

Foreword – Youth Wellbeing Forum Model



Kate Carnell AO
Chief Executive Officer
Australian General
Practice Network
August 2007

Adolescence is a crucial period of development in the lives of all Australians. During this time, young people will experience some of the most significant physical, mental and emotional changes in their entire lives. We know that although most young people will experience the best physical health during their adolescence, this is also the peak period for the onset of mental illness and other psychosocial-related problems. Indeed, this is the period during which young people are developing the behaviours and attitudes that will set the tone for their health and wellbeing in the years to come.

As we plan for the consequences of an ageing population, it should come as no surprise that we are also turning our attentions to the new generations that will one day lead this country. There is growing awareness in the health sector, community and government about the importance of increasingly our focus on promoting wellness and preventing illness from occurring in the first place. To put it succinctly:

Preventative care focuses on keeping people well through disease prevention (including early detection) and health promotion. There is overwhelming evidence that the lack of appropriate preventative care costs lives and money and degrades the quality of life... It [is] estimated that approximately 80 percent of coronary heart disease, up to 90 percent of type 2 diabetes, and more than half of cancers could be prevented through lifestyle changes, such as proper diet and exercise.^[1]

The Eastern Sydney Division of General Practice's Youth Wellbeing Forum is therefore an exciting new model for engaging and educating young people about their health. The model provides an invaluable framework for talking to young people about their health and wellbeing. Ultimately, it is about empowering young people to take control of their lives and set in place the foundations for a long and healthy life. I congratulate ESDGP for their leadership role in this important field.

Reference

1. Healthcare 2015: Win-win or lose-lose: A portrait and a path to successful transformation. IBM Global Business Services, 2007.



Contents

Executive summary	1
A new model of adolescent health education.....	2
Adolescent wellbeing issues.....	4
Aims of the model	9
Development and design of the model	10
Rationale for the structure of the program.....	12
Enrolment and evaluation	13
Results.....	14
Discussion	18
Attainment of objectives and the creation of future goals	21
Conclusions.....	24
Recommendations	25
References	26
Appendix 1: A number of Commonwealth and state education initiatives targeting adolescent health	28
Appendix 2: Participating schools and facilitators	29
Appendix 3: Overview of the program structure and layout	30
Appendix 4: Neurodevelopmental aspects of the adolescent brain	32
Appendix 5: Youth Wellbeing Forum Questionnaire (YWFQ)	33
Appendix 6: Youth Wellbeing Forum Evaluation (YWFE)	34
Appendix 7: Responses of students to open-ended questions on adolescent health initiatives during the forum	35

Acknowledgements

This paper was presented in part at the 47th Annual Scientific Convention of the World Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians (WONCA 2006) and at the 19th International Union of Health Promotion and Education Conference (IUHPE 2007).

This forum was funded by the EDQUM Program which is funded in turn by the Australian Government Department of Health and Ageing. The views expressed in this report are those of the authors and not of the ESDGP.

Thanks go to the presenters and facilitators who helped make the pilot program possible, and to the support provided by the project group, including Jennifer Dunn, Anita Schwartz, Kevin Reid and Peter Hobbins.

Photographs: Moshe Rosenzveig.



Executive summary

The Youth Wellbeing Forum was a successful attempt to create a means for young people to understand, communicate and act upon their own health needs. Its main focus was on promoting primary prevention – the encouragement of wellbeing and the avoidance of poor health choices – within a group of high-school students in Sydney, Australia.

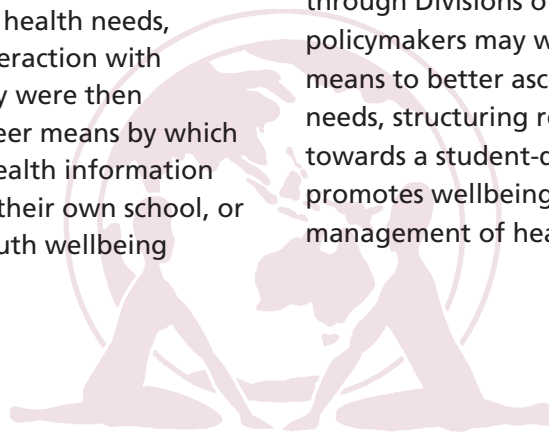
The forum was based on a theoretical model developed by the lead author, drawing upon proven educational strategies, identified health information needs, an appreciation of the neurobiology of the developing brain, and the imperative to involve young people in planning and promulgating their own educational activities and behavioural changes.

This model translated into the creation of a one-day event, the Youth Wellbeing Forum, which enlisted students from 84% of local secondary schools as participants. Facilitation and presentations were provided by primary healthcare practitioners from the same catchment. The forum comprised three stages. In the first, students workshopped in small groups to discuss and iterate the health issues relevant to their individual wellbeing before collating and presenting them to all participants for discussion. During the second session, expert presenters provided information on the same range of health topics, building upon students' existing knowledge and skills while rectifying any misapprehensions. These presentations addressed the behaviour, attitude, skill and knowledge (BASK) domains of sexual health, infectious diseases, nutrition, physical activity, licit and illicit substance use, and relationships and communication. For the final stage, students reconvened into small groups again to integrate the information into their own primary prevention strategies before collating and presenting them to the large group for discussion.

A particular focus was on ensuring that students felt empowered to manage their own health needs, particularly through enhanced interaction with primary healthcare providers. They were then encouraged to consider peer-to-peer means by which they could promulgate relevant health information and effect behavioural change at their own school, or indeed at a national level via a youth wellbeing network.

Qualitatively, the Youth Wellbeing Forum was extremely successful. Both anecdotal evidence and evaluations conducted on the day confirmed that students both enjoyed and benefited from participation. In particular, they felt that the information presented was relevant and comprehensible, and almost 96% of participants stated that their expectations for the forum had been met. Indeed, there was strong interest in conveying the learnings from the forum back to the students' schools via a variety of methods, particularly the workshop model.

The Youth Wellbeing Forum provides a conceptual framework and a practical model for young people, schools, healthcare providers and administrators who wish to shift the adolescent healthcare focus from crisis management to maintenance of wellbeing. The model is adaptable to local needs, skills and resources, and could also be scaled to meet regional or national adolescent health goals. At a youth level, it could assist in empowering participants to take increasing responsibility for their wellbeing through peer-to-peer education sessions such as this workshop and in the creation of local youth wellbeing networks or resources such as websites and newsletters. The model also provides a means by which parents can assist in empowering their children to take increasing responsibility for their wellbeing. Schools may be able to utilise this model to adapt their health and development curricula, and to strengthen relationships with other schools and with local primary healthcare practitioners to further the education and wellbeing of students. Primary healthcare practitioners can use this model as a means to engage with young clients and to enhance their focus on adolescent health needs both at individual practitioner and administrative/political levels (e.g. through Divisions of General Practice). Finally, policymakers may wish to utilise this model as a means to better ascertain and meet adolescent health needs, structuring responses and allocating resources towards a student-driven education model that promotes wellbeing initiatives rather than crisis management of health issues.



A new model of adolescent health education

The model described in this report was a student-driven health educational intervention facilitated by primary healthcare providers. The report sets out the unique role taken on by students, who helped generate and deliver targeted health promotion messages for their peers. The detailed content of those messages was provided via facilitation by primary healthcare providers in the Eastern Sydney Division of General Practice (ESDGP) in Sydney, Australia.

Healthcare interventions targeted at adolescents

Tertiary prevention, with its focus on managing the symptoms of medical conditions, has been the traditional realm of general practice. Tertiary prevention has also been the foundation of healthcare education in Australian schools, particularly crisis issues such as:

- Sexuality, sexually transmitted infections and unwanted pregnancy
- Family breakdown and its emotional consequences
- Alcohol and other substance abuse
- Homelessness and unemployment
- Disconnection from education
- Mental illness and suicide
- Behavioural problems
- Gambling

The shift over recent decades to secondary prevention has been facilitated by the advances in our understanding of disease progression. This shift has brought with it earlier detection and intervention in the crisis issues. As a result, many programs have been initiated at state or federal levels with the aim of extending secondary prevention messages into Australian schools (Appendix 1).

For instance, 'Headspace' is a new initiative funded by the Australian Government which aims to reduce the burden of disease in young people caused by mental health problems and related substance use.

Interventions are aimed at improving mental health, social wellbeing and economic participation of young people in this target group (aged 12–25 years). Among its strategies, 'Headspace' aims to raise community awareness, improve knowledge of effective interventions and treatments, deliver education and training activities, and provide funds for the improvement of health services for young people at a variety of locations across Australia (National Youth Mental Health Foundation, 2006).

'Mind Matters Plus GP' – a similar program – promotes improved referral between schools and primary healthcare, focusing on general practitioners (GPs) and their administrative and educational coordination via Divisions of General Practice.

The 'GPs in Schools' program has been running since 1996. It was created to address the need to educate young people on accessing general practice. The program involves training GPs in youth specific topics such as adolescent development, youth health concerns, psycho-social history taking, youth friendly communication, confidentiality, medico-legal issues, mental health, drugs and alcohol, sexual health and small group facilitation skills. Trained GPs visit local high schools to deliver group presentations to students. They talk to students about accessing primary healthcare services, using Medicare (Australia's national healthcare funding structure) and about how GPs can assist them with physical and emotional health problems (Kefford, 2006).

Primary prevention – or the promotion of wellbeing by avoiding the onset of health problems – is also now virtually possible across the spectrum of diseases. Indeed, wellbeing is set to become a key agenda for schools as students develop expectations beyond crisis management. As GPs enhance their primary prevention focus, they can also offer our youth an enlightened perspective on wellbeing issues such as sexual health, illicit drug use, nutrition and physical activity. Indeed, the education system has embraced a focus on improving the skills of interacting, communication, problem-solving and making appropriate choices. For instance, since 2004 schools in New South Wales (NSW) have provided personal development, health and physical education (PDHPE) skills across three broad strands.

Fundamental movement and physical activity

Games and sport, gymnastics, dance, moving and active lifestyle.

Healthy choices

Personal health choices, safe living, decision making, problem-solving.

Self and relationships

Growth and development, interpersonal relationships, communicating and interacting.

Initiating a primary healthcare-led youth wellbeing forum

The ESDGP has created what is believed to be the first 'youth wellbeing forum' in Australia. This occurred on 15 September 2006 and enlisted 16 out of 19 (almost 85%) of the secondary schools in the eastern region of Sydney (Appendix 2). The program incorporated three separate sessions in order to evaluate the students' needs, to deliver appropriate healthcare messages and to ensure that these messages would be effectively communicated to the wider school community by participating students (Appendix 3).

Our program was built upon the BASK model of planned behaviour, which is based on the premise that behaviour (B) is influenced by attitudes (A) in unison with two other factors: skills (S) and knowledge (K). Knowledge encompasses factual understanding and also takes into account perceptions of social norms, whereas skills relate to beliefs about one's personal ability to perform a specific behaviour, which can include perceived inherent strengths and weaknesses. Most individuals thus evaluate aspects of their environment and the process is often behavioural in its focus. Attitudes are formed as a result of this ongoing evaluative process. Eagly and Chaiken (1993) define attitudes as evaluations of entities – including behaviour – that result in perceptions of favour or disfavour. In the context of adolescent health, attitudes such as "I like eating fast food", "condoms are a good way to prevent sexually transmitted diseases" or "getting drunk will make me feel relaxed" may predispose individuals to adopt or reject specific health-related behaviours.

In order to encourage students to make the behavioural change of taking responsibility for adopting active, healthy and fulfilling lifestyles, it was therefore necessary to determine their baseline attitudes, skills, knowledge and behaviour. Therefore, the focus of the first session of the program was to explore the wellbeing issues relevant to adolescents in the following BASK domains:

- relationships – communicating with family, peers and GPs ('feeling good')
- physical activity – active lifestyle and physical image ('looking good')
- nutrition and healthy food choices
- drug, alcohol and tobacco misuse
- infectious diseases
- sexual health.

Understanding of these issues was built upon during the second session, during which primary healthcare

practitioners delivered targeted healthcare information. During the first and final sessions, facilitators also helped students to build upon the essential skills of:

- interacting
- communicating
- decision-making
- problem-solving.

The wellbeing forum allowed students to provide information and share experiences in a peer-group setting with practitioner support. The objective was to obtain an understanding of how attitudes influenced the adoption of health-related behaviours such as contraceptive and condom use, licit and illicit drug use, risk-taking activities and maintenance of a healthy diet. Facilitators also obtained information regarding the attitudes students held towards their primary healthcare practitioners, plus techniques they perceived could improve the therapeutic relationship.

The ultimate aim of the forum was to observe how the attitudes, knowledge and skills of the students translated into health-related behaviours. By using strategies designed to empower the students, the aim was to assess and positively influence their attitudes towards adolescent health issues, thus encouraging primary prevention as a means to enhance adolescent wellbeing.

Adolescent behaviour as part of development

For the purposes of this paper a variety of terminologies have been used to describe the individuals targeted by our intervention. Popular use of the word 'youth' refers to a person who is neither an adult nor a child, but somewhere in between. Scientifically these individuals are referred to as 'adolescents', while for the purposes of this paper they are often called 'students'. In terms of a healthcare relationship, youths are often considered to be aged between 13 and 24 years. In such a setting they may be referred to as 'patients', but the term 'clients' also acknowledges the intention of primary prevention within a well population.

Understanding the capabilities and limitations of the developing brain is crucial for planning appropriate educational interventions (Appendix 4). During adolescence there is a significant rise in morbidity and mortality that is not related to conventional diseases and disorders (Whalen *et al.*, 2005). These poor health outcomes may be related to difficulties experienced by adolescents in controlling their behaviours or emotions, resulting in an increase in accidents, suicide, homicide, violence, reckless behaviour, eating

disorders, depression, alcohol and substance abuse, and risky or unsafe sexual behaviours (Lescano *et al.*, 2007). In addition to the emerging neurobiological evidence for the existence of a 'teen brain', there is equally strong evidence to suggest that adolescent thoughts, feelings and behaviours are the result of social influences (Epstein, 2007). Key factors include:

- artificially extending childhood past the onset of puberty
- isolating adolescents from adults, so that they learn virtually everything they know from their peers rather than from the people they are about to become
- the growing influence of Western-style schooling, television programs and movies.

