

Footprints Forwards

Better strategies for the recruitment, retention and support of Indigenous medical students



MONASH UNIVERSITY
as lead agency in collaboration with
James Cook University
and
The University of New South Wales

FINAL PROJECT REPORT



Cover image:

Artist: Mick Harding Clan name: Taungurung

Bunjil's Law (detail)

The first layer represents Bunjil's law and he created the earth and everything on it.

The second layer represents all the seeds of the plants and animals that Bunjil created.

The third layer is represented by Goornmil (tiger snake) and he follows Bunjil's law by only taking what he needs.

The last layer represents the person (you) and it has a combination of all these elements inside them and is essential for any person to be the best they can.

Outside blue layers represent Wurru Wurru (the sky).

barcode to come

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Abbreviations

AITAP	Aboriginal and Islander Tertiary Access Program
AIDA	Australian Indigenous Doctors' Association
AMA	Australian Medical Association
AQF	Australian Qualifications Framework
CE	Catholic Education (Diocese of Townsville)
CDAMS	Committee of Deans of Australian Medical Schools
DEST	Australian Government Department of Education, Science and Training
the Department	Australian Government Department of Health and Ageing
HCAP	Health Careers Access Program
HCB	Health Careers in the Bush
HSC	Higher School Certificate
IHCAP	Indigenous Health Careers Access Program (JCU)
INMED	Indians into Medicine
JCU	James Cook University
KE	Koori Educator
KEDO	Koori Education Development Officer
KODE	Koorie Open Door Education
MAPAS	Maori and Pacific Admission Scheme
Monash	Monash University
NACCHO	National Aboriginal Community Controlled Health Organisation
OATSIH	Office of Aboriginal and Torres Strait Islander Health
OECD	Organisation for Economic Co-Operation and Development
PMP	Pre-medicine program for Indigenous students entering medicine at UNSW
QED	Queensland Government Department of Educations and the Arts (North Queensland Region)
QTAC	Queensland Tertiary Admissions Centre
RUSC	Rural Undergraduate Support and Coordination Program
TAFE	Technical and Further Education
UMAT	Undergraduate Medicine and Health Sciences Admissions Test
UNSW	The University of New South Wales
USyd	The University of Sydney
UWA	The University of Western Australia
VDET	Victorian Department of Education and Training
VET	Vocational Education and Training
Winter School	One week residential program on medical and other health professionals conducted at UNSW

Summary

This report details the work undertaken through the project titled *Footprints Forwards: Better Strategies for the Recruitment, Retention and Support of Indigenous Medical Students*. The project was undertaken by a consortium from Monash University (Monash), James Cook University (JCU) and The University of New South Wales (UNSW) for the Australian Government Department of Health and Ageing (the Department) under the Rural Undergraduate Support and Coordination (RUSC) Program as a Program of National Significance. Monash was the lead agency. In this report the word Indigenous is used to mean Aboriginal and Torres Strait Islander people.

The aim of the project was to look at opportunities for and barriers to Indigenous student entry to medical education. The key objectives of the project were to examine existing information relating to Indigenous recruitment and support strategies of Australian medical schools; identify reasons for low Indigenous recruitment, enrolment and completion in medical schools; review existing promotional materials; develop an interactive multimedia product; design and pilot flexible and sustainable models of recruitment; and establish a Reference Group.

Project activities included forming a group that provided informed guidance during the project; undertaking a literature review to examine what has been published concerning the barriers to and opportunities for Indigenous students entering medical courses in Australia; auditing the current number of Indigenous medical students including first year enrolments in 2006; considering existing promotional materials for Indigenous students currently considering medical careers; developing a recruitment resource suitable for use in all Australian secondary schools; piloting and reviewing various models to recruit Indigenous medical students; and seeking to establish from withdrawn Indigenous medical students reasons impeding their course completion.

In framing the project the consortium considered medicine in terms of a career for individuals as well as a discipline where practitioners are part of a health workforce and do not operate in isolation. Accordingly a broad view was adopted that considered other health careers as part of the pathways to university and to medical courses as well as the context in which doctors work with Indigenous communities.

The literature review identified that medical educators in developed countries with Indigenous populations such as Australia, Canada, US and New Zealand increasingly recognise that one strategy to tackle poor Indigenous health is to increase the number of Indigenous medical graduates who will work on better health outcomes for their own people. It was also found that in Australia Indigenous people are significantly under-represented in both medical schools and in the medical workforce.

The literature search identified that performance gaps between Indigenous and non-Indigenous student outcomes indicate that much remains to be achieved on every aspect of school performance.

As career advice and counselling in secondary schools is an important influence affecting the recruitment and retention of Indigenous students into medicine, to understand the dynamics of information exchange the consortium conducted research at both State (Victoria) and regional (Townsville) levels. The consortium supports the expectation that career guidance should improve the efficiency of the education systems and the labour market as well as contributing to the promotion of social equity.

The research conducted in Victoria found that the majority of advice provided to Indigenous students interested in medicine concerned subject choice or academic work requirements. Respondents appeared unable to demonstrate that they could effectively provide complex career advice to these students. Many respondents indicated they did not have a good understanding of the various pathways into Australian medical schools for Indigenous students. Mentorship and role models were seen by participants as the best way to provide support and encouragement.

Almost two thirds of the participants in the Townsville regional survey had not provided career advice about medical or other health profession careers to Indigenous students in the last year. A number of participants indicated they had 'not much' knowledge of entry processes to medicine. While most respondents were aware of medical school entry processes their knowledge was more about admission to Queensland universities rather than at a national level. Participants identified a range of barriers and opportunities. The most frequent barriers found surrounded not achieving pre-requisite subjects, low university entry scores and issues about self-perception and self-belief. Suggestions for activities to support Indigenous students include role models; mentoring; and importantly improved and appropriate resources that are regularly updated. The research also identified that there needed to be clarification of the roles surrounding the provision of career advice and ongoing partnerships between universities, schools and students.

One of the key findings from the project is that rather than specify one type of information program for Indigenous students and their families (such as residential workshops) a range of programs need to be offered. Participants at the career information sessions indicated that they found these were useful and their feedback was positive. Focus group participants identified they expected to need support once undertaking a university course. Most of the focus group participants appeared to be unaware of the existence of Indigenous support centres within universities.

Some of the other key points from the focus groups highlight that the participants were interested in medical and other health careers for somewhat altruistic reasons such as helping people and working with others; were influenced by — and sought information and support — from people when considering a medical or health career and in particular career teachers, family and friends as well as those working or studying in the field; did not have clearly defined course or career expectations; and have high needs for information and support.

A number of outcomes from the information sessions had not been anticipated. Six Indigenous people attended the Mildura workshop as observers. Of those four people are now considering their pathway — as mature age students — into a career in nursing. In addition in response to the positive experiences of their students who attended the workshop two of the schools have requested that a similar one day session at each school be conducted.

At the beginning of 2006, an audit found there were 109 students in undergraduate and graduate entry medical courses who identify as Indigenous. This was as accurate a total figure as we were able to establish at the time of the audit. Since the audit period the consortium has been provided with revised numbers for two universities adding an additional eight Indigenous students. It is known that enrolment numbers are subject to change.

The audit reveals that there has been only a slight increase in the number of Indigenous medical students enrolled in 2006 when compared with figures for 2003, 2004 and 2005. Considering the overall number of medical students in Australia is well over 9,000 these audit figures show that the significant under representation Indigenous students in medicine continues. This also highlights that much needs to be done to reach the target set by AIDA of 350 additional Indigenous students enrolled in medicine over the five years to 2010.

The differing entry requirements of medical schools, increasing numbers of medical schools admitting students, increases in available places and changes to support offered to Indigenous students point to the complexity of information surrounding the entry to medical schools. This highlights some of the many difficulties that students, schools, families, career advisors and others have in seeking accurate and current information.

The consortium also considered the resources and approaches currently used by university medical schools. This component looked at the stated policy and support strategies of all Australian universities with medical schools through a scan of all websites to assess how the individual universities sought to effectively manage the recruitment, retention and support of Indigenous students. In addition it looked at a range of programs and initiatives. The web sites of all universities with medical schools were searched to document what stated policies they had that recognised the special needs of Indigenous students and staff as well as what strategies, support structures and practices they had in place to encourage Indigenous students through medical training including the policies and/or strategies to encourage Indigenous student recruitment, scholarships, Indigenous support centres and recruitment materials.

It was found that there is considerable variation in current approaches in Australian universities across articulated policies, provision of scholarships, existence of support centres and promotional materials. Some universities were found to have strategies which recognise Indigenous people. Others state their intention to encourage Indigenous students. Some web sites required lengthy searches to locate information about the Indigenous support centre. Others were found to have obscure information. All university web sites searched were found to have Indigenous centres except Bond and Notre Dame.

The search revealed that those medical schools with high numbers of Indigenous students have a combination of a formal university policy or strategy for encouraging Indigenous students, allocated places and special access pathways. It found that those faculties that also have large Indigenous medical student numbers have a number of support strategies in place.

Importantly, at least six universities who have allocated places for Indigenous medical students have not been able to fill them. The overall low numbers of Indigenous medical student totals over recent years demonstrate that health sciences faculties, university Indigenous support centres, secondary schools and governments must enhance what is currently in place to encourage better recruitment and retention of Indigenous medical students.

A number of factors become apparent looking at the range of resources. It seems there is no national approach. Initiatives occur usually as a one off production rather than as part of an ongoing program. This tactical approach is not sustainable in the long term. Some strategic approaches were observed. Access to programs was identified as an issue. It would also appear that a number of assumptions are made about the form and style of

information delivery without determining whether it is appropriate for use. One finding coming from this study was that the Internet was not regarded by most participants as a source of information about careers. As the sample size was small this is seen as worth future investigation.

A number of enabling factors can be drawn from participants who had attended residential programs run by UNSW for those interested in medicine and Indigenous students preparing to study medicine. These include that students think early about possibility of a health career in primary or early high schools as well as in later years of high school; selection of the right school subjects, especially science subjects; timely information needs to be provided by teachers and career advisors; other health careers can be pathways to medicine for mature aged students and Indigenous supports, particularly identification with other Indigenous students who share similar goals of studying medicine or going to university are also important.

The project also sought to discover more about the reasons for Indigenous students discontinuing or deferring their medical course. Many of the reasons given by students as to why they had withdrawn from medical studies provide valuable feedback. Key findings include: that the medical course was not what they expected; they were disappointed with teaching attitudes and methods; before deferring or withdrawing alternative pathways were not suggested; and that they withdrew due to financial problems. Support whether from the faculty or the Indigenous unit was the most significant factor that would have encouraged participants to continue their medical course. What emerges from these responses is the need for students to seek all the support they can find such as tutors, mentors and scholarships. A strong motivating factor for wanting to be a doctor was the state of Indigenous health and wanting to make a difference. Leaving family and friends or being away influenced their decision to withdraw from medicine.

Synthesis of project findings reveal that while a number of opportunities exist, barriers to the recruitment, retention and completion of Indigenous medical and other health students remain. At the secondary education level low retention of Indigenous secondary students results in a small pool of Year 12 students to potentially recruit into medicine and other health careers. Indigenous secondary students have high motivations for wanting a career in this sector but have a need for high levels of information and support.

Career advice and counselling in secondary schools was just one of the activities considered in this project however a number of key findings concern career development. It is recognised that much of the information about Indigenous entry to medical schools is complex, changing and varies between medical schools. Many participants working in career development lacked knowledge, understanding or current information concerning medical courses. Advice was often limited to subject choice or academic work requirements. This is considered an area that requires further training, support and development.

At the tertiary level an audit of Indigenous medical student numbers in 2006 reveals there has been no meaningful increase in recent years. Universities have yet to find ways to address the significant under-representation of such students. There are opportunities for greater collaboration and better targeting of efforts which could result in benefits such as a move towards greater consistency in information delivery and sharing of resources. Mature age Indigenous people were found to have entered medical schools following other health careers. Many existing promotional materials were considered to occur on an *ad hoc* basis and may not be able to be accessed by all potential Indigenous students. Orientation of materials display a one-way approach to information provision whereas these findings indicate engagement is desirable.

The consortium produced a DVD promotional resource titled *You Can Do It!*

Dissemination of the knowledge and findings of this project is seen as an important part of the consortium's role. This will play an important role in future strategic planning and requires resources to undertake effectively. It is considered that there are two stages concerning the dissemination of these findings. The first stage involves distributing information on the project and concludes the consortium's project responsibility. The tasks involved in this stage include preparing a report on the project for a wider audience and papers for peer-reviewed publications.

The second stage of disseminating what has been learned in this project involves seeking to engage with key stakeholders and developing approaches to progress the better recruitment, retention and support for Indigenous students in medicine and transform the under-representation of Indigenous students in those schools. It is considered that this will play an important role in future strategic planning and requires resources to undertake effectively. This will include discussing with the Department means to share current information; consultation with key stakeholders on the way forward; undertake workshops in a number of locations to share the recommendations to interested groups and individuals; and future research to build on what has been learned, including exploring the gaps that have been identified, piloting appropriate initiatives and any appropriate expansion of *You Can Do It!* material.

The Project Reference Group was representative of key stakeholders and made a contribution throughout the project. This was valued by the consortium.

The recruitment and retention of Indigenous students into medical courses is a complex task involving many separate systems and sequential activities by a number of sectors and agencies. Recommendations arising from the project findings centre on the need for a nationally co-ordinated and collaborative approach:

RECOMMENDATION 1: A nationally co-ordinated and collaborative approach

It is recommended that a coordinated and collaborative national approach be taken by the numerous key stakeholders including governments, Indigenous organisations, educators, career development practitioners, universities and the VET sector concerning the provision of career advice to Indigenous students. A key step would involve establishing a medicine and health career advice clearing house project to collect, develop and distribute information as well as facilitate engagement and collaboration amongst stakeholders. The clearing house would preferably be established under the auspices of an existing organisation.

RECOMMENDATION 2: A focus on secondary school students

It is recommended that universities collaborate to share resources to increase the opportunity for Indigenous students of all ages and their families to attend events such as career workshops, expos, forums, residential programs and in-school visits. The consortium recognises that in this field direct support to the student and their family by face to face visit, phone calls, letters and e-mails is paramount. In addition accessible material should be developed that includes advice about subject choice, scholarships and other financial support, details of support available at universities and the availability of mentors and tutors. This material should be available in a number of modes.

RECOMMENDATION 3: Career development support

To support career development practitioners improve outcomes it is recommended that they receive access to professional development in working with Indigenous students and advising these students and their families about medicine and health career choices. This process should start at the national level with representations to organisations such as the Australian Association of Career Counsellors and the Career Industry Council of Australia regarding the development of additional standards in this area and a series of professional development modules for delivery across Australia.

RECOMMENDATION 4: Support from universities for existing recommendations

It is critically important that university medical faculties implement the excellent recommendations set out by CDAMS (Phillips 2004) and AIDA (Minniecon and Kong 2005). This includes Indigenous health as a core theme throughout the curriculum for all students. We recommend that financial incentives be used to encourage take up of the CDAMS and AIDA recommendations and that the Australian Medical Council establishes clear standards in this area.

RECOMMENDATION 5: Indigenous support mechanisms in universities

To encourage more Indigenous students into and through medical and other health courses it is recommended that all universities have Indigenous support units with adequate facilities and resources to support Indigenous students and that the number of Indigenous staff be increased in all Australian medical schools.

RECOMMENDATION 6: Existing approaches in universities

It is recommended that universities should have in place and periodically review their Indigenous education policy and ensure that the principles and strategies in it are actively operating. For medical faculties this should, as a minimum, lead to a marketing strategy for recruitment of students into medicine directed at government, schools and the community, identification of allocated places, scholarships, admissions considerations, a policy advisory group, pre-medical orientation, and reducing racism and disadvantage as well as ensuring adequate funding is made available. The Australian Universities Quality Agency could also be approached to ensure Australian medical schools meet targets in this area.

RECOMMENDATION 7: Further research

It is recommended that there needs to be support for further research to be conducted in a number of areas including how Indigenous students access career information and advice.

RECOMMENDATION 8: Mature age Indigenous medical students

It is further recommended that to increase the number of Indigenous medical students, recruitment strategies should be based on an understanding that secondary schools represent just one of a number of sources of potential medical students. Mature age entry into medicine via the full range of pathways needs to be encouraged and supported. This is an area worth further investigation.

Introduction

This report details the work undertaken through the project titled *Footprints Forwards: Better strategies for the recruitment, retention and support of Indigenous medical students* done by a consortium from Monash University (Monash), James Cook University (JCU) and The University of New South Wales (UNSW). Monash acted as the lead agency. In this report the word Indigenous is used to mean Aboriginal and Torres Strait Islander people.

The project consortium was established following the combination of two tenders — one from Monash and another from JCU and UNSW — that had been submitted to the Australian Government Department of Health and Ageing (the Department) under the Rural Undergraduate Support and Coordination (RUSC) Program as a Program of National Significance.

The aim of the project was to look at opportunities for and barriers to Indigenous student entry to medical education. This is seen as an important element of the goal of the RUSC program to develop strategies that will increase the number of doctors working in rural and remote medicine. The key objectives of the project were to:

- examine existing information relating to Indigenous recruitment and support strategies of Australian medical schools to identify the achievements in attracting and supporting Indigenous students from admission through to graduation as well as to determine what additional information needs to be sought
- identify reasons for low Indigenous recruitment, enrolment and completion in Australian medical courses and locate the remaining barriers to increasing the numbers of Indigenous medical students
- review existing promotional materials that have been developed by Australian medical schools to highlight medical courses to Indigenous students and their families and develop an interactive multimedia product as a recruitment resource for all Australian secondary schools
- design and pilot flexible and sustainable models of recruitment for Indigenous students into medical courses that can be adopted by Australian medical schools
- establish a Reference Group which will oversee this project and guide measures to improve Indigenous student enrolment in and support through Australian medical courses.

In framing the project the consortium was mindful that medicine as a career and as a practice discipline does not operate in isolation of the health workforce. Accordingly and significantly the project team took a broader approach that also considered other health careers as part of the pathways to university and to medical courses. This is also in keeping with the context in which doctors work with Indigenous communities.

Two recently published national reports of particular relevance to this project were the report from the Australian Indigenous Doctors' Association (AIDA), *Healthy Futures — Defining best practice in the recruitment and retention of Indigenous medical students* (Minniecon & Kong 2005) and report for the Australian Government Department of Education Science and Training (Craven et. al. 2005) titled *Indigenous Students' Aspirations: Dreams, perceptions and realities*. These reports were published after the tenders were submitted and the project began. The former report which defined best practice in the recruitment and retention of Indigenous medical students has recently been endorsed by the Australian Medical Association (AMA 2006) and provided an excellent discourse framework and discussion on the recruitment strategies of Australian medical schools. This project adds to the work contained in both reports by exploring the relationship between the complex needs of Indigenous secondary school students and the challenges involved for the university sector in ensuring their increased representation and success, particularly in relation to health professional careers including medicine.

The project was led and undertaken principally by Indigenous people in universities based in the three most populous States of Australia — New South Wales, Queensland and Victoria. A list of the project team can be found at the end of this report.

Initially the project was scheduled to be undertaken from 1 January 2005 until 31 December 2005. However as will be detailed later in this report there were significant delays in gaining approval from the ethics committees at each of the universities to undertake the research as well as obtaining the commitment and support from key stakeholders. This process took eight months. Accordingly the project timeframe was extended to 30 June 2006 with RUSC's approval.

All the necessary ethics applications by each consortium member were approved and followed. This has involved:

- For Monash the Victorian Education Department and the Monash University Standing Committee on Ethics in Research involving Humans which gave approval to the project on 7 September 2005.
- The UNSW received approval of their ethics application on 18 October 2005 and had their application for community access approved by the UNSW Human Research Ethics Committee.
- For the Queensland component of the project, JCU received ethics approval in August 2005, as well as approval from Queensland Government Department of Education and the Arts (North Queensland Region) (QED) and Catholic Education (Diocese of Townsville) (CE).

