piano and plays as a volunteer at the Wellington Hospital on weekends.

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The New Zealand Medical Association (NZMA) through its General Practitioners Council represents general practitioners (GPs) and 600 General Practices in the Primary Health Care and is a strong advocate for urgent and effective solutions to the crisis in the GP workforce. NZMA has been organising the General Practice Conference & Medical Exhibition (GP CME) every year since 1998, and it was held this year from 10 to 13 June at the Energy Events Centre, Rotorua. There was a record-breaking attendance at the conference, with over 1000 delegates representing general practitioners, practice nurses and practice managers. The NZMA also subsidised the registration of 12 medical students to attend the NZMA GP CME conference, and I was very fortunate to be one of them.

The annual event was opened with a warm welcome address by Dr Mark Peterson, the Chairman of NZMA GP Council, who invited the delegates to enjoy the workshop sessions and the sponsor trade exhibitions during the conference. This was followed by a presentation entitled "Future Role for Generally Trained Medical Practitioners" by Professor Des Gorman, Head of the University of Auckland's School of Medicine and Executive Chairman of Health Workforce New Zealand. Professor Gorman suggested that community-based and hospital-based practice should be integral to the future concept of GP, as outcome and utility data has shown that this mixed practice is cost-effective. He also said that reconfiguration of GP training and employment is imperative in addressing the current local issues, such as the difficulties in delivering the GP training scheme and attracting General Practice Education Programme Stage 1 (GPEP-1) candidates.

One highlight from the first day of the conference was the Medico-political session chaired by Dr Peter Foley, the Chairman of NZMA. The invited political guests were Hon Tony Ryall, Minister of Health and Hon Ruth Dyson, spokesperson of Labour Party. It was a real eye-opener as the session saw the astuteness of the politicians in answering the burning questions from the audience in regards to the recent Health Budget and the Expression of Interest (EOI) process. Mr Ryall said that although other countries had reduced their health budget, the NZ government had not followed suit, and that health services were required to "ensure a strong and ongoing focus on value for money, with resources moving from administrative overhead and low priority spending into more important frontline services." With

regards to the EOI process, he urged GPs to become involved in the EOI process for "Better, Sooner, More Convenient" care.

Following the official speeches and medico-political session, the first of over 50 workshop sessions were held, and these were based on a huge variety of common clinical presentations to the General Practice. Seven sessions were run concurrently every hour and delegates were given the choice to select from what sessions they wanted to attend prior to the conference. To be honest, I had a hard time choosing which session to go as all of them seemed very interesting, with sessions ranging from 'ADHD' to 'The Science of Happiness' and 'Hepatology 101' to 'How to: Trigger Point Needling'. Moreover, the speakers were all experts in their respective fields with unquestionable qualifications.

I attended a few workshop sessions during the three day period, and amongst them, three of them were particularly worthy of note. The first one was a workshop session on "Better Lung Health – What to do with smokers", conducted by Associate Professor Rob Young from the University of Auckland. Professor Young's primary research and main clinical interests involve the early diagnosis and primary prevention of smoking related respiratory disease. In his recently published research article, Professor Young demonstrated that smokers are motivated to quit by taking the genetic testing for lung cancer risk – Respiragene. The study showed that the 6-month quit rate was over 30% amongst the study participants compared to the 4-5% of general smokers who manage to curb the habit each year.<sup>2</sup> This is most probably due to the test results giving a personalised risk that predicts ill health in the future and thus raises motivational will of participants to quit smoking.<sup>2</sup> Therefore, Professor Young suggested that GPs should offer the test to patients most at risk as a measure to facilitate smoking cessation.

The second workshop was "Insomnia and Circadian Dysrhythmia" by Dr Alex Bartle, a sleep disorders specialist. The popularity of this session (all the seats were taken and some delegates had to stand through the whole session) proved that sleeping and circadian disorders are prevalent in our community and are dealt by GPs on a daily basis. This was consistent with my observation during my GP attachment in Wellington. About 15% of the adult population is affected by sleep difficulty, and this creates a significant burden on the health system and industry. There are two main methods of treatment for insomnia, and these include pharmacological and behavioural therapies.<sup>3</sup> According to Dr Bartle, behavioural therapy is superior to that of pharmacological therapy, and amongst the different approaches of behavioural therapy (such as sleep hygiene and stimulus control), bed restriction therapy is the most effective insomnia treatment. In this method, sleep efficiency is improved by initially restricting the sleeping time to the average sleeping time over a period of two weeks. Time in bed can then be increased slowly when sleeping is consolidated to 85% to 90%. He also stressed that behavioural treatment may require a little longer than writing a prescription and more commitment from the patient, but many are prepared to make this effort given the benefits.

Another workshop that caught my attention was "Lifestyle influences on fertility" by Dr Mary Birdsall, the Medical Director of Fertility Associates'



Medical students from University of Otago: (from left) Puai Yee Shum and George Lim

Auckland clinic. It is widely known that better lifestyle leads to heightened fertility; however, I was intrigued by some facts conveyed in this session. For instance, cycling for more than 160 km per week decreases sperm morphology, children born to fathers who smoke are four times more likely to develop childhood cancer and most interestingly, SSRIs increase DNA fragmentation in sperms. All these have implications at the GP setting, especially in family planning where patients are trying to set up families.