In creating adolescent health interventions, it is therefore essential to incorporate neuro-developmental and psychosocial information into educational materials developed for schools and primary care providers. Our model is based on an appreciation of both the neurodevelopmental aspects of teen brains plus their interaction with adult role models. As a result, we have introduced an adolescent-driven education model facilitated by primary healthcare providers as one means to optimise wellbeing in a school-aged youth population.

Adolescent wellbeing issues

In order to generate the material addressed at the forum, the most recent research was used to identify issues affecting youth health. Studies relating to common adolescent health issues were evaluated via literature review, with recent information presented under the following subheadings. During the first forum session, information was obtained to assess students' knowledge, skills and attitudes relating to these health issues, and to determine their behaviour in these contexts. Subsequently, primary healthcare providers were able to provide factual information pertaining to each area, including evidence regarding the magnitude of the health issues and the behaviours contributing to them.

Sexual health

Sexual health and education has long been an important component of the curriculum in Australian high schools. To assess baseline knowledge of issues relating to sexual health and transmissible diseases, a survey of Australian secondary school students was recently conducted at both catholic and independent schools across all states and territories (Smith *et al.*, 2003). The 2388 respondents were in their final years of high school (Years 10 and 12) and 55% were female.

One aspect of the study investigated students' knowledge of sexually transmitted infections (STIs). These comprised blood-borne viruses including human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) and hepatitis A, B and C viruses (HAV, HBV, HCV), plus diseases transmitted by surface exposure: chlamydia, gonorrhoea, herpes simplex virus (HSV) and human papillomavirus (HPV).

The survey reported that students' knowledge about HIV/AIDS was generally good, although there were significant areas of concern relating to their knowledge of virus transmission. For instance, 10–15% of male students believed that the contraceptive pill provided women with protection against HIV, and 11% of all students did not know that condoms provided some protection against transmission. Furthermore, around 16% of respondents believed that someone who 'looks healthy' could not pass on HIV infection and 27% of students believed that HIV only affected gay men and injecting drug users.

In relation to other STIs, students' knowledge generally remained low. For example the survey reported that 31% of male Year 10 students did not know a person could be asymptomatic when infected with an STI, while 47% believed that STIs can be cured. Only 20% of the sample knew that chlamydia affected both men and women, and only 36% of the sample were aware that this disease could lead to sterility in women. There were likewise gaps in knowledge about other STIs. For instance there was a poor appreciation that HPV could be transmitted without sexual intercourse taking place, or that gonorrhoea and syphilis could be contracted via oral-genital contact.

The survey went on to examine attitudes towards friendships with gay and lesbian peers. Over three quarters of students surveyed in 2002 expressed a favourable attitude towards maintaining friendship with students who identified themselves as lesbian or gay. Female students showed a more positive attitude

towards friendship with young gay men than with young lesbians, and conversely male students were more positive towards friendship with young lesbians than with young gay men. Older students (Year 12) expressed more positive attitudes toward homosexuality than the younger students (Year 10).

In relation to sexual behaviour, the 2002 survey showed that most students (Years 10 and 12) had experienced some form of sexual activity. About 80% had engaged in deep kissing and two-thirds had experienced sexual touching. Approximately 33% of all Year 12 students were having sex without condoms. About 8% of all students in both years never used condoms. Over one quarter of the sample had experienced an unwanted sexual encounter, most commonly because they were drunk. Of significant note were responses relating to behaviour that resulted in pregnancy. While condoms appeared to be primarily used for contraception rather than STI prevention, 6% of sexually active students reported having sex that resulted in pregnancy. These instances occurred more commonly among Year 10 students and female respondents.

A recent systematic literature review has summarised the evidence that was available to us in planning the Youth Wellbeing Forum. This review of studies published in the period 1990–2004 examined the factors and beliefs that underlie the sexual behaviours of young people (Marston, 2006). The authors assessed 246 journal articles and 22 books, then commented on emergent themes. Among the key themes relating to youth sexual behaviour that do not seem to be exclusive to any particular country or cultural background were that the use of condoms is stigmatising and associated with a lack of trust, and that communication about sex is hindered by social expectations and the use of deliberate miscommunication and ambiguity.

Infectious diseases

Knowledge amongst students of ways to reduce both airborne and contact transmission of infectious diseases can be improved. Communicable diseases are often spread within schools by an airborne route. Coughing and sneezing disperses infectious droplets and aerosols into the atmosphere, which are in turn inhaled by others. Examples of respiratory diseases include the common cold, influenza, avian flu, chicken pox, measles and whooping cough (pertussis). Acute respiratory tract infections have been reported as the leading cause of childhood morbidity and mortality in the world, and the single largest cause of disability-

adjusted life years lost (Murray and Lopez, 1997). A review of the medical literature reveals that there is a paucity of studies investigating knowledge of contagious diseases (other than STIs) among adolescents. However, despite significant public health responses to the recent threat of an avian influenza pandemic, knowledge of transmission and prevention of infectious diseases remains inadequate among young people.

Nutrition and healthy food choices

For some time it has been clear that the proportion of Australian children and young people who are overweight or obese is increasing. In response to this emerging awareness, in 2002 the NSW government held a Child Obesity Summit which resulted in the formation of the NSW Centre for Overweight and Obesity. In 2004 the centre conducted a study of NSW school children known as the NSW Schools Physical Activity and Nutrition Survey (SPANS). This survey sought to understand the reasons for the observed increase in obesity among children and adolescents, focusing in particular on common risk factors for being overweight (Booth *et al.*, 2006).

The study examined 5400 students from kindergarten and Years 2, 4, 6, 8 and 10. Subjects were recruited from schools across Australia and were demographically comparable to the general population. The investigators measured body mass index to categorise children as being of healthy weight, overweight or obese. Older students were also asked about their physical activity, sedentary pastimes and eating behaviours. The results from 2004 were also compared with previous surveys (conducted in 1985 and 1997) to observe trends over time.

The results of SPANS suggested a significant proportion of Australian children and adolescents were overweight or obese. The survey found that 8% of boys and 6% of girls were obese, and that overall almost a quarter of boys and girls were overweight or obese. The data also indicated that the prevalence of overweight was increasing, with the rate of this increase rising among boys. The survey also analysed the diet and nutrition of school children. The results suggested that 60–70% of respondents ate the recommended two pieces of fruit a day, although only a quarter ate enough vegetables (four serves or more per day). Most students reported eating dinner with their families, although 10% reported regularly missing dinner and 30% reported eating most evening meals in front of the television. This latter habit was associated with the consumption of more energy-dense foods.

Overall, SPANS concluded that children were becoming overweight and obese at an increasing rate. The investigators expressed concern that a student today is more than twice as likely to be overweight or obese as a student of 20 years ago. They iterated the potential impact of overweight on children's wellbeing, from the psychological impact of being stereotyped and teased, to the potential health implications including the development of diabetes, high blood pressure, fatty liver, high cholesterol and a multitude of associated problems. The results suggested that students, schools and families should promote physical activity, good nutrition and eating habits, while discouraging sedentary behaviours and poor food choices.

Lunchbox contents are an extremely relevant reflection of diet and nutrition in this population (Bell and Swinburn, 2004). Recent estimates suggest approximately one-third of the total energy intake of Australian students aged 5–15 years is consumed at school. Furthermore, the majority of food is brought from home with only 14% being purchased from the school tuckshop. To further investigate what students were actually consuming in their diets, a subsequent investigation was undertaken into the lunchbox contents of Australian school children (Sanigorski *et al.*, 2005). A cross-sectional survey of school foods among 1681 Victorian students aged 5–12 years found there was an excess of energy-dense, micronutrient-poor 'junk food' in the respondent's lunchboxes. It was concluded from this examination of the lunchbox contents that there was significant room for dietary improvement on behalf of students and their parents.

Overall, there are implications of the above findings for health and wellbeing. The SPANS results indicate that a significant number of adolescents are at increased risk of developing common, preventable diseases. For instance, the findings suggest almost 20% of year 10 students have high levels of insulin, putting them at risk of developing type 2 diabetes. Furthermore, approximately 10% of students have elevated levels of high-sensitivity C-reactive protein (hs-CRP) which increases their risk of heart disease. Approximately 10% of boys also have a low level of high-density lipoprotein (HDL or 'good') cholesterol, putting them at further risk of heart disease. Markers of liver damage such as the enzymes alanine aminotransferase (ALT) and gamma-glutamyltransferase (GGT) were also elevated in some students. These findings were most marked in boys, but were also observed among girls, reiterating the importance of primary prevention at an age when nutritional behaviours are amenable to change.

Physical activity

In the 2004 SPANS study it was noted that physical activity creates its own rewards for students (Booth *et al.*, 2006). In terms of physical activity, it is accepted that active children are healthier, stronger and less prone to anxiety and depression than those who are inactive. Physical activity has also been linked to good health in multiple domains. Researchers in SPANS surveyed schoolchildren about the time they allocated to sport, their physical education lessons and their facilities. It was reassuring to find trends that indicated physical activity was increasing among all children surveyed, although boys remained more active than girls. Overall, three quarters of children surveyed met the recommendation for at least one hour of moderate physical activity each day.

Another focus area in the SPANS report was the patterns of sedentary behaviour observed in students. It was accepted that while a degree of sedentary behaviour is essential and perhaps even beneficial, a large amount of time spent inactive will increase the likelihood of being overweight. Furthermore, time spent in sedentary activities reduces the amount of time available for physical activity. Collectively, sedentary behaviours include those such as watching television, playing computer games, chatting on the phone or internet, or participating in low-energy pastimes such as playing cards or musical instruments. The survey also considered students' mode of travel to school, whether by foot, bicycle, bus, ferry, train or car.

The study found that in addition to classroom time, the students spend on average 30–40 hours per week in sedentary activity. Approximately half of this time is spent on leisure pursuits in front of the small screen, watching TV, playing computer games or on the internet. Overall, three quarters of high school boys and two thirds of high school girls spend too much time on such 'small-screen entertainment'. The research suggested that such students are unhealthier than their peers, tending to exercise less and eating more high-calorie foods. Furthermore, the Australian government has recommended that students should not spend more than two hours per day using electronic entertainment (Trost, 2002).

From the above information it can be concluded that physical activity is important for the health of young people. Further studies have been conducted in Australia relating to participation in sport and physical activity. In 2001 the Australian Sports Commission surveyed participation in exercise and found that 89% of people aged 15–24 years had

participated in some form of physical activity in the 12 months preceding interview (Australian Sports Commission, 2003). It should be noted, however, that this left a substantial 11% of youths who had not exercised over the previous year. The Housing, Income and Labour Dynamics Australia survey (Wooden, 2001) found that around one in five young people did not participate in physical activity, or participated in less than one session per week (16% of males and 23% of females).

Drug, alcohol and tobacco use

In early studies on drug and alcohol use it became apparent that most of the Australian population has used alcohol or tobacco at some stage in their lives. A study by the Australian National University sociology department over the years 1985–1995 reported that Australian adolescents were at particular risk because of the rates of alcohol use occurring under the legal drinking age of 18, coupled with the fact that alcohol abuse was often viewed as an important rite of passage (Makkai and McAllister, 1998). The pattern of alcohol use suggested that teenagers (12%) were more likely than adults (5%) to binge drink, often initiating a drinking session with the intention of getting drunk. In terms of illicit drug use, the study reported that one in three Australians had tried cannabis, while a smaller but significant proportion had used LSD and amphetamines.

The results of the third national survey of Australian secondary students knowledge of HIV/AIDS and sexual health also reported on alcohol consumption (Smith *et al.*, 2003). It was reported that in 2002, 85% of Year 10 students and 94% of Year 12 students drank alcohol. These rates had significantly increased from the results of a 1997 survey, where 79% of Year 10 and 88% of Year 12 students drank. Male students were more likely to report drinking at least once a week (39%) than females (29%). The same survey reported binge drinking was also increasing, more so in females: in 2002, a quarter of Year 12 students reported consuming seven or more drinks on the days when they did consume alcohol. Hazardous drinking, defined as eight or more drinks per day for boys and six or more drinks per day for girls, peaked in 16–17 year olds (32–38% of all students). These findings were echoed by a 1999 report prepared for the National Drug Strategy Unit and the Commonwealth Department of Health and Aged Care (Hill *et al.*, 2002). This report suggested that 62–65% of Year 12 students and 51–54% of Year 10 students had engaged in binge drinking behaviour in the past fortnight.

Similarly, smoking mostly begins in the teens: all first-time use of tobacco occurs before the age of 20 years (Royal Australian College of General Practitioners, 2004). The 1999 National Drug Strategy Unit report, conducted at 399 schools across Australia and including over 25,000 students, showed that about 30% of both boys and girls aged 17 years were current smokers, consuming on average 37 and 33 cigarettes per day, respectively (Hill *et al.*, 2002).

The most commonly used illicit substance among secondary school students was cannabis, being used at some time by 25% of all 12–17 year olds (White and Hayman, 2004). Cannabis use at some time increased with age from 9% at 12 years to 42% at 17 years. These results were consistent with the findings of the 1995 National Drug Survey which reported 48% of 14–19 year olds had been offered cannabis, 41% had tried it and in 1993 26% said they would try it if offered by a close friend (Makkai and McAllister, 1998). Of concern, weekly use of cannabis increased with age from 2% of 12 year olds to 10% of 17 year olds, and was more common among males than females (Collins and Lapsley, 2002). Coffey and colleagues (2002) have noted that use of cannabis more frequently than once a week increases the likelihood of dependence among young Australian adults.

In examining the reported use of other illicit drugs, the vast majority (93%) of secondary school students had never used amphetamines (Hill *et al.*, 2002). However, by the age of 17, nearly 11% of students reported having had some experience with amphetamines. Only a small proportion of students (3%) had ever used opiates such as heroin or morphine, with 1% reporting having used opiates in the month prior to the survey. Only 3% of all students reported having ever used cocaine and only 5% had ever used ecstasy. Indeed, recent use of ecstasy was not common among any school-age group: just 2% of students aged 16–17 years had used ecstasy in the month prior to the survey.

The 1999 survey also reviewed the education provided to students about drug and alcohol use and its inherent health-related consequences. Students were asked to indicate if they could recall receiving any lessons on the use of illicit drugs and other substances in the previous school year. Across all age groups, 23% of students indicated that they had not received any lessons on illicit substance use in the previous school year, while 39% indicated that they had received more than one lesson about this topic. These results clearly indicate the provision of health information relating to substance use can be improved in school curricula.