The core components of the project included considering existing information for Indigenous secondary students thinking of medicine as a career, support strategies for Indigenous medical students, the roles secondary schools and in particular career counsellors play in promoting careers in medicine to Indigenous secondary students.

The project involved a number of key activities including:

- Forming a Reference Group to guide the project.
- Undertaking a literature review to examine what has been published concerning the barriers to and opportunities for Indigenous students entering medical courses in Australia.
- Auditing the current number of Indigenous medical students including first year enrolments in 2006.
- Consideration of existing promotional materials for Indigenous students currently considering medical careers.
- Development of a recruitment resource suitable for use in all Australian secondary schools.
- Piloting and reviewing various models to recruit Indigenous medical students.
- Establishing from withdrawn Indigenous medical students reasons impeding their course completion.

Project Reference Group

A Reference Group for the project was established and provided ongoing guidance. Members of the group and the organisations they represent can be found in Table 1.

Table 1: Project Reference Group

Mr Craig Dukes	Office of Aboriginal and Torres Strait Islander Health (OATSIH)
Dr Paula Edgill	Australian Indigenous Doctors Association (AIDA)
Ms Elaine Lomas	National Aboriginal Community Controlled Health Organisation (NACCHO)
Mr Gregory Phillips/ Ms Davina Woods	Committee of Deans of Australian Medical Schools (CDAMS)

The consortium would like to gratefully acknowledge the interest and support that was received from the members of the Reference Group during the project.

Variations to project activities

As will be detailed later in this report Monash was not able to pilot a residential workshop due to the delays in receiving approval to proceed with the project. It was also found that one day activities rather than longer residential workshops suited this cohort of students and their families. The two one day workshops met the needs of students, families, teachers and others and provided opportunities for Monash to reach them.

An interactive DVD was originally planned to be delivered as part of this project. However there were a number of strong reasons that prevented this being developed. These included appropriateness, content, currency and cost. In particular cost was considered an issue in terms of production, resource scope and supply. It was thought that an interactive DVD would require supporting tools such as materials for careers advisors. They were found to be expensive. For instance the *Deadly Bay: Open for Work* multi media resource produced for DEST to support Indigenous people to develop skills in language, literacy, numeracy and computer use for the workplace comprises an interactive animated CD-ROM, teacher notes and workbook sells for \$222.86 a set.

To create awareness and interest a simpler DVD was produced as a prototype based on the strong message: *You Can Do It!*. The music was written by an Indigenous musician and features Indigenous students in medical and other health sciences in short sharp grabs that are considered appropriate to the target audience. This concept has potential to be expanded to a range of promotional and information uses. It has been designed to be positive and engaging.

About this report

The project looked at a number of factors influencing the recruitment, retention and support of Indigenous medical students. This report starts with a literature review, considers the findings from surveys in secondary schools concerning career development for Indigenous students, details responses from Indigenous secondary students on career information and expectations, provides an audit of the estimated number of Indigenous students enrolled in medical schools in Australia in 2006, looks at programs and materials promoting health careers, provides details of a survey with students who withdrew or deferred from their medical course, outlines proposed approaches to dissemination, synthesises the findings and contains a number of recommendations.

Literature review

Background

The aim of the literature review was to identify information available in the public domain in relation to promoting, recruiting, retaining and supporting high school students with an interest in pursuing a career as a health professional. The literature was reviewed in relation to the key objectives of the project. The search included identifying the recruitment strategies of Australian medical schools, their experiences and achievements in attracting and supporting Indigenous students, the barriers to increasing Indigenous recruitment and enrolment in Australian medical schools and understanding more about the experiences of students with programs and initiatives aimed at facilitating their entry into medicine in particular but also related health professions.

Scope

The literature review considered relevant research, policy and programs published in peer reviewed and non-peer reviewed publications. Analyses of programs and associated methodologies were not undertaken as part of this review of the literature. Work conducted between the years 1996 to 2006 was drawn on. The focus of the project inquiry was largely on the Australian experience. Given that the topic encompassed several broad and complex subject areas it was necessary to draw on information that related to the project's key questions. The relevant literature was identified through a data-base search of Medline, Cinahl, Eric, Australian Medical Index (AMI) and Australian Public Affairs Information Service (APAIS). The last source yielded the most articles, given the policy based nature of much of the material in this field. A Google search using multiple search terms was also undertaken. The search terms used were the following: aborigin* or Indigenous*; high school* or secondary school*; career*; career promotion* or career support*. Key stakeholders advised the inclusion of relevant reviews and programs. Government departments, agencies, professional organisations and non-government organisation websites were searched for relevant research and policy documentation.

Findings

It was found among medical educators in developed countries with Indigenous populations such as Australia, Canada, US and New Zealand there is increasing recognition that one way to tackle poor Indigenous health is to increase the number of Indigenous medical graduates who will work on better health outcomes for their own people (Armstrong 2001; Congress of Aboriginal & Torres Strait Islander Nurses 1998; Hays 2002; Mak & Plant 2005; Minniecon & Kong 2005; Spencer et. al. 2005).

In Australia Indigenous people are significantly under-represented in both medical schools and in the medical workforce. Indigenous doctors have been reported as accounting for 0.18 % of the medical profession, despite 2.4% of the Australian population being Indigenous with Indigenous medical students making up about 1.1% of the medical student population (Minniecon and Kong 2005:17). These are not isolated figures. In 2004 the AMA commissioned a report to consider Indigenous health workforce needs. It found that the shortfall between the then estimated current access to medical practitioners by Indigenous Australians and an estimate of what was required was equal to 430 full time equivalent (FTE) medical practitioners (Access Economics 2004:16). Earlier estimates on 2001 Australian Bureau of Statistics data identify an under-representation of 928 Indigenous doctors in the health workforce (Access Economics 2004:3).

In education too there is a significant gap. While almost 20 years ago the National Aboriginal and Torres Strait Islander Education Policy (1989) identified the path for improving Indigenous education recent estimates of the differences between Indigenous and non-Indigenous student outcomes identify much remains to be achieved on every aspect of schooling (Malin and Maidment 2003: 90). The contrast in student outcomes can be seen in Table 2.

Table 2: Gaps between Indigenous and non-Indigenous student outcomes

Aspect of schooling	Indigenous	Non-Indigenous	Gap
3–4 yr old enrolment at pre-school	48%	57%	9%
Attendance rates primary and secondary School	87%	95%	8%
Meeting Yr 3 literacy and numeracy benchmarks	75%	93%	18%
Meeting Yr 5 literacy and numeracy benchmarks	62%	89%	27%
Year 10–12 apparent retention rate	44%	76%	32%
Achieved tertiary entrance score	19%	53%	34%

Tables 3 and 4 provide a summary of barriers and opportunities found in the literature review.

Table 3: Opportunities

Source	Description	Reference
Best practices	AIDA's framework for school includes locally based strategies; relationships with potential students, families and communities; Indigenous support units; Indigenous staff; university and school visits; contact and community engagement; mentoring; curricula; and 'cultural safety'	Minniecon and Kong 2005:21
Contact with health professionals and students	Importance for secondary school students of interactions between health professionals and university students as an effective way to deliver health careers information	Durey et.al. 2003:149
Career advice — expectations and early intervention	Raising expectations of students, offering careers advice earlier in secondary school and proactively address the curriculum, nature of advice and pathways.	Craven et.al. 2005:141
Mature age students	While non-Indigenous students have a higher participation rate in post-secondary education at a younger age, the Indigenous population has a much higher participation rate later in life. Have been found to have particular motivations to enrol	Hunter and Schwab 2003:10 Page et.al 1999: 1
Medical curricula	Indigenous content in all medical courses	Phillips 2004
School based programs	Proper support, effort and building social capital quickly brings about better educational outcomes for Indigenous students in school In WA, the <i>Follow the Dream</i> program provides peer support and a focus on enabling success	McRae et. al. 2000; Biddle et. al. 2004; Sutherland 2003; Schwab and Sutherland 2001. Partington 2004
Teachers	The relationship between teachers and students and valuing the potential of Aboriginal students have been found to add to the quality of the education experience	Herbert 2000
Tertiary programs	The integrated support program for tertiary health students at the Pika Wiya Learning Centre in SA provides a model that employs knowledgeable Indigenous staff and offered a supportive environment, one-on-one and group learning, mentoring, practical support, community partnerships, community ownership, a balance of flexibility and structure and development of aspirations	Adams et. al. 2005: 485–7

Source	Description	Reference
Vocational Education and Training (VET) programs	<p>Indigenous students are twice as likely to participate in VET in Schools as non-Indigenous students</p> <p>Are a means to target those students who would leave school before completing Year 12 and those who need support to study at tertiary level</p> <p>Allowed experimentation of career paths and informed decisions on future careers</p> <p>Staged approaches have been found to be successful in several health careers</p> <p>There is a greater chance of completing programs when support programs are used and there is a positive attitude to Indigenous cultures and needs</p>	<p>Helme 2005:169</p> <p>ANTA 2005</p> <p>Porter 2006:17</p> <p>Kennedy 2006</p> <p>ANTA 2005</p>

Table 4: Barriers

Source	Description	Reference
Careers advisors	Can discourage Indigenous students from careers requiring higher education, and medicine specifically while attempting to divert them to VET streams	Craven et. al. 2005
Combination of difficulties encountered	<p>Unfamiliarity with university structures; doubting their own abilities; inappropriate course delivery and teaching; racism and other negative experiences; lack of cultural relevance of courses; lack of information; difficulty balancing family, study and job; lack of family and friends who have been through university; isolation; lack of encouragement; limited finances, practical support and access to IT</p> <p>Indigenous students identified in order of importance the following potential barriers — lack of family support, the amount of career advice given, their knowledge of education or training needed to pursue goals and academic achievement</p>	<p>Adams et. al. 2005: 485</p> <p>Craven et. al. 2005</p>
Expectations	Indigenous students have been found to have lower academic self-concepts than non-Indigenous counterparts	Craven et. al. 2005
Recruitment and retention strategies — Medical schools	<p>Lack of consistency among medical schools. While 86% have alternative entry modes, just over half have recruitment workshops and just over a third have Indigenous health or medical support units</p> <p>Cultural issues, family and peer influences, poverty, health and broad community factors</p>	<p>Minniecon and Kong 2005</p> <p>Partington 2004</p>

Source	Description	Reference
Teachers	Teachers have inadequate preparation when encountering social and cultural diversity in schools	Partington 1997
VET programs	Differences have been found between programs in NSW and Queensland such as difficulties with articulation of VET qualifications towards tertiary entry. These were obstacles to multiple post-school pathways. At a local level this was influenced by factors including government policies, school or community resources, parental perceptions and community networks. Participation by Indigenous students tends to be at Australian Qualifications Framework (AQF) levels 1 and 2. There had been no improvement in participation since 1997.	Porter 2006 ANTA 2004:11
Year 12 retention	A major barrier to the recruitment of Indigenous students to medicine is the very small pool of Year 12 students from which to draw In 2001 36% of Indigenous students completed Year 12 compared to 74% of non-Indigenous students leading to a lower participation in higher education. There was minimal improvement in retention of Indigenous secondary students from 1994–2001 Approximately one third of Indigenous people did not complete Year 10 compared to 18% of non-Indigenous people In WA an even smaller proportion of students complete Year 12 than in other States and Territories	ABS 2005; Bourke et. al. 1996; Heagney 2004 Bourke and Long 2003 ABS 2003 Partington 2004

Secondary schools – career development

The recruitment and retention of Indigenous students into medicine is a complex task involving many separate systems and sequential activities by a number of sectors and agencies. Career advice and counselling in secondary schools is just one of these activities considered in this project. This is an important element and one of the factors that it will be crucial to get right to improve the recruitment of Indigenous students to medicine and other health courses.

As the only people specifically charged with providing career advice and counselling it would seem that the responsibility for providing Indigenous friendly career guidance would fall to the career advisors. Given the lack of a specific mandate to promote equity for Indigenous students we were interested in finding out the attitudes, knowledge, information and experience career advisors had concerning advising Indigenous students about a career in medicine or health.

In 2004 The Organisation for Economic Co-Operation and Development (OECD) published a major report called *Career Guidance and Public Policy: Bridging the Gap*. This report argued that there are two key expectations that government policy makers have about career guidance namely that it:

- ought to improve the efficiency of both education systems and the labour market
- should contribute to the promotion of social equity.

In the context of this project these points support improving opportunities for senior Indigenous secondary school students in terms of enhancing social and individual equity, improving the self confidence and the career management skills of younger Indigenous children, their parents and extended network. This consortium is clearly interested in both expectations identified by the OECD.

Few specific research papers on promotion of medical and other health careers to Indigenous Australian students have been found. However research with the general population demonstrates that providing little or no career guidance or ineffective career guidance hinders student progress into life long learning, further education and training and entry into jobs and careers (OECD 2004). Because of the cultural history of Indigenous Australians and the fact that many Indigenous students live in families that have no personal experience of tertiary education or a health career we expect that the need for effective career guidance is even more important for Indigenous Australians.

The OECD (2004) report argues that effective career guidance provides good career information, but adds that it is equally important to augment good information with personal support. An Australian Government Department of Education, Science and Training (DEST)

report entitled *School Students Making Education and Career Decisions: Aspirations, Attitudes and Influences* contends that information centred approaches were not rated as highly by students and parents as student centred approaches where the career advisor worked 'proactively' with the student (2004: vii). While this report does not mention Indigenous students specifically, the team's research has found that Indigenous students and their families would rate support and information more highly than information alone. The OECD (2004:92) cites Grubb (2002) on the complexity and cultural specific nature of career promotion and the consortium believes these comments are highly relevant to Indigenous Australians:

In many respects the choices about schooling, work and careers are not choices in the same sense that we think of the choices among shirts or fruit or financial services; they are much more difficult issues of identity, involving deeper issues of what a person is, what their values are, how they position themselves with respect to others and to social groups, what they think of as a worthy life — the many different elements defining who they are.'

To understand the dynamics of the information exchange in Australian secondary schools concerning career guidance, counselling, coordination and support the consortium conducted research at both State and regional levels in Victoria and the Townsville area respectively.

We also briefly reviewed sample position descriptions for the key people in Victorian secondary schools who would seem likely to be involved in promoting health careers to Indigenous students: Koori Educators (KE), Koori Education Development Officers (KEDO) and finally secondary school career advisors. The specific Koori support position descriptions do not mention career advice or counselling as an activity of the role. The sample career advisor position listed a large number of career advice tasks but made no mention of equity issues or specifically providing any advice or support to Indigenous students. We also reviewed the membership application form for the Australian Association of Career Counsellors, especially their core skills and knowledge section. In this section there is a requirement that members have an 'awareness and appreciation of and sensitivity to client's social and cultural differences in order to interact effectively with all populations'. But there is no mention of working to achieve equity for 'all populations'.

Career development — Secondary schools — State survey

Methods

In Victoria principals of Victorian secondary schools (n=532) were asked to indicate the number of Indigenous students in their school and advise whether these students were interested in a health career. The process of designing the survey questionnaire, gaining ethics clearance and encouraging an adequate response was a time consuming one. The first mail out occurred in October 2005 and by May 2006 the occasional questionnaire was still being sent back. During that time Regional Directors of Education were approached for their support, five reminders were sent to principals, an advertisement urging support was placed in the *Education Times* and finally KEDOs were asked to contact schools in their region to urge a response.

Included in the pack sent to principals was a sealed envelope to be passed on to the school's career coordinator or counsellor. Those responsible for coordinating the promotion of health careers were asked to respond to a number of questions about the provision of career advice and support to Indigenous students in the final three years of secondary

school who are considering enrolling in medicine or a health sciences course at tertiary level. The survey asked respondents to address 11 questions. Six closed tick the box questions sought answers on the following areas:

- numbers of Indigenous students in years 10, 11 and 12
- numbers of Indigenous students interested in medicine or a health career
- suggestions about how advice would be given to Indigenous students
- whether literature from Australian medical schools was available
- whether information on pathways into medical schools was available
- how long the informant had been a career coordinator.

Five open questions asked for written comments on the:

- advice they would offer Indigenous students wanting to enrol in medicine
- specific difficulties that the students might experience getting into medicine
- other support and encouragement that Indigenous students might need
- advice the respondent would have for an Indigenous student who would need to leave their community or family to undertake medical education
- any alternative career pathways that could be suggested to an Indigenous student who did not get into medicine.

The returned surveys were entered into a Microsoft Access database for recording and analysis of the quantitative and qualitative data. The written comments were analysed in two ways. The answers were assigned to categories and counted numerically. Then the responses were separately analysed by two researchers. Themes were identified using Silverman's (2001) description of the development of themes and a modified version of Colaizzi's (1978) seven steps of phenomenological analysis (the seventh step was omitted).

Results and analysis

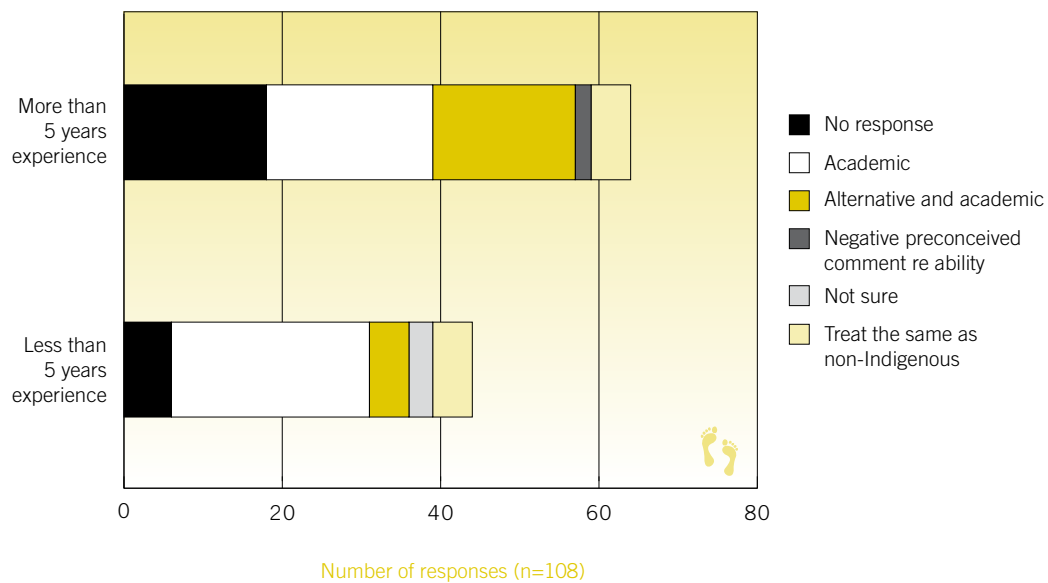
Five hundred and thirty two surveys were sent out. This resulted in 160 responses from both principals and career coordinators from the same schools and 20 responses from career coordinators only. This represented a response rate of 34 percent. Three hundred and fifty two schools did not respond. As is usual with a survey there is no way of knowing if the views of respondents differed from their colleagues who chose not to respond.

Indigenous student numbers

The principals who responded advised there were 616 Indigenous students attending their schools. The career coordinators told us there were 215 Aboriginal students in years 10, 11 and 12. Of these senior students 22 were considered by their career counsellors to be interested in a health career. Six students were said to be interested in medicine.

Fifty eight percent (58%) of respondents had been career counsellors for five years or more. There was little difference between the advice of less and more experienced advisors to Indigenous students about entering medicine (see Figure 1).