Workshop sessions aside, delegates were also invited to the exhibition with the presence of 120 sponsor trade exhibition stands, represented by pharmaceutical and medical equipment companies. Free samples, goodie bags, and attractive prizes for various competitions and lucky draws, such as a holiday in Rarotonga for the Medoku competition (a Sudoku style competition), not to mention the scrumptious buffet lunches at the exhibition, clearly showed the generosity of these companies.

The conference ended on a less serious note with the rather entertaining Clinical Quiz, which included some not-so-medical questions just for laughs. The delegate who got the highest number of correct answers (who unfortunately was not any of the 12 medical students) was delighted to win a hamper.

Attending the conference was an invaluable experience. It gave me an insight into the current predicaments in primary health, especially the difficulties in recruiting GPs in rural areas and recruiting doctors into GP training. In addition, the workshops were very useful for my current learning as I was able to acquire clinical knowledge on how to deal with various common presentations in the community with evidence-based medicine. Furthermore, the exhibition enabled us to acquaint ourselves with some of the new improved drugs and latest technologies available. I would definitely like to attend the conference again in the future, hopefully as a fully-fledged GP. I would also like to express my gratitude to NZMA for subsidising my registration and thus making it possible for me to attend the GP CME.

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<sup>1</sup> "Better, Sooner, More Convenient" Primary Health Care is proposed by the Government to improve the primary health care system with the aim of providing health services closer to home and reducing acute demand pressure. The Ministry of Health issued an EOI in September 2009 to get proposals from eligible primary health care providers to implement "Better, Sooner, More Convenient" care. More than 70 EOIs were received and nine have been selected to move through to the next stage of development, which would work closely with DHBs.

# How to breeze through your BMedSc(Hons) year: Tips from my personal experience

Yassar Alamri

BMedSc(Hons) Student  
Christchurch School of Medicine  
University of Otago

Yassar Alamri is a MBChB/BMedSc(Hons) student on a Saudi Arabia government medical scholarship to New Zealand. He is based at the University of Otago, Christchurch and the Van der Veer Institute for Parkinson's and Brain Research. His research is investigating whether blackcurrant antioxidants are present in the cerebrospinal fluid of human subjects with Parkinson's disease.

The number of medical students choosing to intercalate a Bachelor of Medical Science with Honours (BMedSc(Hons)) degree into their MBChB degree has been steadily increasing over the past 15 years. By the time this article is published, almost all 3rd and 5th year medical students intercalating in 2011, will be committed to a project. This article is written to help those students make it through their research year easily, and get the most out of it. The tips given here are from personal experience, and have been given the acronym B MED SC HONS.

**Befriend your supervisor(s), period.** This is first and foremost. Supervisors are, in general, nice people who have a vast experience in research, and can make your life so much easier! They have the experience and know how to tackle the dreaded ethics applications, help you get money from grants, and make your thesis look 'pretty' towards the end of the year. They offer so much in exchange for very little; simply meeting deadlines, responding to e-mails and working professionally will go a long way to fostering a positive relationship.

**Make new friends at your lab/institute/office.** These are the people, also known as research-mates, that you are going to see every day (yes, including weekends towards the end of the year!) for a whole year. Getting to know them well will make life in the lab a lot more fun and, chances are they are going to help you out later down the track when it comes to preparing an abstract, making a poster, culturing cells or analysing your data.

**Embrace reading.** Your articles are your treasure! Medical research is an ever-evolving field, so you will have to keep yourself up to date, especially in your research field. You will read more articles than all six years of your medical degree years combined. Therefore, it might be a good idea to start reading sooner rather than later. Not only will this give you golden points with your supervisors (helps with point number 1), but it will also help you in planning your thesis; knowing what is important and also what is not.

**Do not let anything put you down.** Unfortunately, research life is not a bed of roses; it is a bumpy road with many twists and turns. Every researcher must take it (and you can!). You may struggle to get your project approved by the Ethics Committee, or cells that you have been culturing die off, or the manufacturer of your equipment has stopped making it. However, do not give up! Be creative and try to find a way to work around the problem. Research is all about novel thinking, so embrace the chance to think outside the box, and of course there are always your research-mates and supervisors to ask for guidance. Persevere and you will prevail!

**Start taking (useful) courses earlier in the year.** Courses for students writing theses are offered free of charge by the Student Learning Centre, and are extremely helpful. These include courses on Endnote (i.e. to keep

track of all those papers you have read!), Word, Excel and SPSS (i.e. for the dreaded stats at analysis time). Courses are packed full of useful tips and ways to expedite the laborious tasks everyone must do. They can save you precious time down the track, and help you to complete your thesis with minimal technical problems.

**Complete administrative tasks as early as you can.** This includes getting your University and hospital/lab ID cards, completing the re-admission form with your school of choice, and completing all health check-ups needed for your project (e.g. MRSA tests or HBV vaccinations). You will become busier as your project progresses. Testing results, analysis and writing up will all pile up in face of looming deadlines, and administration is the last thing you want distracting you.

**Holidays: plan them ahead, and plan them sensibly.** You will find out that you might not necessarily be able to take a timeout during regular university semester breaks. This might be because you are preparing for a conference presentation, working on live cell culture, or planning to meet patients during their appointments. Having said that however, you will have some flexibility to plan for a nice short holiday, and you should! Once you have planned on the dates, double check with your supervisors in case you missed a deadline, and then go for it!