Relationships and communication

Adolescent mental health problems pose a significant and growing concern in Australia (Sawyer *et al.*, 2000). Furthermore, the ability of young people to recognise and seek effective treatment for major psychiatric conditions such as depression or psychosis remain far from optimal, particularly given the prevalence of these conditions during teenage years (Wright *et al.*, 2005). In establishing the Youth Wellbeing Forum, the authors chose to focus on relationships and communication skills as a means to promote mental wellbeing, rather than a tertiary prevention emphasis on identifying psychiatric conditions for which there are a significant number of initiatives already in place (Appendix 1). This led us to focus specifically on addressing relationships and communication skills, both in a peer-to-peer context and with primary healthcare practitioners.

In considering communication and relationship issues from the perspective of young people, adolescence should be conceptualised as a time of transition from the immaturity of childhood into the maturity of adulthood. There is no single event or boundary line that denotes the end of childhood or the beginning of adolescence. Rather, experts conceptualise the passage from childhood through adolescence as a set of transitions that unfold gradually and that touch upon many aspects of the individual's behaviour, development and relationships (Steinberg, 1996). These transitions are biological, cognitive, social and emotional, and significantly affect the relationships that young people experience during adolescence.

A recent study by McPherson (2005) has identified adolescent concerns regarding interaction with the primary care sector, noting that they predominantly focus on confidentiality, suitable appointment times and concerns regarding parental consent. An unfriendly environment or staff, and language barriers such as use of jargon were also flagged as issues preventing younger clients from accessing healthcare and information. A cumulative barrier was respondents' lack of knowledge regarding services available to them: 40% of respondents found it difficult to see their GP and 60% did not know how to register with a GP. However, most adolescents identified confidentiality and access as the most important aspects of primary care for them.

Sanci and Young (1995) provide a suitable introduction to engaging the adolescent patient. One of the necessities in establishing a relationship is defining confidentiality and encouraging the client to accept that their issues will be spoken, written and acted on in strict privacy. However, it must be established there are statutory requirements

regarding disclosure if young people are a risk of harming themselves or others, and to disclose abuse notification to others. In examining the social supports available to young people there is also an opportunity to encourage adolescents to discuss sensitive issues with their parents or guardians. Issues affecting adolescents that may require sensitive discussion include termination of pregnancy in a minor and sexuality concerns.

Empowering young people and engendering trust begin with identification and an understanding of the issues affecting them. A valuable framework for obtaining a psycho-social history is provided by the HEADSS questionnaire (Goldenring and Cohen, 1988). This takes into account a young person's home, education, employment, activities, drug use, sexuality and stressors related to suicide and depression. The results allow the healthcare provider to better understand their client, both in terms of overall developmental stage and specific issues worthy of attention. The questions that comprise HEADSS proceed from the least to the most sensitive areas, helping build rapport by indicating that the practitioner is open to discuss sensitive areas of clients' lives.

The practitioner's attitude and interviewing style also have a significant impact on the formation of the therapeutic relationship. Sanci and Young (1995) recommend that practitioners are interactive rather than interrogative, seeking to engage adolescents in conversation rather than launching into a series of direct questions. They suggest the use of open-ended questions allows adolescent clients the opportunity to talk, helping them feel more comfortable about delivering sensitive information. An example of an open-ended question might be to ask "How's school?" rather than "What are your best or worst subjects at school?". In order to help adolescents communicate their feelings, it could be more appropriate to offer choices in a sentence; suggest an explanation and invite them to agree or disagree. They recommended reducing the personal focus by using the third person which helps teenagers talk about their life.

The sexual history is a relevant part of any adolescent's medical history. Sanci and Young (1995) proposed an approach to the subject might be to ask "Have you ever had a sexual relationship with any boys, or girls, or both?". These are sensitive issues and it might take some work on the therapeutic relationship until the adolescent feels comfortable enough to disclose information pertaining to these areas. The practitioner should encourage clients to talk about themselves and their relationships with other people only when they feel comfortable.

Aims of the model

The model's primary objective was to empower students to optimise their own health and wellbeing. It was created in keeping with the World Health Organization's focus of involving young people in the design and evaluation of services for young people (Currie *et al.*, 2004), in line with their developmental stage. The model aimed to build on adolescents' existing knowledge, understanding, skills, values and attitudes developed at home and at school, in order to encourage them to make behavioural changes and take responsibility for adopting active, healthy and fulfilling lifestyles.

Conceptually, the initiative aimed to bring schools and the primary healthcare sector together through a student-driven forum for promoting adolescent wellbeing. The initiative was intended to act as a model to encourage and assist Divisions of General Practice to work with the schools in their region to develop plans that improve students' access to primary care providers.

Specific objectives were to:

1. empower students
2. develop a youth-driven education model
3. shift the agenda in healthcare from crisis identification and management to promotion of youth wellbeing
4. identify those values and issues of concern relating to adolescent wellbeing
5. build on existing adolescent knowledge, skills and attitudes
6. enhance adolescent perceptions that primary healthcare providers can meet current and future needs of adolescents
7. enhance integration between schools and the primary healthcare sector
8. promote primary care providers as a viable source for student engagement
9. recognise and develop the concept that adolescents can be the interface medium between schools and the primary healthcare sector
10. ascertain the need for and to initiate the establishment a Youth Wellbeing Network.



Development and design of the model

The objectives and structure of this novel model were created by the lead author in order to translate theoretical principles into the practical promotion of adolescent health.

Developmental framework

In developing this model, the 'intervention mapping' methodology described by Bartholomew (1998) was considered as the overarching framework. However, this schema was found to be too comprehensive and complex, leading the choice of the three major program planning activities traditionally employed to create health education activities.

1. Conduct a needs assessment

This was achieved by establishing students' knowledge base at the beginning of the day by ascertaining any mistaken beliefs or knowledge (myths and truths). Students were also asked to complete the Youth Wellbeing Forum Questionnaire (described in detail below), which ascertained their needs with regard to maintaining wellbeing and the ways in which they currently attempt to achieve these ends.

2. Develop and implement a program

The framework for the Youth Wellbeing Forum was created to provide a means by which adolescents could participate in their own wellbeing education, given their developmental stage. The structure that was utilised on the day provided students with a non-confrontational means to convey their knowledge, attitudes and skills with regard to the previously identified BASK domains. The facilitated small-group sessions enabled students to direct the information that they would like to discuss during the course of the forum. In the final session, these small groups allowed students to actively discuss and report back on how they had integrated new knowledge into their own frameworks, and how they would seek to communicate the value of behavioural changes to their broader school community.

3. Evaluate the program

This was achieved by asking students to complete the Youth Wellbeing Forum Evaluation at the conclusion of the forum.

Students

In the case of the students, the primary objective was to empower students via the following steps.

- Students were able to preserve their own space, where they could safely and openly discuss issues important to them with their peers, elaborating their own strategies and initiatives without interference from facilitators.
- Participants documented the issues relevant to their needs, plus their own strategies and initiatives.
- Students worked with their peers to present their group's issues and strategies.

There was no prior briefing of students and the media were not invited to be present.

Facilitators and presenters

GPs and allied health professional skilled in communicating with adolescents facilitated the two student break-out sessions and provided the formal presentations.

Group Structure

Each of the 12 groups established on the day included:

- one primary care facilitator
- one school teacher trained in PDHPE methods or a nurse
- a mixture of boys & girls
- a mixture of age groups from mid- to upper-level schooling (Years 9, 10 and 11)
- one peer scribe/presenter chosen by the group.

Teachers were allocated at random, but adjusted to ensure that they had no students from their school in their group. Likewise, students were allocated to groups at random but this was adjusted as necessary to ensure that there were no school friends within any given group.

Structure of the program

The program proceeded according to the order and physical layout outlined in Appendix 3. Although considerable overlap was anticipated, the sessions were designed to meet the specific objectives outlined above. Session 1 primarily addressed objectives 1–5 while session 3 focused on objectives 6–10 (Table 1).

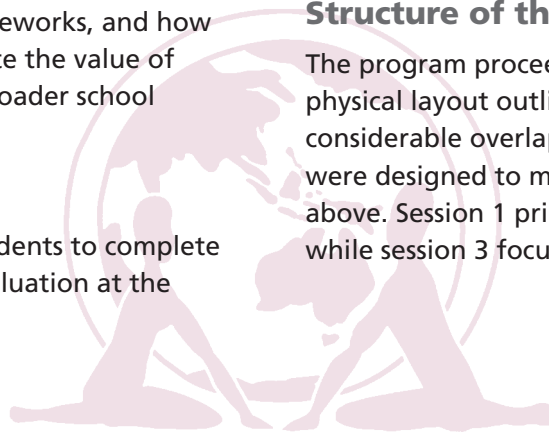


Table 1: objectives as covered by sessions 1 and 3.

	Objective	Session 1	Session 3
1	To empower students	+	+
2	To develop a youth-driven education model	+	+
3	To shift the agenda in healthcare from crisis identification & management to youth wellbeing promotion	+	+
4	To identify those values and issues of concern relating to adolescent wellbeing	+	+
5	To build on existing adolescent knowledge, skills and attitudes	+	+
6	To enhance adolescent perception that primary healthcare providers can meet current and future needs of adolescents	+	+
7	To enhance integration between schools and the primary healthcare sector	+	+
8	To promote primary care providers as a viable source for student engagement	+	+
9	To recognise & develop the concept that adolescents can be the interface medium between schools and the primary healthcare sector	-	+
10	To ascertain and initiate the establishment of a Youth Wellbeing Network	-	+

Session 1

A 15-minute briefing session was conducted for all breakout groups, nominating that:

- issues were to be peer-generated only
- issues raised would be limited to two overheads only per group
- scribing had to be undertaken by a peer
- reporting back had to be by peers to peers.

The subsequent breakout groups aimed to identify issues from a young person's perspective. The facilitators had been briefed with possible issues, in the event that the groups were unable to generate any myths/truths. However, as expected there was no need to revert to these briefs as each group readily generated an original (impromptu) list.

At the subsequent combined debriefing session, participants were asked to:

- provide peer-to-peers reporting via a student spokesperson from each group
- use no more than two overheads
- discuss the issues raised.

Session 2

This session comprised formal didactic presentations addressing the six wellbeing domains identified by literature review.

Session 3

Session three replicated the structure of session 1. The facilitators had been briefed to identify and develop tools for moving forward from a young person's perspective.



Rationale for the structure of the program

Each element of the model was created according to a specific rationale. The primary purpose of the initial session was to share information and experience while developing an understanding of existing knowledge. Its secondary purpose was to initiate and enhance relationships between students and primary care practitioners by engaging the participants in a real-life encounter. The second session addressed the primary purpose of consolidating information and messages received during the first session. The secondary purpose of this session was to posit a primary care provider as a person whom the student would be able to form a positive relationship with. The final session aimed to use the information obtained about knowledge, skills, attitudes and behaviours in order to develop a youth-driven strategy for moving forward.

Rationale for the first session: knowledge, empowerment, engagement

The primary purpose of the first session was to share individual understandings and experiences. Facilitators asked students to critically evaluate information available to them via a myths/truths approach to the six wellbeing domains. The exercise permitted students to identify the weaknesses and strengths of their existing knowledge on these topics or issues, allowing them to build on the latter and not the former. This empowerment process also served the purpose of assessing students' needs while building upon their knowledge.

The brief to the facilitators through the myths/truths approach was to actively involve students in each of the six domains, thereby instilling a sense of power and control in wellbeing education activities by:

- raising student awareness of lifestyle factors (for example, drug awareness) that might impact on their enjoyment of life
- providing information on the impact and effects of lifestyle factors (for example, drug misuse)
- identifying risk and protective factors
- identifying current licit and illicit issues facing young people
- educating young people on accessing help and creating safe environments.

The myths approach was introduced in order to:

- permit students to identify weaknesses in their existing knowledge

- encourage students to question and become more critical of the information they receive
- open up discussion on reliability of information sources
- explore whether students desired further knowledge.

Likewise, the truth approach was developed in order to:

- add to the students' knowledge base
- promote healthcare providers as a source of information
- provide exposure to healthcare professionals outside of the clinic setting
- identify core messages or behaviours relevant to the wellbeing needs of students.

The secondary purpose of the first session was to build engagement by exposing students to primary care practitioners in a face-to-face setting in which they were able to share their individual understandings and experiences. In keeping with the five micro skills commonly used for clinical brief encounters (Neher *et al.*, 1992) students became aware of what they did and did not know, they became receptive to the topics that were addressed, and they interacted directly with primary care professionals.

Rationale for the second session: reinforcement, affirmation, engagement

The primary purpose of the second session was to consolidate and build on the truths discussed in relation to the six domains. The issues students raised in the first session were those which the primary care provider presented formally in the second session. This not only provided the students with correct information, but helped reinforce students' views of the primary care provider as a source of reliable information.

The secondary purpose of the second session was to encourage the personal delivery of truths by primary care professionals, allowing for a spectrum of presenting styles. The students were able to undertake a face-to-face interaction with primary care providers. This adolescent-friendly approach enabled students to see the primary care provider in a different role. They could identify the primary care providers' different personalities, genders and age ranges, thus engaging with them as normal people not dissimilar to themselves or their parents.

Rationale for the third session: attitudes, initiatives, outcomes

The primary purpose of the third session was to develop new, youth-driven tools and strategies for moving forward.

This session began by considering what makes for an adolescent-friendly doctor, and how practitioners can help form and consolidate a therapeutic relationship with young people. Students then considered and reported back on aspects of the sessions that they could take back to their school, including how best to

disseminate that information to their peers. Students also brainstormed as a group what outcomes and objectives would be desirable for the formation of a Youth Wellbeing Network and how this could be implemented. It was recognised in this session that such a Network and the proposed initiatives would operate in a local context which might be limited by available resources. The students were able to formulate methods of future planning they believed to be appropriate, message-relevant and engaging for their peers, bearing in mind the existing PDHPE resources provided by schools.

Enrolment and evaluation

Ethical approval

After discussion with the ESDGP Clinical Research Committee, this activity was considered an educational intervention rather than a research project, it was deemed unnecessary to seek ethical approval.