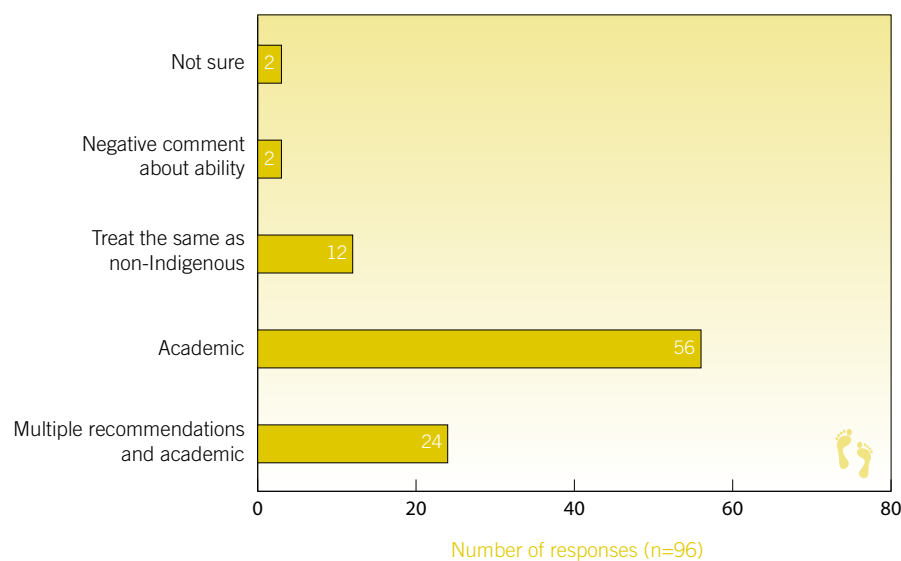
Figure 1: Length of experience of career advisor in relation to the advice given to students



Advice provided concerning entry to medical schools

Responses indicated that the majority of the advice given to Indigenous students interested in medicine related to subject choice or academic work requirements (56%) (see Figure 2). This result aligns with US research reported in an OECD study that found that most career advice to any student group is about school work and study options (OECD 2004: 41). When the academic advice category was combined with categories such as 'not sure what to advise', negative comments about likely Indigenous student's academic ability or application to study and the response that career advisors would treat Indigenous students 'the same as other students' it was estimated that 75% of respondents hadn't demonstrated that they could effectively provide complex career advice to Indigenous students interested in medicine. Only 58% of career counsellors (n=171) said they had at least some literature about Australian medical courses on hand.

Figure 2: Career co-ordinators advice on how best to accomplish entry into medical school

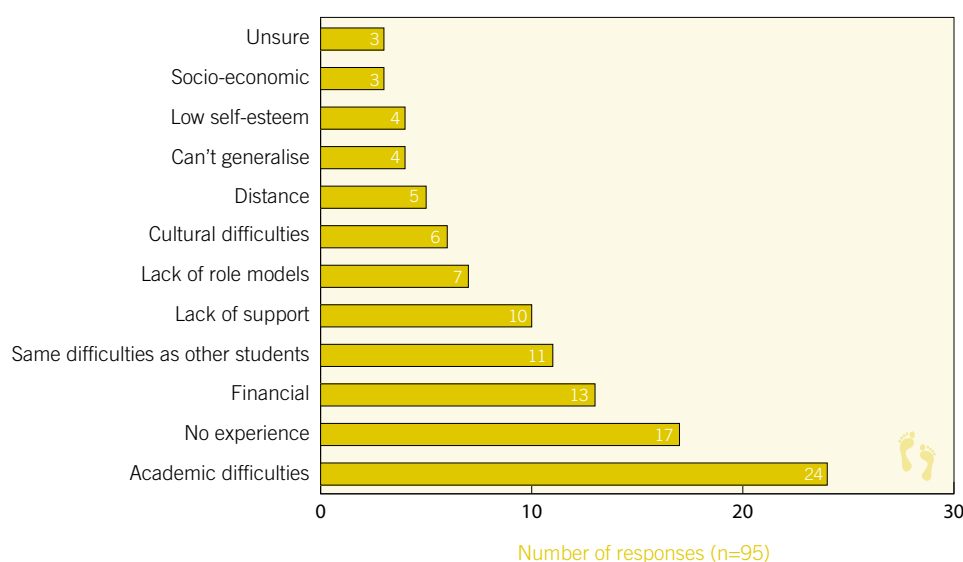


Many of the comments made indicated that respondents didn't have a good understanding of the various pathways into Australian medical schools. Forty eight percent (48%) or 56 out of 117 respondents said they had information about alternative pathways into medical school. However only 13 respondents went on to accurately describe possible pathways for Aboriginal students who didn't have the requisite score for entry to an undergraduate medical course.

The results from this study, the consortium's practical experience and literature in the field indicates that if career advisors believe that no students in their school would be successful academically then they are likely to give a 'reality check' to any student who asks about medicine (Alloway et.al., 2004:24–27). This 'reality check' will inform students that they have no chance of entering a medical career.

This may be especially true for Indigenous students as 'academic difficulties' was the most frequently rated difficulty thought to be faced by Indigenous students considering entry to medicine (see Figure 3).

Figure 3: Career co-ordinators views on special difficulties faced by Indigenous students considering entry to tertiary education

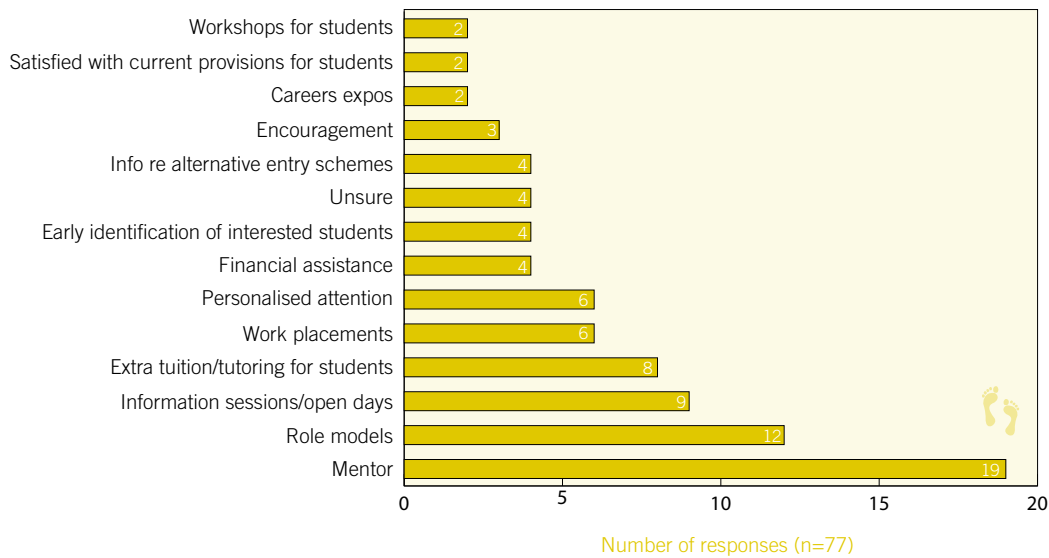


Support for potential Indigenous medical students

The majority of the responses made it clear that supporting and encouraging Indigenous students was best undertaken by someone other than a career co-ordinator. Mentorship and role modelling were considered the best options followed by open days, extra tuition, work placements, tapering off into personalised support, financial assistance, early identification of students, unsure, alternative entry schemes, encouragement, career expos, satisfied with current provisions for students and workshops for students (see Figure 4).

This point links to the sample career advisor position description discussed earlier in this report. It became clear that career advisors were likely to be extremely busy people with almost no time to work intensively with individual students. Therefore it would seem responsible to recommend that support would principally come from other people and preferably from Indigenous people. Alternatively it may have been the nature of the question we asked that focused our respondents to external advice, encouragement and support.

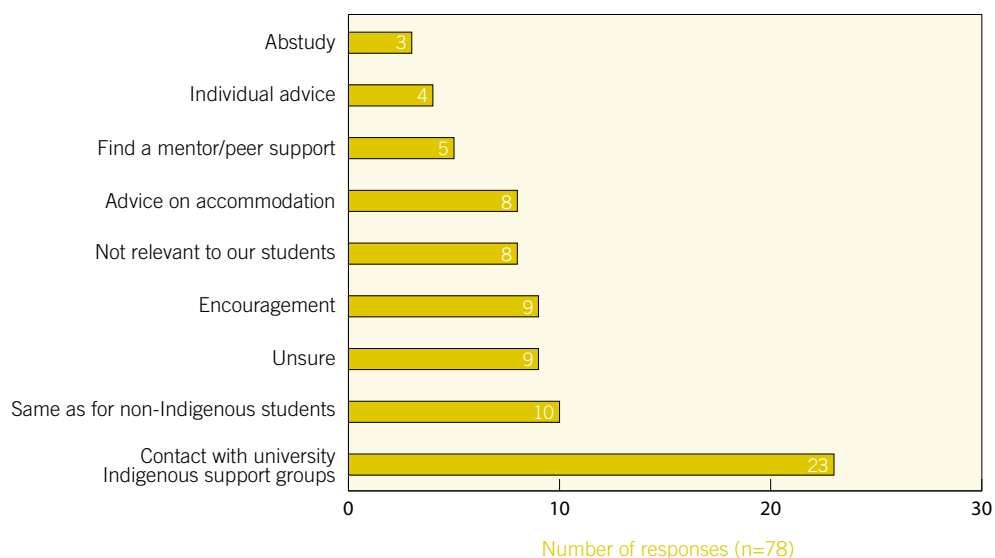
Figure 4: Career advisors' views on support and encouragement that would help an Indigenous student interested in medicine



While it may appear logical to draw the conclusion that KEs and KEDOs would be the people to provide the mentoring and role modelling, it must be considered that these workers are not trained for the task and are called on to undertake a vast array of other roles. As the OECD report makes clear the best career advice outcomes come from collaborations between career advisors, students, parents, community and external agencies such as universities and the VET sector (2004:14).

Some career co-ordinators were aware of supports available for Indigenous students leaving family and community to enter medical courses (see Figure 5). However, it was apparent that among participants there a misunderstanding that entry to medicine is only about entry into undergraduate medicine courses in their local capital city which resulted in other medical schools or post-graduate pathways not being put forward. Comments such as the 'same as for non-Indigenous students' and the 'not relevant to our students' indicated a lack of knowledge about cultural differences in the first instance and a belief that students might apply for and perhaps gain entry to a university close to home rather than an interstate university, a pre-med program, a graduate entry course or alternative pathway program far from their home base.

Figure 5: Advice offered to an Indigenous student who has to leave his/her family/ community to undertake medicine



We thought that the eleven career counsellors who made additional comments at the end of the survey really summed up the themes that emerged in this study. The responses ranged from the complacent ‘in my professional opinion Indigenous students are given excellent support from all schools’, through the encouraging we ‘would like more information provided to careers coordinators covering [your] questions 7–10’ and ‘as I have not worked with these students I cannot comment, my apologies’, to the inspiring ‘we are working at the grass roots level, we believe that if we can get Koorie students here, we can retain them, last year two year twelves completed’ and the difficult to understand ‘we are a Catholic School and therefore do not usually have Aboriginal and Torres Strait Islander students’ and finally the depressing ‘[we] rarely have an Australian white student who wants to pursue Medicine’.

Career development — Secondary schools — Regional survey

Methods

The JCU project component received ethics approval to conduct a survey in the Townsville region through the JCU Human Ethics Committee in August 2005, as well as approval from QED and CE. In addition at a workshop held in 2005 with local Indigenous Community Education Counsellors (CECs) with QED and Indigenous Student Support Officers (SSOs) with CE to provide information about Indigenous students entering medicine at JCU participants were briefed on the project and their input was sought.

In consultation with the QED and CE, the JCU project team developed a self-administered questionnaire. The survey was piloted on two CECs, four SSOs and one VET Coordinator. The final three-page survey contained 19 questions seeking information about:

- numbers of Indigenous students enrolled in their high schools
- career advice given in the past to Indigenous students
- current knowledge of university entrance processes
- awareness of barriers and issues facing Indigenous students wishing to enter a health career.

In late January 2006, all participants and Principals of targeted high schools were sent an introductory letter that outlined the project and provided contact details for the project team. In March 2006, all participants (excluding CECs) were sent a copy of the postal survey, a letter explaining the purpose of the survey, a consent form to sign and a reply paid envelope. As a result of extensive discussion with key stakeholders the CECs were to be consulted using a focus group. This did not eventuate due to key personnel being unavailable and a subsequent expiry of project time. CECs were sent a copy of the survey in May 2006. At least two follow-up contacts (by mail, email and by phone) were made to each non-respondent several weeks after the initial mail-out. Initially the survey was targeted at Indigenous CECs and SSOs. Following discussions with the QED and CE, it was decided that the survey should be extended to include high school Guidance Officers (GOs) with QED and VET coordinators with CE. Data collection occurred via surveys to all CECs, SSOs, GOs and VET coordinators in Townsville and surrounding districts. Following further discussions with representatives of the QED, a focus group was planned with a representative sample of CECs. Negotiations did not progress in time to allow the project to conduct the focus group.

This work was supported by an environmental scan of the literature identify similar programs targeted at Indigenous high school students entering health careers. Following approval from JCU Human Ethics Committee, mailing lists were obtained for the CEC,

SSO, GO and VET Coordinators in the Townsville and surrounding districts in 2006 with the assistance of the QED and CE. A total of 84 participants were initially identified. This number was reduced to 72 after removing those individuals who had roles at more than one school.

Results and analysis

Due to the simple nature of the survey and the small number of respondents the survey data was collated within Microsoft Excel. Categorical data are presented as percentages. Numerical data are summarised using median values and inter-quartile ranges (IQR). Qualitative data or text based responses were thematically grouped to identify common themes.

Study participants

The majority of participants targeted for the survey worked within QED (68.1%, n=49), while 23 (31.9%) worked within CE. Table 5 below provides further details of the range of job titles or positions held by potential participants.

Table 5: Position titles for potential participants

Position Title	N=
Careers Advisor	4
Indigenous Support Officer	6
Liaison Officer	1
Teacher Aide — Indigenous	1
Community Education Counsellor	19
School Student Guidance Officer	30
VET Coordinator	11
TOTAL	72

Response rate

There were considerable delays in recruiting participants for this study due in part to clashes with school breaks. Follow-up contact to prompt participants to complete the survey was restricted by their busy schedules and limited times within the school timetable when potential participants could be contacted. Twenty-one of the 72 surveys mailed out were returned for analysis providing a response rate of 29.2%. Attempts made to contact participants included at least two phone calls, mail and email. The results of this study therefore cannot be considered representative of all GO, CEC, SSO, and VET coordinators in the Townsville region, although it does provide an indication of the issues which are important to consider in future work relating to Indigenous exposure and engagement with health careers information. As indicated earlier some GOs work in a number of schools. They were required to answer the survey about only one of the schools they worked in.

Demographics

More than half of the participants who responded to the survey were GOs (n=11, 52%). Table 6 below provides details of the types of participants.

Table 6: Respondent type

Respondent	Frequency	%
CEC	2	9.5
GO	11	52.4
SSO	2	9.5
VET Coordinator	6	28.6
TOTAL	21	100.0

Most respondents had been in their current positions for more than 10 years. Table 7 below provides further details.

Table 7: Duration in current position

Length of time	Frequency	%
<1 year	1	4.8
1–5 years	5	23.8
5–10 years	6	28.6
>10 years	9	42.9
TOTAL	21	100.0

Number of Indigenous students at participating high schools

All respondents had Indigenous students in their schools. When asked to estimate the number of Indigenous students in their schools, most respondents were able to identify exact numbers in Years 10–12 however two respondents provided estimates in the form of a range e.g. from 100–150. Where this occurred the smaller number was used in the data analysis. Results for the number of Indigenous students attending high schools where the respondents worked are collated below. Where participants were unable to estimate numbers of Indigenous students, data was coded as unsure.

Table 8: Reporting of numbers of Indigenous secondary students

Year	'Unsure' respondents	Median	IQR	Range
Year 10	5	21	(6.75–37.5)	2–100
Year 11	6	20	(5–40)	0–100
Year 12	7	17.5	(2.25–38.5)	0–80

Given the small numbers it is a concern that some respondents were unable to provide a definite figure, as this might indicate that in some schools the academic performance of Indigenous students might be seen as less important, if they are not identifiable in the school cohort.

Knowledge, awareness and practices of health career advice for Indigenous students

Almost two thirds of the participants (62%, n=13) had not provided career advice to Indigenous students about medical careers or other health professions such as nursing and physiotherapy in the last 12 months. Less than one third of GOs and VET coordinators had provided advice to Indigenous students in the last year [29.4% (n=5)]. When asked about

providing health career advice to Indigenous students in the past 65% (11 of 17) of GOs and VET coordinators had provided advice to Indigenous students about health careers. Of those who had provided advice all indicated that advice was provided verbally. Several participants indicated that they also provided literature to students and helped them access university websites. Some schools had arranged workshops for students and/or had guest speakers come to speak. These included industry representatives. When asked about the specific literature from Australian universities regarding their enrolment processes for Indigenous students, approximately half of the respondents (47.6%) indicated that they currently had this type of literature in their workplace. Of the VET coordinators and GOs in this study (n=17), most indicated that they had literature from Australian universities. In response to prompts on the types of enrolment information participants had available in their workplace, most indicated that they had access to a range of information about specific health courses.

Table 9: Availability of literature about specific health courses

Literature on courses	Respondents with literature(n=)	%
Medical School	16	76.2
Nursing	17	81.0
OT	15	71.4
Speech Therapy	15	71.4
Physiotherapy	16	76.2
Sports and Exercise Science	16	76.2
Pharmacy	16	76.2
Veterinary Science	15	71.4

To explore levels of awareness and understanding of the different admission processes into medical schools, participants were asked to indicate on a visual analogue scale (VAS) their self perceived levels of awareness/understanding. The scale ranged from basic or limited understanding, through to an advanced understanding. Scores were determined by measuring where participants had placed their marks on the VAS. Most respondents indicated their levels of understanding of medical school admission/entry processes within the mid range (a fair understanding) of the scale. Table 10 provides summary statistics for respondent VAS scores.

Table 10: VAS scores — Summary Statistics

Nature of information	Participants with information on medical school entry	Median	IQR	Range
QTAC	19	6.5	5–9	1-10
Interviews	18	5.25	4.38–6.25	0–10
UMAT	18	5	3.5–5	0–10
Alternative pathways	18	5.25	4–7.25	1–10
JCU	19	5	4–7	1–10

Other information that participants had about medical school entry processes included information from a Job Guide book for careers, entry information from medical schools in Newcastle, New Guinea and Fiji, scholarship information from Bond University and rural health scholarships.

When asked to describe what they currently know about entry processes for medicine, five participants described their knowledge as 'not much', limited or unsure. Of the 16 participants who were able to describe the processes their responses indicated a detailed awareness of the medical school entry processes. Respondents knew more about Queensland based university processes and were aware of the Queensland Tertiary Admissions Centre (QTAC) and Undergraduate Medicine and Health Sciences Admissions Test (UMAT) application procedures. While most respondents (66.7% n=14) were aware that JCU has different application processes for pharmacy, physiotherapy and medicine as well as QTAC, fewer knew about how these application processes worked for different medical schools across the country (42.9% n=9). With regard to knowledge of subject prerequisites for medicine or other health profession courses, only three respondents were unsure of the prerequisites. Most were able to provide fairly specific details of the subject prerequisites and cited the QTAC booklets as their main source of information and guidance.

For Indigenous students who do not have the prerequisites for entry into medicine or other health science course, respondents identified the following alternative pathways or forms of career advice that they provide to students:

- advise about bridging courses and/or certificate/diploma/Technical and Further Education (TAFE) courses.
- Undertake aptitude assessment for academic study.
- Provide success stories or role model stories.
- Arrange work experience/placements.
- Contact Indigenous units within universities.

Barriers identified

The majority of respondents (85.7% n=18) were aware of the difficulties that Indigenous students have getting into medical programs. The difficulties described by respondents can be grouped into the following themes in order of frequency:

- not achieving prerequisite subjects.
- Low OP (Overall Position) scores (for entry to Queensland universities).
- Self-perception and self-belief issues.
- Lack of role models and highlighting the need for role models.
- Complicated QTAC application processes.
- Resources for health careers are inadequate/need adapting.
- Lack of encouragement/support from schools and family.
- Lack of interest in health careers.

Opportunities identified

Suggestions from the respondents regarding activities that would help provide support and encouragement to Indigenous students interested in health careers centred on the need for:

- role models, success stories and exposure to the work experience in a health setting.
- Early identification of potential students and provision of mentoring support with university students/programs.
- Improved and specifically adapted health career resources for Indigenous students.