**Organise all the important details, so you can access them easily and reliably.** This extends to many aspects of your research life. Deadlines for grants, ethics application, conference abstract submissions and thesis submission all need to be planned ahead and written in your weekly/monthly planner. Similarly, you will find that by the time you have reviewed the relevant literature around your research topic, you will have gone through an average of 80-150 articles. Organising these chronologically or by topic will make your life so much easier for future reference while writing up your thesis. Endnote courses offered by Student IT can help!

**Never too early to start your thesis write-up.** This is the one million dollar tip! You have anything between 10,000 to 40,000 words to write for your thesis; therefore, it is wise to start writing up as soon as possible! You can, in most cases, finish your introduction chapter even before starting your actual project. Your supervisors can help you structure it, and along with your readings from the literature review, you can produce a good introduction. Writing up the introduction is also important for consolidating your understanding of the literature review and helps you keep the bigger picture in mind when results and analysis time comes. This will save you precious time towards the end of the year (when it will get hectic!).

**Senior students are (almost) always happy to help.** Research life is fun and rewarding, but you have to work hard for it. Sometimes it is more skill than instinct, and students that have been through it will have so much to advise you on if you approach them nicely. I am always happy to answer questions related to your BMedSc(Hons) degree through my email: alaya899@student.otago.ac.nz.

So, enjoy it and good luck!

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# Conference report – RANZCP congress 2010

## A shared endeavour Tātau Tātau e

Annika Sjoeholm

5th Year Medical Student  
Dunedin School of Medicine  
University of Otago

Annika is currently a 5th year Medical student at the Dunedin School of Medicine. She has completed a BMedSci(Hons) in the Centre for Neuroendocrinology, University of Otago, in 2008 and is interested in combining both clinical and academic work in the future.

The Royal Australian and New Zealand College of Psychiatrists 2010 Congress, Auckland, entitled: *A shared endeavour Tātau Tātau e* was held at the Sky City Convention Centre from the second to the sixth of May. I was but one of a group of Otago Medical students from the three clinical schools who were kindly sponsored by the Department of Psychological Medicine of Dunedin to attend this fascinating conference. It should also be noted that the RANZCP waived the registration fees for over 50 University of Otago and Auckland Medical students to participate in the conference, and I am sure this was greatly appreciated by all who attended.

This year's RANZCP congress was a four day event with over 800 registered delegates. The conference boasted a diverse range of presentations. Daily keynote presentations were delivered from leading psychiatrists from both clinical, research and teaching perspectives. These focused not only on the mental health issues faced in New Zealand and Australia, but also on the issues faced by developing countries. A particularly memorable presentation by Jim Crowe outlined the advocacy work that had been occurring throughout Asia to aid the mentally ill who are often left to wander the streets uncared for.

Throughout the day, a vast array of workshops and symposiums were on offer such that it was often difficult to choose which presentations to attend. In particular, I found the symposiums on neuropsychiatry most interesting as they gave some insight into the biology of personality and

how the mind works – an area of medicine that is largely still unknown. Other symposium themes included social and cultural psychiatry, child psychiatry, psychopharmacology, and addiction medicine to name a few. All the sessions I attended gave me an appreciation for how vast the field of psychological medicine truly is, and how much research occurs.

The attendees of the conference were not only psychiatrists, but also psychologists, nurses, GPs and students. As a result, break times provided an excellent opportunity to interact with people involved in mental health care and to draw upon their experiences. As with most conferences, a social program was also in place with many delegates attending the formal conference dinner. Apart from the great food available in between presentations and the student-friendly environment, there was also plenty of free merchandise from the pharmaceutical exhibition to test one's moral fibre!

In summary, the RANZCP conference was a great chance to learn a little more about the field of Psychological Medicine. This conference made me aware of the integral role that we have as future doctors in reducing the stigma associated with mental health as well as providing advocacy and support for our patients with mental health problems - and this role does not depend on which branch of medical specialisation we aspire to pursue in the future.





# Babies for the socially infertile: how conceivable is it?

Camelia Soo

3rd Year Medical Student  
Auckland School of Medicine  
University of Auckland

Camelia is a 3rd year medical student at the University of Auckland. She wrote this article as part of her medical ethics humanities course assessment. She believes in writing to inspire, to inform and for pleasure.

## I. INTRODUCTION: IVF and how it's changing the world

Infertility is considered by some to be the direst calamity that could befall any couple with a life-long desire to be parents. Couples stripped of the opportunity to experience the joys of parenthood can experience psychological distress, and marriage break-ups due to infertility are not unheard of. Defined medically as the failure to conceive after 12 months of unprotected intercourse, infertility affects approximately one in six couples, with both males and females accounting equally for the rates.<sup>1</sup> Luckily, with the advent of assisted reproductive technology, infertile patients can now have genetically related offspring with the use of in vitro fertilisation (IVF). It is estimated that, in New Zealand, around 450 babies are born every year via IVF.<sup>2,3</sup>

Although hailed as a remarkable technology for assisting many infertile couples, IVF has not been without controversy. Initial concerns about a lack of foetal-maternal bonding in cases of surrogacy have now been superseded by concerns about IVF being used by a group of people known as 'the socially infertile'. This category includes those who are homosexual (gays and lesbians) and those who are single. To explore the issue, I will look primarily at homosexuals who yearn for biological children, as an example of the socially infertile.