Recruitment of students

All public and private senior high schools in the eastern suburbs of Sydney were sent an invitation to participate in the Youth Wellbeing Forum. Each was asked to nominate from two to six students from Years 9–11 plus a Personal Development, Health and Physical Education (PDHPE) teacher and/or school nurse to participate.

Of the 19 schools approached, 16 (85%) participated on the day. In all, there were 102 participants comprising 12 facilitators (six of whom also presented during the second session), 16 teachers and 74 students. The participants on the day encompassed a diverse range in terms of race, age, gender, socio-economic background, interests and strengths.

Apart from the 15-minute briefing discussions at the commencement of sessions 1 and 3, students were not required to undertake any preparation prior to the forum.

Recruitment and briefing of facilitators

The facilitators involved in this program were recruited from primary care practitioners within the local catchment area. Following initial contact from the lead author, all facilitators attended a facilitator training workshop prior to the forum. At this workshop all facilitators received skills training in:

- empowering adolescents
- communicating with adolescents
- adolescent values and issues
- schools doctors' experiences
- communicating with GPs.

These sessions were based on:

- adolescent neurodevelopmental concepts (Appendix 4)
- principles of adult learning (Education Support and Evaluation Resource Unit, 1997)
- principles of facilitation (Neher *et al.*, 1992)
- evidence-based strategies in doctor education (Sanci *et al.*, 2000)
- specific skills for adolescent consultations (Sanci and Young, 1995).

The Youth Wellbeing Forum Questionnaire (YWFQ)

The YWFQ (Appendix 5) was specifically designed for this forum to assess students' views regarding their wellbeing and to identify values and issues of concern relating to adolescent wellbeing. At the commencement of session 1, students were asked the following.

1. To rank from most to least important the list of expectations they regarded as important in ensuring their wellbeing.
2. To specify what they saw as the most important item to address in order to ensure their wellbeing over the next 20 years.
3. To rank from most to least important a number of ways in which the items they specified as important could be delivered.
4. To make any further comments.

The Youth Wellbeing Forum Evaluation (YWFE)

The YWFE (Appendix 6) was designed to seek students' views about the effectiveness of the workshop. Likert scales ranging in value from 1 to 5 were used to assess continuous variables and all evaluation questions invited further comments from students. Completed by participants at the end of session 3, the YWFE evaluated the following parameters.

1. The participant's demographic details.
2. How relevant the information presented during the forum was to them.
3. How clear and comprehensible the delivery of the presentation and its contents were.
4. Whether sufficient opportunity had been given for questions and discussion.
5. Whether their expectations were met.
6. What other topics they would like to see offered at future forums.
7. Suggestions for improving the program.

Results

The Youth Wellbeing Forum Questionnaire (YWFQ)

The YWFQ was completed by 73 of 74 students who attended the workshop (98.7%). The results of questions 1–3 are presented in tables 2–4 below, whereas the individual comments obtained via question 4 are presented along thematic lines.

Structured responses

Responses to questions 1 and 3 were weighted in order to allow meaningful comparison between the options, but they were not compared for statistical significance. Students assigned a value of 1 to the most important option and the highest number to the least important option. To aid analysis, we recoded the scores in reverse so that the highest value indicated the highest importance while value 1 indicated lowest importance. The values were summed across the options, which were then ordered from highest to lowest priority according to the values assigned by participants.

Table 2 (question 1 on YWFQ): student priorities for their wellbeing, from most to least important (numbers in parentheses represent total scores across the responding population).

1. How do you really feel? (563)
2. Relating to your family (473)
3. What you are really eating (403)
4. Communicating with your peers (385)
5. Shaping your physical appearance (384)
6. Sexual health (381)
7. Party time – alcohol, tobacco and substance misuse (298)
8. Preparedness for disasters – avian flu and the like (222)

Table 3 (question 2 on YWFQ): the four most frequently reported items which students indicated were most important to ensure their wellbeing over the next 20 years (comments in parentheses indicate the main rationales for the choice of each item).

1. Diet and physical activity (to be healthy and disease free).
2. Health (it is crucial for overall happiness, to feel better, to live longer, important to balance physical and emotional aspects).
3. Self esteem (to be happy and comfortable with oneself).
4. Sexual health (to be safe and healthy, as becoming more sexually active is a common teenage activity).

Table 4 (question 3 on YWFQ): student priorities for communicating about their wellbeing (numbers in parentheses represent total scores across the responding population).

1. School education classes (400)
2. Discussion with your family (359)
3. Discussion with your friends (347)
4. Facilitator-led peer discussion groups (265)
5. Discussion/consultation with your family doctor or your GP (230)
6. Information from the internet (214)

Unstructured responses

In question 4, students were asked to make further comments regarding their health concerns and priorities. The take-home messages expressed by students following their discussions with their peers and with the facilitators are outlined under the domain themes listed below. Following the forum, a

summary of these messages will also be distributed to all of the participating schools in the form of a brochure.

Sexual health

- Only 50% of young people are having intercourse.
- 25% of teenagers have had sexual intercourse without using a condom.
- About 25% use withdrawal thinking it will prevent conception.
- Many people don't realise that they can transmit disease and become infected through oral sex.
- Oral sex without consent from either partner is also a form of sexual assault.
- Both partners need to agree to have sex (and you can change your mind).
- About 5% are attracted to both sexes, with <1% solely interested in the same sex.

Infectious diseases

- Chickens in Australia do not have avian influenza; birds that carry avian influenza don't fly to Australia.
- Most people get the common flu by touching something that has a respiratory virus on it, then touching their eye, nose or mouth.
- People catch meningococcal disease from contacting with respiratory secretions spread via coughing, sneezing or unclean handkerchiefs/tissues/hands.
- When you drink from a bottle your saliva and throat germs may go back into that bottle, allowing other people to drink them.
- The skin on your hands becomes dirtier in one day than the rest of your whole body does in seven days; the hands carry more germs than any other part of your body.
- Blood, semen and vaginal fluid can carry HIV, hepatitis B and hepatitis C viruses; the viruses can then enter your bloodstream via unprotected sex, sharing needles, razor-blades or tooth-brushes.
- Handshaking and kissing can't spread HIV, hepatitis B or hepatitis C.

Looking good – active lifestyle and shaping your physical image

- Exercise prolongs your life, gives a sense of achievement and keeps you looking good on the inside as well as on the outside.
- Exercise helps you feel good about yourself and increases self confidence.
- Your body weight does not indicate muscle-to-fat ratio because muscle weighs more than fat: don't obsess over body weight.
- Exercise helps maintain a healthy muscle-to-fat ratio.

- Do 30 minutes of moderately intense physical activity (e.g. dancing, power walking, swimming), preferably most days of the week.
- Exercise reduces risk of dying prematurely from heart disease and reduces the risk of developing diabetes, high blood pressure and other chronic diseases.

Eating well – food nutrition

- A healthy body weight depends on consuming the right number of calories i.e. how much, not what you eat/drink.
- Increase fibre: eat more serves of fruit and vegetables (2 serves of fruit and 5 serves of vegetables per day).
- Minimise saturated fats (e.g. red meat, animal fats, palm oil), avoid trans fats (e.g. margarine, peanut butter, cheesy spreads), choose unsaturated fats (e.g. seafood, sunflower oil, cottonseed oil, corn oil) and monounsaturated fats (e.g. olive oil, avocado, nuts and oils from nuts).
- Choose low glycaemic index (GI) foods over high GI foods: they keep you feeling full for longer.
- A good alkali-acid balance is important; eat more fruit and vegetables (alkali) than protein and grains (acid). This reduces risk of diseases.
- Dark chocolate in moderation is good for you if it contains a minimum of 55% cocoa.

Drug, alcohol and tobacco misuse – party time

- Cannabis causes addiction in about 10% of users.
- Smoking cannabis can increase risk of lung disease, reduce motivation, energy and concentration, lower immunity, reduce male fertility and cause irregular periods in women.
- Ecstasy can have serious immediate side effects such as: the body overheating, seeing/hearing things that aren't there, seizures and flashbacks. You can overdose on ecstasy.
- GHB [gamma hydroxybutyrate] (date-rape drug) plus alcohol and other drugs can kill.
- ICE [crystal methamphetamine] kills.
- Nothing will sober you up. Alcohol takes hours to leave your body and there is nothing you can do to speed up your metabolism to break down alcohol.
- You cannot save up all your drinks for one night.
- Tobacco – it's all been said. Don't be stupid, don't smoke.

What makes for an adolescent-friendly doctor?

- Curiosity (e.g. about the topics in this brochure) is healthy and normal; you may want someone to talk to.
- GPs are totally confidential and trustworthy.

- Privacy – if 16+ years old, no parents required to see the doctor.
- Good attitude – non judgemental.
- Interviewing style – two-way communication.
- Accessible.
- Payment – if 15+ years old, apply for your own Medicare card online.

Comments raised by participants during forum discussions

At the end of session 3, students provided verbal responses to six open-ended questions relevant to improving adolescent health initiatives. While specific responses are detailed in Appendix 7, a summary of the responses to each of these questions is provided below.

Typical responses to the question “what makes for an adolescent-friendly doctor?” suggested it was important to students that doctors communicated in simple language, that they were friendly, trustworthy and understanding, and were up to date with current knowledge. Other attributes which would encourage an adolescent to develop a therapeutic relationship with their primary healthcare provider centred around the consultation: the practitioner should help the student to feel comfortable and confident in discussing their health, and should allow appropriate time for the interview.

Students typically described an adolescent-friendly practice as one which included practitioners trained in relating to young people, with an atmosphere and surroundings that were welcoming and comforting, plus staff who were warm and friendly, and an appointment system that was easy. Students also expressed a desire for consultation fees to reflect their limited income, preferring to utilise services that received rebates under the federal Medicare system.

Regarding the messages they would take back to their school following the forum, students nominated:

- our opinions matter
- we are in charge of change
- we do not have to be sick to see a doctor
- we can make informed decisions
- GPs are awesome
- do not be scared to talk to your GP, they are there to help you.

In terms of the methods of disseminating the information acquired from the forum, the students were also asked how they would take the message back to their school. The typical responses suggested that information would be best disseminated via peers, email, school counsellors, teachers, parents and citizens (P & C) meetings, bulletins and events.

During the forum, the possibility of establishing a Youth Wellbeing Network was discussed. Students gave their views on what they thought should be the objectives of such a Network. The students’ responses suggested the objectives should be to increase student awareness of adolescent health issues, to inform and to educate. The responses identified that effective healthcare should – where possible – be preventive rather than curative. They considered it appropriate to raise awareness about utilising resources and services, and to share information, experiences and resources with peers of different ages. They recognised the value of a Youth Wellbeing Network as a forum to share experiences and encouraging students to speak out about sensitive issues, and saw it as a way to build relationships between primary healthcare practitioners and youth.

Further discussion centred on the logistics and methods of establishing a Youth Wellbeing Network. Suggestions included a website co-hosted by schools in the area and the relevant Division of General Practice, hosting forums in schools, and creating a supportive environment for advice.



Youth Wellbeing Forum Evaluation

The YWFE was provided to students at the conclusion of the day, with 71 of 74 participants completing the evaluation (96.0%). Overall, the evaluation responses were considered highly positive, as detailed in table 5 below. Comments responding to the questions provided on the YWFE are listed verbatim and grouped together by themes.

Comments on the relevance of the information presented

- “Inspiring. Gave us confidence and incentive to talk to friends”.
- “Good insight into topics”.
- “Good and helpful to [be able to] talk with and trust professional speakers”.
- “Informative”.
- “Relevant to our lives”.
- “Successfully targeted at our age group”.

Comments on whether the delivery of the content was clear and comprehensible

- “Entertaining. [It] allowed learning”.
- “Good [to have] all GPs with different specialities”.
- “Interesting. To the point and informative”.
- “Simple. Easy to understand”.

Comments on the opportunity for questions and discussions:

- “All was explained well”.
- “Discussions were open and friendly”.
- “Good group discussion with [adult] facilitators”.
- “Speakers seemed approachable”.
- “GPs & facilitators open and encouraging”.

Comments on whether students’ expectations were met

- “All I wanted was covered”.
- “Benefited a lot”.
- “Good to meet people”.
- “Thoroughly enjoyed it”.
- “Topics were extensive and helpful”.
- “Would recommend it to others”.

Comments on what other topics students would like to see offered in the future

Students’ quotes were lengthy and are not reproduced here in full; most centred around mental wellbeing, including relationships with family and friends, peer pressure, depression, anxiety, stress management and conflict resolution.

Students’ suggestions for future programs

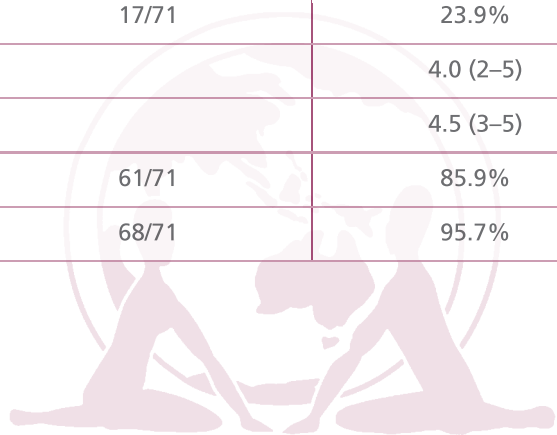
- “Music playing to warm up the mood”.
- “More jokes”.
- “More interactive and hands on”.
- “Ask questions of audience during presentations”.
- “Make it available to others in schools”.

Typical comments about the forum

- “Relationships with GPs are essential”.
- “Facilitator-led groups are very good for discussion”.
- “Young people need support in living a healthy life”.
- “Really found the forum interesting”.
- “More forums and speakers to visit schools”.
- “This was an amazing experience”.

Table 5. Student demographic details and means or percentages of continuous variables tested.

Parameter	Responses	Proportion or mean (range)
Female	43/71	60.5%
Year 9	22/71	30.9%
Year 10	28/71	39.4%
Year 11	17/71	23.9%
Relevance of information		4.0 (2–5)
Delivery clear and comprehensible		4.5 (3–5)
Opportunity for questions	61/71	85.9%
Expectations were met	68/71	95.7%



Discussion

This initiative has been flagged as the first known youth wellbeing forum in Australia. It is a critical starting point in shifting the focus of adolescent healthcare to primary prevention. It purports to empower adolescents in managing their own health, optimising their desire to achieve wellbeing and fulfilment in their lives. As a model it has been designed in the context of adolescent behaviour as a development process and with the objective of utilising facilitators as adult/practitioner role models.

