

# Models of Secondary School Health and Wellbeing Services: Rapid Review and Policy Recommendations for the Australian Context

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## Acronyms

<b>AAP</b>	American Academy of Pediatrics
<b>CDC</b>	Centers for Disease Control and Prevention
<b>ED</b>	Emergency Department
<b>GRHANITE</b>	Electronic data extraction software, University of Melbourne, Faculty of Medicine, Australia. <a href="http://www.grhanite.com">http://www.grhanite.com</a>
<b>GP</b>	General Practitioner
<b>GPA</b>	Grade Point Average
<b>GRADE</b>	Grading of Recommendations Assessment, Development and Evaluation
<b>HEEADSSS</b>	Psychosocial screening tool for young people (Home environment, Education and employment, Eating, peer-related Activities, Drugs, Sexuality, Suicide/depression, and Safety from injury and violence)
<b>HIV</b>	Human Immunodeficiency Virus
<b>HRSA</b>	Health Resources and Services Administration
<b>IHP</b>	Individual Health Plan
<b>NASN</b>	National Association of School Nurses
<b>PWO</b>	Primary Welfare Officer
<b>SBHC</b>	School Based Health Centre/ School Based Health Care
<b>SHPPS</b>	School Health Policies and Practices Study
<b>SSNP</b>	Secondary School Nursing Program
<b>SSO</b>	Student Support Officer
<b>STI/ STD</b>	Sexually Transmitted Infection/ Sexually Transmitted Disease
<b>SYHN</b>	School Youth Health Nurse
<b>WHO</b>	World Health Organisation
<b>YHC</b>	Youth Health Care

## Executive Summary

Adolescents, particularly those from socially disadvantaged backgrounds, frequently miss out on important health care due to barriers in accessing services. These barriers include fears about confidentiality, not knowing where to go, or not having parental/carer support to attend. For this reason many governments globally have developed school based health centres or services (SBHCs) to provide accessible primary care for low-income families to promote a healthy lifestyle and enable students to have a better start and path in life. The tradition is particularly established in the US where SBHCs have been operational for the last 40 years. By contrast, innovation and development of SBHCs in Australia remains an emerging area where further investment is needed. This evidence review aims to inform these efforts.

This report was derived using rapid review methodology, founded on a mix of peer-reviewed and grey literature sources.

SBHCs are clinical facilities, usually located onsite at schools, which deliver primary and ancillary care, mental health and reproductive health services and health education. Extended services may be offered by dentists, nutritionists, social workers, drug and alcohol counsellors and other health care practitioners. Many SBHCs are ‘one stop shops’ providing ‘wrap-around-services’ for all students including preventive care, immunisations, and acute and chronic illness management, laboratory and prescription services. Students require parental permission to enrol and receive services. Other models of delivery include school-linked services where the school is the primary access point but services are provided in community settings.

All types of SBHCs require a clear policy framework to guide implementation, evaluation and monitoring. It is also imperative that SBHCs have established links with, or are considered part of, community services and organisations to: provide access to comprehensive care options and services including afterhours and during holidays when schools are closed; provide professional accreditation and ongoing education of SBHC staff; and ensure linkage of SBHCs with standard quality assurance processes and accreditation and thereby, in the Australian context, access relevant Medicare incentive payments. The main challenge for all SBHCs is the financial sustainability to retain staff and expand services sufficiently to enable quality health and educational outcomes for students. Most of the US models operate the entire school day; most of the existing Australian models are open for

restricted hours on a weekly basis. Mental health care was found to be a vital service to include in the US and other international models because of the high number of presentations concerning mental health.

The evidence for the benefits of SBHCs is growing. Most research studies have been driven in the US by a need to show SBHCs are worth the investment in the face of ever-present funding pressures and other challenges in scaling up the model. Studies have been of low quality but in recent years more robust, well-controlled, longitudinal studies including baseline and post-intervention data are emerging. More quality evaluation studies are needed, in particular to assess the link between health status and educational outcomes in the presence of a SBHC. A summary of the evidence-based outcomes of SBHCs include:

- the ability to address common service access barriers for adolescents such as stigma and cultural inappropriateness has resulted in adolescents being more likely to present to a SBHC than to another health service;
- a reduction in Emergency Department (ED) presentations and hospitalisations for students who attend SBHCs compared to those who do not;
- an ability to effectively detect hypertension and dyslipidaemia, promote healthy nutrition and exercise, and improve immunisation completion rates compared to community based care has been noted. By improving psychosocial and physical health, SBHCs have been shown to reduce health disparities. Economic modelling studies reveal that these health gains translate into reduced health and social care costs;
- high levels of acceptance and utilisation by students within schools where SBHCs are located; particularly for students with health issues. While males and females are almost equally enrolled in SBHCs, utilisation by females is greater, in common with all other service delivery models. Utilisation is less in schools where parental consent is required for every visit rather than once per year for any visit;
- increased school attendance for SBHC users compared to non-users, particularly when SBHC use was for physical health; and higher grade point averages, particularly when SBHC use was for mental health;
- improved school attendance and lower number of ED visits and hospitalisations for young people with asthma; more comprehensive health assessments and improved health knowledge amongst all students at schools where there is a SBHC;



- student use of SBHC services appear to be complementary to other existing community services in US models, rather than duplicative of existing community based care;
- increased access to mental health care, particularly for disadvantaged youth and young men;
- lower levels of depression and suicide risk have been noted in schools where SBHCs operate longer hours of school nurse and doctor time, relative to SBHCs with minimal hours of clinician time;
- increased use of contraception and protection against STIs in users of SBHCs with a full range of reproductive health care including treatment of STIs and prescription of contraceptives or provision of these onsite;
- one study revealed a negative association between well-care visits in SBHCs and tobacco and drug use and obesity. This model was different to other international models in that no comprehensive primary health care was offered on site.

SBHCs often articulate with other school health promoting activities and school nursing programs. The review demonstrated limited ability to conclude on effectiveness of global whole-of-school health intervention programs, but established that school based health programs promoting healthy eating, physical activity and mental health are effective, acceptable, accessible and affordable to adolescents. SBHCs prove ideal workplaces for nurse practitioners as the work suits their scope of practice. Nurse practitioners coupled with sessional consultation by a general practitioner and use of existing Medicare item numbers creates the potential for a cost-effective model for SBHCs in Victorian schools.

Literature within this review emphasised advantages in developing overarching guiding policies that detail principles to be addressed in the specific design of SBHCs. These would include the evaluation strategy, minimum required facilities, data management and linkage systems, staff qualifications including clear role definition, vision and plan for integration within the school and with community services and organisations, and the delivery of tailored healthcare services based on best evidence of effectiveness. In doing so, not only are health needs met but evidence-based policy-making can be developed to guide future operations. A plan for sustainability and design such that services can most effectively and efficiently service the population in need is also required.

While existing Australian models differ in size and scope, they could offer costing and revenue information on which to model future Australian-based SBHCs. The case for

Australian State Governments to seriously consider the development and evaluation of rigorously-designed and well-funded SBHCs within the state education system, and the opportunities that lie therein, is compelling.

## **Key Recommendations**

The following are evidence-based recommendations for consideration in achieving effective School Based Primary Care in the Australian context.

### **Policy Development**

- Develop a universal policy and framework to guide the implementation of primary health services in schools, while allowing some flexibility to adapt programs to the local community and school's needs. Incorporate practical ideas and strategies to guide implementation.
- Strive to support school health centres through sustained funding and policies to ensure that they are available longer term. This may require a mix of public and private revenue streams.
- Ascertain that policies are in place to ensure school health services address gender-specific needs, disadvantaged students, and deliver culturally appropriate and safe care.
- Ensure policies are in place to direct privacy and confidentiality between health and education areas.
- Develop policies around medication management, minor consent, confidentiality and health data, and quality of care for clinical services.
- Define competencies for health care professionals in the school setting. Include in universal policy a requirement that school based health centre staff have adequate pre-service preparation and ongoing professional development, and make opportunities for this to be available and be recorded as continuing education credits for the health care provider.

## **Design of Service**

- Consider integration of mental health care into the school based services offered using learnings from the Jablow (2012) model:
  - Ensure a strong commitment from all levels of the school district and participating mental-health agencies. Address the stigma of seeking mental-health services.
  - Build a secure support framework inside the school.
  - Facilitate extensive collaboration between the school and the provider agency.
  - Implement the program progressively.
  - Time the inception of services carefully.
  - Make provision for parents to meet with clinicians in familiar surroundings.
  - Contemplate developing a shared-risk model between any project sponsors and the agencies that provide clinicians.
- Include a full range of sexual and reproductive health care services in the suite of services offered by school based clinics, in line with evidence that these are more likely to reduce risks for unplanned pregnancy and sexually transmitted disease.
- Incorporate prevention and early intervention for risky behaviours (e.g., tobacco, alcohol use, unprotected sexual activity) or at-risk health states (obesity, diabetes, depression). Use the HEEADSSS assessments as a basis for risk assessments and consider targeting high risk or frequent attenders with outreach psychosocial risk screening, anticipatory guidance or counselling.

## **Collaboration**

- Ensure collaboration between health and education sectors with clarification of links and areas of potential overlap. Secure a strong buy-in from all levels of the school district and participating health and mental-health agencies. Guide establishment of an ongoing infrastructure of support inside the school for the wellbeing of students and for extensive coordination between the school and the clinical providers.
- Ensure all school based clinical models integrate seamlessly with community health services (e.g., arrangements with providers not located on school property) to provide access to other services for a comprehensive care approach, to avoid fragmentation of care, and also to provide school based clinic staff with collegial support, particularly in rural areas. This integration task will be assisted by establishing new professional

relationships and strengthening existing relationships within and across sectors and agencies.