Fertility clinics differ in their willingness to provide IVF for homosexuals, with some countries denying IVF treatment to homosexuals, privately and publicly.<sup>4</sup> At private clinics in New Zealand, lesbian women are eligible for donor-insemination, and gay men are allowed to donate sperm for IVF.<sup>5</sup> However, if publicly funded treatment is sought, one of the lesbian couple would have to be diagnosed with biological infertility, such as endometriosis or tubal disease.<sup>5</sup> Therefore, for homosexuals who do not have the financial means to pay for private fertility treatment, any desire to have biological children would go unsatisfied. In this article I argue that the reasons against providing homosexuals with IVF treatment are not justifiable; that homosexual couples have the right to conceive biological children; and that it is not morally permissible to discriminate against this group.

## 2. ARGUMENTS ALLOWING IVF FOR HOMOSEXUALS

### 2.1: Procreative liberty: But it's their rights, right?

The World Health Organisation (WHO) defines reproductive rights as the

*"Basic right of all couples to decide freely and responsibly the number, spacing and timing of their children and to have the information and means to do so. It also includes their right to make decisions concerning reproduction free of discrimination, coercion and violence".<sup>6</sup>*

From this it is clear that no individual should be denied the right to have children of their own and, no individual should be discriminated against should they make the decision to do so. Reproductive freedom is further explored by John Robertson, who introduced the concept of 'procreative liberty'.<sup>7</sup> This is essentially the individual right to have or avoid having children, and importantly "one violates no moral duty in making a procreative choice and other persons have a duty not to interfere with that choice".<sup>7</sup> Robertson states that just because homosexuals are attracted to people of the same sex, this does not mean they lack the desire to achieve fulfilment and meaning in life.<sup>2</sup> Supported by the American Society of Reproductive Medicine's ethics committee, many homosexuals seek fertility treatment, as they still want to be part of something so basic to every human's existence. That is, they desire a family of their own, for reasons of companionship, legacy, intimacy, love and nurture.<sup>4</sup> Therefore, to deny homosexuals the chance to procreate would be denying them the right to experience something fundamental to human existence. If IVF were allowed for homosexuals, then we would be addressing one of their human needs and helping them live life with dignity and joy.

Some would argue that although it is important to recognise the procreative liberty of individuals, this does not confer any obligation onto the law, or any particular fertility clinic, to provide a means for individuals to exercise that right. Just because someone has the right to procreate, this does not mean the reproductive specialist would be automatically willing to carry out IVF; he or she may have moral and religious beliefs that go against the unconventional family. We can compare this situation with that of abortion. As the WHO definition of reproductive rights above indicates: patients have the right to decide whether or not to proceed with a pregnancy and, should they decide on termination, no one has the moral duty to interfere with that choice. Doctors are, however, under no legal obligation to offer abortions, based on the same reasons why reproductive specialists may deny IVF treatment to homosexuals. I feel that in order to explore this point further, we must ask whether the grounds for denying homosexuals the chance to procreate are justifiable. Reproductive specialists that do this may be acting on grounds of prejudice and discrimination against a minority group and, I believe all forms of discrimination should be eradicated, especially in the health sector. This, therefore, does not form a sound basis to deny IVF treatment to homosexuals.

### 2.2: Professional autonomy and non-discrimination

According to the New Zealand Human Rights Act of 1993, there is to be no discrimination based on sexual orientation.<sup>8</sup> Homosexuals have long struggled to obtain the same rights as everyone else. As health professionals, we are bound to treat everyone with fairness and with equal respect.<sup>4</sup> This implies that homosexual couples should not be denied IVF treatment due to their sexual orientation. As explained earlier, some may argue that it is within the health professional's moral and religious rights to deny treatment. However, in some states of the USA, such as California, the refusal to provide treatment on the basis of religious freedom actually violates the laws which prohibit discrimination based on sexual orientation.<sup>4</sup> So, the need to eradicate discrimination is considered more important than one's religious freedom. Furthermore, one could argue that if the reproductive specialist denied treatment based on moral and religious grounds, but then referred homosexual couples to another specialist willing to perform IVF, then surely they would still be indirectly responsible for homosexual pregnancies, and would thus be defying their principles.

### 3. ARGUMENTS DENYING IVF TO HOMOSEXUALS

#### 3.1 *The supernatural: How can it be natural?*

Historically, many have found it hard to comprehend and accept same-sex relationships. Hence, when it was put forth that IVF could be used for homosexual couples to have biological children, there was a lot of protest. Some argued that it was 'unnatural' to have two mothers or two fathers in a household, as it went against traditional family values and the structure of the nuclear family. On a political website on gay rights, Molly Bennett commented on how parenting should ideally include a father and a mother, and that this is the child's basic right.<sup>11</sup> Bennett further explained that humans "evolved over years to reproduce and that is natural. Trying to procure life by any other means while obviously possible makes it unnatural".<sup>11</sup> One could argue that if one strongly supported this 'unnatural' argument then IVF should not exist at all. Fertility treatment is also unnatural, and perhaps biological infertility is nature's way of preventing an individual from being a parent, so should not be tampered with. In the same article, Ian Dunt put up a valid argument in response. Dunt maintained that humans have evolved to make use of their tools and knowledge to overcome the obstacles of the world. He said that it is not unnatural for humans to build a bridge to cross a river to reach our destination, and "the use of tools to overcome the limitations set on us by our environment constitutes one of the earliest known behaviours of mankind".<sup>11</sup> In other words, humans have evolved with time as it is natural to do so, and what is even more natural is our way of developing new technologies to ease the load on our lives. There is thus nothing more natural than homosexuals using IVF as a means to overcome the barrier of their social infertility.