This student-driven education model empowers students to take responsibility for adopting active, healthy and fulfilling lifestyles in collaboration with their primary healthcare practitioner. This is achieved by exploring their knowledge base, their pre-existing attitudes and behaviours, and by utilising a skill-set level appropriate to their developmental stage.

Adolescent brain development

Neurobiological discoveries have confirmed the importance of understanding brain development in the context of adolescent behaviour (Appendix 4). The research reviewed suggests that there are important distinctions between the brains of adolescents and adults. In particular, the concept of the immature brain may explain why teenagers are more prone to make poor decisions and place themselves in risky situations involving unsafe sexual behaviour or drug use. Educating students regarding the science of brain development and the neurobiology of addiction may play a role in shifting the behaviour of adolescents towards primary prevention. Indeed, it is apparent that many teens are using drugs and alcohol from an early age, which suggests that prevention and education programs should begin as early as primary school.

International initiatives that relate to the model of engagement

There is increasing recognition internationally of the importance of enlisting adolescents in public health and educational interventions aimed at young people (Powers and Tiffany, 2006; Jensen and Simovska, 2005). However, relatively few concrete examples exist in which young people are involved in BASK-oriented models which identify their specific needs, build upon their current understanding and then encourage students to promulgate appropriate information and behavioural guidance to their peers.

As a step towards this goal, a range of programs targeting the domains addressed by the Youth Wellbeing Forum – sexual health, nutrition and physical activity – have employed extensive youth participation in the research and evaluation of school-centred activities. This participatory action research (PAR) model has been employed at community or school levels to target HIV/AIDS awareness and safe sex practices in Thailand and the Philippines (Fongkaew *et al.*, 2006; Morisky *et al.*, 2004), plus drug-focused initiatives in the USA (Gosin *et al.*, 2003). Likewise, a number of health-based programs have sought to enlist and train peer educators/advocates to target HIV prevention in Italian, Greek, South African and American schools (Borgia *et al.*, 2005; Merakou and Kourea-Kremastinou, 2006; Campbell and MacPhail, 2002; Silvestre *et al.*, 2002). Where these models have been assessed longitudinally, they demonstrated some degree of improvement in knowledge, student empowerment, personal responsibility and behavioural change, although there was considerable variation in success rates between programs.

These international initiatives augur well for the BASK model detailed in this report, which focuses on a range of wellbeing domains and is targeted to an understanding of adolescent neurodevelopment. In particular, there is clearly a valuable role for a student driven model that provides for self-motivated and peer-to-peer health education and promotion.

Sexual health

In terms of knowledge about sexual health and how this translated into behaviour, it was apparent from the Australian Sexual Health Survey in 2002 that most high school students are sexually active to some degree (Agius *et al.*, 2006). However, it was noted that overall knowledge about sexual behaviour, contraception and sexually transmitted infections could be improved. A particular concern arising from the literature reviewed was the common belief that a potential sexual partner who looked well and was asymptomatic would not have an STI. This belief, coupled with reports that approximately 33% of year 12 students have sex without condoms, clearly indicates the need for sexual health promotion among adolescents. The Youth Wellbeing Forum incorporated this insight into objectives 3 and 5, in order to promote wellbeing and primary prevention strategies by building on students' existing knowledge, attitudes, skills and behaviours.

International studies have reported similar findings to Australian data, with researchers raising concerns about the social and health implications of the sexual beliefs and behaviours of adolescents. Nicoll and colleagues (1999) reviewed all national data pertaining to sexual ill health among teenagers in England and Wales, plus birth and termination statistics from the Office for National Statistics (Dickson *et al.*, 1997), and reports from sexually transmitted disease clinics (Simms *et al.*, 1998). They then analysed data for 1995–6, noting substantial increases in indicators of sexual ill health among English teenagers even over this brief period.

The aforementioned study findings and the results of the Youth Wellbeing Forum suggest that unwanted pregnancies, poor knowledge of contraception and sexual risk taking remain an issue for adolescents. The paper by Nicoll *et al.* (1999) showed no reduction in teenage pregnancies or risk taking, but an increased incidence of sexually transmitted diseases, cervical intraepithelial neoplasia, ectopic pregnancy and tubal infertility despite extensive sex education programs and the expenditure of large sums on medical and social services in England and Wales. It has been the assumption that sex education can be undertaken by teachers, some of whom may feel uncomfortable discussing issues such as masturbation, homosexuality, rape and abortion. The medical and scientific aspects of health, development and wellbeing may be neglected in adopting a psychosocial approach within the context of a student-teacher relationship.

It may be more appropriate for the provision of primary healthcare and information to be conducted between a student and a primary care provider. Barriers to this process may be that healthy students do not generally go to see their doctor and that the relationship between students and doctors may be seen exclusively in the context of acute illness. It should be acknowledged that many general practitioners lack the time, experience or facilities required to run a comprehensive adolescent service. Difficulties with appointment systems and anxiety about confidentiality can pose further problems for adolescents. These concerns created an objective at the forum to establish a mechanism for empowering students and shifting their primary care emphasis toward seeking-health behaviour.

In Sweden a positive model is in place (Reiss, 1999). Clinics are provided where doctors and nurses join in sex education programs at the local schools. Adolescents are educated and counselled before they become sexually active. This has led to a significant

reduction in the incidence of teenage pregnancies, terminations, gonococcal and chlamydial infections, pelvic inflammatory disease, and ectopic pregnancy. When the students attend the clinic they meet friendly staff who offer advice on sexuality, interpersonal relationships, contraception and avoidance of STIs. Contraception, termination, cervical cytology, diagnosis and treatment of lower genital tract infections, and contact tracing are also available (Reiss, 1999). In contrast, services offered in Australia and the United Kingdom are fragmented, being dealt with by a variety of specialists and clinics.

Infectious Diseases

There are no known studies investigating the knowledge or behaviour of Australian students with regard to infectious diseases and their transmission. The Youth Wellbeing Forum identified that many students do not perceive they are at risk of avian influenza as “birds that carry influenza do not fly into Australia”. It is clear from such misconceptions that there are discrepancies between assumed knowledge and factually accurate information. This specifically relates to objective 5, which seeks to build on existing adolescent knowledge, skills and attitudes.

At an international level, one study identified knowledge and concerns about avian influenza among secondary school students in Saudi Arabia (Al-Shehri *et al.*, 2006). A stratified random sample of 514 students from six secondary schools undertook a self-administered multiple-choice questionnaire. The knowledge section comprised questions about the definition of avian influenza, its aetiology, exact causative agent, method of transmission to humans, the likelihood of human infection compared with bird infection, means of prevention and control, and the countries affected by the then-current pandemic. Knowledge responses were poor, and related to socioeconomic indices. Approximately 70% of the participants reported that electronic media (TV and/or radio) were the source of their information. Overall, 65.4% of the participants said they expected there to be cases of avian influenza in Saudi Arabia in the current year, with females were more concerned than males (70.9% versus 58.9%). This survey identified that misconceptions were prominent among adolescents and that indiscriminate information sources such as the electronic media were not the most appropriate means of educating students. Conversely, at the Youth Wellbeing Forum, facilitators provided a successful alternative information source which was well received by students.

Food nutrition

Australian data suggesting that food and nutrition knowledge and behaviours required improvement (Booth *et al.*, 2003; Booth *et al.*, 2006; Bell and Swinburn, 2004; Sanigorski *et al.*, 2005) were reiterated in a study of adolescents' eating habits conducted in London (Parker and Fox, 2001). This study found that at baseline, vegetable and fruit consumption was very low at all schools investigated. The investigators aimed to evaluate the effectiveness of multiple interventions targeted at lunches in secondary schools, with the aim of increasing the consumption of healthier foods by students. Three schools were studied, two receiving multiple interventions and one – acting as a control – received none. Overall there were no significant changes in school-based eating at the end of the study. Some positive changes were made, with some of the dietary targets being achieved at an early stage, but these were not sustained. Ultimately this study confirmed the difficulty of changing the eating habits of young people, even with considerable input of resources. It reiterated the importance of empowering young people to design and evaluate the services that would provide them with the means to achieve healthy and fulfilling lives.

Physical activity

Low levels of physical activity among adolescents continue to pose a major international health problem. For instance, a study of nearly 15,000 American and Canadian youths found that physical activity declined steadily from 14 to 18 years of age – in other words, during middle to late high-school years (Allison *et al.*, 2007). Many large surveys focus on demographic elements that are difficult for practitioners to alter – for instance, the client's socioeconomic status or the location of their home. However, other factors specific to students' individual beliefs and environments are more amenable to intervention, either in the clinic or at a local/school level. In Canada, for instance, a study of 2688 high-school students found that there were relatively few differences between rural and urban youths regarding barriers to participating in physical activity (Loucaides *et al.*, 2007). Factors that could be amenable to adolescent-led programs included self perception of physical ability, use of recreation time – particularly participation in group activities – and peer levels of physical activity. Further opportunities for change included increased rates of active commuting to school and participation in physical education classes. These factors were reiterated by 44 New

Zealand high-school students who were asked in small focus groups to nominate ways in which they could improve their participation in physical activity (Hohepa *et al.*, 2006). Their suggestions included increased availability of school or local group activities, improved peer support and a revised approach to the structure of physical education classes. Data such as these suggest that there exists considerable scope for the local adoption and implementation of BASK models such as the Youth Wellbeing Forum iterated in this report.

Drug, alcohol and tobacco use

Alcohol and drug use amongst Australian students is an established issue which was freely recognised by students at the Youth Wellbeing Forum. These concerns are echoed at an international level. For instance, in a study of substance use among adolescents in England (15–16 year olds), it was found that female adolescents were more likely to be smokers (20.7%) but male counterparts (17.6%) were more likely to be heavy smokers (Rodham *et al.*, 2005). Frequent drinking and heavy consumption of alcohol were more prevalent among males than females (53% versus 44%, respectively). Male adolescents were more likely to have used any drug, the most commonly used being cannabis (29.5%). The consequences of drug abuse were delineated in an American study examining the relationship between early adolescent marijuana use and late adolescent problem behaviours, drug-related attitudes, drug problems, and sibling and peer problem behaviour (Brook *et al.*, 1999). Over 1000 African-American and Puerto Rican youths completed questionnaires and were individually interviewed 5 years later. It was found that early adolescent marijuana use increased the risk in late adolescence of not graduating from high school, delinquency, having multiple sexual partners, not always using condoms, perceiving drugs as not harmful, having problems with cigarettes, alcohol and marijuana, and having more friends who exhibited deviant behaviour. The authors concluded that early adolescent marijuana use was related to later adolescent problems that limited the acquisition of skills necessary for employment, while heightening the risks of contracting HIV and abusing legal and illegal substances.

These local and international data confirm the need not only for education regarding the consequences of drug abuse and addiction, but for the creation of effective strategies by which adolescents can provide appropriate behavioural guidance to their peers (Bond *et al.*, 2004).

Attainment of objectives and the creation of future goals

Specifically, the design of the forum reflected the desire to meet the program's first two objectives, namely 1) to empower students and 2) to develop a youth-driven education model. These objectives were established in the first session and consolidated in the subsequent sessions, culminating in the formation of an education model that empowered students by encouraging them to identify issues and take responsibility for their own health, in addition to promoting health messages to their peers. The success of the forum was demonstrated in the willingness of students to understand and adopt behaviours that enabled active, healthy and fulfilling lifestyles, in collaboration with primary care providers. While it is difficult to accurately quantify whether these objectives were achieved, it was clear that the program garnered a positive response from participants, evincing comments such as "Inspiring. Gave us confidence and incentive to talk to friends".

Session 1 was also intended to meet additional objectives of the program, including 3) to shift the agenda in healthcare from crisis identification and management to youth wellbeing promotion; 4) to identify those values and issues of concern relating to adolescent wellbeing; and 5) to build on existing adolescent knowledge, skills and attitudes. In this session the background information relating to wellbeing issues was assessed in terms of its relevance to the student population participating in the forum. Although the educators set the agenda, the students were able to bring up issues they viewed as relevant to their wellbeing while detailing their knowledge about these topics. By educating peers in a group setting that was led by students, they were able to actively participate in determining their health needs, and in dispelling myths and misconceptions about many wellbeing issues. By examining the pre-existing knowledge, attitudes and beliefs that adolescents held towards the six BASK domains, the facilitators were able to determine the participants' current behavioural trends. By focusing on students as both the starting and end points of the process, the forum enhanced their ability to engage with primary prevention and health promotion.

Session 2 consolidated the previous objectives while seeking to accomplish the additional aims of 6) enhancing adolescent perceptions that primary healthcare providers can meet their current and future needs; 7) enhancing integration between schools and the primary healthcare sector; and 8)

promoting primary healthcare providers as a viable source for student engagement. In this final session the students were able to express what it meant to them for a doctor to be 'adolescent friendly'. They identified being "friendly, accepting and with the times" as important attributes of an ideal GP, while noting that the current perception of doctors as authority figures could be a barrier to wider youth access to primary healthcare. The nature of the health system was also highlighted as a potential barrier, especially in terms of cost and access opportunities; students also shared universal barriers to effective healthcare such as time and resource constraints.

During the final session the forum addressed objective 9), which was to recognise and develop the concept that adolescents can become the interface medium between schools and the primary healthcare sector. This was achieved by involving students in the promotion of wellbeing, and encouraging them to act as peer messengers to disseminate accurate information. The benefit of targeting students via peer-to-peer networks is obvious when one considers how myths and misinformation regarding health and disease are often perpetuated. Students have a very powerful voice amongst their peers and student-led networks are an appropriate medium to engage them in the process of optimising their healthcare and wellbeing. The creation of such networks is an important step toward accomplishing the final objective of the program: 10) to ascertain the need and means for establishing a Youth Wellbeing Network.

Session 3 also allowed students to identify what the objectives of such a network might be and how it could be implemented. They recognised empowerment and ownership as key issues, and thought the purpose of a network should be to disseminate credible information, raise awareness and inform and educate its users. It should debunk myths and aim to prevent rather than cure disease. These purposes are in alignment with the objectives of the forum, highlighting the reasons why such a forum could be a useful starting point in the establishment of local peer-to-peer adolescent health networks. The added benefit of such networks was recognised as enabling the unification of educators, primary health providers and students in achieving a common goal of wellbeing. The students were alerted to the resources available to them in order to obtain quality, adolescent-friendly healthcare, and they felt more able to access this service at the end of the forum.