## **Implementation**

- Establish permissions at the outset that enable linkage of de-identified health and education data to track associations in health and education outcomes.
- Ensure appropriate staffing levels necessary to achieve best outcomes. For example, one nurse practitioner to 750 students (US) or 4.8 hours of nursing time per week per 100 students and 0.18 hours of doctor time per week per 100 students (NZ). Availability of a diverse health care team is beneficial (e.g., nurses, nurse practitioners, part-time doctors, social workers and an administrative assistant).
- Ensure appropriate orientation of the clinic staff into the school. Establish good working relationships between clinic staff and other school staff. Ensure both clinic staff and school have clear expectations of the roles of each.
- Establish the school infrastructure to improve health care to students who do not otherwise have access to such services, which may require a discreet entrance to ensure privacy of access (particularly important in rural and regional areas). Ensure accessibility to school health care during school hours, especially for students with chronic problems and for students who need follow up, and provide linkage to community primary care, including potential to access electronic records to allow health care for students out of school hours.
- Consider that the school based service might be operated by a local hospital/clinic/qualified health provider directly or under contract and planned in consultation with broad-based community groups (e.g., parents, school boards, faculty, youth agencies, local health and welfare departments and local businesses) which may form a community advisory committee.
- The functions of the school based health service should cooperate with existing school nurses, teachers, coaches, counsellors, and principals and any existing whole-of-school approaches to health promotion interventions.

## **Evaluation**

- Maintain surveillance of school health policies, practices and outcomes with standardised data collection on quality indicators and key outcome variables. At a local level each school centre should conduct regular evaluations to ensure that the breadth of services is meeting specific needs of the particular community of adolescents that attends each school.
- Plan for the evaluation of school based primary care initiatives alongside implementation. Participating schools should collect baseline data, pre-implementation, to allow measurement of changes in key outcomes post-implementation, (including health access and health outcomes), and over time. These can be used to guide quality improvements and assess impact. Where multiple schools are involved in a new initiative, a staged approach to implementation would allow for a comparison school group (which would later receive the intervention) and thereby increase rigour of the evaluation and confidence in outcomes.
- Develop quality indicators for service performance and key outcomes, informed by young people's views.
- Evaluate competencies for health care professionals in the school setting

## Introduction

A significant challenge to governments globally is the provision of primary health care that is accessible and affordable, particularly for low-income communities. Here residents are often medically disenfranchised, leading to disproportionately negative health outcomes that reduce quality of life and curtail access to greater opportunities [1].

One important strategy to remediate this need is through the development of school-based health centres (SBHCs). SBHCs are facilities that provide on-site primary care, ancillary care, reproductive health care and education, and mental health services [1]. Additional extended care services offer dental care and a range of staff including nutritionists, community care workers and social workers, amongst others. SBHCs are flagged as critical access points to low-income families; they are facilities that promote a healthy lifestyle and deliver health prevention strategies to give children a better start in life [2]. While several countries around the world describe SBHC models, the United States has by far the longest tradition and has published more information on SBHC models than any other country.

Historically, the first SBHCs were established as a result of President Lyndon Johnson's 'War on Poverty' in the 1960s in Cambridge, Massachusetts [1]. SBHCs have expanded in the US exponentially since the 1970s to more than 1,900 nationally [1]. Approximately 57% of SBHCs are urban, 27% rural and 16% suburban [3] with operating models including in-school or on school property (93%), school-linked health centres (4%) and mobile programs (3%) [4].

The initial mission of SBHCs was to increase health care access for adolescents and reduce teen pregnancy; hence most of the centres were based in high schools, and early centres had a focus on reproductive health care. This changed with the expansion of aims to provide a more comprehensive and preventive health care approach for all school-aged children, which has resulted in SBHCs being housed in more elementary (20%) and middle schools (15%); the majority (30%) are in high schools with an additional 35% in mixes of elementary/middle, middle/high, or schools offering kindergarten to Year 12 [1, 2].

The underlying principle of SBHCs is to offer access to all students regardless of their ability to pay and to address barriers to accessing primary health care such as out-of-pocket costs, transport needs, and inconvenient appointment times [2]. SBHCs are also developmentally appropriate, responding to both physical and emotional needs. They are culturally sensitive, confidential, comfortable and safe [4]. Many feature a one-stop-shop model for evaluation,

diagnosis and treatment and have onsite laboratory and prescription services [4]. For students with complex problems, referral is made to community health services. The enrolment of students in SBHCs is high at 64% of the school population and their utilisation rate, at 84%, indicates acceptance by most students and guardians [2, 4].

Despite the advantages of SBHCs only about 1.1 million students, representing 2% of the US nation's school enrolment, attend schools with a SBHC [4]. The program faces challenges in scaling up, not least of which is financial sustainability and ongoing proof of benefits to health and education [3, 4].

The lessons learned from the 40 or more years of SBHCs in the United States are invaluable to the Australian context as state governments and policy makers seek to establish locally relevant and effective approaches to delivering comprehensive primary health care to secondary school students. This review summarises the peer-reviewed academic literature on models of care, policy drivers, barriers and enablers to implementation, evidence of effectiveness and future directions. Key findings from the grey literature are provided, particularly description of models of care which have been implemented in countries outside the United States. In the conclusion we highlight the key points we believe should be considered during the design, implementation and evaluation of SBHC models suited to the Australian context.

## Overview of Methods

To ensure this review was comprehensive, literature searches were conducted on both the academic literature and the grey literature. Academic literature generally presents only studies which have been conducted using academically accepted research methods, and resulting articles are peer reviewed to meet a minimum standard prior to publication in a scientific journal. Despite this, critical appraisal of individual studies is still essential to determine the level of inference which can be made from such studies to other contexts.

Grey literature includes research that is not published in peer-reviewed journals, such as reports and monographs, as well as government documents. Examining grey literature often provides a more balanced perspective, as peer-reviewed journals may show a publication bias towards reporting positive or significant results. In addition, grey literature often includes policy documents and evaluations which contain very practical information.

Given the very different nature of these two types of literature, different search strategies are required for each.

### Academic Literature Search Methods

In May 2015, 6 electronic databases were searched. These databases were selected as together they offer the widest coverage of the range of disciplines relevant to this review, including health, public health, medicine, social sciences, clinical services, allied health and evidence-based medical decision-making. Databases included were:

- Web of Science (ISI)
- Cochrane Database of Systematic Reviews
- Pubmed
- Medline
- EBSCO (ERIC) and
- Embase

In addition, reference lists of individual papers were searched and citation tracking was used to identify other relevant papers.



The search strategy used the following combinations of keywords:

(adolescen\* OR teen\* OR “young person” OR youth OR “young adult” OR “young people” OR student)) AND (“secondary school” OR “high school” OR “middle school” OR “junior high”) AND (("primary care" OR "primary healthcare" OR "primary health care" OR "family medicine" OR "family practice" OR "family physician" OR "general practi\*" OR community\* OR "health service\*" OR "health program" OR "health clinic" OR "school based health" OR "SBHC" OR "doctor" OR "nurse")) AND (“health policy” OR policy OR “health economics” OR economics) AND (“mental disorders” OR “mental health” OR “risk factors” OR “risk-taking” OR “protective factors” OR wellbeing OR psychosocial OR multidimensional OR alcohol OR drug OR cannabis OR THC OR “sexual health” OR STI OR STD or “sexual health” OR pregnan\* OR contracepti\*) AND (“health policy” OR policy OR “health economics” OR economics) AND (“school based health service” AND implementation).

Selection criteria included reviews, systematic reviews and meta-analyses, randomised controlled trials, and case-studies. Participants of studies needed to include secondary school students and health care providers, systems and services, where programs or models were school-based. Searches were refined using keywords, titles and abstracts depending on the database used. Authors of individual studies were contacted where further clarity about the relevance of a particular study was required.

To assist in refining the search, a number of inclusion and exclusion criteria were applied. Publications needed to be in English only, and, to ensure relevance of results to the current social context, only publications after 1995 were included. We excluded studies focusing on primary or pre-school children, unless implementation of the model was described.

For the purpose of this rapid review, where the database yielded more than 150 results, additional limitations included reviews only.

## Grey Literature Search Methods

Grey literature searches are more complex than academic literature searches, and so were conducted in a number of ways. Four grey literature online databases were searched:

- Open Grey
- Grey Source Index databases
- Grey Literature Report

- TROVE

In addition, fifty-four separate databases in Grey Matters were searched, and Google searches were also performed.

To assist in refining the search, a number of inclusion and exclusion criteria were applied. As for the academic literature, reports were excluded if they were not written in English or participants were not of secondary school age. In addition, reports set in developing countries were considered to be beyond the scope of this review.

Databases and search term combinations varied according to the requirements of the database:

#### Open Grey

Terms used were:

- “school based health service”
- “school health service”
- “primary health care in schools”
- “school health”

#### Grey Source databases

Only MedNar was searched. Remaining databases on Grey Source Index were either not relevant or did not produce any results using “school health”.

Terms used were:

- "primary care" AND "school health" AND “adolescent”, limited to PDF documents

#### Grey Literature Report

Terms used were:

- “school based health service”
- “school health service”
- “primary health care in schools”
- “school health”

These searches were repeated using 3 of the 5 priority areas (Prevention, Eliminating Disparities and Academy Staff Publications), with *Grey Literature Report* as a subject link.