Talking about evolution, I feel that as a society, we are evolving towards becoming more tolerant, with a greater acceptance of things that, in the past, may have seemed 'unnatural'. One aspect of this is the concept of family. Many of us may be acquainted with the notion of the nuclear family. The family dynamics is, however, changing rapidly and the definition of family now constitutes more than what some may refer to as the 'conventional family'. Divorced families, families with single parents, and families with no parents but with grandparents raising children are not uncommon. Therefore, the question is, do you consider these conventional families? If so, how can we classify homosexual families (children with homosexual parents) as unnatural, or how is it even morally correct to exclude that minority? The most important thing we have to consider is that the definition of family has changed. I am less concerned about the constituents of the family, but more concerned that there is love, support, communication, security, sense of belonging and culture in the family. I believe those values are sufficient to define a family.

#### 3.2 *Doing more harm than good: welfare of child at stake*

Welfare is described by Peterson to be the material and psychosocial well-being of a person, and often encompasses stability, love, warmth, caring and compassionate relationships.<sup>12</sup> It has been thought that the influences of both the father and the mother on the child are essential for its psychosocial development, and that psychosocial stimuli could impact on the child's self-esteem, aspirations, moral beliefs and emotional state.<sup>12</sup> Some believe that fathers are important in a child's life as they are not only providers, but also disciplinarians, models, companions and teachers.<sup>13</sup> Mothers on the other hand, are said to be nurturing, understanding and supportive. It is thus argued that homosexuals should not have biological children, as the child will be growing up either without paternal or maternal attributes, putting their welfare at stake. However, we have to realise that homosexuals often have extended family and the child in question may indeed have other female and male influences, such as uncles, aunts, grandparents and close friends.

It has also been stated that more harm will be done if children are born to homosexual parents as it is likely that the child will be stigmatised and bullied at school, and this will have severe consequences on the child's self-esteem. Stigmatisation has always been around, but this could be eradicated if society were to become more accepting of homosexuals. As explained above, the trend is moving towards more acceptance and tolerance, and I'm hopeful that in the future, stigmatisation of children based on their

parents' sexual orientation will be completely eradicated.

Some maintain that homosexual relationships are volatile and this could also be harmful to the child.<sup>11</sup> To refute this point, I think it is valid to say that there is no guarantee a child would be any better off with heterosexual parents, given the current high divorce rates. It is thus an unfair attack on homosexuals to prevent them from undergoing IVF solely because of a concern for the child's welfare.

Some not in favour of IVF for homosexuals have put forth the argument that gay couples are more likely to mistreat their children, such as exposing them to sexual abuse, and that offspring of homosexual couples are more likely to be homosexual themselves.<sup>4</sup> Research has, however, shown that children of homosexual parents develop normal gender identity and normal sex-type behaviour.<sup>4, 13</sup> Furthermore, research has also elucidated that competency of gay parenting is not an issue, as development (personality, self-concept and conduct) of children of homosexual couples shows little difference to that of children of heterosexual couples.<sup>4</sup> There is thus no sound evidence to deny homosexual couples IVF based on welfare concerns. I think those who oppose the use of IVF for homosexuals based on the welfare argument have overlooked the 'non-identity problem'. Characterised by Derek Parfit, the 'non-identity problem' basically states that the child in question cannot be characterised as 'harmed', because they would not even exist if the 'no IVF for homosexual' law was adopted.<sup>2</sup> The arguments based on the welfare of a potential child sound feasible, but they are based on protecting the rights of a child who is probably non-existent; thus those are weak claims and are merely discriminatory attacks on homosexuals.

#### 3.3 *Gay people are not really infertile! How is it justifiable?*

In vitro fertilisation was created to help biologically infertile patients regain some dignity and meaning to life. Since homosexuals are only socially or 'psychologically infertile' and they have functioning reproductive systems, some maintain that it is not justifiable to allow them IVF as it was not developed with them in mind. It has been argued that if we were to allow the psychologically infertile to utilise IVF to have biological children, then what would this mean to others in society who have other psychological issues? It is thus argued that it is 'just wrong' for homosexuals to use IVF, as they are not infertile by nature, but by choice.

I feel that to deny someone fertility treatment based on lack of physical ailment is not appropriate, as there are currently many medical conditions that do not affect someone physically but psychosocially. Some of these include depression, schizophrenia and bipolar disorder. Having said this, I am in no way indicating that homosexuality is a mental health disorder and that homosexuals should be treated psychiatrically in any way. But rather; if homosexuals yearn for biological children and cannot produce any due to psychological and social constraints, then health professionals have the responsibility to ensure IVF is not denied, and that homosexuals are treated like any other infertile heterosexual patient.

It has been maintained that homosexuals are infertile by their lifestyle choice and that it seems unjustifiable to allow IVF in those circumstances. However, it can be argued that a proportion of women are also infertile based on lifestyle choices such as delaying child-bearing until their late 30s or early 40s. Does this mean we should deny these older infertile women IVF as well, since they are infertile based on their lifestyle choice of prioritising their career over child-bearing? Is this not similar to homosexuals who are infertile based on their lifestyle choice of having a partner of the same-sex? If we were to extrapolate this argument to say we should not treat a subset of people based on their lifestyle choices, does this mean we are to refuse treatment to lung cancer patients who are smokers, and inevitably became sick due to their lifestyle choice of smoking cigarettes? Many people would be appalled if we were to deny treatment to a terminal lung cancer patient. So the question is, should we treat homosexuals any different, such as denying them IVF, based on their lifestyle choice? A response would be that we are more tolerant of smokers than homosexuals, so ideally lung cancer patients should be offered treatment. However, I stand by my belief that we are evolving towards a more accepting society, and discrimination against homosexuals will gradually evaporate. It is thus not justified to deny them

IVF because they are socially infertile and do not fit the physical criteria of infertility.