In examining the student-generated suggestions regarding the creation of a Youth Wellbeing Network, several possibilities were raised. Established methods of communication amongst peers were explored, including mobile phone text messaging, websites or blogs, school programs, clinic-based initiatives and establishing forums or group-based support. It was highlighted that advertising by an appropriate medium might further harness support, awareness and acceptance of such a network. Privacy issues were discussed, including login access, anonymous blogs and forums, and confidentiality was reiterated by students as an important aspect of any provision of individual health information.

The evaluation of the Forum was overwhelmingly positive and affirmed its acceptance by the participating students. It was embraced as relevant, comprehensive and understandable, and 95.7% of respondents reported their expectations of the forum were met. Comments from students acknowledged that young people require support in living a healthy life and that relationships with primary healthcare practitioners are essential in this regard. The suggestions for the future included “make it available to other schools”. From a planning perspective, the input of students regarding which topics should be developed for future forums was valuable, with suggestions centring around mental health issues and coping with stress, family-centred issues and conflict resolution.

In line with the specific objectives outlined for the model, a number of priority areas for future (national) consideration were identified at the forum.

Empower students

Students participating in the forum identified that they felt better equipped – in terms of knowledge and attitudes – to manage their own wellbeing. Moreover, their willingness to contemplate and plan primary prevention activities at their school confirmed that most participants felt empowered by participation in the Youth Wellbeing Forum.

Develop a youth-driven education model

At a practical level the forum worked as planned, inasmuch as students nominated their areas of interest and identified existing knowledge/myths, which were then addressed by expert presenters. The participants overwhelmingly confirmed that they had been given ample opportunity to question and discuss the issues, and that the content was clear and relevant to their own health needs.

Shift the agenda in healthcare from crisis identification and management to promotion of youth wellbeing

Although it cannot be claimed that this single activity shifted attitudes and behaviours of participants from tertiary to primary prevention, it provided a model for one means by which such an aim could be achieved. In particular, the Youth Wellbeing Forum highlighted the willingness of adolescents to contemplate taking increasing responsibility for their own wellbeing, and for promoting healthy behaviours in their peers.

Identify those values and issues of concern relating to adolescent wellbeing to build on existing adolescent knowledge, skills and attitudes

Students were provided ample opportunity to discuss and iterate their own local and developmental stage-specific health concerns during the first session of the forum. Via the subsequent presentations and group discussions, myths were corrected and existing knowledge and skills were built upon.

Enhance adolescent perceptions that primary healthcare providers can meet current and future needs of adolescents

This objective was achieved in a practical sense by providing an environment in which adolescents could interact with primary healthcare practitioners, recognising both their professional skills and knowledge while acknowledging that they were ‘human’. At a system level, students were encouraged through presentations and discussion to consider how they and their peers could better interact with the health system, while likewise providing suggestions as to how primary healthcare services could better meet their needs.

Enhance integration between schools and the primary healthcare sector

The appeal of this model was confirmed by the very high proportion of local schools choosing to participate in the forum. This process helped build logistical and interpersonal relationships between local schools and a primary healthcare body (the Eastern Sydney Division of General Practice). The involvement of teachers and school nurses in the program ensured that positive messages and initiatives arising from the forum were perpetuated at the administrative as well as at the student level.

Promote primary care providers as a viable source for student engagement

Through interaction on the day, students and school staff were better able to conceptualise primary

healthcare practitioners as both advocates and effectors of adolescent wellbeing. Means of interaction between young people and practitioners were discussed, including possible means for reducing barriers to engagement.

Recognise and develop the concept that adolescents can be the interface medium between schools and the primary healthcare sector

Through engagement and empowerment on the day, students were encouraged to consider that they could communicate their health needs, build appropriate knowledge and skills, and then convey these to their peers. In this sense, the Youth Wellbeing Forum created both a framework and a practical example for students who wish to take an active role in promoting their own (and their peers') wellbeing.

Ascertain the need for and to initiate the establishment a Youth Wellbeing Network

There were many positive comments and suggestions regarding the possibility of establishing a youth wellbeing network at a local or even at a national level. Students imagined a range of possibilities and proposed modalities by which peer-to-peer enhancement of adolescent health could be promulgated.

Limitations

The Youth Wellbeing Forum was intended to provide a means for students from a local catchment to interact with each other and promulgate positive health messages back to their individual schools. With 84% of local schools contributing students, the main logistical limit on the size of the forum was the time available for each small group to report back its deliberations. If more than 12 groups had been involved, the activity could not have been conducted in a single day.

In examining the impact of the forum on improving health outcomes, it would be helpful to have objective outcome measures to assess the correlation between reported behaviour changes and specific health targets. For example, it would be valuable to have a tool for assessing participants' understanding of specific health issues before and after the forum, especially if this could then be correlated with behavioural outcomes such as practicing safe sex or abstaining from binge drinking.

One of the aims of the model was to enhance the accessibility and acceptability of primary care practitioners to students. In terms of improving health access, one could observe parameters such as practice attendance rates or applications for Medicare cards among participants. With regard to acceptability of practitioners, there would be further value if the quality of prior and subsequent clinical interactions could be rated.



Conclusions

The Youth Wellbeing Forum described in this report can be considered a successful proof-of-concept pilot program. The model aimed to shift adolescent health toward a youth-driven primary prevention focus, by engaging with students and empowering them to communicate health information and behavioural cues to their peers. This was achieved by a number of means, constructing the model from a base of educational and neurodevelopmental knowledge and implementing it via the enlistment of local schools and primary healthcare providers. By providing an interface between the three key stakeholders (students, schools and healthcare providers), the forum sought to debunk myths, provide accurate and relevant health information, and to diminish barriers to youth access to health services.

Qualitatively, the pilot forum proved to be successful. Involvement by local schools and participation by the attending students were both of a high order. Evaluations completed on the day confirmed anecdotal impressions of the organisers, namely that the students felt both engaged and empowered by the process. The responses of participants to the concept were overwhelmingly positive, expressing both satisfaction with the discussions and a willingness to promulgate key messages to their wider school community. There was a pronounced interest in participating in future forums. Importantly, in addition to providing future forums, students considered means by which they could assist in creating follow-on youth wellbeing networks within and beyond their schools.

Whether the participants' knowledge, skills, attitudes or behaviours changed quantitatively or permanently as a result of the Youth Wellbeing Forum was not

evaluated. In order to assess such correlations a much more intensive activity would be required, involving both cross-sectional and longitudinal data capture. This was not the intention of the pilot program, but could form the basis of a more detailed validation study. Likewise, the means by which messages communicated at the forum could be promulgated and reinforced at the whole-school level are also deserving of further attention. It should be borne in mind that our model does prescribe a formula for peer-to-peer education, as well as a means by which young people are empowered to create the health promotion networks that they believe will be effective locally. Nevertheless, study of the initiatives arising from students' suggestions may confirm which strategies appear to be the most effective.

The model used for this inaugural Youth Wellbeing Forum is intended to be neither definitive nor prescriptive. It was created to meet a specific set of objectives and addressed a series of health issues that were identified as locally relevant. Nevertheless, national and international studies confirm the need for ongoing initiatives that target the health and wellbeing of adolescents. Structurally, the Youth Wellbeing Forum provides a framework for encouraging young people to adopt seeking-health behaviour, based on both sound educational principles and an understanding of teenage neurobiology. We hope that the initial success of this innovative forum will encourage other education and healthcare providers to consider similar student-led initiatives, or to adapt and extend the model we have proposed here.



Recommendations

In considering the establishment and success of the pilot Youth Wellbeing Forum, the following recommendations are proposed for consideration by key stakeholders in the promotion of adolescent health and wellbeing.

Young people/students

- Consider supporting or contributing to a youth wellbeing website, which either hosts or coordinates access to information relevant to all aspects of adolescent health.
- Consider creating or participating in youth wellbeing networks at a school, region or national level; these may incorporate a range of activities tailored to local needs, skills and resources, including peer-to-peer presentations, invited presenters or facilitators, newsletters/magazines, SMS networks or blogs.
- Consider lobbying of school, health or government authorities for greater recognition of adolescent health needs, with a focus on primary prevention.

Parents and citizens

- Discuss with students, schools and healthcare providers the needs and boundaries of health information that should be provided to adolescents.
- Encourage adolescents to view wellbeing as the promotion of healthy behaviours and the minimisation of risks; assist in empowering students to take responsibility for maintaining their own wellbeing as they progress to adulthood.
- Lobby for the establishment of a formal working party on youth wellbeing, seeking local or national input into policy development and resource allocation both for overall strategies and targeted initiatives such as the Youth Wellbeing Forum.

Schools and teachers

- Ensure local curriculum (e.g. PDHPE or similar methods) addresses both the health information and behavioural needs of adolescents, at a level relevant to developmental stage.
- Consider networking with other local schools and health networks (e.g. Divisions of General Practice) in order to develop and implement local adolescent health initiatives, such as the Youth Wellbeing Forum.

- Offer support and resources to students in order for them to participate in adolescent health initiatives, with a particular focus on promoting peer-to-peer promulgation of health information and behavioural messages.

Primary healthcare providers and Divisions of General Practice

- Consider adapting practice environments to meet the expressed needs and preferences of adolescent clients, for instance through staff training, scheduling considerations or the establishment of specific adolescent health clinics.
- Seek to engage with adolescents in the local (school) community by creating primary prevention initiatives such as the Youth Wellbeing Forum, in conjunction with local schools and Divisions of General Practice.
- Lobby Divisions and government for strategic direction and resource allocation that effectively promotes youth health, including practitioner education and the support of targeted initiatives that empower adolescents to take responsibility for their own wellbeing.

Government/administration

- Continue to acknowledge the value of youth health initiatives – including those already established – but with a progressive revision of focus from tertiary prevention/crisis management to primary prevention strategies.
- Create and/or support youth-led initiatives that empower adolescents to take responsibility for maintaining their own health and reinforcing positive behavioural changes among their peers.
- Promulgate and enforce policies that minimise access of adolescents to harmful activities (e.g. drug, alcohol and tobacco use) while encouraging positive behaviours such as healthy food choices, increased physical activity and safe sex practices.



References

- Agius, P.A., Dyson, S., Pitts, M.K., Mitchell, A. and Smith, A.M. (2006) Two steps forward and one step back? Australian secondary students' sexual health knowledge and behaviors 1992-2002. *Journal of Adolescent Health*, 38, 247-252.
- Allison, K.R., Adlaf, E.M., Dwyer, J.J., Lysy, D.C. and Irving H.M. (2007) The decline in physical activity among adolescent students: a cross-national comparison. *Canadian Journal of Public Health*, 98, 97-100.
- Al-Shehri, A.-S., Abdel-Fattah, M. and Hifnawy, T. (2006) Knowledge and concern about avian influenza among secondary school students in Taif, Saudi Arabia. *Eastern Mediterranean Health Journal*, 12 Suppl 2, S178-S188.
- Amunts, K. (2005) Cytoarchitectonic mapping of the human amygdala, hippocampal region and entorhinal cortex: intersubject variability and probability maps. *Anatomy and Embryology*, 210, 343-352.
- Australian Sports Commission (2003). *Participation in Exercise, Recreation and Sport 2002*, Australian Sports Commission, Canberra.
- Baird, A.A., Gruber, S.A., Fein, D.A., Maas, L.C., Steingard, R.J., Renshaw, P.F., Cohen, B.M. and Yurgelun-Todd, D.A. (1999) Functional magnetic resonance imaging of facial affect recognition in children and adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, 38, 195-199.
- Bartholomew, L.K., Parcel, G.S. and Kok, G. (1998) Intervention mapping: a process for designing theory- and evidence-based health education programs. *Health Education & Behaviour*, 25, 545-563.
- Bell, A.C. and Swinburn, B.A. (2004) What are the key food groups to target for preventing obesity and improving nutrition in schools? *European Journal of Clinical Nutrition*, 58, 258-263.
- Booth, M., Okely, A.D., Denney-Wilson, E., Hardy, L., Yang, B. and Dobbins, T. (2006). *NSW Schools Physical Activity and Nutrition Survey (SPANS) 2004: Short Report*, NSW Department of Health, Sydney.
- Booth, M.L., Chey, T., Wake, M., Norton, K., Hesketh, K., Dollman, J. and Robertson, I. (2003) Change in the prevalence of overweight and obesity among young Australians, 1969-1997. *American Journal of Clinical Nutrition*, 77, 29-36.
- Bond, L., Thomas, L., Coffey, C., Glover, S., Butler, H., Carlin, J.B. and Patton, G. (2004) Long-term impact of the Gatehouse Project on cannabis use of 16-year-olds in Australia. *Journal of School Health*, 74, 23-29.
- Borgia, P., Marinacci, C., Schifano, P. and Perucci, C.A. (2005) Is peer education the best approach for HIV prevention in schools? Findings from a randomized controlled trial. *Journal of Adolescent Health*, 36, 508-516.
- Breyer, J. and Winters, K.C. (2001) *Adolescent Brain Development: Implications for Drug Use Prevention*, Centre for Substance Abuse Research, Department of Psychiatry, University of Minnesota, Duluth.
- Brook, J.S., Balka, E.B. and Whiteman, M. (1999) The risks for late adolescence of early adolescent marijuana use. *American Journal of Public Health*, 89, 1549-1554.
- Campbell, C. and MacPhail, C. (2002) Peer education, gender and the development of critical consciousness: participatory HIV prevention by South African youth. *Social Science and Medicine*, 55, 331-345.
- Chambers, R.A., Taylor, J.R. and Potenza, M.N. (2003) Developmental neurocircuitry of motivation in adolescence: a critical period of addiction vulnerability. *American Journal of Psychiatry*, 160, 1041-1052.
- Coffey, C., Carlin, J.B., Degenhardt, L., Lynskey, M., Sanci, L. and Patton, G.C. (2002) Cannabis dependence in young adults: an Australian population study. *Addiction*, 97, 187-194.
- Collins, D. and Lapsley, H. (2002) *Counting the Cost: Estimates of the Social Costs of Drug Abuse in Australia in 1998-9*. National Drug Strategy Monograph Series No. 49, Commonwealth Department of Health and Ageing, Canberra.
- Currie, C., Roberts, C., Morgan, A., Smith, R., Settertobulte, W., Samdal, O. and Rasmussen, V.B. (eds) (2004) *Young People's Health in Context. Health Behaviour in School-aged Children (HBSC) Study: International Report from the 2001/2002 Survey (Health Policy for Children and Adolescents, No. 4)*, World Health Organization Europe, Copenhagen.
- Dickson, R., Fullerton, D., Eastwood, A., Sheldon, T. and Sharp, F. (1997) Preventing and reducing the adverse effects of unintended teenage pregnancies. *Effective Healthcare*, 3, 1-12.
- Eagly, A.H. and Chaiken, S. (1993) *The Psychology of Attitudes*, Harcourt Brace Jovanovich College Publishers, Fort Worth.
- Education Support and Evaluation Resource Unit (1997) *Education SERU Information Resource Folder*, Support and Evaluation Resource Unit, Townsville.
- Epstein, E. (2007) The myth of the teen brain. *Scientific American Mind*, April/May, 55-63.
- Fongkaew, W., Fongkaew, K. and Muecke, M. (2006) HIV/sexual and reproductive health program for HIV prevention: the youth-adult partnership with schools approach. *Journal of the Medical Association of Thailand*, 89, 1721-1732.
- Goldenring, J. and Cohen, E. (1988) Getting into adolescent heads. *Contemporary Pediatrics*, 5, 75-80.
- Gosin, M.N., Dustman, P.A., Drapeau, A.E. and Harthun, M.L. (2003) Participatory Action Research: creating an effective prevention curriculum for adolescents in the Southwestern US. *Health Education Research*, 18, 363-379.
- Haller, J., Mikics, E., Halász, J., Tóth, M. (2005) Mechanisms differentiating normal from abnormal aggression: glucocorticoids and serotonin. *European Journal of Pharmacology*, 526, 89-100.
- Hill, D., White, V. and Effendi, Y. (2002) Changes in the use of tobacco among Australian secondary students: results of the 1999 prevalence study and comparison with earlier years. *Australian and New Zealand Journal of Public Health*, 26, 156-163.
- Hohepa, M., Schofield, G. and Kolt, G.S. (2006) Physical activity: what do high school students think? *Journal of Adolescent Health*, 39, 328-336.
- Jensen, B.B. and Simovska, V. (2005) Involving students in learning and health promotion processes - clarifying why? what? and how? *Promotion and Education*, 12, 150-156.
- Kefford, C. (2006) "Evaluation of the 'General Practitioners (GPs) in Schools' program", presentation at the Primary Health Care Research Evaluation and Development Conference, Sydney.
- Lescano, C.M., Hadley, W.S., Beausoleil, N.I., Brown, L.K., D'eraimo, D. and Zimskind, A. (2007) A brief screening measure of adolescent risk behavior. *Child Psychiatry and Human Development*, 37, 325-336.