## TROVE

Terms used were:

- "school health service" AND "policy" AND "primary care" AND "adolescent", limited to English

## Grey Matters databases

Of the 54 databases, those under the following headings were searched: Health Technology Assessment (HTA) Agencies; Health Economics; Clinical Practice Guidelines; Clinical Trials (ongoing); Databases (free); Health Statistics; Mental Health. Where possible, searches were limited to the title of the publication.

Terms used were:

- "school health service" AND "adolescent"
- "school health service" AND "policy" AND "primary care"
- "primary care" AND "school" AND "student", filtered by 'guidance' for the National Health and Clinical Excellence (NICE) databases

Google searches were also performed, using a variety of different search strategies and limiting functions. The main limiting functions were English language and key words in the title of the publication, and in some cases searches were limited to government websites.

## Identification of relevant academic and grey literature

As an initial screen, titles of all articles and reports identified in the searches were examined for relevance by four researchers (CW, BJ, AMD and MS). Abstracts or executive summaries from these publications were extracted for further evaluation. Five researchers (LS, MTS, PL, CW and AMD) were involved in identifying references worthy of more detailed review (performed by LS). Where the initial reviewer was uncertain if a reference should be included, the abstracts/executive summaries were examined concurrently by two additional reviewers (MTS & PL). Four researchers (LS, MTS, PL and AMD) read all

abstracts/summaries and a final decision on all papers was then made by consensus at team meetings.

## Synthesis process

Each publication from both the academic and grey literature searches was summarized according to the following subject areas: target population; model of care; implementation (including elements that enhanced the evaluation of the model); evaluation and health outcomes; policies required to support the model; economic evaluation; issues/considerations arising from this model; and barriers and enablers to the implementation of this model.

The publications were then grouped according to either geographic location of the model described or the types of models described. Resulting summaries were used for the synthesis of the final report.

## Search Results

### Academic literature

The initial search strategy identified 146 papers. Removal of duplicates and viewing titles and abstracts resulted in 78 papers being retained. Full texts were then screened, resulting in 39 papers included for final review.

A list of these papers and their summaries are in Appendix 1.

### Grey literature

The initial search strategy identified 135 publications. Removal of duplicates and viewing titles and abstracts resulted in 96 publications being retained. Full texts were then screened, resulting in 58 publications included for final review.

A list of these papers and their summaries are in Appendix 2.

## Review of Results

### 1. The context of marrying education and health for children and young people in schools

#### 1.1 The Whole School Approach

Unhelpful and unhealthy adolescent behaviours which affect morbidity and mortality are often clustered. A comprehensive, total-life approach has been proposed to address this phenomenon. *The Whole School Approach* defines school-wide interventions that involve curriculum, school environment, parents and the wider community [5]. We briefly outline some of these approaches because they may influence the context in which SBHCs operate and in some cases, SBHCs are the launching pad for health promotion programs designed to address specific school population issues.

Langford et al. (2014) [6] evaluated 67 cluster trials assessing the effect of a *Whole School Approach* (the Health Promoting Schools framework) on students' health. The quality of evidence overall was found to be low to moderate as determined by the Grading of Recommendations Assessment, Development and Evaluation (GRADE) [7] approach, which examines the underlying methodology of the study used to evaluate the program, and the likelihood for potential bias to have affected the results. In addition to methodological flaws, many studies had high attrition rates, and limited follow-up. However, the authors concluded that the *Whole School Approach* can be effective in improving some health outcomes. They found small but positive effects for some interventions: body mass index (BMI), physical activity, physical fitness, fruit and vegetable intake, tobacco use, and being bullied. There was insufficient evidence to assess the effect of these interventions on academic or attendance outcomes.

A school-cluster randomised trial in Melbourne, Australia (The Gatehouse Project) aimed to evaluate a *Whole School Approach* to mental health promotion through a primary prevention program that worked at both the individual and institutional level. This project demonstrated that a focus on general cognitive skills and positive changes to the social environment of the school can have a substantial impact on important health risk behaviours such as tobacco and alcohol use [8]. However, the study failed to produce significant differences in outcomes such as depressive symptoms in the intervention groups.

Another systematic review found that where the intervention in a *Whole School Approach* simultaneously addressed multiple behaviours, it was found to be less effective than addressing a single issue. However, few empirical studies of school-based interventions were used to inform this finding. School-based in-service teacher training was found to enhance effectiveness, and parental involvement was found to be an important indicator of success. Community involvement had lesser impact on outcomes [5].

Overall the results of studies examining a *Whole School Approach* were inconsistent. The findings of two systematic reviews concluded that a multifaceted approach for school-based health promotion interventions is likely to be of most benefit [9]. These authors recommended that the combination of a classroom program with changes to the school ethos and/or environment, along with family and community involvement is likely to be most effective. This is consistent with the health-promoting schools approach [10]. In the current review, student surveys and key-stakeholder interviews were found to be the most common means of evaluating effectiveness of the *Whole School Approach* offering limited ability to provide strong evidence of effectiveness. More objective measures of effectiveness would be difficult and expensive to undertake.

The World Health Organisation undertook a literature review in 2006 to determine the evidence for school health promotion in improving health, preventing disease and, specifically, to define the effectiveness of the health promoting schools approach [11]. It found that school-based programs promoting healthy eating, physical activity and mental health are amongst the most effective. Programs on preventing substance misuse and suicide are amongst the least effective. Moreover, they found peer-delivered education was highly valued by students. The report also established that the key components of school-based health programs should be multifactorial, sustained, whole school approaches that are underscored by appropriate teacher training. The study concluded that school health promotion can be effective and recommended that mental health should be a feature of all school health promotion programs [11].

For adequate implementation, a whole school intervention should have a designated coordinator, be integrated into pre-existent school settings, be specific to the target population or environment, involve family and the community, and be led by the school itself [5]. The importance of tailoring the interventions for each school was emphasized in several studies [5, 12, 13]. Strengthening this perspective, Hung et al. (2014) [14] suggested that school

health policies need to meet local health needs. These authors also emphasized the importance of a mutual understanding and collaboration between health and education sectors. Langford et al. (2014) [6] reiterated that in order to allow the *Whole School Approach* to health to achieve its potential, cross-departmental working between health and education is required.

Barriers to successful implementation of the whole school approach to health include lack of staff commitment to an intervention; Government-led academic priorities that do not reflect individual school needs; initiative overload; low autonomy for schools; lack of staff support; lack of facilities; lack of resources; litigation risk; low parental engagement.

## **1.2 School based health interventions through curriculum-based programs delivered by non-nurse clinicians or teaching staff**

Several systematic reviews have been conducted on curriculum-based interventions addressing particular health risks. In some models, it is unclear whether classroom-based health interventions are delivered by classroom teachers, nurses or other personnel. In other models, professionals (usually health) are enlisted to provide specialist health promotion on specific topics.

Other examples of curriculum-based health interventions were described in a systematic review of *physical activity interventions* held in schools, which were facilitated or promoted by staff in local public health units [15], and in a systematic review on universal school-based *programs to prevent illicit drug use* [16]. The evidence suggested that the school-based physical activity interventions were successful, given the positive effects on behaviour (engaging in more moderate to vigorous physical activity during school hours and less time watching TV) and one physical health status measure (maximal oxygen consumption, measured by a trained professional). However, all of these studies contained at least moderate risk of bias, and small magnitude of effect, requiring cautious interpretation of results. Small but consistent positive effects were seen in the studies assessing effectiveness of programs for illicit drug use.

In a systematic review assessing the effect of school-based *interventions for overweight adolescents*, authors found that despite the large number of trials examining childhood obesity and school achievement, most studies have serious methodological issues affecting the quality of evidence, and thus the impact of interventions for overweight adolescents on school achievement and cognition was lacking [17]. However one high quality study showed

significant improvement in mathematics performance. Nonetheless, the authors concluded that multi-component interventions targeting physical activity and healthy diet are of value, as although effects are likely to be small, a very large number of children and adolescents could benefit.

A systematic review of school-based programs to reduce smoking [18] found that the largest and most rigorous school-based study designed to reduce smoking in youth failed to detect a difference in smoking rates in the experimental and control school clusters [19]. These authors concluded that there was no evidence that a school-based social-influences approach is effective in the long-term deterrence of smoking among youth.

Several other school-based curriculum-focused interventions demonstrated significant differences in health outcomes in intervention groups in some areas (for example, reduction in heavy smoking and heavy alcohol use; and in some sexually transmissible infections), while other interventions found no significant differences in incidence of casual sexual intercourse, condom use, HIV infection, alcohol consumption or illicit drug use [20-22].

In some curriculum programs, classroom interventions were led by non-health professionals, usually teachers. One example is a randomised trial conducted in twenty-five matched pairs of secondary schools in three Australian States which aimed to assess the efficacy of a three year, comprehensive, classroom-based intervention to reduce depressive symptoms in students starting high school. There were no significant differences between the intervention and control groups, leading researchers to conclude that the challenges of implementing large scale, universally based interventions need to be addressed, and that more effective approaches to engaging adolescents should be sought [23]. This conclusion concurs with that of Stice et al. (2009) [24] who proposed that interventions that are shorter and directed towards older, high-risk adolescents may be more effective.

Overall, the evidence for efficacy of classroom-based health intervention programs is not compelling.



## 2. The Australian context: examples from Victoria of existing education initiatives marrying with health programs

While there are examples of existing SBHCs in the Australian context, these are far fewer in number and comprehensiveness than those in some other countries. We present below examples of SBHCs currently in place in one Australian state, Victoria, as an illustration.