### 3.4 Scarcity of resources

Allocation of scarce resources in medical treatment is always a contentious problem, and this issue underpins an argument in favour of denying IVF to homosexuals. In our health system, there is often not enough funding for every patient and every condition. This is one reason why publicly funded treatment in New Zealand is only available for lesbians who exhibit some form of biological infertility. The 2006 New Zealand Census data shows that 0.7% of the population live in a same-sex relationship, and that around 7.8% of young people are attracted to the same sex.<sup>14</sup> With these estimates, it may be argued that the proportion of our homosexual population who may request IVF is too insignificant to cause an impact on the utilisation of health resources, and resistance to providing them IVF based on a scarcity of resources cannot be justified.

## 4. CONCLUSION:

The use of IVF for the socially infertile is a contentious problem, and different countries will continue to adopt different laws and regulations. I think it will be impossible for everyone to reach a consensus on whether or not IVF use will ever be fully justified for homosexuals. As stated throughout, I hold a firm belief that IVF should be allowed for homosexuals, as we have to not only acknowledge their procreative rights, but also the fact that it is morally incorrect to question their parenting rights and competency. Arguments resisting IVF for homosexuals are largely based on traditional and biased beliefs, and are not sufficient to deny fertility treatment. I think that although babies for the socially infertile may seem unnatural to some, the concept is conceivable to me.

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<sup>9</sup> Article 26 of the International Covenant on Civil and Political Rights state that: All persons are equal before the law and are entitled without any discrimination to the equal protection of the law. In this respect, the law shall prohibit any discrimination and guarantee to all persons equal and effective protection against discrimination on any ground such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status.

I am indebted to Dr: Phillipa Malpas who raised this point.

# End of Life

**Praveene Thachanamurthy**

4th Year Medical Student  
Wellington School of Medicine  
University of Otago

Praveene is a fourth year medical student based at the Wellington School of Medicine. She is under the Malaysian government medical scholarship to study in New Zealand. She enjoys writing Tamil (an Indian language) short stories, and is planning to get a degree in Tamil Literature.

As a fourth year medical student, I was required to visit the Mary Potter Hospice and talk to a patient who is "at end of life", or dying. This formed an important part of the Palliative Care module. This article presents the patient that I met with, and reflects on what I gained and learned from the experience.

I have been around deaths before. I have seen my bed-ridden grandfather kissing his daughters goodbye before finally 'embracing' death. I have seen my cousin with leukaemia crying and begging his mother to not let him go because he did not want to die. I have seen my uncle going to bed, only to not wake up the next morning. I have seen relatives wailing and mothers and wives fainting. I have experienced the quietness that settles just as the funeral services come to an end. So yes, I am familiar with death and dying. And since I have been around death, I did not expect much out of the Mary Potter Hospice visit that I had to undertake as part of the course requirement. I was mentally prepared to face the worst. One has to admit that visiting a cachectic, dying patient in a worn down, dingy building is not a picnic. My aim was to collect as much information as I could and leave before tiring the patient out. I was mentally preparing myself to face a crying patient. Somehow in my mind, crying goes along with dying.

I was truly surprised as I entered the hospice. The whole building was well lit, with big windows and sun roofs. There were bright flower bouquets everywhere and the hallways were lined with exuberant paintings. To me, the hospice resembled a day care centre or a nursery. Then I passed by the Family Room, where I caught a glimpse of a crying lady being comforted by a group of people. This served as a reminder for me that I was, in fact, in a hospice.

I was greeted by Dr. Brian Ensor, who was holding a light bulb. He was about to change the fused-out bulb of a patient's bedside lamp. How often do we get to see a bulb-changing doctor, who goes the extra mile to ensure patient comfort? I have met doctors who would rather wait for hours for a technician or orderly to arrive for a trivial job such as this, because it does not fit their job description. Dr. Ensor inspired me, simply by holding that light bulb.

Dr. Ensor then introduced me to the patient, BW. He was a 74 year old man, who looked very thin and frail. His clothes were too big for him. He did not have anything much around him, except for some books on his bedside locker, which suggested to me that he might be a new admission. This was later confirmed by him. He had come in the day before and was adjusting to the new environment.

BW's voice was very soft, almost a whisper. His voice, together with his

shrunken frame, gave away his current health condition, regardless of the strong emotional and mental status that he projected. I started the interview from the medical point of view, hoping that it would then lead to the psychosocial aspect of his illness. Thus, I asked him to tell me about his condition.

BW presented to his GP in 2007 with severe constipation for which he was treated with laxatives and dietary modifications. But six months later, his constipation returned so the GP made some further investigations and referred him for a colonoscopy. A number of polyps were discovered and removed. His constipation cleared after the colonoscopy. He did not have any problems until two years later, when he again presented to the GP with severe constipation, abdominal pain, loss of appetite and weight loss. The GP was surprised to see him and asked him why he had been missing his follow-up appointments with the gastroenterologist that the nurse had scheduled. The GP and BW later discovered that the nurse had indeed made appointments for him but had failed to inform BW about it. By the time BW was referred to the gastroenterologist and the diagnosis of colorectal cancer was made, and it had already metastasised to his liver and bones. BW had noticed bone pain before, but attributed it to ageing.