- Information sessions presented by Indigenous health professionals at high schools.
- Camps for students to share with similarly interested students.
- Developing better relationships between families, communities and schools.
- Mechanisms to support students with lifestyle related issues for example finances, accommodation etc.
- Tutorial support for mathematics and science pre-requisites in secondary schools.

Other suggestions included having activities like 'health career expos' in high schools, targeting potential students before year 10 and having universities visit schools regularly and provide careers advisors with potential contacts for students. One particular response noted that

If we run AITAP (Aboriginal and Islander Tertiary Aspiration Program) days where we take a group of Indigenous students away for a week and work with them — you have a group of students with no other distractions, the environment is great; the peer group is focused on career opportunities; you could perhaps have or pick up students who may be interested in health careers first, then have role models within the health profession come and speak outside of the school environment.

Suggestions for a resource pack for careers advisors and CECs/SSOs predominantly focussed on the need for targeted local information with local Indigenous role models or success stories that Indigenous students can identify with. Several respondents particularly noted the need for resources in a variety of formats including DVD/CDs, that are 'jargon-reduced' and in simple English which can be taken home as well as resources such as posters, stickers and rulers that provide constant reminders in a covert way.

Other suggestions included the need for regularly updated information about alternative pathways into health careers, application advice, scholarships and financial assistance and the need to address 'shame' issues surrounding specific programs for Indigenous students. There is clearly a need to raise awareness in students about what different health professionals do in communities and to provide career advisors with contact details for Indigenous units within Universities and contact details of potential Indigenous role models willing to talk with students.

Another issue that was raised by one of the participants (a GO) was that of confusion about the role of CECs particularly where their role overlaps with the careers' advice role of guidance officers within QED. The participant noted that 'CECs shouldn't be providing careers advice' and that this may have legal ramifications should they do so.

Discussion

Despite the small numbers involved in this study, the majority of participants had worked in their current positions for more than five years. This indicates considerable experience in providing career advice to Indigenous high school students. All were aware of the considerable difficulties and barriers facing Indigenous students interested in pursuing a health career.

While this survey cannot be considered representative of all North Queensland career advisors in secondary schools with Indigenous students, the results are similar to that described in another report that explored issues surrounding career advice for Indigenous students (Curriculum Corporation 2003). While not specifically targeted at health career guidance, the ANTA-funded *Career Guidance and Advice for Indigenous Students* project found that there were few opportunities and little time for career counsellors to develop effective relationships with Indigenous students and their families.

Notably one respondent demonstrated that there is a potential for confusion surrounding the role of Indigenous support officers in providing career advice to Indigenous high school students. It appeared that the role of CECs is to facilitate access by Indigenous students to GOs rather than provide career advice themselves. While the project didn't explore this issue in detail, there seems to be scope for improving relationships between GOs and Indigenous students and up skilling CECs and SSOs in terms of how career advice is provided.

Comments and responses from the project participants suggested their knowledge and awareness of health career advice for Indigenous students was relatively poor, particularly so for CECs and SSOs. Simply by conducting this project there has been an improvement in the local sector in the awareness of the issues surrounding Indigenous health career advice and generated considerable interest in the dissemination of information about health career advice. Based on the outcomes of this project, follow-up activities are planned with CECs and SSOs in the Townsville region.

Participants particularly highlighted the need for easily updated, targeted, local resources that include local success stories and/or local role models for Indigenous students. In addition, participants articulated the need for universities to be responsive to Indigenous student information and support needs when they are contemplating a health career. The identification of these issues indicates a further need for ongoing partnerships between universities, schools, students and their families.

Secondary schools – Student Information Sessions

Introduction

To provide information sessions on enrolment, course content and available supports for medical and other health careers Monash piloted forums for Indigenous secondary school students. This was seen also as an opportunity to conduct focus groups to provide the research team with the student perspectives on medical and other health careers, factors that influence their decision making, their information sources and needs. Responses were sought to assist in identifying what is needed to assist more Indigenous students into medical and other health courses.

Background

As identified earlier in this report, Monash originally planned to conduct residential health career information sessions for secondary school students in Victoria. However these were not able to be conducted partly due to delays in obtaining approval to proceed with the research from the university's ethics committee. The delays created problems with the organisation of the sessions. Also feedback from consultation with a number of schools indicated that a residential workshop was not favoured by their students mainly due to other commitments. It was agreed that one day programs would be more appropriate for this cohort. A key learning arising from this part of the project is that when planning information programs for Indigenous students to meet the needs of Indigenous students and their families rather than offer one type of program such as residential workshops a range of programs are needed.

Two one day career expos were held for Indigenous secondary students. The first workshop occurred at the Monash Peninsula campus in Frankston on 7 May 2006. The content for this event focused on providing health careers information about medicine and other courses. The sessions were designed to be interactive. Tertiary health students participated in one session to provide insight into their experience of university. Another session sought to engage the secondary students in thinking about health careers by discussing health issues in their community and the health professionals needed to deal with these issues. The other workshop was held in Mildura on 16 May 2006 at the Mildura Aboriginal Cooperative, with a similar format to the Frankston workshop.

Methods

To learn from the students and others attending the workshops a number of focus groups were conducted. By bringing together a small number of people with some common interest or characteristics through facilitation by a moderator the focus group interactions are recognised as a way to gain information about a specific or focused issue (Marczak and Sewell, Creswell, 1998; Krueger and Casey 2000).

Approval from the ethics committee at Monash was gained for this project before any information or requests of schools or students was sent. Approval was also obtained from the Office of Learning and Teaching in the Victorian Department of Education and Training (VDET) to carry out research in government schools. Letters were sent out to VDET Regional Directors to advise them of the project. NACCHO (National Aboriginal Community Controlled Health Organisation), the Victorian Aboriginal Community Controlled Health Organisation (VACCHO), and the Victorian Aboriginal Education Association Incorporated (VAEAI) were also advised. All organisations were pleased to endorse the project. Explanatory Statements and Consent Forms were sent out to all potential participants of the focus groups through their schools so that both parents and students would be familiar and comfortable with the intentions and structure of the focus groups and to provide their respective consents.

Six students and two parents attended a focus group in Frankston on 7 May 2006 and 24 students and three teachers went to Mildura on 16 May 2006. In addition six other Indigenous people who had heard about the workshop sat in on the sessions as observers. The Mildura forums were divided into four groups, each with a moderator. A scribe recorded the student responses. The sessions were held in a comfortable classroom and a hall. Each session took about an hour each. The Indigenous student participants were in Years 9 to 12. Students were drawn from a wide area of Victoria and New South Wales (see Map 1). In groups of no more than seven, they were invited to respond to six open-ended questions.

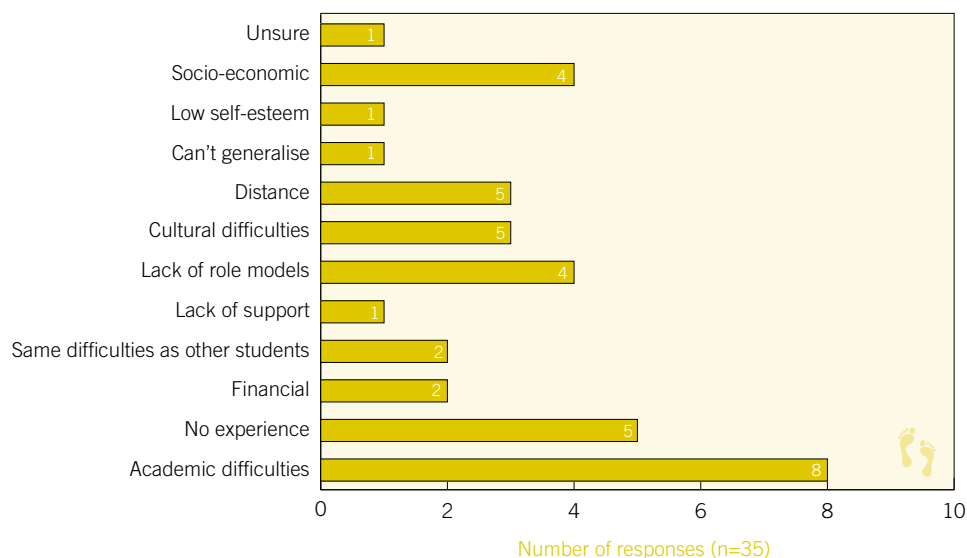
Map 1: Distribution of Indigenous student participants at the focus groups



Q 1: What interests you about a career in medicine and/or health area?

The main theme emerging was as an interest in helping others. Less than a quarter of responses were based on ideas that a career in health would greatly improve their prospects for a good job, travel and open up other opportunities (see Figure 6).

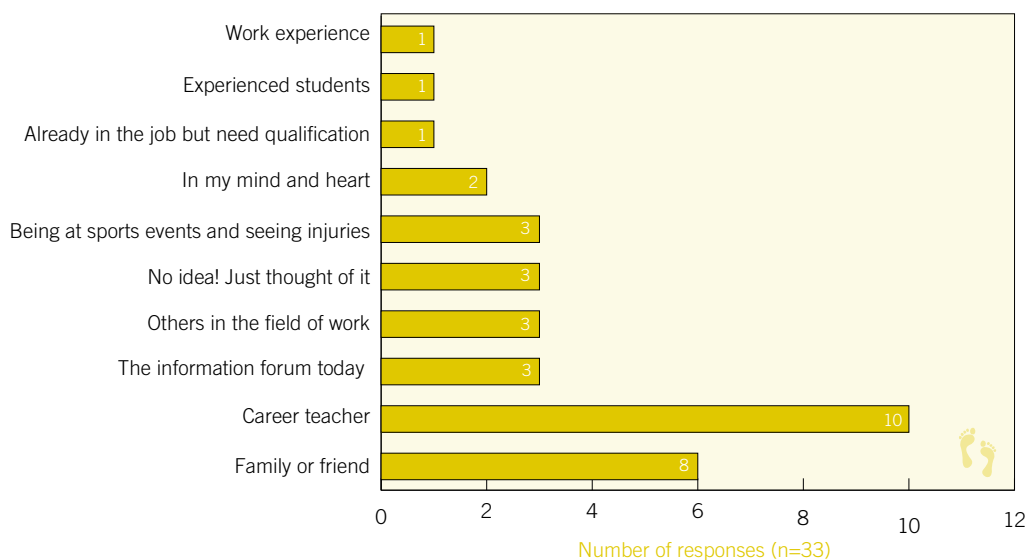
Figure 6: Reasons for interest in medicine and/or health



Q 2: What or who influenced you in this direction?

Roughly half the respondents (n=16) were influenced by career teachers, families or friends. Other people that participants identified as influential were students and those working in the health field (see Figure 7).

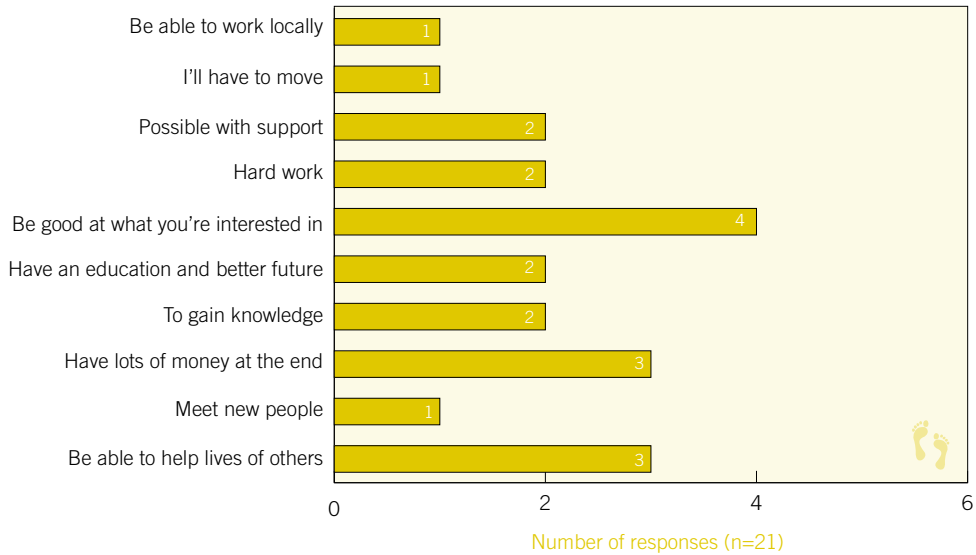
Figure 7: Influences on students



Q 3: What are your expectations of a course in medicine/health?

Of all six questions asked, this received the smallest number of responses and a range of answers. Responses suggest that the expectations of students surrounding university courses are not clearly defined.

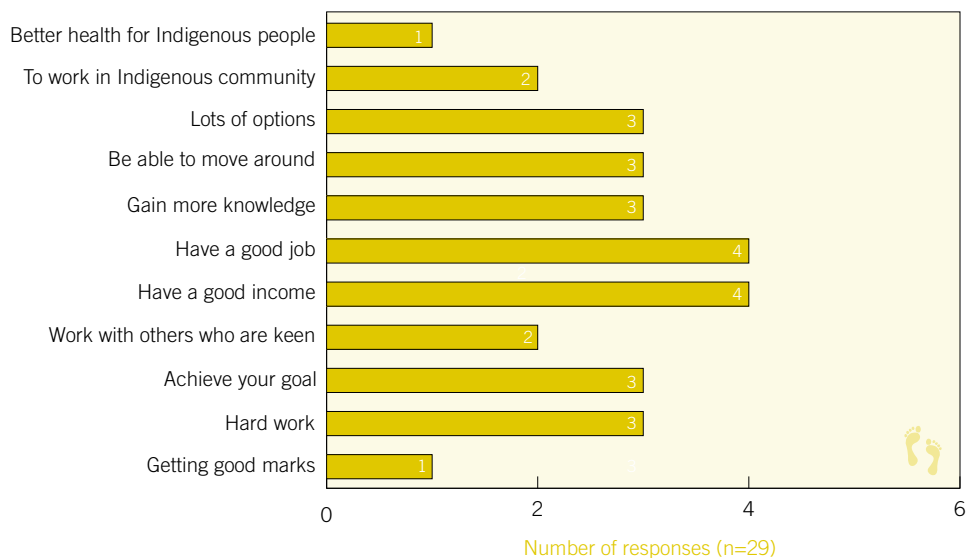
Figure 8: Course expectations



Q 4: What are your expectations of a career in medicine/health?

Of the 29 responses to this question just under half (n=12) focused on personal expectations such as hard work, gaining more knowledge and working in the company of like-minded keen people. Only three responses indicated expectations that a health career would lead them to work in Indigenous communities or improve Indigenous health. This was in contrast to responses to Question 1 in which the desire to help people was given as a reason for being interested in a health career. The response 'getting good marks' also suggests some lack of understanding concerning the differences between 'course' and 'career'. This was also evident in responses to Question 3.

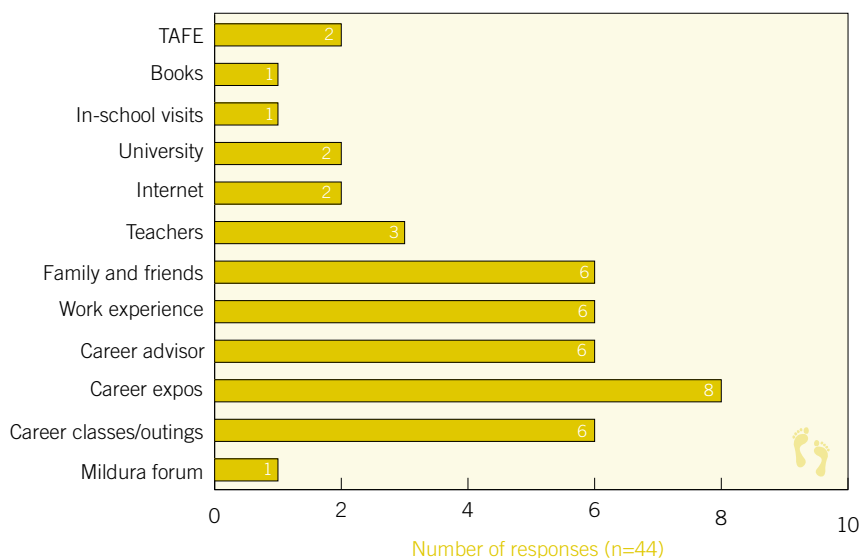
Figure 9: Career expectations



Q 5: Where did you get your information about careers in medicine/health?

Half (n=22) of the 44 responses to this question indicated careers events and work experience had provided them with information on health careers. That they were at a career forum may have had some influence on responses. For roughly a third (n=15) teachers, family, friends and career advisors were an information source. Significantly only two participants cited the Internet as an information source. Figure 10 provides more detailed information.

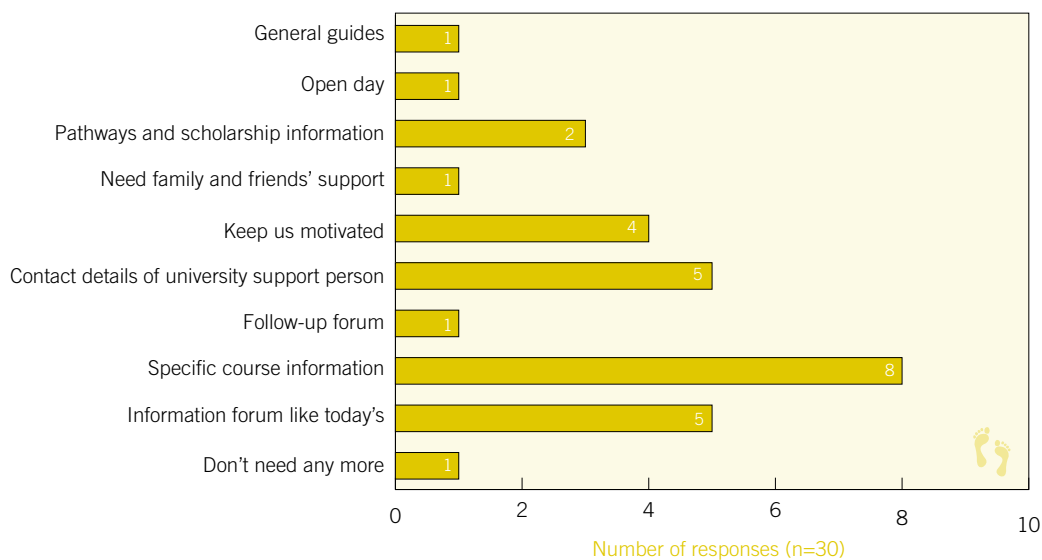
Figure 10: Career information sources



Q 6: After being at this expo what further information and/or support do you think you will need?

There were 30 responses to this question. Almost two thirds (n=19) of these indicated they needed more information and events. A number of responses recognised the importance of the personal contact and support from family, friends or support person at university. Only one participant felt they did not need further information or support. See Figure 11 below.

Figure 11: Additional information needed



Discussion

Differences in responses from the Frankston and the Mildura cohorts were apparent. Many of the Frankston participants already had personal experience of working in a health context and one was familiar with the UMAT having already put in some practice on the questions. The Frankston cohort was asked what further information they required and listed information about scholarships, the UMAT test and how to select subjects within a course. When the Mildura groups were asked what they thought about the presentations, several participants said that there was a lot they didn't know including what courses were available, what subjects they needed and what they needed to do to get into university. As Frankston is a metropolitan/rural interface and Mildura is a rural/remote area this suggests that lack of access due to geographic location may be a barrier to acquiring information about health careers.

Summary

Participants found the career expos useful and feedback from the sessions was positive. Focus group participants identified their need for specific and general information, but also for support once into a university course. Most of the focus group participants appeared to be unaware of the existence of Indigenous support centres within universities.

Key points from the focus groups highlight that the participants:

- were interested in medical and other health careers for somewhat altruistic reasons such as helping people and working with others.
- Were influenced by people when considering a medical or health career and in particular career teachers, family and friends as well as those working or studying in the field.
- Did not have clearly defined course or career expectations.
- Source medical or other health career information from career event and people such as career advisors, family, friends and teachers.
- Rarely use the Internet as an information source.
- Have high needs for information and support.