- Loucaides, C.A., Plotnikoff, R.C. and Bercovitz, K. (2007) Differences in the correlates of physical activity between urban and rural Canadian youth. *Journal of School Health*, 77, 164–170.
- Luna, B., Thulborn, K.R., Munoz, D.P., Merriam, E.P., Garver, K.E., Minshew, N.J., Keshavan, M.S., Genovese, C.R., Eddy, W.F. and Sweeney, J.A. (2001) Maturation of widely distributed brain function subserves cognitive development. *Neuroimage*, 13, 786–793.
- Makkai, T. and McAllister, I. (1998) *Patterns of Drug Use in Australia, 1985–95*, Department of Health and Family Services, Canberra.
- Marston, C. (2006) Factors that shape young people's sexual behaviour: a systematic review. *Lancet*, 368, 1581–1586.
- McPherson, A. (2005) Adolescents in primary care. *British Medical Journal*, 330, 465–467.
- Merakou, K. and Kourea-Kremastinou, J. (2006) Peer education in HIV prevention: an evaluation in schools. *European Journal of Public Health*, 16, 128–132.
- Morisky, D.E., Ang, A., Coly, A. and Tiglaio, T.V. (2004) A model HIV/AIDS risk reduction programme in the Philippines: a comprehensive community-based approach through participatory action research. *Health Promotion International*, 19, 69–76.
- Murray, C.J.L. and Lopez, A.D. (1997) Global mortality, disability and the contribution of risk factors: global burden of disease study. *Lancet*, 349, 1436–1442.
- National Youth Mental Health Foundation (2006) *Information and Guidelines for Funding Submission*, Department of Health and Ageing, Canberra.
- Neher, J.O., Gordon, K.C., Meyer, B. and Stevens, N. (1992) A five-step 'microskills' model of clinical teaching. *Journal of the American Board of Family Practice*, 5, 419–424.
- Nicoll, A., Catchpole, M., Cliffe, S., Hughes, G., Simms, I. and Thomas, D. (1999) Sexual health of teenagers in England and Wales: analysis of national data. *British Medical Journal*, 318, 1321–1322.
- Olds, J. and Milner, P. (1954). Positive reinforcement produced by electrical stimulation of septal area and other regions of rat brain. *Journal of Comparative Physiology and Psychology*, 47, 419–427.
- Parker, L. and Fox, A. (2001) The Peterborough schools nutrition project: a multiple intervention programme to improve school-based eating in secondary schools. *Public Health Nutrition*, 4, 1221–1228.
- Powers, J.L. and Tiffany, J.S. (2006) Engaging youth in participatory research and evaluation. *Journal of Public Health Management and Practice*, Suppl, 579–587.
- Reiss, H. (1999) Sexual health of teenagers. Comprehensive youth clinics are needed. *British Medical Journal*, 319, 1367–1368.
- Rodham, K., Hawton, K., Evans, E. and Weatherall, R. (2005) Ethnic and gender differences in drinking, smoking and drug taking among adolescents in England: a self-report school-based survey of 15 and 16 year olds. *Journal of Adolescence*, 28, 63–73.
- Sanci, L.A., Coffey, C.M., Veit, F.C., Carr-Gregg, M., Patton, G.C., Day, N. and Bowes, G. (2000) Evaluation of the effectiveness of an educational intervention for general practitioners in adolescent healthcare: randomised controlled trial. *British Medical Journal*, 320, 224–230.
- Sanci, L. and Young, D. (1995) Engaging the adolescent patient. *Australian Family Physician*, 24, 2027–2031.
- Sanigorski, A.M., Bell, A.C., Kremer, P.J. and Swinburn, B.A. Lunchbox contents of Australian school children: room for improvement. *European Journal of Clinical Nutrition*, 59, 1310–1316.
- Sawyer, M.G., Arney, F.M., Baghurst, P.A., Clark, J.J., Graetz, B.W., Kosky, R.J., Nurcombe, B., Patton, G.C., Prior, M.R., Raphael, B., Rey, J., Whaites, L.C. and Zubrick, S.R. (2000) *Mental Health of Young People in Australia: Child and Adolescent Component of the National Survey of Mental Health and Well-being*, Mental Health and Special Programs Branch, Commonwealth Department of Health and Aged Care, Canberra.
- Silvestre, A.J., Faber, J.F., Shankle, M.D. and Kopelman, J.P. (2002) A model for involving youth in health planning: HIV prevention in Pennsylvania. *Perspectives of Sex and Reproductive Health*, 34, 91–97.
- Simms, I., Hughes, G., Swan, A.V., Rogers, P.A. and Catchpole, M. (1998) New cases seen at genitourinary medicine clinics: England 1996. *Communicable Disease Report Supplement*, 8 Suppl 1, S1–S12.
- Smith, A., Agius, P., Dyson, S., Mitchell, A. and Pitts, M. (2003). *Secondary Students and Sexual Health 2002. Monograph Series No 47*, Australian Research Centre in Sex, Health and Society, La Trobe University, Melbourne.
- Royal Australian College of General Practitioners (2004) *SNAP – Smoking, Nutrition, Alcohol and Physical Activity. A Population Health Guide to Behavioural Risk Factors in General Practice*, Royal Australian College of General Practitioners, Melbourne.
- Steinberg, L. (1996) *Beyond the Classroom: Why School Reform has Failed and What Parents Can Do About It*, Simon and Schuster, New York.
- Tapert, S.F., Schweinsburg, A.D., Barlett, V.C., Brown, S.A., Frank, L.R., Brown, G.G. and Meloy, M.J. (2004) Blood oxygen level dependent response and spatial working memory in adolescents with alcohol use disorders. *Alcoholism: Clinical and Experimental Research*, 28, 1577–1586.
- Trost, S.G. (2002) *Australian Government Department of Health and Ageing Discussion Paper for the Development of Recommendations for Children's and Youths' Participation in Health Promoting Physical Activity*. School of Human Movement Studies, The University of Queensland, Brisbane.
- Whalen, L.G., Grunbaum, J.A., Kinchen, S., McManus, T., Shanklin, S.L. and Kann, L. (2005) *Middle School Youth Risk Behavior Survey 2003*, US Department of Health and Human Services, Centers for Disease Control and Prevention, Atlanta
- White, V. and Hayman, J. (2004) *Australian Secondary Students' Use of Over-the-Counter and Illicit Substances in 2002. National Drug Strategy Monograph Series No. 56*, Australian Government Department of Health and Ageing, Canberra.
- Wooden, M. (2001) *Design and Management of a Household Panel Survey: Lessons from the International Experience, HILDA Discussion Paper No. 2/01*, Melbourne Institute of Applied Economic and Social Research, University of Melbourne, Melbourne.
- Wright, A., Harris, M.G., Wiggers, J.H., Jorm, A.F., Cotton, S.M., Harrigan, S.M., Hurworth, R.E. and McGorry, P.D. (2005) Recognition of depression and psychosis by young Australians and their beliefs about treatment. *Medical Journal of Australia*, 183, 18–23.

Appendix 1

A number of Commonwealth and state education initiatives targeting adolescent health

Source: Young People's Access to Healthcare by NSW Centre for the Advancement of Adolescent Health, 2006.

- Mind Matters (secondary school level) – this whole-school approach promotes student wellbeing and provides teacher training and resources with a focus on teaching students emotional coping skills.
- Mind Matters Plus (secondary school level) – similarly, a whole-school approach which offers a range of programs to deal with emotional health and well-being issues e.g. anxiety, peer skills, suicide, parenting, grief and loss.
- Mind Matters Plus GP (secondary school level) – promotes improved referral between schools and primary healthcare, focusing on GPs/Divisions of General Practice.
- Talking Sexual Health (secondary school level) – this whole-school approach provides framework and curriculum materials for delivering comprehensive and sensitive educating on sexually transmissible infections, HIV/AIDS and blood-borne viruses.
- Health Promoting Schools (secondary school level) – whole-school approach which provides methodology and framework for delivering effective holistic health promotion within the school environment.
- School-link (secondary school level) – whole-school approach focusing on mental health and resilience, plus strengthening links between education and health service referrals.
- PDHPE Curriculum (Years 7–10) – curriculum on general health and personal development.
- Crossroads Curriculum (Years 11–12) – curriculum on general health, personal development with an emphasis on relationships and drug and alcohol issues.
- Senior Students' program (Year 11) – crossroad curriculum with added relationships and stress management focus.
- NSW Gold Medal Fitness Program (primary/secondary school level) – specific needs program focused on improving young people's physical activity, preventing overweight and obesity.
- Resourceful Adolescents' Program (RAP) (usually Year 9) – specific needs program focused on resilience and coping skills with professional development for teachers.
- Adolescents Coping with Emotions (ACE) (Years 8–10) – specific needs programs focused on small-group work sessions on relationships, communication and support networks.
- School Counsellors – referral and liaison with specialist services and provision of individual counselling.



Appendix 2

Participating schools and facilitators

Schools invited to participate

Public secondary schools

- Sydney Girls High School
- Sydney Boys High School
- Conservatorium High School
- Rose Bay Secondary College

Catholic secondary schools

- St Vincent's College Ltd
- Kincoppal School of the Sacred Heart
- St Mary's Cathedral College
- St Catherine's School
- St Clare's College*
- Waverley College*

Independent secondary schools

- Ascham School
- Cranbrook School
- Kambala
- Moriah College
- Reddam House (Years 10–12)
- Sydney Church of England Girls Grammar School
- St Andrews Cathedral School
- Sydney Grammar School*
- The Scots College

* Indicates schools that were unable to attend; 16 out of 19 schools (84.2%) participated.