By the end of 2009, BW had lost a total of 17kg and did not qualify for chemotherapy treatment. The oncologist feared that his body may not have the strength to withstand the chemotherapy, given that he had lost so much weight. So little could be done besides symptom relief. He was prescribed morphine for his abdominal pain and two tubes were inserted into his abdomen to drain the ascitic fluid. He kindly showed me the tubes and the bags that were attached to them. He then said to me:

*And now I am here. The doctor told me that he can't do anything else for me and I don't blame him. [He] has been really good and the medical staff were amazing. I can't complain [sic]. Even the people here [the hospice] are good. [I] can't complain.*

I asked him about his family, and he told me that he has two daughters and both were coming in the next day to visit him. His wife had died ten years before and he had never remarried. He used to work at the New Zealand Dairy Board before retiring.

What struck me as unusual was the fact that BW never once did mention the word 'death' or 'dying' or even 'cancer'. He just replaced these with the word 'it'. When I asked whether 'it' meant cancer or death, he would simply reply, "Yes." Maybe because he had just come in to the hospice the day before, he had not yet had enough time to grasp the gravity of the situation. Or he may still have been in denial of the prospect of death, and did not want to use the word. Or maybe he was getting used to the idea of death and was simply trying to find the courage to use the associated language.

I was inclined to ask about his feelings because he came across as someone who is very stoic, and in the back of my mind, I thought that he would not volunteer such information unless asked for. But the reply that I got was, "I was diagnosed [with colorectal cancer], so now I just got to get on with it." When asked if he blames the nurse (who failed to inform him of his appointments) for his condition, he shrugged and said that he does not blame anyone for his condition and that he has accepted it. His reservation

of using the word "death" and his acceptance of his condition served me as a reminder that every patient is different, thus every patient may have a different way of handling their terminal disease.

Retrospectively, I noticed that our conversation had some gaps. Sometimes, he would pause to catch a breath, and sometimes the both of us would run out of things to say. But, interestingly, the silences were not uncomfortable. It felt natural, like they were supposed to be there. And neither of us felt like saying anything to break the silence until it was appropriate to do so. I believe the silences and gaps add to the melancholic tone that usually surrounds the topic of dying, and it just felt right.

Furthermore, I realised that I enjoyed the surreal calmness of the hospice and the consultation; there was something almost spiritual about it. People come here fully informed that they have less than a year to live. How do you live a life that is on a definite pathway to doom? All throughout our lives, we are taught not to do things that have been proven to fail or be futile. How do we alter that state of mind and re-orientate our thinking when we know we are going to die? I guess one way is to redefine death and to find a meaning in it before finally accepting it. Maybe some patients see death as a natural end or a release from the sufferings that they are undergoing.

I do not believe that his inability to communicate his feelings was caused by a lack of rapport between him and me, as he answered questions about his condition willingly and we even shared some jokes. But after the session, I did feel inadequate for not being able to explore more about his feelings; to ask the 'right' questions. If I had been more capable in terms of handling this kind of situation, then perhaps he would have spoken more about his feelings and views on the end of life. This concerned me the most. I was disappointed with myself, but quickly realised that this provided me with

a window of opportunity to learn from my mistakes and to be better equipped for the future.

Medical students are often taught about diseases and ways of curing them, ultimately to avoid disability or death of a patient. We are taught to battle with death every day, and a good outcome means a patient who is alive. So it is that much harder to sit back and do nothing. I feel it is more difficult to 'let go' than it is to treat. Feelings of guilt and anger may develop as a result of being 'useless' in these circumstances. I realised that four years of medical education has not prepared me to accept the fact that not everything needs cure. Sometimes the best thing we could do is to sit back, hold the hands of the patient and reassure him that he is not alone in this journey; that we are there to support him. Being supportive and caring is incredibly important for patients. It is also self rewarding to help someone else in this way. However, it is important not to go too far when offering this support, and to keep in mind professional etiquette. Reflection, peer review and professional supervision may provide guidance towards managing this.

If given the chance, I would like to redo the interview. Although I may be dissatisfied with my approach, a good thing came out of it. I was given an opportunity to review my skills and a chance to realise that no matter how many experiences with death and dying I have had, every one of them is unique.

I have a newfound respect for people at end of life. So much courage is needed to carry on living; to change our perception of death as being a stopover, not a destination. So much bravery is needed to accept death and to welcome it with open hands. Different people treat death differently. Some find freedom in it. Some feel they have been cursed. Some accept it and some avoid it. However, handling death will always be part of the job description of a doctor. Death; it scares me a little.



### Benson Chen

5th Year Medical Student  
Auckland School of Medicine  
University of Auckland

Benson Chen is a fifth year medical student in Auckland, with an interest in the surgical specialties. He flirts with the idea of being a neurosurgeon, but is currently going through a neurology phase.



### Hunt & Marshall's Clinical Problems in Surgery, 2nd Edition.

Julian A Smith, Jane G Fox, Alan C Saunder, Ming Kon Yi Elsevier  
2010  
RRP: NZ\$169.90

'It is more common to see an unusual presentation of a common disease than a rare disease.' Many medical students would have heard this before, yet when it comes to practicing clinical medicine we often forget that even common diseases can have unusual presentations. This is especially true in surgery where many common surgical problems masquerade as the unusual; where despite our best efforts the patient's presenting problems just don't seem to match a certain disease.