A number of outcomes had not been anticipated. Of the six Indigenous people who were observers at the Mildura workshop, four people are now considering their pathway, as mature age students, into a career in nursing. In addition in response to the positive experiences of their students who attended the workshop two of the schools have requested that a similar one day session at each school be conducted.

Universities – 2006

Indigenous medical students

The project also sought to ascertain the current number of Indigenous students in all Australian medical schools. At the start of the 2006 academic year an audit was conducted. The schools were approached and asked to provide the number of Indigenous medical students who enrolled for the first time in 2006 and the total number of Indigenous students enrolled for all years. Discussions were held with AIDA concerning this survey. Table 11 provides a summary of total number of Indigenous students in their medical courses. For a comparison the DEST data for Indigenous enrolments in 2003 (Minniecon and Kong 2005:17) are included.

Table 11: Indigenous students in Australian medical schools in 2006

University	Indigenous students commencing in 2006	Entry level of course	Indigenous students in all years of medicine	Indigenous medical students %	Indigenous medical students 2004–05 (Minniecon and Kong 2005)
Adelaide	2	Undergraduate	14	12.8	12
Australian National	0	Graduate	0	0	0
Bond	0	Undergraduate and Graduate	0	0	0
Flinders	0	Graduate	2	1.8	2
Griffith	0	Graduate	1	1.0	1
James Cook	9	Undergraduate	15*	13.8	16
Melbourne	0	Undergraduate and Graduate	4	3.7	2
Monash	3	Undergraduate	4	3.7	1
Newcastle	3	Undergraduate	23	21.1	24
New South Wales	3	Undergraduate	11	10.1	10
Notre Dame	0	Graduate	0	0	
Queensland	3	Graduate	8	7.3	6
Sydney	3	Graduate	6	5.5	7
Tasmania	0	Graduate	2	1.8	2
Western Australia	3**	Undergraduate	19**	17.4	19
TOTALS	29		109	100%	102

Revised figures as at July 2006

* JCU Total Indigenous students in all years of medicine 22

** UWA Total Indigenous students in all years of medicine 20

UWA Total Indigenous students commencing in 2006 4

At the beginning of 2006, this audit found there were 109 students in undergraduate and graduate entry medical courses who identify as Indigenous Australians and/or Torres Strait Islanders. This was as accurate a total figure that could be established. As can be seen in the notes to Table 11 since the audit period the consortium has been provided with revised numbers for two universities adding an additional eight Indigenous students. It is accepted that enrolment numbers are subject to change.

The audit reveals that there has been only a slight increase in the number of Indigenous medical students enrolled in 2006 when compared with figures for 2003, 2004 and 2005 (Minniecon and Kong 2005:18). Considering the overall number of medical students in Australia is well over 9,000 (Phillips 2004) these audit figures show that the significant under representation Indigenous students in medicine continues. This also highlights that much needs to be done to reach the target set by AIDA of 350 additional Indigenous students enrolled in medicine over the five years to 2010 (Minniecon and Kong 2005:51). This target was based on work commissioned by the AMA (Access Economics 2004) and led to the organisation calling for among other things 800 training places being made available to Indigenous students studying medicine (AMA 2004).

Some university medical schools such as Newcastle, Western Australia and now JCU stand out by having significantly larger enrolments than the other universities. New student enrolments at JCU accounted for almost a third of all Indigenous students commencing medicine in 2006. There is potential for further increases in enrolment in the next few years. A number of universities have either recently opened a medical school (Notre Dame and Griffith Universities) or will take their first intakes in the next two years (The University of Wollongong and Deakin University). Extra places will also be available in 2008 at Monash University. The continuing under representation of Indigenous students in Australian medical schools draws attention to the need for a greater sense of urgency and may prompt increased action amongst all universities.

The differing entry requirements of medical schools, increasing numbers of medical schools admitting students, increases in available places and changes to support offered to Indigenous students point to the complexity of information surrounding the entry to medical schools. This highlights some of the many difficulties that students, schools, career advisors and others have in seeking accurate and current information.

Universities – Resources and initiatives for Indigenous students

Given the barriers facing Indigenous students enrolling in and progressing through medical and other health courses that have been identified in the literature, it was appropriate for the project to consider the resources and approaches currently used by university medical schools. This component looked at the stated policy and support strategies of all Australian universities with medical schools through a scan of all their websites to assess how the individual universities reported they managed the recruitment, retention and support of Indigenous students. In addition it looked at a range of programs and initiatives.

Policy and support strategies of all Australian universities

The web sites of all universities with medical schools were searched to document what policies they had that recognised the special needs of Indigenous students and staff as well as what strategies, support structures and practices they had in place to encourage Indigenous students through medical training including the following specific factors:

- policy and/or strategies to encourage Indigenous student recruitment into and support through a medical course.
- Scholarships for Indigenous students.
- Indigenous support centres.
- Recruitment materials (multimedia products, booklets etc.) to inform Indigenous students interested in a medical and other health careers.

This search provided insights into the commitment and management focus of individual medical schools. As can be seen in Table 12 there is considerable variation in current approaches articulated by Australian universities across publicly stated policies, provision of scholarships, existence of support centres and promotional materials. Some universities were found to have strategies which recognise Indigenous people. Others state their intention to encourage Indigenous students. Some web sites required lengthy searches to locate information about the Indigenous support centre. Others were found to have obscure information. All university web sites searched were found to have Indigenous centres except Bond and Notre Dame. Table 12 provides a summary of findings.

Table 12: Summary of policy and support strategies in Australian medical schools

University	Specific scholarships	Indigenous support unit	University policy/strategy to recruit/support Indigenous students	Recruitment material
Adelaide		Wilto Yerlo Yaitya Purruna	<ul style="list-style-type: none"> • Strategic Plan • Indigenous Forum • Six allocated places • Aboriginal Access Scheme • Foundation Studies Program 	Olivia's Story
ANU	To be re-established	Jabal Centre	<ul style="list-style-type: none"> • Two allocated places annually • Special consideration 	No
Bond		No	<ul style="list-style-type: none"> • In preparation 	In preparation
Flinders	Scholarship	Yunggorendi	<ul style="list-style-type: none"> • Statement of Intent: Indigenous Education Strategies • Indigenous Admissions Scheme 	
Griffith		Gumurrii Centre	<ul style="list-style-type: none"> • Indigenous Education Strategy • Recruitment program • Unireach program 	Only general
James Cook	Scholarships	Indigenous Health Unit	<ul style="list-style-type: none"> • Science Tertiary Access Course • Six allocated places 	
Melbourne	Scholarships Bursaries	Centre for Indigenous Education	<ul style="list-style-type: none"> • Indigenous Education Strategy • Access Melbourne for students of disadvantaged backgrounds • No allocated places • No quotas 	Producing these in 2006
Monash	Scholarships	Centre for Australian Indigenous Studies Indigenous Health Unit	<ul style="list-style-type: none"> • Indigenous Health Unit Strategic Plan • Faculty In principle Indigenous document • Health Science Diploma pathway • Four allocated places • Indigenous Excellence scholarship • Dean's scholarship 	In preparation
Newcastle	AMEPP	Unulliko & Wollatuka	<ul style="list-style-type: none"> • Statement of Values in University Strategic Plan • Alternative entry • Quota places • Affirmative action 	Resource kit
New South Wales	Scholarships	Muru Marri Indigenous Health Unit and Nura Gili Indigenous Programs	<ul style="list-style-type: none"> • Special Entry Scheme • Pre-medicine Program • Indigenous support unit 	General with some specific for medical school

University	Specific scholarships	Indigenous support unit	University policy/strategy to recruit/support Indigenous students	Recruitment material
Notre Dame		No	<ul style="list-style-type: none"> • In preparation • A quota of 25% for Indigenous students is being considered 	
Queensland	Scholarships	Centre for Indigenous Health and ATSI Unit and Goorie Berrimpa Indigenous Students Association	<ul style="list-style-type: none"> • 'Commitment to assist ATSI graduates to pursue a medical career.' • Equity and Diversity Plan • Indigenous health mentoring project 	
Sydney	24 financial bursaries 8 undergrad merit scholarships	Koori Centre	<ul style="list-style-type: none"> • Indigenous Education Statement • Education Policy • Yooroang Garang Policy Advisory Group • Cadigal Special Admission Scheme • Pre tertiary preparation courses 	<i>Your Future in Indigenous Health DVD</i>
Tasmania	Cadetship Indigenous People's Medical Scholarship Trust Fund	Riawunna	<ul style="list-style-type: none"> • One place for student from disadvantaged background 	
Western Australia	Cadetships Indigenous People's Medical Scholarship Sponsorships	Centre for Aboriginal Medical & Dental Health Shenton House	<ul style="list-style-type: none"> • Indigenous Education Strategy • Consultative mechanisms • Aboriginal Pre-Medicine Programme • Alternative Pathways • Eight allocated places • High school programs 	General
Wollongong	Equity and Merit	Woolyungah Indigenous Centre	<ul style="list-style-type: none"> • Three allocated places 	

The search revealed that those medical schools with high numbers of Indigenous students have a combination of a formal university policy or strategy for encouraging Indigenous students, allocated places and special access pathways. Those faculties that also have large Indigenous medical student numbers have a number of support strategies in place. This suggests a correlation between recruitment, retention and a strong support network. Some of the newer medical schools have little in the way of encouragement or support for Indigenous medical students although there are plans by some to rectify this.

Importantly, at least six universities who have allocated places for Indigenous medical students have not been able to fill them. In part, this could be a reflection of the very small pool of Indigenous year 12 students from which to draw.

Examples of international programs for Indigenous students

To provide insight into some of the programs for Indigenous students in other nations we highlight a number of approaches.

University of Auckland, NZ

For over 30 years the Faculty of Medicine and Health Sciences at the University of Auckland has operated the Maori and Pacific Admission Scheme (MAPAS) which provides entry for Maori and Pacific students to study pharmacy, medicine, nursing and health sciences. For many years medicine was the only program for which MAPAS facilitated access. Other programs have been introduced in recent years. The MAPAS program is seen as an affirmative action program which aims to increase the number of Maori and Pacific health professionals to levels commensurate with New Zealand's Maori and Pacific population.

Selection under the scheme is based on the willingness of students to identify with their Maori or Pacific communities, contribute to the development of Maori and Pacific health and their academic ability. Since the late 1990s the MAPAS program has also operated the year long Certificate in Health Science program which acts as a bridging course to other programs at the university and health-related programs offered by allied tertiary institutions for students who are not eligible for normal admission. The program provides foundation level courses in physics, chemistry, biology, professional development and Maori language and culture. Through the MAPAS program the Faculty of Medicine and Health Sciences undertakes extensive promotional work in the community health science programs and the MAPAS system to education.

(<http://www.health.auckland.ac.nz/study/undergrad/admission.html>)

University of Manitoba, Canada

Through the cooperation of the Province of Manitoba and the University of Manitoba, the University of Manitoba Access Programs (Access Program) is offered exclusively to Aboriginal (Metis, Status, Non-status and Inuit) residents of Manitoba with a strong interest in attending university. One of the programs the university offers is the Health Careers Access Program (HCAP) to assist Aboriginal people who aspire to become doctors, dentists, pharmacists, nurses, dental hygienist or physical, occupational or respiratory therapists. Students take a general first year with a combination of a minimum of 21 credit hours and a maximum of 24 credit hours.

After completion of this year, students are streamed into the faculty of their choice. The intent of the common first year is to place significant focus on inter-professional education. The goal is to create more awareness of the diversity of challenges in various professional health fields and to allow for more informed career choices for HCAP students. The program offers intensive orientation in physics and chemistry credit courses for students who do not have a strong science background. Tutorial supported anatomy and physiology courses are available for nursing candidates. Every student is required to complete a course in health careers as well as a paid supervised summer field experience. The HCAPs have a long-standing presence and as such there is much communication and promotion of the programs to Aboriginal school students and communities about the opportunities. This promotional activity is facilitated through strong partnerships with the education system authorities. (<http://www.umanitoba.ca/extended/access/>)

University of North Dakota, USA

The University of North Dakota (UND) through the Indian Studies Department offers a variety of coursework programs including the Indians into Medicine (INMED) program, a comprehensive education program that assists and supports Indian students prepare for health careers. The program was established in 1973 to meet the need for Indian health professionals to serve reservation populations. Since its inception INMED has resulted in a total of 317 Indian health professional graduates.

INMED support services include academic and personal counselling for students and assistance with financial aid application as well as the summer academic enrichment sessions. Students currently enrolled in grades seven to twelve are encouraged to participate in the INMED Summer Institute six-week enrichment sessions which provide participants with an opportunity to improve their potential for success in courses that are vital for a successful health career. Daily classes are held in biology, chemistry, communication/study skills, basic first aid, maths and physics. In addition students are introduced to campus life by being housed in university accommodation with access to the cafeteria and classrooms. Other opportunities include listening to successful American Indian health professionals, participating in educational field trips, attending a powwow and meeting with other American Indian students from across the United States. Ninety students are selected each year to participate in the enrichment sessions and supervision is provided on a twenty-four hour a day basis for the entire six-week period. INMED students whose grades fall below an acceptable level are placed on probation with UND and INMED. Conditions of probation include tutoring sessions, periodic instructors' evaluations, weekly advising sessions, mandatory class attendance and individual testing to identify skill areas the student should strengthen.

(<http://www.med.und.nodak.edu/depts/inmed/home.html>)

Selection of Australian programs

A number of Australian programs were identified as relevant to this project, including the following selection of programs.

James Cook University

JCU has two programs of relevance to this review. The first is the ASPIRE program which aims to encourage aspirations towards and participation in tertiary studies by students from groups traditionally under represented in higher education, including Indigenous students. ASPIRE targets a range of students enrolled in schools who have academic potential but who would otherwise be unlikely to progress to university due to a variety of barriers such as remoteness, financial difficulties, lack of role models and encouragement. Students from under-represented groups including those from low socio-economic backgrounds, Indigenous students and rural or remote students are targeted.

ASPIRE provides a structured alternative pathway to tertiary studies for selected students. It identifies and provides enabling and supporting conditions once they are enrolled at JCU. The program supports selected students using a range of strategies. The most important of these is providing each student with a mentor. In addition, workshops and activities are held both at the schools and on campus to provide information, motivation and skills development. Some sessions are conducted specially for parents/guardians.

The program also includes university preparation activities such as orientation/access sessions and mentor shadowing as well as support for special entry consideration. It is hoped that scholarships will be offered in the future. Students in Years 10, 11 and 12 are identified within the school and nominated to participate in the program. A student can be nominated

by teachers, year level coordinators, Heads of Department, Guidance Counsellors, Youth Workers, Community Education Counsellors, Parents and Citizens' and ASSPA Committee members. Students can also nominate themselves. JCU then selects those students who would most benefit from participating in the program. An adapted ASPIRE program focussing on Indigenous students and health careers is planned for implementation as a pilot activity in the second half of 2006 as a partnership between the Indigenous Health Unit and the QED.

A second JCU program which aims to support and encourage Indigenous student participation in health science programs is the Indigenous Health Careers Access Program (IHCAP), which commenced at the beginning of 2006. The IHCAP program is run by the Indigenous Health Unit which is located in the Faculty of Medicine, Health and Molecular Sciences. The IHCAP program provides an academic framework to increase Indigenous student success in pursuing a health career. It has been adapted from the HCAP program run by the University of Manitoba. The program is shaped around three core components:

- the compulsory one month orientation program prior to the commencement of normal study period
- Year One of academic study which provides four foundation subjects in areas such as science, chemistry and maths along with two first year subjects specific to the discipline of choice
- Year Two of academic study requires students to complete the remaining 1st year subjects from their choice discipline in preparation for entry to second year of the program.

The IHCAP program is available for all biomedical sciences, medical laboratory science, nursing, occupational therapy, pharmacy, physiotherapy, speech pathology, sports and exercise science and veterinary science.

(<http://www.jcu.edu.au/fmhms/faculty/IHU/index.html>)

Monash University

Monash has put in place a number of recent initiatives designed to increase Indigenous student numbers. The Dean's Indigenous List has been established in addition to the Dean's Rural List. The Dean's Indigenous List ensures that places are available for Indigenous medical students and provides high levels of counselling, financial and advisory support not only to students but also to their families. Strategies are in place to provide an alternative interview process for enrolment of suitable Indigenous students.

The University of Newcastle

Newcastle is recognised as the early leader in attracting and retaining Indigenous medical students. During the course of this project we were unable to source materials or information about their programs. The consortium understands new material is in the process of being developed and looks forward to its release.

The University of New South Wales

Indigenous specific health and other professional careers residential programs are emerging as one of a number of powerful motivators for Indigenous students to complete their schooling and continue onto tertiary study. The UNSW Aboriginal and Torres Strait Islander Admissions Scheme is run through Nura Gili Indigenous Programs in conjunction with the NSW Universities Admission Centre. The Scheme provides an alternative access for Indigenous people into degree programs at UNSW. All Australian Aboriginal and

Torres Strait Islander people can apply to UNSW through the Admission Scheme, and it is available for all undergraduate courses at UNSW. It is not necessary for applicants to attempt the Higher School Certificate (HSC) (or equivalent) in order to apply for admission under this scheme although applicants must demonstrate that they have the capacity to study at a tertiary level in the area of study to which they have applied. Nura Gili Indigenous Programs offers prospective students support through Winter School Programs, Pre-Programs, assistance with applying to UNSW and Mid-Year entry to UNSW.

The target groups for these types of programs and workshops are Indigenous students in Years 10 to 12, many of whom want to explore the range of health-related careers as a prelude to 'shopping around' for a career or those who have a broad interest in the health sciences.

University based residential programs seek to provide:

- access to information about tertiary studies.
- Increased awareness and participation in tertiary education institutions among Indigenous high school students.
- Provide awareness of Indigenous specific support programs as pathways to study.
- Encourage students 'at risk' of disengaging from Schools especially during difficult transitional periods to continue.
- Assist students to identify and clarify paths of interest and the necessary subject areas for further study in their areas of interest.
- Provide a culturally safe, sensitive and 'proud' environment for participants.
- Incorporate team building and cultural activities as part of the week.
- The opportunity to meet with Indigenous health and other professionals and university enrolled Indigenous students who can relate their own personal pathways to Indigenous high school students.

The UNSW Winter School for medicine commenced in 2004. This one week residential Program provides high school students in the final years of high school (NSW Years 10-12) with the opportunity to learn about the options for university study in a range of medical and other health professions in a culturally safe and engaging program of educational and social activities. A review of the UNSW Winter School Program for 2004 found overwhelming support for the residential program with 44% and 56% of students respectively rated the program as 'very good' or 'excellent', 91% of teachers felt the program had or would have a positive effect on clarifying students' ideas and aspirations for the future and 95 % of parents/carers reported that the program had positively influenced their child and clarified their ideas and aspirations for the future (McCall and Martin 2004:16-18). Longitudinal studies would provide valuable data to test the relationship between these positive anecdotal experiences and eventual higher education outcomes. Teachers recommended that program participants be followed up and that the experience is opened to more participants suggesting the need for greater resources for this residential model of career promotion to Indigenous high school students.

(<http://www.nuragili.unsw.edu.au/>)

The University of Sydney

The Koori Centre at The University of Sydney (USyd) runs Information Programs for primary and secondary schools as part of efforts to recruit Indigenous students. Representatives from the Koori Centre visit schools to provide Indigenous students with

information on a wide range of courses offered by USyd, enrolments, student support, Koori Centre Indigenous Programs including the Cadigal Special Entry Program, facilities, scholarships and accommodation. This program is offered to all schools in rural NSW and the Sydney metropolitan area.

The Cadigal Special Entry Program is an access and support program for Aboriginal and Torres Strait Islander people who want to study a course offered by USyd (excluding block-mode and away-from-base courses) can be studied through the Cadigal Program. Indigenous students enrolled in health courses undertake the Aboriginal Health Science Support Program in which students enrol in 6-8 hours/week of academic support in their first two years and approximately 1-4 hours/week in later years. The program consists of support subjects which are offered concurrently or prior to a related undergraduate subject.