### 2.1 Nurses providing health promotion in schools

The Victorian Secondary School Nursing Program (SSNP) [25] has been operating since around 2000. The program resulted from a 1999 pre-election commitment to reduce risks to young people and promote better health in the school community [26]. It employs school nurses at approximately 200 disadvantaged Victorian secondary schools, with generally each nurse serving two schools at 0.5 EFT. Nurses provide referrals to other health care services as required. The aim of the SSNP is to reduce the harm caused by risk taking behaviours, and prevent ill health and problem behaviour.

The Victorian SSNP was based on the *Queensland School Based Youth Health Nurse Program* [27]. The Queensland model differs to the Victorian model in that their rural based service nurses are required to undertake health care at an advanced practice level in addition to the health promotion role [28]. The SSNP is similar to services provided to schools across the US which do not necessarily have a SBHC [29].

The health promotion model of school health nurses in Victoria is in keeping with international models, and has been found to be especially beneficial to secondary students in the lower socioeconomic demographic [30]. The accessibility and approachability of the school health nurse was seen as an enabler to health care access [31]. A systematic review of the health promotion role of school nurses found that among the 250 articles retrieved, none was of sufficient rigour to constitute evidence of effectiveness that might form the basis for future policy making or inform practice [32]. These authors argued, however, that qualitative methods evaluating school nurse programs were appropriate, and concluded that school health nurses made a valuable contribution through specific prevention or reduction of the incidence of disease or undesirable behaviours or outcomes, as well as promoting student well-being.

An evaluation was carried out for a pilot program in the ACT [33] which is based on a similar model to that used in Victorian schools. These authors concluded that the School Youth

Health Nurse (SYHN) model is feasible and acceptable, and provides health promotion and accessible primary health care in the school setting, consistent with the Health Promoting Schools framework [10]. The main challenges with this model were time (working two days in each school), occasional working outside of scope of practice, and confidentiality issues between SYHN and educators.

The Victorian SSNP was reviewed in 2004 [26] and 2009 [34] and is currently due for a third review. Results indicated that the program is highly valued by students and by the schools. Nurses estimated 24% of their time was devoted to clinical care [34]. Nearly 2/3 of nurses were involved in care planning, and 81% of nurses indicated some involvement in supporting transitions from primary to secondary school. Despite mental health, drug and alcohol use, and family issues being the biggest issues facing young people, only 21% of nurses identified having a mental health, psychiatric or adolescent health background [34]. A series of recommendations to improve the SSNP were made to the Victorian government as part of the 2009 review [34], which were received favourably [35], but are yet to be implemented.

## **2.2 Whole school approach to student health and wellbeing in Victorian schools**

There are existing programs, such as *Bullystoppers* [36], *Safe Schools Coalition Victoria* [37], *Building Resilience* [38], and *Building Respectful Relationships* [39], which facilitate student health and wellbeing across the whole school. Additional programs such as *MindMatters* [40] and *MindMattersPlus* [41] focus more on the provision of mental health support. Victorian students may also be supported by Student Support Officers and Primary Welfare Officers.

*Bullystoppers* [36] employs an online toolkit which provides easy to use interactive printable tools and resources. Interactive learning modules encourage students to discuss bullying, cyberbullying and responsible social media use. Advice sheets are available to help deal with face-to-face and online bullying and iPhone Apps can be used for promoting online safety. Learning modules for parents on bullying, cyberbullying and cybersafety are provided. Teachers receive professional learning resources to facilitate the use of interactive learning modules in the classroom, and a study guide including guidelines and templates. Classroom activities, videos, interactive learning modules and advice sheets are available for download. A Principals' tool kit includes case studies and policy advice.

*Safe Schools Coalition Victoria* [37] conducts audits of staff and student perceptions, knowledge and experience to provide a snapshot of what is happening in a particular school.

Professional learning workshops draw on current national research and best practice knowledge to give teachers insight, ideas and confidence. A range of high quality electronic and print-based best practice resources for both teachers and students is available to provide a comprehensive guide for responding to homophobia and transphobia, and supporting and celebrating diversity. The organisation also provides tailored support and guidance to schools around specific issues and concerns for individual students, parents, or implementing whole school practices.

*Building Resilience* [38] is an evidence-based program which highlights the importance of taking a multi-dimensional, school-wide approach to building resilience. It assists schools to: partner with the school community, families and local and community services; lead teaching approaches and support social and emotional learning to all students across all year levels; support young people identified as needing additional assistance; and refer to appropriate services when required.

*Building Respectful Relationships* [39] assists in the development of a whole-school approach to preventing gender-based violence. It provides schools with: a common framework for understanding and responding to respectful relationships; effective curriculum delivery; relevant, inclusive and culturally sensitive practice and reflection; and evaluation of the impact of strategies on the whole-school community. Different schools have different baseline approaches to addressing issues related to gender-based violence and developing respectful relationships, so *Building Respectful Relationships* is designed to give schools flexibility when integrating the teaching activities into their curriculum. Schools may integrate the activities into existing developmental health and sexuality education programs, in other learning areas or in less curriculum-specific areas, such as Pastoral Care, Personal Development or Life Skills programs. Schools may even decide that the activities could be used in English or as part of a Media or Drama unit.

*MindMatters* [40] is a mental health initiative for secondary schools that aims to improve the mental health and wellbeing of young people. It is a framework that provides structure, guidance and support while enabling schools to build their own mental health strategy to suit their unique circumstances. *MindMatters* provides school staff with blended professional learning that includes online resources, face-to-face events, webinars and support. All content has been informed by strong evidence in the area of school mental health and wellbeing. The use of *MindMatters'* comprehensive resources has mental health benefits for the entire school

community – including students, families and school staff. *MindMatters* is based on the principle that the best mental health strategy is one that prevents issues from arising in the first place. For this reason *MindMatters* helps schools promote positive mental health through the whole school community, and aims to prevent mental health difficulties in students by taking steps to improve relationships and resilience. *MindMatters* provides staff with practical advice and guidance so that they can support students who may be struggling with mental health difficulties in a timely and appropriate way. Promotion, prevention and early intervention are central tenets of the *MindMatters*’ approach.

*MindMattersPlus* [41] is a complementary program designed to provide optimal support for students with high mental health needs. It builds the capacity of secondary schools to ensure optimal health outcomes for students at risk. It provides a range of resources for schools to use in supporting students.

Student Support Officers (SSO) include psychologists, social workers and speech pathologists. Their role in Victorian schools is to support students and teachers by working with young people and their families as well as to assess and develop strategies to address students’ emotional and mental health needs within an educational context [42]. SSOs may provide counselling for individuals and families around their educational and wellbeing needs, but primarily their role is to make individual assessments about development, learning and behavioural difficulties.

Schools may also have the support of Primary Welfare Officer (PWO) [43]. PWOs take a whole school approach to addressing the health and wellbeing of the school community by supporting students at risk of disengagement or who are not achieving their educational potential. The PWO initiative was expanded in 2012-2014, with an additional commitment of 150 PWOs to support the 256 PWOs already employed in Victorian schools. This position may be shared between schools, with the aim of helping schools address key government priorities in relation to bullying, behaviour, mental health and welfare issues.

### **3. International Models of School Based Health Care**

There are several models of delivering comprehensive primary health care to children and adolescents from disadvantaged backgrounds. Table 1 summarises these different models and their outcomes from various countries around the world, though the majority of peer-reviewed academic literature focuses on SBHCs in the US where there has been an established tradition for four decades.

**Table 1. International Models of School Based Health Care**

Country	Primary Care Site	Snapshot of model	Policy drivers	Evaluation of effectiveness
<b>USA</b>	Usually nurse practitioners on-site. Mental health services on-site. Some doctor services on-site (limited times)	<ul style="list-style-type: none"> <li>• National initiative but implemented differently in different states, according to local community priorities.</li> <li>• Services are largely provided by nurse practitioners or physician assistants with physician over-sight.</li> <li>• Services can be distinct from school, and administered by local health care or social service organisations, with the school serving as an additional location for their services, allowing students access outside of school hours.</li> </ul>	<ul style="list-style-type: none"> <li>• Healthy People 2020, one of the US' Health Objectives for the current decade</li> <li>• US Centers for Disease Control and Prevention developed the "School-based obesity prevention strategies for state policymakers" in 2010.</li> <li>• This accords with the Healthy Schools Promotion Framework developed by the Alliance for a Healthier Generation</li> </ul>	<ul style="list-style-type: none"> <li>• Rigorous evaluation historically lacking.</li> <li>• Evidence for facilitating dropout prevention, academic improvement and high school graduation, as well as reducing avoidance of school due to health problems, better reproductive health and access to care, cost effectiveness and lower use of ED.</li> </ul>
<b>New Zealand</b>	Nurse on-site, referral off-site. Some schools have GPs on-site part-time	<ul style="list-style-type: none"> <li>• School-based health services (usually registered nurses) in secondary schools attended by young people from communities with high health care needs.</li> </ul>	<ul style="list-style-type: none"> <li>• Followed 2008 government initiative to provide health services at disadvantaged secondary schools.</li> <li>• Services expanded as part of the Prime Minister's Youth Mental Health Project</li> </ul>	<ul style="list-style-type: none"> <li>• Less depression and suicide risk, and less use of hospital A &amp; E services in students whose schools had high levels of health services. Also greater use of contraceptives by females in schools that provided sexual health services</li> <li>• The evaluation highlighted that rural schools were less likely to be able to provide quality guidance/ counseling, and that a lack of support from school leadership and external support agencies was a problem</li> </ul>