Teachers who participated

Peter Bottrill
Tara Eggar
Beth Ghitgos
Juan Gonzaga
Katy John
Michael Mathews
Jenny May
Robyn McMillan
Kylie Mildren
Sarah O'Gorman
Jenny Oughton
Simon Pardy
Annika Pernelid
Brian Roddie
Mary Short
Lisa Smith
Hayley Strong
Cynthia Talone

Healthcare practitioners who participated

Carla Avolio
Dr Danny Beran
Amy Bolton
Dr Jodie Emanuel
Dr Claudia Lee
A/Prof Eugen Molodysky
Dr Barri Phartarfod
Dr Neil Peace
Dr Celina Rappaport
Dr Raymond Seidler
RN Paul Smollen
Cynthia Talone
Dr Lisa Ying



From left to right. Cynthia Talone, Eugen Molodysky, Claudia Lee, Neil Peace, Amy Bolton, Paul Smollen, Barri Phartarfod, Danny Beran, Celina Rappaport

Appendix 3

Overview of the program structure and layout

Revisiting adolescent values and needs – the message

9.00–9.30 am	Arrival and registration	
9.30 am	Briefing	Moderator
9.45 am	Breakout groups	Facilitators
10.15 am	Debriefing	Student group leaders
10.45 am	Morning Tea	

Presentations

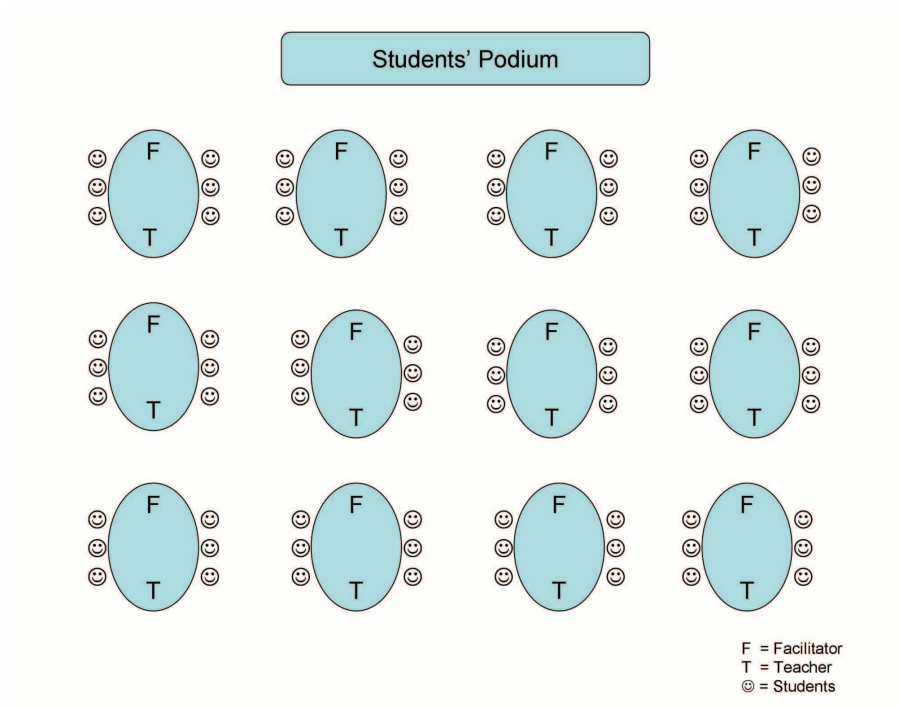
11.00 am	Sex in the city	Presenter 1
11.20 am	A bug's life	Presenter 2
11.40 am	Looking good – body fitness and shaping your physical image	Presenter 3
12.00 pm	Eating Well – are you what you eat?	Presenter 4
12.20 pm	Party Enhancers – be aware	Presenter 5
12.40 pm	What's up? – communicating with your GP	Presenter 6
1.00 pm	Lunch	

Revisiting adolescent communications – the messengers

1.30 pm	Briefing	Moderator
1.45 pm	Breakout groups	Facilitators
2.15 pm	Debriefing	Student group leaders
2.45 pm	Summing up	Moderator



Seating arrangement for sessions



Appendix 4

Neurodevelopmental aspects of the adolescent brain

An appreciation of the neurobiology of brain development during adolescence assists in planning health interventions that are appropriately targeted both to anticipated behaviours and to developmental level. Compared with the mature adult brain, there are a number of important distinctions in the functioning and capabilities of the adolescent brain.

Differences in the inferior parietal cortex

This section of the brain contributes to spatial working memory. It has been hypothesised that this function becomes more efficiently distributed across brain regions with maturity (Tapert *et al.*, 2004).

Differences in the nucleus accumbens

Almost every drug abused by humans has been shown to increase dopamine levels in the nucleus accumbens. Dopaminergic input from the ventral tegmental area is thought to modulate the activity of neurons within the nucleus accumbens. These terminals are the site of action for stimulant drugs such as cocaine and amphetamine (Olds and Milner, 1954). This region of the brain is also implicated in directing motivated behaviour, determining how much effort will be expended in order to seek rewards. The relevance of this linkage for adolescents might relate to the activity of the nucleus accumbens in explaining adolescent preferences for activities that require low effort yet produce high excitement, such as video games or skateboarding. It may also have a role in the neurophysiology underlying substance abuse and other addictions.

Differences in the amygdala

The amygdala comprises almond-shaped groups of neurons located deep within the medial temporal lobes of the brain. As this brain region performs a primary role in the processing and memory of emotional reactions, the amygdala is considered part of the limbic system (Amunts, 2005). Its function includes integrating emotional reactions to pleasurable and aversive experiences. The amygdala is also involved with the tendency to react explosively rather than with controlled responses (Haller *et al.*, 2005). As the amygdala appears to be essential for the recognition of fearful facial expression (Baird *et al.*, 1999), it may also have a role in situations when adolescents mis-read others' neutral or inquisitive facial expressions as a sign of anger.

Differences in the prefrontal cortex

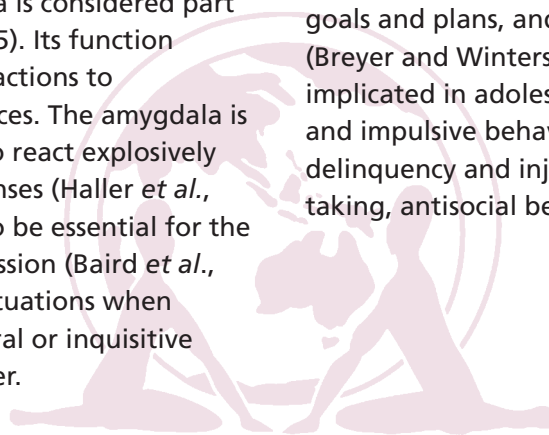
The most typical neurological term for functions carried out by the pre-frontal cortex area is executive function. This faculty relates to abilities to differentiate among conflicting thoughts, determine good and bad, better and best, same and different, future consequences of current activities, working toward a defined goal, prediction of outcomes, expectation based on actions, and social 'control' (the ability to suppress urges that could otherwise lead to socially unacceptable outcomes).

Psychologists distinguish two types of behaviour control:

- exogenous control which is reflexive and generated in response to external stimuli; for example, focusing on lights as they appear on a screen
- endogenous control which is voluntary and generated by an internal plan; for example, trying not to look at the lights.

A mature prefrontal cortex makes it easier for endogenous behaviour to override exogenous behaviour. A focus on neuropsychological development could create strategies to enhance endogenous behaviour control, while exploring the ability of adults to tap into other brain regions in order to inhibit socially unacceptable behaviours (Luna *et al.*, 2001).

Many authors have proposed an integral link between an individual's personality and the functioning of their prefrontal cortex. An area of particular interest in this regard is the dorsolateral prefrontal cortex – a part of the brain involved in controlling impulses – which undergoes synaptic pruning with brain maturation (Chambers *et al.*, 2003). In the development of adolescents, it is the area of the brain responsible for the complex processing of information, ranging from making judgements to controlling impulses, foreseeing consequences, setting goals and plans, and developing moral reasoning (Breyer and Winters, 2001). It could therefore be implicated in adolescent displays of poor judgement and impulsive behaviour, leading to juvenile delinquency and injuries acquired as a result of risk taking, antisocial behaviours, violence and aggression.



Appendix 5

Youth Wellbeing Forum Questionnaire (YWFQ)

Student Name (optional): _____
School: _____
Male or Female: _____
Year: _____

Question 1

All of us expect many things to ensure our wellbeing. The following list attempts to summarise these expectations. Which expectations do you regard as being MOST important?

(Please rank the list of expectations in priority order by placing '1' in the box next to the one you think is most important, a '2' in the box next to the second most important one, and so on as far as you can go).

- How do you really feel?
- Shaping your physical appearance
- What you are really eating
- Sexual health
- Preparedness for disasters – avian flu and the like
- Relating to your family
- Communicating with your peers
- Party-time – alcohol, tobacco and substance misuse
- Other (please specify) _____
- Other (please specify) _____

Question 2

Looking forward over the next 20 years, what do you think is the MOST important thing that should be addressed to ensure your wellbeing?

Why? _____

Question 3

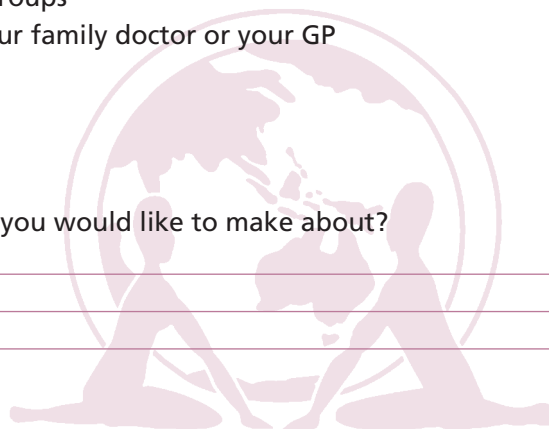
There are a number of ways to deliver these things. The following list attempts to summarise the ways in which these things are or can be obtained.

(Please rank the list of communication in priority order by placing '1' in the box next to the one you think is most important, a '2' in the box next to the second most important one, and so on as far as you can go).

- School education classes
- Information from the internet
- Discussion with your friends
- Discussion with your family
- Facilitator-led peer discussion groups
- Discussion/consultation with your family doctor or your GP
- Other (please insert)
- Other (please insert)

Question 4

Do you have any other comments you would like to make about?



Appendix 6

Youth Wellbeing Forum Evaluation (YWFE)

Student Name (optional): _____
School: _____
Male or Female: _____
Year: _____

1. Was the information relevant to you?

Not relevant 1 2 3 4 5 Extremely relevant

Comments:

2. Was the delivery of the presentations and its content clear and comprehensible?

Overall: Confusing 1 2 3 4 5 Very clear

Comments:

3. Was there sufficient opportunity for questions and discussion? Yes No

Comments:

4. Were your expectations met? Yes No

Comments:

5. What other topics would you like to have offered in the future?

Comments:

6. Do you have any suggestions for improving this program?

Comments:



Appendix 7

Responses of students to open-ended questions on adolescent health initiatives during the forum

What makes for an adolescent-friendly doctor?

GP Attributes

- Understanding, accepting
- Young, down to earth, hip, with the times
- Approachable
- Friendly, joyful, cheerful

Attitude and interviewing style

- Positive
- Not invading personal space
- Respectful of our decisions
- Responds appropriately to our situations
- Communicates in simple language, no medical jargon
- Interactive and involved, not interrogative

Current knowledge

- Interested in adolescent/teenage health
- Up to date; both in medical knowledge and interests of adolescents such as music, fashion, sport

Confidentiality/privacy

- Trustworthy
- Asks us for an individual appointment – ensure parents leave
- Honest and confidential – does not disclose issues to parents
- Non judgemental, no prospect of getting into trouble

Accessibility

- Readily accessible
- Suitable appointment times
- Uninterrupted time – focuses on us

What makes for an adolescent-friendly practice?

Doctor

- A GP who comes out of their consulting room to introduce themselves
- Young doctors, specifically for adolescents
- Skilled/trained in relating to young people
- Choice to see same-sex doctor

Atmosphere and surroundings

- Welcoming, comforting surroundings
- Waiting room set up – relaxed, comfortable environment (colour, smell, temperature), relevant leaflets, current magazines, music and TV
- Free things/lollies
- Friendly and engaging staff

Appointment system and communication

- Easy to book
- A consultation is about 15 minutes long
- Affordable – Medicare card – bulk billing
- Being on time, reduced waiting time
- Follow-up, recalls
- Bulletins

What messages will you take back to your school?

- Our opinions do matter
- We are in charge of change
- We can make informed decisions
- We do not have to be sick to see a doctor
- We should not be scared to talk to our GPs, they are there to help us
- GPs are awesome and human

How do you take those messages back to your school?

Peers

- Senior peer support program
- Talking to friends and classmates
- Set up youth mediator and support system at school
- Adolescents speaking to other adolescents (buddy system)
- Youth to discuss at assembly what Youth Wellbeing Forum was about

Teachers

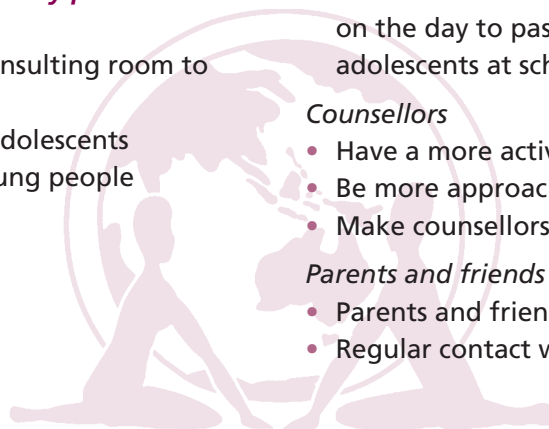
- Teachers to tell other teachers about the day
- PDHPE teacher to allow adolescents who attended on the day to pass on the message to other adolescents at school

Counsellors

- Have a more active role
- Be more approachable
- Make counsellors known to adolescents

Parents and friends

- Parents and friends meetings
- Regular contact with parents via email/mail



Communication

- Email summary to schools to reinforce what was learnt on the day
- Youth bulletin/school newsletters – written by young people for young people
- Notice board
- Posters

Events

- Guest speakers – presentations at school assemblies for adolescents – state the facts
- Empowerment workshops – outside guest speakers empowering adolescents to be health savvy and extend PDHPE curriculum
- Expos at schools – wellbeing and open days, camps, crossroads
- National Youth Wellbeing Forum
- National Youth Wellbeing Network

What objectives would you set for a Youth Wellbeing Network?

Empower Youth

- Encourage youth to speak out
- Develop and support a youth support network
- Finding what adolescents want and need in a wellbeing network

Credible Information

- Raise youth awareness of adolescent health issues
- Debunk myths (give real reliable info)
- Inform and educate (FAQ)
- Prevent rather than cure

Communication Network

- Build relationships between GPs and youth
- Provide the opportunity to talk with experts
- Share information and resources with peers
- Bring schools together

Reliable services

- Raise awareness of resources and services
- Publicise doctors interested in adolescent health
- List adolescent-friendly doctors

How would you start putting a Youth Wellbeing Network in place?

Website

- Login code
- Secured professional information
- Email forum “YouthSay” – a blog
- Website co-hosted by schools and Divisions of General Practice
- FAQ, inform and educate, provide information for specific questions
- Confidential question box – anonymously proposed questions to PDHPE/counsellors

Promotion and communication

- Texting – NineMSN or ABC
- Advertising – TV, radio, internet, pamphlets, student representative council

Linking up

- Interschool council
- Trading school magazines
- An intranet between schools – connect all schools
- Organise forum at schools
- Parent workshop/forum – educating them on youth
- National schools expo

At school

- School assemblies – question/survey the audience about what they want to hear about
- Guest speakers to speak about personal experience
- Guest speakers, such as GPs, talking at school assemblies
- GPs at the school on occasions for adolescents to talk too
- PDHPE classes that cover the wellbeing issues

Access to adolescent-friendly doctors

- Finding out which GPs are adolescent friendly
- Make phone numbers available for medical information and services
- Encouraging own Medicare card