The Koori Centre also provides the opportunity for primary and secondary schools to visit the Centre at a pre arranged time with the Community Liaison Officer or other staff members. Students are given a tour of the Koori Centre, introduced to staff members, provided with an information package and taken through the Information Program. The Koori Centre also runs an Information Program for all Indigenous Tertiary Education Centres and community organisations in NSW and the wider community. (<http://www.koori.usyd.edu.au/studying/cadigal.shtml>)

The University of Western Australia

The Centre of Indigenous Studies at The University of Western Australia (UWA) administers a range of programs and activities to increase Indigenous participation in university courses. These include:

- alternative admission for Aboriginal and Torres Strait Islanders such as the Aboriginal Orientation Course, the Aboriginal Pre-Medicine Programme and the Aboriginal Pre-Law Programme.
- Providing a Student Resource Centre with a range of facilities such as computers, a common room and resource library. The School also attempts to promote an atmosphere where Indigenous students can come to study and socialise with fellow students and staff.
- Social, cultural and education activities throughout the year for Aboriginal and non-Aboriginal members of the university and wider communities.

In addition, UWA runs schools programs that incorporates:

- Year 12 Seminars for Aboriginal and Torres Strait Islander students from around the state. The Year 12 Seminar is a one-week state-wide residential seminar run annually by the Centre. Indigenous university students act as mentors. The seminar includes visits to all universities in the State.
- The Year 10 Health Careers Workshops in which Indigenous medical and science students act as mentors in the program, which includes visits to hospitals, university departments and Aboriginal health services.
- The Year 8 Discovery Day held in December each year that focuses on introducing students to the University environment through a range of hands on activities for the day.
- The Health Careers Workshop in conjunction with the Centre for Aboriginal Medical and Dental Health. (<http://camdh.uwa.edu.au/>)

Recruitment materials

A wide range of promotional materials and programs for Indigenous students have been considered during this project. In addition throughout Australia there are many careers markets and festivals which are conducted to encourage secondary school students towards the employment market with Indigenous students increasingly part of the target audience for such activities. The focus of these events is broad with disciplines, employment sectors and industries represented. Apart from the regional and education system organised activities there are some notable activities which are particularly relevant in the context of recruiting Indigenous students to health science programs. An example is the Croc Festival® (see below). This innovative event is held annually in a number of locations around Australia. It celebrates youth and culture and seeks to build partnerships in rural and remote communities. General career markets and festivals are not detailed in this report.

The Aboriginal Career Aspirations Programs

The Aboriginal Career Aspirations Program Resource Kit was produced in 2001 by the Board of Studies in NSW as part of the national *Indigenous Education Strategic Initiatives Program and Strategic Results Program*. This range of programs aims to improve educational outcomes for Indigenous students and operates across a number of States. In the Northern Territory the program is called the AITAP which targets Indigenous students in urban secondary schools in the NT and falls under the auspices of the Department of Employment, Education and Training. Information can be accessed on the following web address: www.education.nt.gov.au. In New South Wales the following web address takes you to the NSW Board of Studies Program (accessed 18 May 2006), and includes a number of useful applications and program evaluations.

(<http://ab-ed.boardofstudies.nsw.edu.au/go/resources/acap/>)

Breaks in the road: Evaluation of the Indigenous Youth Partnership Initiative

The following website provides information on an initiative to support the transition of young Indigenous people to adulthood. Eighteen projects were funded and evaluated. The initiative provides a 'whole of community' approach to youth transitions and covered assistance and support to stay on at school and provide pathways to training, employment and independence.

(http://www.dest.gov.au/sectors/Indigenous_education/publications_resources/profiles/breaks_in_the_road_final_report.htm) (Accessed 18 May 2006)

Croc Festivals

The Croc Festivals engage young Indigenous and non-Indigenous Australians in education, careers markets, health-expo, sporting events and inspirational activities as well as performing and visual arts and crafts in a 100% drug- and alcohol-free environment. The mission of the festivals is to foster improvement in health, education and well-being of Indigenous and non-Indigenous youth in rural and remote areas of Australia and to assist in the development of their employability and interpersonal relationships. These events provide an opportunity for students in rural and remote areas to come together and meet students from other remote areas, learn from sporting personalities and role-models, increase their awareness of employment opportunities for school leavers and highlight training and employment prospects.

(<http://www.crocfestivals.org.au/>)

Follow the Dream

This program focuses on Aboriginal secondary school students in WA who wish to complete Year 12 and enter TAFE or university. Students are identified in Year 7. In their first year of secondary education in Year 8 they voluntarily start to receive personal development support. The program aims to increase school attendance and retention of students to year 12. It involves collaboration between school sites, families, communities, the WA Department of Education and Training, Smith Family, Red Cross, Graham (Polly) Farmer Foundation, UWA and Edith Cowan University.

(<http://www.eddept.wa.edu.au/abled/docs/FollowTheDream.pdf>)

Guiding Circles: an Aboriginal guide to finding career paths

Guiding Circles: an Aboriginal guide to finding career paths is a self-exploration package developed by the Aboriginal Human Resource Development Council of Canada that combines traditional teachings with sound contemporary career development exercises to arrive at a better understanding of one's self in terms of possible career goals. The series of activities assists the user in developing a personalized career circle by incorporating personal interests, skills, values, style, spirit, learning patterns and work/life balance.

Guiding Circles is holistic approach that invites input from community members, parents, teachers, elders, peers, etc. to provide additional feedback toward an individual's skills and goals to complete the career circle. It aims to provide users of this guide to have a better understanding of themselves and their potential, to empower them to better determine their career direction. This aspect of the tool is done by implementing a vision, decision, and action process.

(http://www.ahrdcc.com/resource/gc_home.htm)

Health Careers in the Bush

The *Health Careers in the Bush* (HCB) program is funded by Queensland Health to increase rural and Indigenous participation in the health workforce. The Indigenous Health Careers Workshops are just one of the strategies being undertaken as part of the HCB program. Funded by Queensland Health, the workshops are conducted annually for rural and remote Indigenous students across Northern and Central Queensland by the North Queensland Workforce Unit (North Queensland) and the Yangulla Centre—Rural Health Training Unit (Central Queensland). The main objective of the workshops is to provide students with a further understanding of the health career pathways available in Queensland. The three to five day workshop program provides information on the:

- types of jobs available in the health industry in Queensland.
- Health courses available at universities throughout Queensland.
- Tertiary entrance requirements, prerequisites, costs etc.
- Life while at TAFE and university.
- Working while studying, accommodation and the support services available.
- Personal and professional career development.

Students are given the unique opportunity to tour the local hospital and tertiary institute campuses. There is time allocated for hands-on demonstrations and numerous information sessions from various health professionals currently working in the industry.

Application kits are distributed to principals, careers advisors and community education counsellors at all schools in rural and remote locations and boarding schools in North Queensland. Applications are accepted only from Year 10 students who live in or come from rural and remote locations of Queensland.
(<http://www.healthcareersinthebush.com/>)

Health Careers Kit 2005–06

This kit provides information about the various health programs offered at each of the participating universities in NSW. It has a section for Indigenous students with information about the Special Admissions Schemes and Indigenous Student Support Centres at each of the Universities in NSW.

Indigenous Careers On-line Resource

This website has information on career guidance and advice for Indigenous students and can be accessed on the following website: <http://www.curriculum.edu.au/Indigenoucareers/> (accessed on May 18, 2006). The following web address takes the reader through a concept map for a proposed on-line resource and includes documents on the following:

- effective provision of career support.
- Resources.
- Elements of effective Indigenous programs.
- Role models.
- Mentoring.
- Engaging parents.
- Adapting resources for an Indigenous audience.

Koorie Open Door Education (KODE)

The KODE addresses four key areas of education in Victorian Schools. These are:

- retention of Koorie students from early childhood through to Year 12 of schooling.
- Participation of parents in decision making and their children's learning.
- Curriculum reform.
- Access to training and higher education beyond school.

Contact details for the four KODE campuses can be found at the following web address (accessed on 18 May 2006): http://www.vaeai.org.au/education/s_kode.html

No Shame Job Careers in Health

This resource is a health career information guide for Indigenous students produced by DEST in 2004 and presents the personal stories of a number of Indigenous people and their pathways to studying medicine and other health science professions. It provides sections on student case-studies, common questions and answers about taking the plunge into higher education and a section on some of the options for study, financial and residential support. (http://www.dest.gov.au/sectors/career_development/publications_resources/profiles/no_shame_job_health_information.htm) (accessed 18 May 2006).

Olivia's Story

Olivia's Story is a DVD resource developed by Yaitya Purrana, Indigenous Health Unit of the Department of General Practice, The University of Adelaide. The DVD can be purchased for \$30 through the Yaitya Purrana Indigenous Health Unit. Their telephone number is 08 83034629. The DVD is aimed at increasing recruitment into the Faculty of Health Sciences and covers several Aboriginal community cohorts in the target audience including:

- pre-Year 12 secondary students.
- Year 12 secondary students.
- Indigenous health workers in allied health fields.
- Indigenous TAFE students.
- Mature age people.

Partners in a Learning Culture the Way Forward

This resource can be found on the following web address or accessed through the DEST website. The following web address takes you directly to the Report, Partners in a Learning Culture (accessed on 18 May 2006): <http://www.dest.gov.au/NR/rdonlyres/E879AF00-53E7-4087-812A-5064A50E0BFB/6398/THEWAYFORWARDfinalJune05.pdf>

This document addresses recruitment, retention and support for students through the pathways of the VET sector. The document includes pathways to employment in the health sector.

What Works. The Work Program

The What Works program has been funded by DEST for those working in schools. It provides information, advice and case studies to improve outcomes for Indigenous students. The program has a guidebook, workbook and website. <http://www.whatworks.edu.au>

Summary

The resources detailed above provide only a selection of the programs and initiatives that have been developed. There has been a considerable amount of information and diversity in approaches taken. A number of factors become apparent looking at the range of resources described above. It seems there is no national approach. Initiatives occur usually as a one off production than as part of an ongoing program. This approach is not sustainable in the long term.

Some strategic approaches have been observed. For instance the *Follow the dream* program in WA has clearly identified who is to be targeted, how this will occur and developed a network of partners to provide support. It seeks to address the issue of the low number of Indigenous students completing year 12 by providing support to aspiring students and has engaged considerable numbers of students. However this is a State based initiative. This reinforces that access to programs is an issue. For instance while some universities offer week long residential programs for Indigenous students not all students from around the country who may want to participate would be able to attend.

It would also appear that a number of assumptions are made about the form and style of information delivery without determining whether it is appropriate for use. For instance a great deal of information is made available on the Internet. However this presumes that information seekers have online access, have a desire to seek the information, are able to find the content and find it useful. One finding coming from this study was that the Internet was not regarded by most participants as a source of information about careers. As the sample size was small this is seen as worth future investigation.

Universities – Residential health career programs at UNSW

UNSW Winter School and Pre-Medicine Program

This section provides more detailed understanding of the residential health career programs at UNSW and reports on findings from interviews with participants who were applicants either to the Winter School or the Pre-Medicine Program (PMP).

The UNSW Winter School for Medicine commenced in 2004. It is a one week residential program that provides high school students with the opportunity to learn about the options for university study in a range of medical and other health professions in a culturally safe and engaging program of educational and social activities. This includes assisting Indigenous high school students from all over Australia identify their paths of interest, in turn, clarifying the subject areas required for further study in that field. Almost all those who attend are in their final years of high school (NSW Years 10–12). The Winter School draws applicants from a number of States (see Table 13).

Table 13: Winter school applicants by State for 2004 and 2005

Home State	%
New South Wales	40
Northern Territory	10
Queensland	30
Western Australia	20

The PMP was developed to support Indigenous medical students at UNSW and provides a structured course to prepare Indigenous students for study in the Faculty of Medicine. Due to changes in the medical program since 2004, the PMP now runs a program not dissimilar to components of first year medicine. Students who have not achieved a sufficiently strong HSC result in chemistry, maths or biology are required to attend the mainstream UNSW bridging programs prior to their entry into first year medicine.

The PMP began in 1998 and has had 114 participants — 62 (54%) female and 50 (44%) male. (There are two missing values for gender in the available dataset.) Table 14 below provides details of the 114 applicants by age and gender.

Table 14: PMP Participants by age and gender

Age	Female (N=)	% Total female	Male (N=)	% Total male
18 to 19 years	20	17.54	9	7.89
20 to 24 years	13	35.14	11	29.73
25 to 34 years	2	5.41	8	21.62
35 to 44 years	4	10.81	3	8.11
45 to 54 years	4	10.81	2	5.41
55 years & over	1	2.70	0	0.00
Unknown	18	15.79	17	14.91
Total	62	100.00	50	100.00

NOTE: The study sample included applicants during the years 1999–2006

In the nine years since its inception most of the participants have been from NSW, with 43 (38%) from metropolitan Sydney and 39 (34%) from elsewhere. Table 15 details the location of each of the applicants' home where known.

Table 15: Home location of PMP participants 1998-2006

Home Location	N=	%
NSW—metro Sydney	43	37.72
NSW—rural	39	34.21
Queensland	8	7.02
Northern Territory	6	5.26
Western Australia	4	3.51
South Australia	3	2.63
Victoria	2	1.75
Australian Capital Territory	1	0.88
Tasmania	1	0.88
Unknown	7	6.14
Total	114	100

Research component

Twenty seven (27) participants in the Winter School and/or PMP (16 females and 11 males) were interviewed. Twenty four (24) participants were Aboriginal and three (3) were Torres Strait Islander. Thirteen were currently at university and eight of whom were enrolled in a health degree—six in general medicine, one in dentistry and one in midwifery. Five were currently employed while six people were still at school. There were three interviewees for whom this information was not available. One person had attended both the Winter School and the PMP. The next largest category (n=9) comprised people who had been offered and had accepted a place in the PMP. We interviewed smaller numbers of people who had applied for but were not offered a place in the PMP (n=4), or who had been offered, but did not accept a place in the PMP (n=1). Six of the 27 participants indicated that they had contemplated leaving school before completing Year 10, while three participants said that they had thought about leaving school before completing Year 12.

Limitations

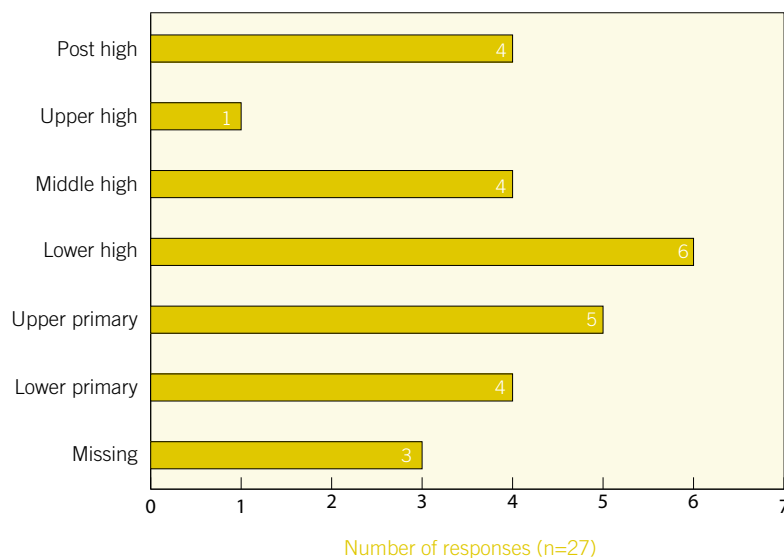
There are a number of limitations to the findings. Firstly, respondents are not necessarily representative of the total populations from which they are drawn or of other Indigenous people in similar circumstances. A second limitation relates to how clearly and accurately respondents can recall circumstances or influences that occurred over an earlier period of time.

Findings

Thoughts about a career generally or health career specifically

Participants were asked when they had started to think about a career generally. Sixteen interviewees said they had started thinking about the concept of a career during their primary years. For ten of these, this thinking began when they were in their lower primary years. In general, participants were older when they started thinking about a health career.

Figure 12: Stage when participants thought about a career in health



Sources of health career information

Interviewees were asked to reflect on whether they had accessed or been provided with sources of information about pursuing a health career during their high school years, which are summarized below. Participants were read a list of possible sources of information about health careers and provided an affirmative or negative response.

Table 16: Sources of information about health careers

Source	YES	NO
Career advisors	22	5
Family members	16	11
Career expos	16	11
Career websites	14	13
Members of Indigenous community	11	16
Aboriginal Community Liaison Officer	11	16

Source	YES	NO
Teachers	10	17
Aboriginal Education Assistant	7	20
Written media	8	19
TAFE	7	20
Government organisations	6	21
Enrichment camps	4	23
TV/radio	4	23
Health career expos/Croc Fest	3	24
Centrelink*	1	25
Other	1	26

* One missing value

The majority of respondents (22 out of 27) were given information by careers advisors. Some respondents also elaborated on the nature of the information received. The following are some examples.

The career advisor took a special interest in me because of my early interest in pursuing medicine. He provided me with UMAT. There was a lot of information in the career advisor's office and I was encouraged to go through all the faculty manuals and other information there.

I had no direction. He gave me direction when I decided what to do. Once I decided he knew where to steer me. It was different. I wasn't really living at home and so I didn't really know what I wanted to do.

Personally, I thought the careers classes at school focused quite a lot on uni and not so much on TAFE or vocational education... The other Aboriginal students at my school left early. I think it would be useful to have more information like personal stories from other Indigenous students for them.

Three people made very positive comments about career expos, but there were some negative comments. These related to a focus on nursing, a lack of information about health careers and a failure to advertise the event. Of note is how few people had received any health career information from any media sources. Four people said they had received information from TV or radio, while seven had received information from newspapers. The magazine *Deadly Vibe* was mentioned by one person. For another a childhood memory of the main character in comic strip Archie taking his younger sister to a paediatrician triggered an interest in health.

Residential courses

Participants provided a range of comments on their experiences of the Winter School and PMP:

Feedback on Winter School experience

I think it was an extremely encouraging experience. We got to go to the Sydney Children's Hospital which I really found inspiring; and the whole course was really helpful... Also [it was] kind of inspiring how many Aboriginal people there were who all wanted to do medicine...

The practical side... going to lectures, seeing what it's really like. The whole Winter School was great, I had heaps of fun. The GP interested [me]... I stitched up pigs' legs and did hospital visits...

Winter School opened my eyes to the outside world—what it would be like to go to Sydney, and the things you'd have to go through. I come from a place with a lot of dark-coloured Indigenous people, but (at Winter School) there were mostly fair-skinned Indigenous people. It was a bit shame to open up, but only at the beginning. I got OK with it towards the end, and made some mates. The staff there gave us good ideas...

Probably the fact that you stay at Uni for a week... The pamphlets, booklets etc don't actually sink in... but going to lessons sinks in... I saw the Hall of Pathology I'm actually going to get to [another university] and do medical science and pathology...

I didn't find out what you needed to get into the medicine course. I didn't really understand what subjects I needed to take for entry into a medical course.

Feedback on PMP

I think it was to give you a basic understanding of the concepts you will come face to face with at Uni; how to use computers and establish study patterns and things like that...

Anatomy and histology [was helpful]. The assignment on Aboriginal health [was helpful]. When I started at [other university] it was mad. I had a head start because we started the anatomy and histology first. (The assignment on Aboriginal health) was my first taste of public health and we also got into public health early at Uni. I started Uni a week after Pre-Med finished. It made it possible to keep my head above water at (another university)... the fact that I'd done those courses at PMP. I had a head start...

Looking back now as a first year med student, having done the PMP I am so thankful because the transition was really hard at the time in the Program but it's easier now because of that... the fact that the residentials were with other Indigenous people really helped me. I found the PMP students stayed together. We formed our own community and we had our Indigenous identity and were able to celebrate that and support each other. And we were all trying to succeed as blackfella people with medicine.

Reasons for choosing a health career

Respondents mentioned a variety of factors which influenced their decision to enrol in a health degree. Two people talked about a family member's illness. Seven people specifically mentioned or alluded to a desire to help people. For some this was particularly other Aboriginal people or communities. One young woman said that in Grade 7 in primary school her thinking about a career was influenced by living in an Indigenous community in North West Queensland where she

... saw the need for more Indigenous health people to be in that field.