<b>Europe</b>	Nurse on-site, referral usually off-site	<ul style="list-style-type: none"> <li>• The school nurse is the key member in the school health services workforce, but teams may comprise doctors, psychologists and counsellors, social workers, dentists, and others, such as nutrition specialists.</li> </ul>		<ul style="list-style-type: none"> <li>• Anecdotally, children and young people valued both the clinical knowledge and confidentiality of these services and often preferred discussing sensitive issues with a nurse rather than a teacher.</li> <li>• Common challenges faced by European school health services include the need for: <ul style="list-style-type: none"> <li>• Strong and effective leadership and advocacy for school health services.</li> <li>• Research and evaluation of school health and health services.</li> <li>• Guidelines on school health services organization, practice, standards and performance assessment.</li> <li>• Sufficient, appropriately trained staff.</li> </ul> </li> </ul>
<b>Wales</b>	Co-ordinator on-site, referral off-site	<ul style="list-style-type: none"> <li>• Healthy schools co-ordinator recruits and supports school. Schools appoint their own co-ordinators who work with the healthy schools co-ordinator to plan and carry out activities identified by the school.</li> <li>• Schools are expected to introduce health improvement topics into three domains: the curriculum; school ethos and material environment; and relations with individuals and groups outside the school.</li> </ul>	<ul style="list-style-type: none"> <li>• All schemes assess their member schools and recognise those which are successful in completing each phase.</li> </ul>	<ul style="list-style-type: none"> <li>• Health promotion has been well integrated into many schools, but some teachers have found it impacts on curriculum delivery.</li> <li>• Differences in local circumstances in implementing the scheme have meant variability in the effectiveness of addressing health inequalities.</li> </ul>

<b>Scotland</b>	Nurses and trained support workers on-site, referral off-site	<ul style="list-style-type: none"> <li>• Support workers take on screening and surveillance work previously undertaken by registered practitioners, and promote health links between school and the home.</li> </ul>	<ul style="list-style-type: none"> <li>• The Health and Well-being in Schools project, a Scottish Government-funded initiative designed to complement the national effort to improve the health and well-being of children and young people.</li> <li>• Supported by the Health Promoting Schools model, Getting It Right for Every Child programme.</li> </ul>	<ul style="list-style-type: none"> <li>• Anecdotally, teachers reported better classroom attentiveness from children whose families were receiving support from family support workers.</li> </ul>
<b>Sweden</b>	Nurse practitioner on-site, physician, social worker & psychologist part-time on-site	<ul style="list-style-type: none"> <li>• The student health and welfare team (nurses, counsellors and doctors) provides health promotion, preventive health care and conducts simple medical procedures. Confidentiality is emphasised.</li> </ul>	<ul style="list-style-type: none"> <li>• Education Act, the Health and Medical Services Act, and National Board of Health and Welfare's directives and recommendations.</li> <li>• Supported by a quality assurance programme which describes 7 SBHS Quality Standards</li> </ul>	
<b>Moldova</b>	Nurses on-site, referral largely off-site	<ul style="list-style-type: none"> <li>• School nurses provide care to pupils and employees, including hygiene advice, infection control, emergency health care, and illness-prevention activities.</li> <li>• Preventive medical examinations of all children by family physicians at the age of 3, 7, 11 and 15, with</li> </ul>	<ul style="list-style-type: none"> <li>• The national programme of compulsory health insurance.</li> </ul>	

		medical examination by specialists as required.		
<b>Portugal</b>	Nurses/ counsellors on-site, referral off-site. School staff provide health education	<ul style="list-style-type: none"> <li>• From 2010, all schools have a “health space” where students can voluntarily access confidential health care and counselling.</li> <li>• Health education is incorporated into the national curriculum.</li> </ul>	<ul style="list-style-type: none"> <li>• National policy that prioritises health education.</li> <li>• Supported by a protocol with regional health centres and by a teacher-training initiative focusing on issues such as health promotion, counselling, sexual education and contraception.</li> </ul>	<ul style="list-style-type: none"> <li>• From 2007 to 2009, the proportion of schools which provided health education rose from 79% to 95%. In 2009, 43% of schools had a “Health space” addressing health issues with pupils.</li> </ul>



### 3.1 United States (US) models of School Based Health Care

According to the American Academy of Paediatrics, all school-based health services should provide the following:

- state-mandated services including health screening, verification of immunisation status, and infectious diseases reporting;
- assessment of minor health complaints, medication administration, and care for students with special health needs;
- capability to handle emergencies and other urgent situations.

More comprehensive services might provide immunisations, case management and counselling, wellness promotion, health education, services for students with chronic health conditions such as asthma, diabetes or seizures [44], and on-site nutritionists, health educators, and community outreach workers [1]. Mental health care and dental care may also be offered on-site, and a health assistant schedules appointments and undertakes paperwork [1]. The infrastructure provided for a SBHC usually includes: examination rooms, counselling rooms, a reception area, professional office space, storage area and locked storage space for medical records and pharmaceuticals, bathrooms and infirmary areas, clean and dirty prep areas, hand washing sink and laboratory area [1].

Brindis and Colleagues [4] published the findings from a rigorously conducted US national survey of SBHC directors collected by the National Assembly of School Based Health Care Census (1998-1999) [4] in which there was a 70% response rate (N=806) from school services based in schools or on school property. While there were no further recent published census reports, a recent review by Keeton and Colleagues confirmed similar findings [3].

Most of the 806 SBHCs in the census (92%) used a combination of physicians, physician assistants and nurse practitioners for physical health services which were delivered for an average of 27 hours per week [4]. Mental health services were provided in 57% of sites for an average of 33 hours per week, by mental health professionals including psychologists, social workers, and substance abuse counsellors [3]. Other clinical support was usually provided by nurses in 55% of SBHCs for an average of 33 hours per week. Other SBHC support services included health aides (39%); administrative assistants (52%); health centre directors (24%); health educators (19%); social work (19%) and nutritionists (14%). Less than 5% of SBHCs had dental health professionals. Services usually always used a multidisciplinary team of providers who work with school staff, parents and community leaders [3, 45].

Davis and colleagues (2005) detailed the different roles and responsibilities of the clinical disciplines involved in delivering health care to students in US SBHCs [46]. The majority of the direct medical care is provided by nurse practitioners and physician assistants and in some models home visits are included [47]. Collaborating physicians provide part-time medical services for students and work closely with nurse practitioners to determine the appropriate course of treatment for complex medical problems; a recommendation from the *American Academy of Pediatrics* [44]. The physician is also available for consultation during the school day when the nurse practitioner needs advice or to refer to for issues beyond the scope of practice for a nurse practitioner. The American Academy of Pediatrics recommends that there should be one nurse practitioner to 750 students [44].

In the SBHC census survey [4], the older a service was the more likely it was to: operate in excess of 30 hours per week; offer equal amounts of mental health and primary care (30 hours each per week for SBHCs aged 10 years or older); and to have higher numbers of students enrolled. Authors comment that it takes clinics much time and outreach education to build the base of students who attend. The average student enrolment into SBHCs was high, at 64% of the school population. Students attending SBHCs are required to have parental consent but it is noteworthy that centres requiring parental consent for every visit had lower utilization rates by students compared to centres where parents signed an annual consent form covering all visits for the year. More than half of the SBHCs in the census were more than 4 years old; newer ones being located in primary schools. Very few SBHCs have been reported to close over time [3]. One paper suggested that the operating hours of clinics, among other elements of service, were influenced by the advent of managed care in the US which mandated certain quality standards for SBHCs to be included in their networks as comprehensive primary care providers [48].

Of the comprehensive medical services, 89% of SBHCs in the national census offered: preventive care (health assessments, vision/hearing screens, anticipatory guidance); immunizations; acute illness treatment; laboratory services and prescription services [4]. Of the mental health services, 60% provide: crisis intervention; case management; evaluation and treatment; substance abuse counselling; assessment and treatment of learning problems; grief counselling; and group counselling (classroom behaviour modification, substance use prevention and treatment, gang prevention) [4].

Setting up SBHCs requires partnerships to develop programs, provide staffing, supervise clinicians and provide backup for afterhours care and during the holidays. Common

sponsorship organizations in the US include: community health centres, hospitals or local health departments (73%) and also university medical centres, non-profit agencies or school districts. Those sponsored by public health departments and schools had fewer hours of operation (average of 20 hours per week) compared to SBHCs supported by other sponsors. Encouragingly, over 90% of SBHCs in the census used nationally recognized clinical health care standards and other quality assurance measures (e.g., staff credentialing, chart audits, policies, patient surveys).

Keeton [3] summarises the characteristics of the typical SBHC model:

- Located in schools or on school grounds;
- Work with school staff and students to become an integrated part of the school;
- Provide a comprehensive range of services to meet the physical and behavioural needs of young people in the community;
- Use a multidisciplinary team of providers;
- Provide clinical services through a qualified health provider e.g., medical practice/hospital;
- Require parents to sign written consents for children to receive full range of services;
- Have an advisory board including community representatives; parents; youth; family organisations to provide planning and oversight.

Pastore [45] describes two SBHCs in New York City that are an interesting example of scale as they are now in their twentieth year of service. They operate near the gymnasium of the schools with one or two examination rooms, a counselling room and a laboratory space. The SBHCs have 2090 students enrolled from the two schools and other schools in the district; these students made a total of 8,216 visits during 2002-2003. Hours of operation are from 8.30 am to 4pm each weekday with direct medical services provided 30-35 hours per week, mental health services for 24 hours per week, individualized health education for 14-16 hours per week and first aid 37.5 hours per week. After hours and in the holidays, services are provided by the sponsoring community-based adolescent health clinic. Half of all visits were by uninsured students and two thirds were by female students, even though 40-48% of those enrolled were male students. Confidentiality is a key platform of the service. Many times students were treated and able to attend classes for the rest of the day.