Hunt and Marshall's Clinical Problems in Surgery (2nd ed.) is not your ordinary textbook. Medical and surgical texts, such as the Oxford Handbook series, have traditionally been based around the diseases one may encounter in clinical practice, organised by anatomical region. Instead, Clinical Problems in Surgery discusses common clinical presentations encountered in surgical practice, how to solve these problems and how to devise a plan to manage them expeditiously and safely.

The beauty of this book is its focus on the practice of medicine using a problem oriented clinical approach rather than emphasising disease and pathology. "Patients present with clinical problems, not defined disorders". This approach is centred on the patient's presentation and the issues that are affecting this patient.

The introduction to the text teaches students how to use this approach, which involves: (1) Collecting and recording the Database (history and examination); (2) Constructing a problem list; (3) Assessment and plan; (4) Recording progress notes; and (5) Writing discharge summaries. Clinical students, especially those who are just starting on the wards, will find this section particularly relevant to all branches of medicine – not just surgery!

Clinical Problems in Surgery covers a range of surgical problems over nine chapters grouped by region. The main presenting problems from each surgical specialty are covered including topics from general surgery; vascular surgery; orthopaedics, ENT head and neck, urology, cardiothoracic surgery, and neurosurgery. Topics from plastics, ophthalmology and gynaecology are also discussed – making this a comprehensive surgical text.

Each chapter begins with an introduction focusing on the important aspects of the history and examination relevant to that system. Every conceivable problem a patient can present with is then discussed in detail, beginning with a description of the problem and the most common causes. Each cause is then reviewed briefly and compared and contrasted with the others, and a diagnostic and treatment plan outlined. All the common surgical conditions that medical students are likely to encounter while on the wards are discussed.

The second edition of the book introduces four new chapters: Preoperative Medical Problems in Surgical Patients, Postoperative Problems, Problems in Surgical Intensive Care, and Problems in the Injured Patients. These chapters explore additional problems that one may have to manage. I found the new chapters on managing the pre-op and post-op patient to be very relevant and practical. As I am often reminded, surgeons don't want to spend time on the wards managing patients – this is the role of the House Officer!

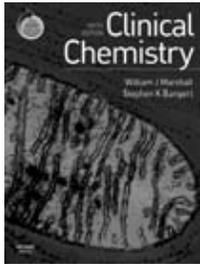
Clinical Problems in Surgery is printed using a two-colour scheme (blue and black), nevertheless the text is easy to read, and accompanying diagrams and pictures simple and easy to understand (even if they are not in full colour). Despite the numerous authors involved in writing Clinical Problems in Surgery, there is very little difference in writing styles between chapters. Each chapter is succinctly written with the key points highlighted and emphasised. If I had to fault the book, it would be the layout of the text on the page, which is organised into long paragraphs. This however does not detract from the quality of the book, unless you like to learn from lists and bullet points.

Overall, students will find Clinical Problems in Surgery to be a useful companion while they are on their surgical runs. The book's simplicity and step-by-step approach to every possible presenting complaint is incredibly helpful and will give every medical student the confidence to diagnose, manage and treat the patients they encounter in all aspects of surgery using a problem-oriented clinical approach.

### Ashwin Kanamala

2nd Year Medical Student  
Dunedin School of Medicine  
University of Otago

Ashwin Kanamala is a second year medical student at the University of Otago having initially completed a BA majoring in economics. In his spare time he reads textbooks, on a more serious note he is interested in surgery, although it's early days.



### Clinical Chemistry

6th Edition.  
Marshall, WJ and Bangert, SK.  
Publisher: Mosby/Elsevier  
2008  
NZRRP\$90

Marshall and Bangert's Clinical Chemistry 6th Edition aims to "describe the role of biochemical investigations in the investigations and management of disease". To this end this textbook has proven a valuable resource for understanding the basic sciences behind the physiology and biochemistry of medicine, integrating both in an easy on the eyes format. The detail is not overwhelming, although not a walk in the park either. If you are looking for a pocket reference on clinical biochemistry then this is not it. Instead this book offers a systematic review of the body system's physiology, biochemistry and what can go wrong in a clinically relevant manner. What I enjoyed most about this book was the succinct yet free flowing prose.

Each chapter starts with the basic physiology. The physiology is reinforced in most cases by a flow diagram (thank you editors). This is followed by biochemical investigations used in making a diagnosis, after which discussions on particular diseases associated with the system of interest are presented. Alongside the investigations and diseases, cases are interspersed throughout the chapter which helps put the new information into context.

The pros are that: it is easy to read, has colour diagrams, a structured format, is clinically correlated, and comes with online StudentConsult. The major con for me is that it needs an exam style question section, testing both the basic sciences and clinical sciences with answers at the end of the book (as a matter of fact, every textbook needs this!).

So what is the bottom line? If you are strapped for cash then the library is only a stone throw away. It is a suggested reading for ELM2 at Otago, but we do not use the book too much during the course. If you do have the money to buy the book, it is definitely worthwhile having. Going through a few pages each day has worked wonders for my understanding of the basic sciences, and reinforcing that knowledge would hopefully make for better clinicians.

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Case reports (<1500 words)  
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