Another young woman had a comment of a similar nature

Where I come from there's not many people with health careers or degrees, and there's a lot of obesity. It's a small town, about 1,000 people. That's what inspired me.

Three participants referred to previous work in health. One woman spoke of her career path which had begun in aged care then did nursing before pursuing medicine. A young woman who had had work experience in a hospital when at school said

I think I was in Year 9 when I started working in a pharmacy so I sought work experience in the area...built up a bit of a clinical knowledge and knowledge of medicines...

A young man spoke of the evolution of his career path which began in the Armed Forces

After careers testing at school you had to pick a career so I thought medical assistant in the Navy. I was there for about 10 years. I loved the clinical aspect... lots of procedural things, prescriptions. Then in 2002 I had reached the senior medic stage... I had this interaction with the [forces] doctor about a patient's diagnosis and prescribed treatment. I was asked what I thought and the... doctor agreed with my diagnosis and prescribed plan. Then I thought why don't I get paid properly for doing this?

Enablers of educational and career progression

Respondents were asked to reflect on the factors that they perceived had enabled them to achieve what they had to date. It was clear from the responses that both intrinsic (their own characteristics and attributes) and extrinsic (opportunities available and environments of support) factors were important. Family support and other positive role models emerged as recurring themes. The main themes identified were:

Personal characteristics and attributes

It emerged that some respondents had a high level of self-motivation in terms of leadership, organisational skills, tenacity, determination and a desire for self-improvement.

I was a bit of a binge drinker. I thought I'd never leave home. Leaving my community was hard. What got me out of this cycle? I spoke to myself. I said: I've got to get out of this.

Contact with health professionals

Seven people spoke about contact with their own GP having an influence on their subsequent decision to pursue a health-related career. One young man talked fulsomely about the help he had received in many ways from his GP.

When I was ill and lost my hearing he personally travelled up to Sydney to find out about the [health condition]... He could have made a phone call but he went there himself. He took a very personal interest in me and wrote me a reference to apply for scholarships. I have been awarded a scholarship...

Eleven people mentioned the importance of contact with other health professionals in deciding to pursue a health-related career. For some it was during periods of their own ill-health and hospitalisation. Some people mentioned particular health professionals such as Indigenous doctors they had met and who had inspired them.

Other Indigenous influences

There were a few comments about other positive Indigenous influences. One concerned a respondent receiving the Puggy Hunter Scholarship for nursing. Another person was inspired by meeting former tennis champion Evonne Goolagong who encouraged her in her choice of health career. Another comment from a young woman said that the support from her mentor an Indigenous medical student was important as was Indigenous peer support.

Inter-generational experience of University

Seven of the people interviewed said that they were not the first person in their family to attend University.

Schooling

Six people talked about the importance of choosing the right school subjects. One young man, for example, talked about the way the courses he had chosen enabled his entry into a medical degree. Three people talked about particular teachers who had helped them.

Family members as strong role models

Ten people referred to the importance of their mother in particular, in inspiring them.

Hurdles in educational and career progression

Many respondents came from social contexts that were in relative terms, compared with the broader Indigenous school experience, conducive to positive educational outcomes. There was, nevertheless, a diversity of experience in respondents' families, educational and social circumstances. The people interviewed spoke about the following difficulties encountered as they endeavoured to achieve their educational and career potential.

Schooling

There were a range of reasons cited by nine people for possible hurdles during their schooling, including, family, financial, 'the wrong subjects', 'boring' and "leaving early". A young woman talked about the particular challenges she faced as a Year 12 Indigenous student in a small remote town.

I was the only year 12 Indigenous student in my school to go through. They expected you to do nothing after. For them it was an achievement that I finished school.

A number of respondents spoke about being the first people in their families to do the HSC. For others, they were the first person in their family to go to University.

Deaths in the family

Four people mentioned deaths in their family, two of which had been in the previous twelve months. One of the older respondents talked in general about the number of deaths in the family and how these had impacted on him.

...being the eldest and being responsible, with a lot of family members dying quite young. I'm (in my forties now) there's only two older males in my family. I have the responsibility of looking after the young members.

Health conditions

Four people talked about the difficulties of having to cope with their own health conditions. For two this had occurred during their childhood years. One person had been left with a hearing deficit. One respondent had been ill in recent months and had had to put her undergraduate studies on hold. A fourth person, currently enrolled in a health degree, talked about his health condition (one common among Aboriginal people) which had prevented him from pursuing a particular allied health field.

Assumptions and stereotyping

Five people talked about the negative effects that other people in positions of power and influence had on them during their education. For one person, a careers advisor had made an assumption that had led to one young man almost missing out on doing the UMAT and therefore medicine because:

...the career advisor made an assumption that no-one at our school would make it into medicine.

Another talked about her school not passing on information to her, which she believed was due to her Indigenous status. She said of a residential program at her local University during Year 11, that it was:

... run with the Indigenous support Unit at [my local University] where my auntie works. It is for students in year 10 and onwards. When I didn't do it in year 10 my auntie rang up and asked mum where I was. The school didn't pass the information along. I was the only Aboriginal student doing the TEE (11 and 12) at the time so maybe they didn't think it was relevant... Anyway, my auntie told me about another camp and I went in the following year when I was in Year 11.

Another respondent's comments concerned her University entry and the attitudes about the alternative entry scheme for Indigenous students, referring to:

...the attitude of a lot of people towards Aboriginal students because of the alternative entry score. An attitude of 'You don't really deserve to be here.' My score was high enough anyway for [University]... So very disappointing. In their minds you get it easy. It's a subtle thing and you know it's there, but there are a lot of other Indigenous students at [University], so [there's] people to talk to.

Another respondent who was already a health professional lamented that in her experience any Aboriginal health professional is assumed to be an Aboriginal Health Worker and talked about the discrimination she also had to endure due to her age:

Medicine is still a dream for me and I feel knocked back...the doctors here tell me I'm too old. It's a struggle or perhaps people are jealous that I have these goals and I'm game enough to go for it. You mention it on the ward and you're not good enough for that...

One person had known he needed to stay on at school to enable him to get into university but felt he was hampered by his parents' assumptions about his capabilities. They had encouraged him to consider a trade career as they believed him to be an average student and had thought this was the best thing for him to do.

Travel and distance

Just two people commented on issues related to the distance needed to travel for their education, one for travelling to university and one for travelling to school.

Academic ability

Two people, one of whom had started a degree in health but not completed it, talked about the challenges they faced academically, which resulted in withdrawal from their intended career plan.

Absence of role models

Nine respondents felt that they had not had any role models for guiding them at school or into higher education.

Confidence and self esteem

Three people talked about issues related to their lack of confidence as a barrier to enrolling or continuing study.

Family responsibilities

Two respondents spoke about being challenged by their family responsibilities as eldest in the family.

Administrative obstacles

Two people talked about important issues relating to administrative obstacles that they had encountered while trying to enrol for an undergraduate degree. One participant found the application process overwhelming and suggested a strategy that could have assisted him in the transition from school to University was help in completing forms.

Moving away from home

Respondents fell into three categories when asked to discuss the implication of moving away from home to study. One set of respondents were ambivalent, that is they saw both positive and negative aspects. For others moving away from home was not a problem as they were used to independence or had been independent for quite some time. A third set of responses expressed the difficulties experienced away from family.

How family feels

In response to the question which sought information about how the interviewee's family feels about them pursuing a health career, 16 people said that their family felt positively about this, and used words such as 'proud', 'excited', 'extremely supportive', 'good', 'great', '[the] family are all for it' and 'rapt'. There were no responses that indicated that family members felt negatively about the interviewees pursuing a health career, although one young woman referred to some tension in her family that had ensued as a result of not continuing with medicine.

How friends feel

In response to the question which sought information about how the interviewee's friends feel about them pursuing a health career, 13 people said that their friends felt positively towards this, and used words such as 'proud' and/or 'happy' to describe how their friends felt about it. Seven of these respondents mentioned that their friends were also either at University and studying health related careers, or were planning to do so.

Summary

Based on the recollections of those who participants who had applied to attend residential programs run by UNSW for those interested in medicine and Indigenous students preparing to study medicine some of the enabling factors that can be drawn from this qualitative data are:

- students think early about possibility of a health career in primary or early high schools as well as in later years of high school.
- Choosing the right school subjects, especially science subjects.
- Provision of timely information from teachers and career advisors.
- Other health careers can be pathways to medicine for mature aged students.
- Indigenous supports, particularly identification with other Indigenous students who share similar goals of studying medicine or going to university.
- Influential persons, particularly mothers, Indigenous health professionals, non-Indigenous health professionals.
- Intergenerational effects i.e. not being the first in the family to go to university.

Withdrawn and/or deferred Indigenous medical students

The project also sought to discover more about the reasons for Indigenous students discontinuing or deferring their medical course. Approval to undertake the research was given so long as intermediaries such as a university Indigenous support centre, fellow students or a university database were used to contact potential participants. This indirect access provided for privacy, anonymity and avoided any sense of coercion or duress to potential participants.

Initially interviews with participants were planned. However this approach was not pursued as it was perceived potential participants may have difficulties with sensitive matters and the planned method would have required them to approach the researchers for an interview. Accordingly a questionnaire was prepared in electronic and hardcopy form. The survey had 19 questions and could be completed in less than 10 minutes. The focus of the questions included:

- what help and information Indigenous students had in the process of enrolling in a medical course.
- What barriers and difficulties they encountered in the enrolment process and subsequently while undertaking their course.
- What made them withdraw from their course and what could have helped them to continue.

Indigenous support centres or an Indigenous spokesperson in all Australian universities with medical schools were contacted and asked to pass on a kit containing the explanatory statement, questionnaire and return envelope to all the withdrawn students for whom they had contact details. Help from AIDA was also sought.

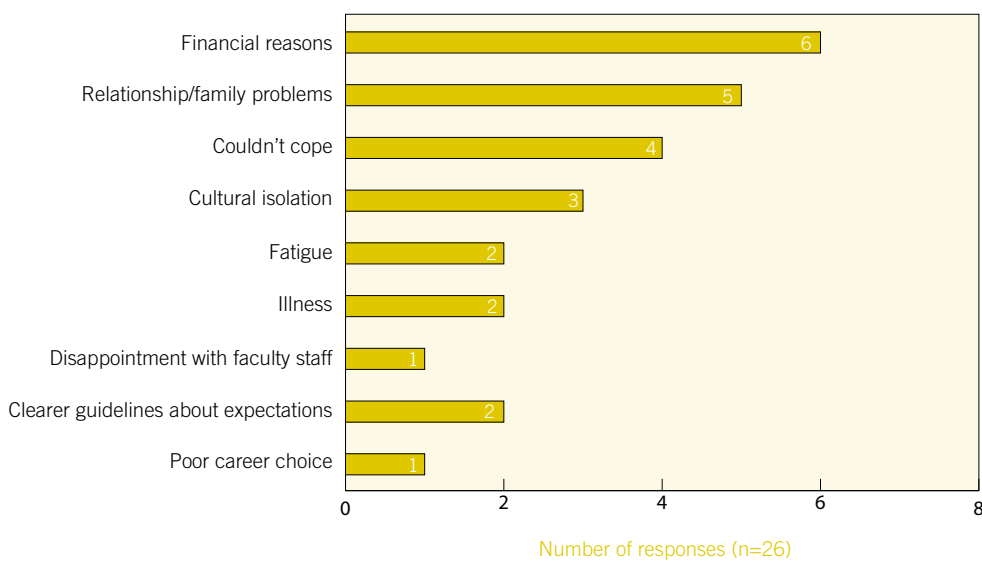
Reliance had to be placed on those who agreed to pass on the questionnaire to potential participants. To support the survey an advertisement was inserted in the AIDA *Friday Flyer*, an electronic newsletter read by Indigenous health professionals and students. This resulted in a prompt response from potential participants. Around 130 questionnaires were posted to the intermediaries. Even with follow up and reminders, responses were difficult to elicit and only 12 questionnaires (9.2%) were returned. Poor response rates could be due to a range of factors including difficulties locating contact details, unease about the topic and the hiatus due to the end of the academic years and the Christmas and New Year holidays.

The information from the questionnaire was entered onto a relational database—Microsoft Office Access. A subsequent qualitative analysis of the responses using the ENVIVO programme was not pursued because of the small numbers (n=12).

Many of the reasons given by students for why they had withdrawn from medical studies provide valuable feedback for both universities and Indigenous support centres:

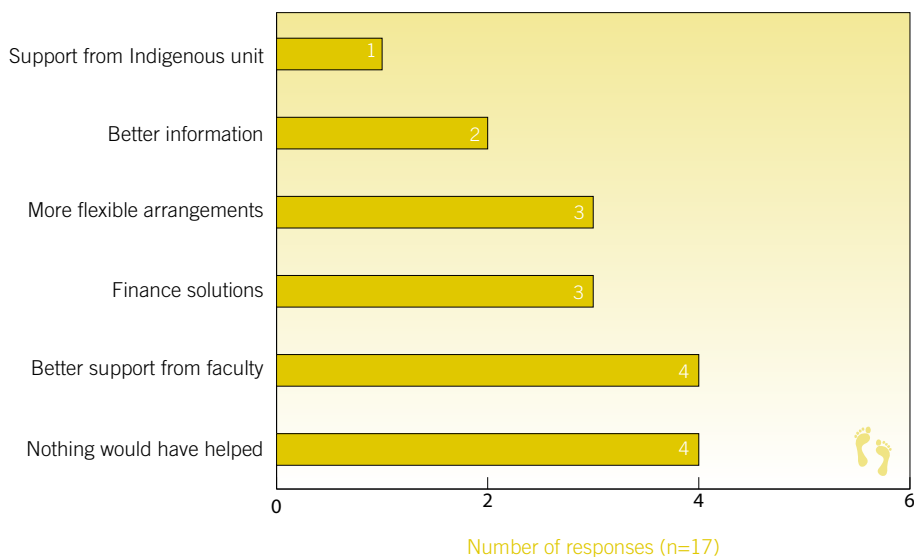
- two thirds of respondents said they would be prepared to speak to Indigenous students about medicine and implied that their experience provided valuable insights that could help to prepare new students that they themselves had not received.
- Seven respondents were accepted by their first choice of university.
- The reasons given for their selection were that it offered an Indigenous pathway and support.
- While six respondents said the advice they were given about entering a medical course had been helpful seven participants stated the medical course was not what they expected, all citing disappointments with teaching attitudes and methods. Prior to deferring or withdrawing, seven respondents reported that alternative pathways were not suggested to them.

Figure 13: Reasons given for withdrawal or deferment.



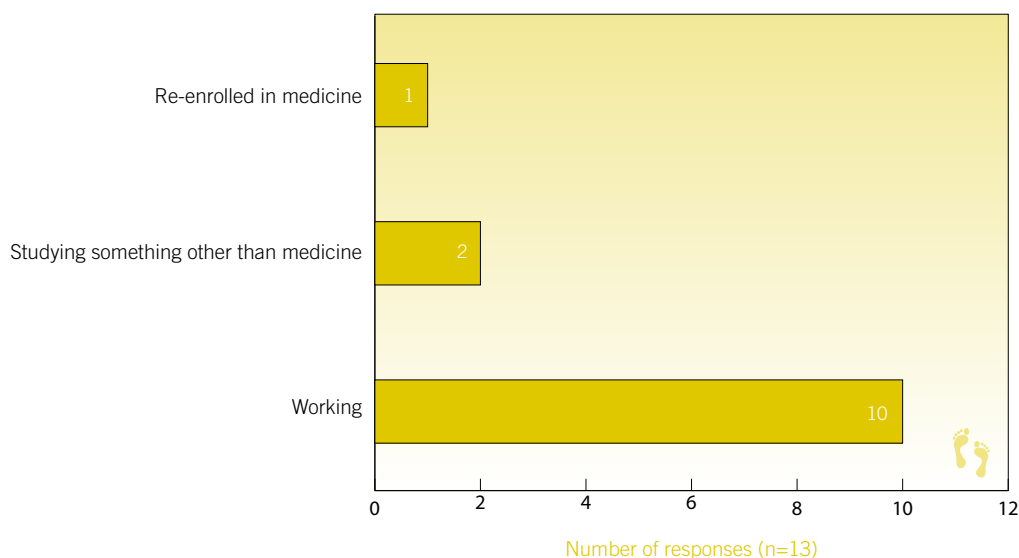
Respondents listed one or more reasons why he/she withdrew or deferred from their medical course. Financial problems were cited by half the respondents with some being their family's financial provider.

Figure 14: Factors that would have encouraged withdrawn students to continue



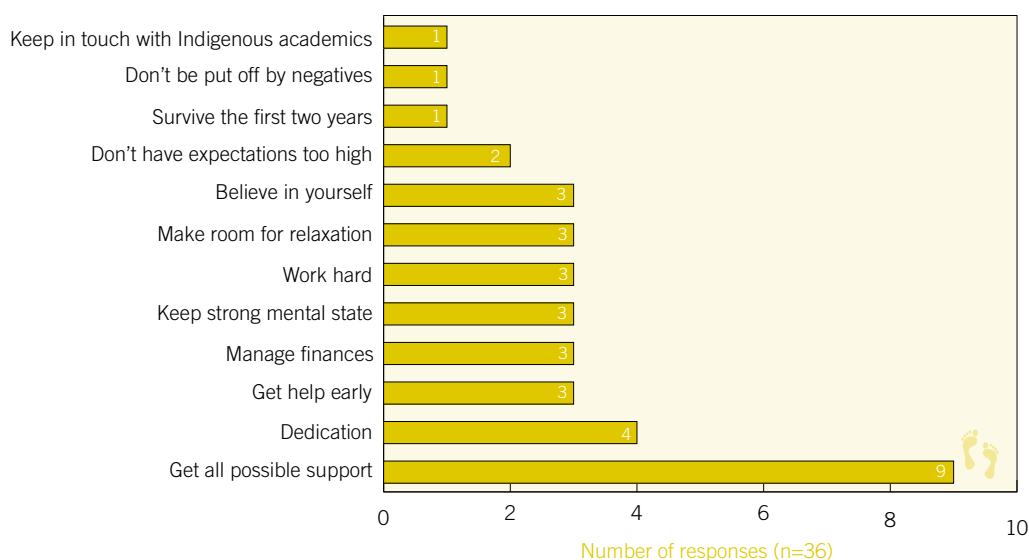
Support whether from the faculty or the Indigenous unit was the most significant factor that would have encouraged participants to continue their medical course. However a third of respondents ($n=4$) felt that nothing would have helped. Finance was again raised as an issue by a number of respondents.

Figure 15: Participants' current activity



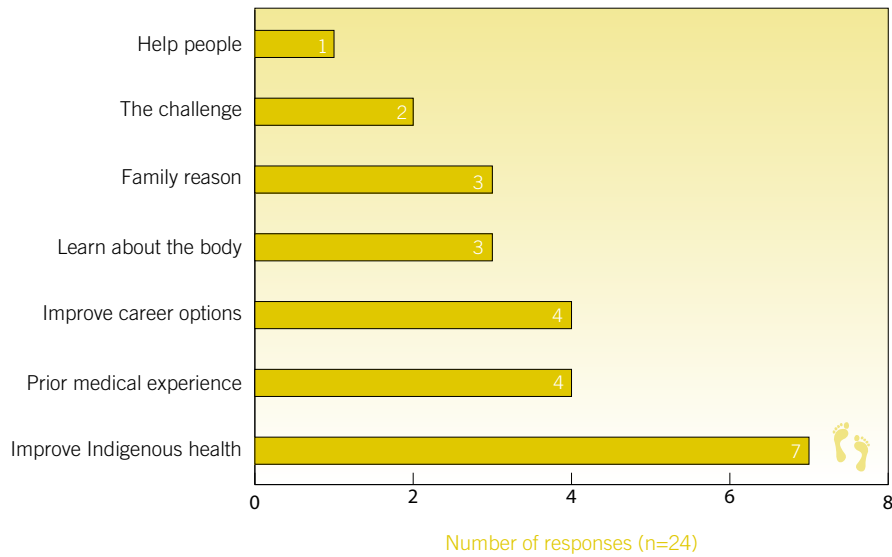
By far the greatest proportion of respondents ($n=10$) are currently working (see Figure 15). A number have continued in tertiary study, including one who has resumed a medical course. This suggests that while some Indigenous students may discontinue their medical course they may reenrol in medicine or pursue a different career, possibly in another health discipline.