Additional services are often provided by the SBHC model in the US [3]. Many also support the larger school environment through delivery of health education to students, parents and

teachers and by providing consultation to teachers about supporting students with special learning needs in the classroom. SBHC staff work with teachers to identify students with poor academic performance and emotional or behavioural dysfunction to improve academic outcomes for students. SBHCs also provide opportunities for youth participation and development in activities including being members of advisory boards, and peer education and career advice on the health professions. Over two thirds of SBHCs provide services beyond the school in which they are located to students from other schools, out-of-school youth, faculty and school staff, and other community members. However, there are challenges in providing services to adults in the community, including putting a strain on resources which are already at capacity in servicing students, risking the confidential and youth specific engagement of the young people who tend to be marginalised in adult services, and letting adults into school grounds during school hours when they may not be desirable in these environments [3]. In one study, outcomes from mental health services delivered in 36 inner city schools by therapists from a university-affiliated child psychiatric outpatient clinic were compared to outcomes from services delivered in the central clinic [49, 50]. Findings showed that both sets of children improved equally well, as assessed by validated scales, although the school children were treated within an average of 5 months, compared to 8 months for the clinic-based group. Given that for the school based services, the sole referral source was from within the school, these results highlight the potential for schools to reach children who may otherwise not have access to such services.

### **3.2 New Zealand models of School Based Health Care**

Reforms from 1989 on in New Zealand led to an interest in the provision of primary health care services to school students, particularly those attending schools in areas with the worst population health status. In 2008 a larger government initiative was announced to provide school nurses or school-based health services in all lower decile secondary schools nationally. It was phased in over the next few years beginning with decile 1 and 2 secondary schools, teen parent units and alternative education facilities. In April 2012 it was announced that this would be extended to decile 3 schools, as part of the Prime Minister's Youth Mental Health Project. In the absence of an overall framework guiding the implementation of the program, the quality and level of service provided by the SBHC can vary markedly [51, 52]. As well as treatment of injuries and illness, SBHCs under this system generally appear to provide medical checks for each student (height, weight, blood pressure), and health and wellbeing assessments [53]. Hearing, vision and dental health may also be discussed [53].

The HEEADSSS psychosocial screening tool for young people (Home environment, Education and employment, Eating, peer-related Activities, Drugs, Sexuality, Suicide/depression, and Safety from injury and violence) is used by some schools for screening risk taking behaviours [53, 54]. Students can be referred to a GP, school counsellor or other support service as required [53]. Registered nurses are the most common health professionals working in schools, with slightly more public health nurses (who visit schools) than primary care nurses (who are based at schools). There are a small number of doctors (5% of the health professionals). Most health professionals working in schools have some level of training in youth health, mostly from one-off study days or lectures.

Schools with higher levels of health service (an on-site school nurse or health team) were more likely to have more facilities, to be better integrated with the school, the community and local primary health organisations, and to provide routine comprehensive health assessments and more comprehensive health services [51]. The most notable results were in the mental health domain: there was less depression, measured by the Reynolds Adolescent Depression Scale – Short Form (RADS-SF), and suicide risk among the students in schools that had higher levels of health services [51]. There was significantly less depression and suicide risk where the school health services had health professionals on site; where the hours of health professional time per week per 100 students was higher; and where the health professionals were well integrated with the school and with the local community [51]. There was also some evidence of effectiveness of school health services in the domain of sexual and reproductive health: there was better contraceptive use (measured by survey) by female students in schools that provided sexual health services and where the health professionals had received training in youth health [51]. Schools with visiting health professionals reported the lowest hours per week per 100 students: on average less than 1 hour of nursing time per week per 100 students and less than 0.05 hours of doctor time per week per 100 students. By contrast, schools with an on-site health team reported on average 4.8 hours of nursing time per week per 100 students and 0.18 hours of doctor time per week per 100 students. There was less hospital Emergency Department use reported by students in schools with health services, especially where the health services had sufficient nursing time (over 2.5 hours per week per 100 students), and performed routine HEEADSSS assessments. There was also better school engagement among students in schools with a health team on site, with sufficient nursing time, and that performed routine HEEADSSS assessments [51].

In addition to work in expanding the SBHC program, the Prime Minister's Youth Mental Health Project currently comprises a further 25 initiatives to deliver improvements to young people by July 2016 [53]. Some of these projects focus on health and well-being more generally and include: expanding the HEEADSSS check to all schools, improving the responsiveness of primary care to youth including through drop-in services, and developing integrated funding models and connected service delivery. However, most of the initiatives are focussed on aspects of mental health. Examples of these include the extension of the current primary mental health service to all youth in the 12–19 year age group and their families, expansion of the Positive Behaviour School Wide programme, implementation of an internet-based e-therapy tool (SPARX) for young people with common anxiety and depression, and improving the user-friendliness of youth mental health resources for students and family members.

### 3.3 European models of School Based Health Care

Most European countries have health services based within schools (56% of the WHO European region) [55], but school health services are organized in a variety of different ways, with many countries spreading their services between schools and primary health care settings. A Dutch study on open-access school-based Youth Health Care (YHC) which only provided well-care visits and preventive health counselling suggested that, except for alcohol consumption, a negative correlation existed between tobacco use, drug use and obesity, and frequent well-care visits; and the availability of freely accessible ('open') consultation hours had significantly adverse effects on alcohol consumption and obesity [56]. This model was different to other international models in that no comprehensive primary health care was offered on site. Authors could not suggest an explanation for the negative findings except that well-care visits alone with their health promotion messages may not be effective in adolescents. School nurses consider that psychosocial problems are the most common reasons for children and young people seeking urgent assistance through school health services [57]. Children and young people valued both the clinical knowledge and confidentiality of these services and 'often preferred discussing sensitive issues with a nurse rather than a teacher' in Personal, Social, Health and Economic sessions [58].

Doctors and nurses are represented in onsite SBHC in most countries in the WHO European Region: 76% of the countries have school doctors and 65% have school nurses, however only 43% have psychologists, 24% a social worker, 22% a dentist, 8% physiotherapists and health care assistants, and 22% other professionals [59]. The school nurse is the key member in the

school health services workforce, but teams may comprise doctors, psychologists and counsellors, social workers, dentists, and others, such as nutrition specialists. The nurse is seen as an advocate, liaising with primary health care and with education, and may also have a function in referring directly to specialist care [59].

Evidence from a survey of school health services in the European Region indicate a general lack of funding, insufficient orientation towards health promotion, a mismatch between priority health problems (mental health and health promotion, overweight and obesity) and services provided, and school health personnel having insufficient training to provide appropriate services [60]. Key areas for future development have been identified and include the definition of minimal competences for professionals in adolescent/school health; creation of criteria to evaluate the competence of providers in adolescent/school health care; and issues around continuing professional development in this area.

### **3.4 United Kingdom (UK) models of School Based Health Care**

The Welsh Government provides a framework and funding for schemes which are partnerships between local Education and Health departments [61]. The Welsh Network of Healthy Schools Scheme consists of twenty-two local healthy school schemes, one in each unitary authority of Wales. Each scheme employs a healthy schools co-ordinator who recruits and supports schools and organises appropriate local training. Schools appoint their own in-school co-ordinators who work with the healthy schools co-ordinator to plan and carry out activities identified by the school. Schools are expected to introduce health improvement topics into three domains: the curriculum; the school's ethos and material environment; and relations with individuals and groups outside the school. All schemes assess their member schools and recognise those which are successful in completing each phase [61].

The Health and Well-Being in Schools project, which ran from September 2008 to March 2011, was a Scottish Government-funded initiative designed to complement the national effort to improve the health and well-being of children and young people in Scotland. The project also worked alongside established health and well-being initiatives in Scotland, such as the Health Promoting Schools model, Getting It Right for Every Child programme and integrated children's services, and complemented and supported a range of national policies [62]. Using a community based partnership approach, the aim of the Health and Well-being in Schools project [62] was to increase health care capacity in schools by providing improved health care services. This was achieved chiefly by introducing family support workers into

the school health teams. Following appropriate preparation, these support workers were able to take on screening and surveillance work previously undertaken in schools by registered practitioners and to act as health links between school and the home [62]. This released registered professionals' time to focus on early intervention/prevention programmes targeting vulnerable groups of children and young people at key transition stages, rather than providing crisis interventions. Common themes emerging from the demonstration sites were concerns about emotional health and well-being, obesity and communication difficulties.

### 3.5 Swedish models of School Based Health Care

Two case studies in the grey literature outline Swedish models of SBHC. The student health and welfare team consists of school nurses, school doctors and counsellors who work within a preventive health care framework [63]. Health visits are both voluntary and free of charge. In upper secondary school, all students are offered a health interview in Year 1 which also provides the opportunity for targeted health screening (e.g., hearing tests) of students who will undertake studies which involve food-handling, construction or motor vehicle use. In one municipality all municipal schools have a school health officer and a school nurse assigned to them. The school health officer has a clinic once per month and monitors the students' health and development throughout their time at school. Appointments are booked through the school nurse, who works primarily in prevention, conducting health assessments, vaccinations, examinations and providing information about health issues. The welfare officer is also part of the school's student health team, and provides information about drugs, sex and relationships, as well as participating actively in the school's work against abuse [64].