Figure 16: Advice that withdrawn students would give new students.



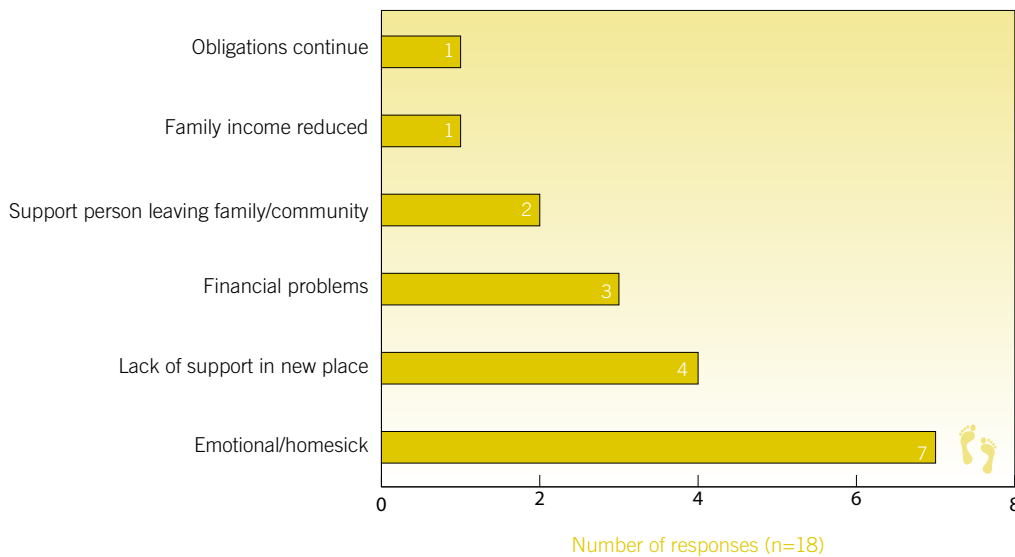
What emerges from these responses is the need for students to seek all the support they can find such as tutors, mentors and scholarships. Psychological strength was also seen as an important attribute. See Figure 16 for more information.

Figure 17: Reasons for wanting to be a doctor



Two thirds of the survey respondents (n=8) said their motivation for wanting to be a doctor was the state of Indigenous health and wanting to make a difference. Other reasons were achieving better career options and because they had prior medical experience.

Figure 18: Problems leaving family and/or community.



Respondents were asked if leaving family and friends or perhaps being away from these were factors that influenced their decision to withdraw from medicine. The majority of respondents (n=9) said they had to leave their community and/or family to pursue their medical course and experienced problems with either their departure from family/community or with their context in the new place. The loss was felt either by the family/community left behind or by the respondent having moved to be at university.

Synthesis of project outcomes

The following points provide a summary of the key learnings from the project.

Low recruitment, enrolment and completion of Indigenous medical students

Secondary schooling

- Poor retention of Indigenous students throughout secondary schooling leads to a small pool of Year 12 students to recruit from.
- There is a need to develop ways to overcome negative perceptions about educational outcomes for Indigenous students.

Indigenous secondary school students

- Need and seek high levels of information.
- May not seek career information and advice through expected channels such as the Internet.
- Need a range of supports.
- Are influenced by and seek advice and support from career counsellors, parents, relatives, friends, health students, health professionals.
- The positive motivations for students being interested in medical or other health careers — such as helping people, working with others and improving Indigenous health — are not being harnessed.

Career development

- Many working in career development lacked current information of medical courses and enrolment pathways.
- A significant number of career advisors did not have any literature on hand about medical courses and a number had not provided medical career advice to Indigenous students in the last 12 months.
- Low capacity of career advice providers to be aware of current initiatives, programs and have easy access to current information. Few could accurately describe alternate pathways into medicine.

- Careers advice tends to be mainly about subject choice or academic work requirements.
- Need further training, support and development to undertake their work with Indigenous people.

Universities

- Have failed to adequately address the under-representation of Indigenous students in medicine in recent years.
- Need to implement the CDAMS Curriculum Framework.
- Provide a range of information and approaches — many do not provide specific information of relevance to career development making it more difficult for those providing this information and advice.
- Need to collaborate better to share resources and avoid duplication of activity.
- Many universities lack Indigenous support units.
- Need to consider moving towards consistency of approach.

Indigenous medical students

- The numbers of Indigenous medical students have not meaningfully increased in recent years.
- Are motivated to enrol for certain altruistic reasons.
- Many more would have continued through their course with appropriate support.
- Indicate they withdraw for reasons beyond issues with course work.
- Mature age Indigenous people provide a largely untapped reserve of potential medical students.

Existing information

There is a lack of research papers on medical and health career promotion to Indigenous Australians. This results in a poor evidence base for practice.

Review of existing promotional materials and programs

- Programs and initiatives occur on an *ad hoc* basis — a clearing house for Indigenous content to support Indigenous recruitment and retention could help.
- One gap identified was equity of access to programs. For instance the *Follow the Dream* program provides support to secondary students however it is only available to those in a certain number of sites in WA.
- The orientation of materials often takes a ‘telling’ approach whereas the findings suggest a two-way engagement approach is required.
- A significant concern was how Indigenous students access career advice. This warrants further exploration.
- Our findings add to that of other experiences nationally and internationally which conclude that engagement with Indigenous students needs to occur much earlier than senior high school. Engagement needs to happen in primary school and junior high school with a core element of continuity and follow-up focussed around mentoring and relationship building. This engagement also calls for families and teachers to be included.

Development of a recruitment resource

The prototype DVD titled *You Can Do It!* was developed using a simple yet key message to communicate to the target audience that medical and other health careers are achievable for Indigenous students. It was developed with music by a young Indigenous musician using inserts of current Indigenous medical and other health students. It is designed to be short, sharp and positive in line with understanding of target audience interest. It is also capable of being developed into a range of material.

Pilot recruitment models for Indigenous students

- UNSW undertook a week long residential workshop for students during the project period.
- Monash also intended to run a residential workshop but this did not occur. The reasons for this provide valuable insights for the future. Time was a barrier in this and other parts of the project. Approval to conduct the research was not received until late October 2005. This meant that the scheduled December workshop could not be conducted. In addition when alternate dates for a residential workshop were set for 2006 agreement could not be reached with this cohort of students. Due to a range of commitments — such as sport, family, school and social — participants could not attend for more than one day. With more time and with another cohort of students this may change. Nevertheless the two workshops and five focus groups provided valuable opportunities for them and for this project.

Reference Group

- It was important to have a Reference Group that is representative of key stakeholders. Throughout the project the contribution made by an active Reference Group that took interest in the project and provided guidance was apparent and valued by the consortium.

Dissemination

Dissemination of the knowledge and findings of this project is seen as an important part of the consortium's role. It is considered that there are two stages concerning the dissemination of these findings.

The first stage involves distributing information on the project and concludes the consortium's project responsibility. The tasks involved in this stage are:

- incorporating feedback and clarifying queries from RUSC into the project report
- debriefing the consortium members and its Reference Group and workshopping the recommendations to make any necessary refinements
- preparing this report on the project for a wider audience
- prepare papers for peer-reviewed publications
- follow up with CECs and SSOs in the Townsville region
- market test versions of the *You Can Do It!* material/s

The second stage of disseminating what has been learned in this project involves seeking to engage with key stakeholders and developing approaches to progress the better recruitment, retention and support for Indigenous students in medicine and transform the under-representation of Indigenous students in those schools. This will play an important role in future strategic planning and requires resources to undertake effectively. This will include:

- discuss with RUSC a means to share current information
- consultation with key stakeholders on the way forward. These would include RUSC, AIDA, CDAMS, AMA, DEST, the Australian Association of Career Counsellors and the Career Industry Council of Australia.
- undertake workshops in a number of locations to share the recommendations to interested groups and individuals
- with the support of the Department undertake a workshop at the National Rural Health Alliance Conference to be held in Albury in March 2007
- future research to build on what has been learned, including exploring the gaps that have been identified, piloting appropriate initiatives and any appropriate expansion of *You Can Do It!* material.

Recommendations

Recommendation 1: A nationally co-ordinated and collaborative approach

It is recommended that a coordinated and collaborative national approach be taken by the numerous key stakeholders including governments, Indigenous organisations, educators, career development practitioners, universities and the VET sector concerning the provision of career advice to Indigenous students. A key first step would involve establishing a medicine and health career advice clearing house project to collect, develop and distribute information as well as facilitate engagement and collaboration amongst stakeholders. The clearing house would preferably be established under the auspices of an existing organisation.

Recommendation 2: A focus on secondary school students

It is recommended that universities collaborate to share resources to increase the opportunity for Indigenous students of all ages and their families to attend events such as career workshops, expos, forums, residential programs and in-school visits. The consortium recognises that in this field direct support to the student and their family by face to face visit, phone calls, letters and e-mails is paramount. In addition accessible material should be developed that includes advice about subject choice, scholarships and other financial support, details of support available at universities and the availability of mentors and tutors. This material should be available in a number of modes.

Recommendation 3: Career development support

To support career development practitioners improve outcomes it is recommended that they receive access to professional development in working with Indigenous students and advising these students and their families about medicine and health career choices. This process should start at the national level with representations to organisations such as the Australian Association of Career Counsellors and the Career Industry Council of Australia regarding the development of additional standards in this area and a series of professional development modules for delivery across Australia.

Recommendation 4: Support from universities for existing recommendations

It is critically important that university medical faculties implement the excellent recommendations set out by CDAMS (Phillips 2004) and AIDA (Minniecon and Kong 2005). This includes Indigenous health as a core theme throughout the curriculum for all students. We recommend that financial incentives be used to encourage take up of the CDAMS and AIDA recommendations and that the Australian Medical Council establishes clear standards in this area.

Recommendation 5: Indigenous support mechanisms in universities

To encourage more Indigenous students into and through medical and other health courses it is recommended that all universities have Indigenous support units with adequate facilities and resources to support Indigenous students and that the number of Indigenous staff be increased in all Australian medical schools.

Recommendation 6: Existing approaches in universities

It is recommended that universities should have in place and periodically review their Indigenous education policy and ensure that the principles and strategies in it are actively operating. For medical faculties this should, as a minimum, lead to a marketing strategy for recruitment of students into medicine directed at government, schools and the community, identification of allocated places, scholarships, admissions considerations, a policy advisory group, pre-medical orientation, and reducing racism and disadvantage as well as ensuring adequate funding is made available. The Australian Universities Quality Agency could also be approached to ensure Australian medical schools meet targets in this area.

Recommendation 7: Further research

It is recommended that there needs to be support for further research to be conducted in a number of areas including how Indigenous students access career information and advice.

Recommendation 8: Mature age Indigenous medical students

It is further recommended that to increase the number of Indigenous medical students, recruitment strategies should be based on an understanding that secondary schools represent just one of a number of sources of potential medical students. Mature age entry into medicine via the full range of pathways needs to be encouraged and supported. This is an area worth further investigation.

Bibliography

- Access Economics (2004), *Indigenous health workforce needs: a report by Access Economics for the Australian Medical Association*, Access Economics, Canberra.
- Adams, M., Aylward, P., Heyne, N., Hull, C., Misan, G., Taylor, J. and Walker-Jeffreys, M. (2005), 'Integrated support for Aboriginal tertiary students in health-related courses: the Pika Wiya Learning Centre', *Australia Health Review*, 29(4) 482–488.
- Alloway, N., Dalley, L., Patterson, A., Walker, K. and Lenoy, M. (2004) *School Students Making Education and Career Decisions: Aspirations, Attitudes and Influences*, Canberra, Commonwealth of Australia.
- Armstrong, F. (2001), Australia needs more Indigenous nurses, *Australian Nursing Journal*, 8(9)28–30.
- Australian Bureau of Statistics (2003), *The health and welfare of Australia's Aboriginal and Torres Strait Islander Peoples* (Cat No 4704.0), ABS, Canberra.
- Australian Medical Association (2004), *Healing Hands — Aboriginal and Torres Strait Islander Workforce Requirements*, Discussion Paper, AMA Canberra.
- Australian Medical Association (2006), *Healing Hands — Aboriginal and Torres Strait Islander Workforce Requirements: Aboriginal and Torres Strait Islander Health Funding*, Discussion Paper 2004 — Update, AMA Canberra.
- Australian National Training Authority (2005), *Partners in a Learning Culture: the Way Forward*, ANTA, Canberra.
- Biddle, N., Hunter B.H. and Schwab, R.G., (2004), *Mapping Indigenous educational participation*, Discussion Paper No.267, Centre for Aboriginal Economic Policy research, Australian National University, Canberra.
- Bourke, G. and Long, M. (2003), *Participation and resourcing of education and training with special attention to Indigenous students*. Paper given at Monash University ACER, Centre for Economics and Education and Training Conference, 15 September 2003.
- Colaizzi, P. (1978), 'Psychological research as the phenomenologist views it' in Valle, R. & King, M. (Eds.), *Existential phenomenological alternatives for psychology*, Oxford University Press, New York.
- Commonwealth of Australia (1989), *Joint Policy Statement National Aboriginal and Torres Strait Islander Education Policy*, Canberra.
- Congress of Aboriginal and Torres Strait Islander Nurses (1998), *Recommendations to develop strategies for the recruitment and retention of Indigenous peoples in nursing*, CRANA, Brisbane.

Craven R., Tucker A., Munns G., Hinkley J, Marsh H. and Simpson K. (2005), *Indigenous students' aspirations: Dreams, perceptions and realities*, DEST Canberra. <http://nla.gov.au/nla.arc-53655>.

Creswell, J.W. (1998), *Qualitative inquiry and research design: choosing among five traditions*, Sage Publications, Thousand Oaks, CA.

Curriculum Corporation (2003), *Career Guidance and Advice for Indigenous Students*, Curriculum Corporation, Carlton South.

Durey A., McNamara B. and Larson A. (2003), 'Towards a health career for rural and remote students: cultural and structural barriers influencing choices', *Australian Journal of Rural Health*, 11, 145–150.

Grubb, W. N. (2002), *Who am I: the inadequacy of career information in the information age*, Paper prepared for the OECD Career Guidance Policy Review, <http://www.oced.org/careerguidance>.

Hays, R. (2002), 'One approach to improving Indigenous health care through medical education', *Australian Journal of Rural Health*, 10(6)285–287.

Heagney, M. (2004), *Dropping out in Australia: young students from low socio-economic backgrounds and non-completion*', Paper given at the International Colloquium, Stoke on Trent, UK, June 2003 <http://www.staffs.ac.uk/institutes/access/docs/28604Aust.doc> Accessed: 23.2.06.

Helme, S. (2005), 'Indigenous students and vocational education and training in schools: ladder of opportunity or corrugated iron ceiling?', *Australian Journal of Education*, 49, 169–181.

Herbert, J. (2000), 'Getting to the heart of the matter: the importance of the Aboriginal community in education', *Queensland Journal of Educational Research* 16(2) 130–146.

Hunter, B. and Schwab, R. (2003), 'Practical reconciliation and recent trends in Indigenous education', Technical Discussion Paper no. 249, Centre for Aboriginal Economic Policy Research, Australian National University, Canberra.

Kennedy Consultants (2006), *Case Studies and Best Practice in Aged Care, Nursing and Health-Related VET in Schools Activities*. Prepared for DEST, (<http://www.communityactivecareers.com.au/>).

Krueger, R.A. and Casey, M.A. (2000), *Focus groups: a practical guide for applied research*, Sage Publications, Thousand Oaks CA.

Mak, D.B. and Plant A. J. (2005), 'Reducing unmet needs: a prevocational medical training program in public health medicine and primary health care in remote Australia', *Australian Journal of Rural Health*, 13(3) 183–190.

Malin, M. and Maidment, D. (2003), 'Education, Indigenous Survival and Well-being: Emerging ideas and programs', *Australian Journal of Indigenous Education*, 32, 85–99

Marczak and Sewell <http://ag.arizona.edu/fcs/cyfernet/cyfar/focus.htm>

McCall, J. and Martin, S. (2004), *2004 Indigenous Winter School Review*, Nura Gili Indigenous Programs, UNSW, Sydney (unpublished).

McRae, D., Ainsworth, G., Hughes, P., Price, K., Rowland, M., Warhurst, J., Woods D. and Zbar V. (2002), *What works. The work program. Improving outcomes for Indigenous students. The Guidebook*. The Australian Curriculum Studies Association and National Curriculum Services, Canberra. www.whatworks.edu.au Accessed October 2005.

Minniecon D. and Kong K. (2005), *Healthy Futures: Defining best practice in the recruitment and retention of Indigenous medical students*, Australian Indigenous Doctors' Association, Canberra.

- Organisation for Economic Co-operation and Development (2004), *Career Guidance and Public Policy Bridging the Gap*, OECD.
- Page, S., Farrington, S. and DiGregorio, K. (1999), Promoting academic success through valuing and supporting diversity amongst Indigenous students in a block mode health science program. HERDSA (Higher Education Research and Development Society of Australasia Inc) Annual International Conference, Melbourne.
- Partington, G. (2004), *Preparing for a Longitudinal Study: Conceptualising the nature of data to be gathered*. Paper presented at the Australian Association for Research in Education Annual Conference, Melbourne.
- Partington, G. (1997). *Why is it important for Aboriginal students to stay on at school and succeed? Factors in the processes of dropping out and pushing out of Aboriginal secondary students*, Australian Teacher Education Association National Conference.
- Phillips, G. (2004), CDAMS *Indigenous Health Curriculum Framework*. For the Project Steering Committee, Committee of Deans of Australian Medical Schools.
- Porter, J. (2006), *What makes vocational training programs in school work? A study of NSW and Queensland schools* (NCVER), Australian Government, Canberra.
- Schwab, R.G. and Sutherland, D. (2001), *Building Indigenous learning communities*, Discussion Paper No. 225, Centre for Aboriginal Economic Policy Research, ANU, Canberra.
- Silverman, D. (2001), *Interpreting Qualitative Data: methods for analysing talk, text and interaction*, Sage, London.
- Spencer, A., Young, T., Williams, S., Yan, D. and Horsfall S. (2005), 'Survey on Aboriginal issues within Canadian medical programmes', *Medical Education*, 39 101–109.
- Sutherland, D. (2003), *An Indigenous school and learning community in the ACT? Opportunity, context and rationale*, Discussion Paper No.258, Centre for Aboriginal Economic Policy research, ANU, Canberra.
- Trees, J. (2005), *Mangroves in salty mud — Australian Indigenous students in medicine*, Unpublished Honours thesis submitted to the Graduate Medical Program, The University of Sydney.
- Usher, K., O'Conner, T., Miller, M., Turale, S., Lindsay, D. and Miller, A. (2003), *Successful strategies in the retention of Indigenous students in nursing courses*. Report to the Queensland Nursing Council Research Committee, James Cook University, Townsville.
- Usher, K., Miller, M., Turale, S. and Goold S. (2005), 'Meeting the challenges of recruitment and retention of Indigenous people in nursing: outcomes of the Indigenous Nurse Education Working Group', *Collegian*, 12(2)27–31.
- Wakerman, J., Matthews, S., Hill, P. and Gibson, O. (2000), *Beyond charcoal lane. Aboriginal and Torres Strait Islander health managers: issues and strategies to assist recruitment, retention and professional development*. Menzies School of Health Research, Indigenous Health Program, University of Queensland, Alice Springs.
- Year Book of Australia (2005), Education and Training: Primary and secondary education, Australia Bureau of Statistics, Canberra.
- Yu, J., Hume, W.R., McConkey, K., Green, S., and Chandler P. (2002), *Achieving equitable and appropriate outcomes: Indigenous Australians in higher education*, <http://www.backingaustraliasfuture.gov.au> Accessed 23.1.06.

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