Of interest, a useful framework for describing school health and health services in Sweden has been constructed [65] which offers a basis both for further research on school health and a tool for shaping evidence-based policy-making. The framework describes 7 SBHC quality standards:

1. An intersectoral national or regional normative framework involving health and education sectors, and based on children's rights to advise on the content and conditions of service delivery of SBHC.
2. SBHC respect the principles, characteristics and quality dimensions of child- and adolescent-friendly health services; principles of accessibility, equity and acceptability also apply to the way in which SBHC engage with parents.



3. SBHC facilities, equipment, staffing and data management systems are sufficient to enable SBHC to achieve their objectives.
4. Collaboration among SBHC, teachers, school administration, parents and children, and local community actors (including health care providers) is established and respective responsibilities are clearly defined.
5. SBHC staff have clearly defined job descriptions, adequate competencies and a commitment to achieving SBHC quality standards.
6. A package of SBHC services based on priority public health concerns is defined, supported by evidence-informed protocols and guidelines.
7. A data management system that facilitates the safe storage and retrieval of individual health records, monitoring of health trends, assessment of SBHC quality (structure and activities) and research is in place.

### **3.6 Moldovan model of School Based Health Care**

This health care system has faced major financing problems since the Republic of Moldova became independent in 1991, when public health expenditure was reduced by approximately 62%, reaching a per capita level of only US\$10 per year.

School nurses provide emergency health and preventive health care to students and staff at education institutions, and work together with education staff during infectious disease outbreaks (e.g., hepatitis A, influenza, intestinal infections) at the education institution. School nurses organize recreation camps for pupils in the summer and arrange for annual medical examinations. National compulsory health insurance provides for annual preventive medical examinations of all children (including school pupils), performed by family physicians. At the ages of 3, 7, 11 and 15 years, the children have a comprehensive medical examination from specialists (paediatrician, ophthalmologist, ear, nose and throat specialist, surgeon, neurologist, psychiatrist, dentist and speech therapist), as required. Screening tests widely used within the framework of such examinations are not always cost-effective, particularly due to the lack of an adequate referral system, but include tests for foot problems, faults in posture, reduced visual and hearing acuity and problems in physical development [60].

Only 75.8% (1139) of pre-university education institutions have medical facilities. Health care workers are often accommodated in the school office or in other facilities that are not

suitable for health care services. Over 85% of medical stations at education institutions do not have essential medical equipment and have incomplete supplies of emergency medication. The number of pupils at schools, particularly in rural areas, has dwindled considerably over the past 10 years, as has the birth rate. As salaries are linked to the number of pupils, nurses working at many village schools may receive half or even quarter the standard salary, which may result in a decrease in the amount and quality of health care services provided to pupils [60].

### **3.7 Portuguese model of School Based Health Care**

Portugal has a national policy that prioritises health education. From 2010 onwards, all schools have a “health space” where students can voluntarily access confidential health care and counselling. These spaces are supported by regional health centres and by a teacher-training initiative focusing on issues such as health promotion, counselling, sexual education and contraception. Health education is incorporated into the national curriculum, and at least one hour a month focuses on sexual education [60].

Four main health issues for priority intervention have been identified [60]:

- substance use
- sexuality/STIs and HIV prevention
- nutrition and physical activity
- violence prevention and mental health and well-being.

### **3.8 Australian models: Partnerships between schools and General Practitioners**

Several pilot projects in Australia have tested the primary care delivery model in which a general practitioner (GP) or group of GPs work in partnership with a particular school. In some of these, the GP offers health education sessions with the aim of breaking down barriers to young people’s concern at attending the local practice. In others, the GP undertakes consultations at the school, using bulk-billing [66]. What is striking about these models is their small scale, compared to the US models, and the lack of peer-reviewed publications on their effectiveness in meeting the needs of students. Australian models of SBHC currently underway or in development are summarised in Table 2. Additional detail is provided below of several Victorian programs by way of further illustration.

**Table 2. Australian Models of School Based Health Care**

<b>School (state)</b>	<b>Primary Care Site</b>	<b>Snapshot of Model</b>	<b>Appointment/ Drop In</b>	<b>Other Services</b>	<b>Payment</b>	<b>Parental Permission</b>	<b>Main Presenting Issue</b>
<b>Wellington Secondary College (Vic)</b>	Purpose built facility on-site Arrangement with McKinley Medical Centre – provides registrars and keeps records	<ul style="list-style-type: none"> <li>• GP one afternoon per week, registrars on a 6 weekly rotating roster.</li> <li>• Nurse 0.8FTE, first aid and health promotion role only</li> <li>• Student Welfare Co-ordinator 1.0 FTE</li> </ul>	GP - Appointment only	<ul style="list-style-type: none"> <li>• Student Wellbeing Worker (Chaplain)</li> <li>• Visiting DEECD Psychologists, Social Workers, Speech Pathologists</li> <li>• Outreach from a variety of community organisations</li> </ul>	Bulk billed	4 page form parents sign as a once off	Mental Health Care Plans
<b>Upper Yarra Secondary College (Vic)</b>	‘House of Health’ on-site	<ul style="list-style-type: none"> <li>• GP for one hour per week</li> <li>• Community Health Nurse (Co-ordinator) 2 hours per week</li> <li>• School nurse health promotion only</li> </ul>	Appointment or drop in	<ul style="list-style-type: none"> <li>• MOU with local Shire provides Social Worker</li> <li>• School Counsellor, psychologist school chaplain</li> </ul>	unknown	Opt –out system at enrolment	unknown
<b>Doveton College (Vic)</b>	Purpose built clinical rooms	<ul style="list-style-type: none"> <li>• Wellbeing and Engagement Team – leading teacher, psychologists, OT, school nurse</li> <li>• Paediatric Fellow 1 day per week</li> <li>• Have tried unsuccessfully to recruit GP</li> </ul>	Appointments with Paediatric Fellow	MOU with Monash Community Health, Good Beginnings and other agencies – no waiting lists for a good range of services	No fee	Incorporated into initial student enrolment form	Self harm/suicide, mental health, sexual health, nutrition and disabilities

<b>Doctor on Campus (Victor Harbor High School) (SA)</b>	Off-site GP consultation at private office one morning per fortnight	School Counsellors take students to appointment	Appointment	Linked with Victor Medical Centre and Torrens House (Psychology).	Bulk billed	School Counsellors arrange as needed	Emotional health/wellbeing issues – depression, anxiety, self harming / suicidal ideations, related drug / alcohol issues, anger, grief, eating disorders, sexual management,
<b>Wirreanda High School (SA)</b>	Purpose built Learner Wellbeing Centre on-site (under construction)	[Future]	Unknown	[Future] Sexual Health, Case Management, Counselling Services, Volunteer Services, Youth Work, Psychologist Services, Dental Services	Bulk billed	Unknown	Unknown
<b>Lake Munmorah High School (NSW)</b>	On-site	GP and nurse each present for 5.5 hours each week	Appointments only during school hours, drop in for remaining 2.5 hours	Unknown	Bulk billed	Unknown	Unknown
<b>Healthy School Age Kids (NT)</b>	On-site annual health check	Health Centre clinical staff, supported by Primary Health Care Manager and Medical Practitioner/s	All students have annual check up	Ideally co-ordinated with visiting specialist visits	Bulk billed if possible	School co-ordinates parental consent forms	Unknown

There are currently three Victorian secondary schools with existing models for school-based health care [67]. Two (Wellington Secondary College, WSC [68] and Upper Yarra Secondary College, UYSC [69]) involve GPs providing primary care onsite on a weekly sessional basis (one afternoon/week (appointment only) and one hour/week (drop-in or via appointment), respectively). GP appointments are made via the Student Welfare Co-ordinator (WSC) or the Community Health Nurse (UYSC). Both of these schools also employ an adolescent health nurse who provides first aid and performs a health promotion role. The other model (Doveton College, DC) is a Prep-Year 9 school [70], and has a Paediatric Fellow one day/week providing the frontline primary care role, assisted by the school nurse [67].

Primary care support in all three models is facilitated by access to a range of different allied health services, including psychology, social work, counselling, speech pathology, and occupational therapy. Other support services, such as parenting groups and school chaplaincy are provided at one of the schools (UYSC). Parental consent for students' access to the health services at the school is either via a once-off consent form upon enrolment (WSC and DC), or via an opt-out system (UYSC). Services are bulk-billed. The main health issues the schools deal with vary between schools but include mental health, self-harm/suicide, sexual health, nutrition and disabilities.

The school based health care model at Upper Yarra Secondary College was initially established as part of a 'Docs in Schools' program. The 'House of Health' established onsite at UYSC was initiated by the school nurse and the parent and school body. The GP initially consulted onsite 2 hours per week with students referred by the school nurse, who was present 3 days per week under the secondary school nursing program. A full range of primary care services were provided along with mental health care by the GP, with referral links to community resources as appropriate. GP consultations were bulk-billed and ran for 30 to 40 minutes with each patient. Currently this GP now consults in a hub model from the community health centre and allocates one afternoon/evening per week solely to secondary school student care. Secondary school nurses from the eight surrounding disadvantaged schools refer and sometimes transport students to the GP for health care. This hub-method has had benefits in also integrating with community services.

The second example of the Docs in Schools program was run by the North West Area Mental Health Service in partnership with the Westgate Division of General Practice [71]. GPs with a special interest in mental health were partnered with two of the disadvantaged high schools in the area. A project officer coordinated the program from the mental health service. GPs

visited schools for two hours each fortnight, seeing a maximum of 4 students booked in by the school nurse or welfare officer. There were no clinical services so the aim was for health information provision for non-acute issues and provision of mental health plans for students in need of mental health services. This program no longer operates due to funding restrictions.

Four other Australian models for providing primary health care in secondary schools have been described in the literature. Two are in South Australia [72, 73], one in NSW [74], and one serving rural and remote schools in the Northern Territory [75]. The Doctor on Campus program at Victor Harbor High School [73] is perhaps the most well established program. In this model, students are referred by teachers, parents/family, friends of students, and self-referral to the school counsellors. School counsellors' refer cases beyond their expertise for a 45 minute consultation with a local GP, who attends the school one morning per fortnight. School counsellors provide case notes to the GP, and the consultation is bulk-billed. This model commenced primarily as a mental health program and GPs see students to discuss issues such as depression, anxiety, self-harming, drug and alcohol issues, grief, eating disorders and sexual health. The program is supported by a psychologist and other mental health professionals offsite. When fully operational, the other South Australian model [72] will use a purpose-built space to provide bulk-billed or low cost services to students.

Psychology, dental, youth work, counselling and sexual health services will be available, and health care will be provided by a GP. Lake Munmorah High School [74] uses a drop-in or appointment health service staffed once per week by a GP and a nurse. Services are bulk billed. In contrast, the Healthy School Age Kids (HSAK) Program in NT [75] focuses on health promotion in the school and community setting, annual child health checks (surveillance and screening), and integration of other services and programs. Annual reviews of all school age children are provided by health centre clinical staff, including doctors. Screening is conducted in partnership with the school and includes immunisation, checks for trachoma, clean face, scabies, ringworm, sores and other skin conditions, dental checks and Albendazole/Pyrantel treatment. Additional tests are conducted at 5, 10 and 15 years of age for visual acuity and hearing, growth, Mantoux status, heart murmurs and urinalysis for protein and albumin:creatinine ratio. Identification of problems during health checks allows referral to specialist services.

## 4. Evidence of effectiveness of School Based Health Care

There have been significant barriers in the international literature to obtaining quality evidence on the effectiveness of SBHCs on health and educational outcomes. These include limited resources allocated to evaluation, difficulties of conducting randomised trials, confidentiality concerns, diverse school environments and diverse services offered; high attrition of students from schools in deprived areas making follow-up expensive, parental consent issues, and failure to link health service use and educational data based on privacy legislation [3]. To improve capacity for generating quality evidence, there is a need for more well-controlled longitudinal studies, a standardized set of health service indicators, data linkage (de-identified) between health service use and educational outcomes, and detailed documentation of type of intervention implemented in each SBHC. Furthermore evaluation should be planned alongside services and resourced appropriately.

There are no Cochrane systematic reviews of SBHC outcomes collectively but there have been a number of narrative reviews and single studies on particular outcomes, which will be discussed below.

### 4.1 Impact of School Based Health Care on academic outcomes

Walker and colleagues (2010) conducted a well controlled quasi-experimental longitudinal study on the effects of SBHC use on academic outcomes for high-school students and on whether medical and mental health service use differentially impacted on educational outcomes [76]. They performed a retrospective comparison of SBHC users and nonusers in 9<sup>th</sup> grade from 13 SBHCs in Seattle. School attendance for SBHC users dropped initially but over time increased at a greater rate than for non-users. Grade Point Averages (GPA) increased more rapidly over time in SBHC users compared to non-users. Use of medical SBHC services was more strongly associated with attendance rate gains and use of mental health SBHCs with GPA gains. These results are important given students in SBHC user groups were at higher risk to start with. There were limitations in that a school without a SBHC was not available to act as a control group. The conclusion was that SBHC use is associated with school attendance and GPA gains of low to moderate effect sizes mediated through improving health and emotional well-being. Another longitudinal study also in Seattle found that SBHC use was associated with a one third lower likelihood of dropping out of school, particularly if in a high risk category for drop out [3, 77].

## **4.2 Impact of School Based Health Care on mental health and other health service use**

Kaplan and colleagues (1998) [78] and Juszczak and colleagues (2003) [79] answered concerns about SBHCs increasing or duplicating service use. They found strong evidence for the role of SBHCs in increasing access to mental health care for both insured and non-insured adolescents and reducing the use of Emergency Department services by as much as four fold. School time service use was higher in SBHC-users compared to non-users but this seems to have been driven by increased access for mental health concerns, including for young men. Both studies accurately concluded that SBHCs have the ability to attract harder to reach populations such as minority youth, those with mental health concerns and young males, and that SBHCs are making complementary contributions to health care rather than duplicating service use [79]. Kaplan concluded that adolescents seem to use both the SBHC and managed care services appropriately and that when both are on offer for teens they have a synergistic effect on adolescents' health. Furthermore, this increase in access to mental health services and decreased emergency department use associated with SBHC use are important areas of savings for insurers [78].

Integration of mental health care within SBHC lowers stigma, non-compliance and access issues [29, 80]; however, while improvements in depression and suicide risk were found in one study, results should be interpreted with caution as it was a small quasi-experimental study with a dissimilar comparison group and short-term follow-up [80]. However, as discussed above, Denny et al (2014) report that students in NZ schools with SBHCs had better mental health [51]. They found less depression, measured by the Reynolds Adolescent Depression Scale – Short Form (RADDS-SF), and suicide risk among the students in schools with higher levels of health services onsite and where the health professionals were well integrated with the school and local community. While these findings have not been published in the peer reviewed literature, the methodology undertaken to collect and analyse this information from secondary school students across NZ appears robust.

There is limited research evidence on the best models of intervention by SBHCs to address alcohol and tobacco use, even though some services provide substance use counsellors [3].

## **4.3 Impact of School Based Health Care on sexual and reproductive health**

Several papers have examined the impact of SBHC on sexual and reproductive health. A review paper by Kirby (2002) examined studies on the impact of school involvement in sexual risk taking and included a focus on SBHCs [81]. Six studies from 1980 to 1996 were



included which examined the impact of SBHCs using quasi-experimental designs. The studies also measured the effects on the entire school population as opposed to just students using SBHCs, hence caution is required in interpreting the evidence. One of the most important and consistent findings from the review, also echoed in other reports [82, 83], was that *providing contraceptives onsite in SBHCs did not hasten or increase student sexual activity*. Other results were mixed between the studies, with some showing that the presence of SBHCs did not increase the use of contraception in the whole school population and others showing the opposite. Better quality study designs are required. The report also concluded that when SBHCs are well staffed and well run, and importantly, when they actually dispense contraceptives, they have the characteristics of ideal reproductive health care, whose features include: convenient access for males and females, confidential and comprehensive health care, skilled staff, cost free and integrated education, counselling and medical services. SBHCs may not, however, reach young men as effectively as young women.

Owen and colleagues (2010) conducted a survey and systematic review of current models of SBHC sexual health services for those aged 11-18 years and their effectiveness [83], with similar findings to Kirby [81]. The overall conclusion was that services *may* reduce unwanted conceptions and sexually transmitted infections (STIs) in males however the quality of the evidence was rated as very poor. Only six out of 26 papers described controlled before-and-after studies (slightly higher quality) and the others were low quality. Most of the studies were again from the US, with only one from the UK and one from Brazil. Particular findings were that: there was a higher uptake of condoms when they were free compared to dispensed from a condom vending machine; there was no evidence of association between availability of condoms and increased condom use; one reasonable study showed a reduction of live births to teen mothers; and one poor study showed that school-based screening for chlamydia and gonorrhoea may have been associated with reduced prevalence of these infections in males.

Minguez and colleagues (2015) conducted a more recent study on the reproductive health impacts of SBHCs [82]. They also offered a useful perspective on reasons for poor quality evidence producing mixed results in this area. Reasons included: that the method of SBHC implementation does not consider, or provide funding for, evaluation; no baseline data collection occurs before implementation; differences may exist among communities in adolescents' reproductive health needs and access to community based providers; and SBHCs differ in the scope of practice, including whether contraceptives are provided on-site or not.

Minguez and colleagues compared two school groups in a quality quasi-experimental design, one school group with a SBHC and one without, for the impact on students' access to reproductive health care, receipt of sexual and contraceptive counselling and use of contraception [82]. The school with a SBHC had two to three fulltime adolescent medicine trained physicians or nurse practitioners and two fulltime mental health providers and health educators for classroom education for 2700 students (four different high-schools in the one building). The comparison school group had HIV education, a condom availability program and a full-time first-aid nurse and referral links to community based clinical care for over 5000 students (four schools in the one building). All students in Grades 9-12 in regular education were eligible to participate with high response rates of 77.3% and 67.2% in intervention and comparison schools, respectively. Results were encouraging and, notwithstanding some study limitations, this appears to be a high quality study. Intervention students were more willing than students in the comparison group to use SBHCs for reproductive health care by the 12<sup>th</sup> Grade (81% vs 35%); the receipt of education and counselling was highest in SBHC users followed by SBHC non-users and lastly comparison school students; self-reported contraceptive use in sexually experienced adolescents was higher in SBHC schools (70%) compared to comparison schools (50%) and higher within intervention schools for those using the SBHC compared to SBHC non-users (70% vs 26%); young men were more likely to use condoms in intervention schools and SBHC users more likely than non-user males to use condoms (70% vs 54%); condom use with first intercourse was 20% in Grade 12 in intervention compared to 2% in comparison schools; hormonal contraception use with first intercourse was also higher in SBHC users versus SBHC non-users versus comparison arm (30% vs 22% vs 20%); 80% of women using contraception and 40% of men obtained their contraception from a SBHC.

Authors concluded that a SBHC with the full range of reproductive health care has advantages for students who use the service. SBHCs which restrict services in this area or have parents not providing permission for students at the school to access them, may not see such positive impacts. Keeton (2012) reports that over 60% of US SBHCs are prohibited from dispensing contraception onsite due to sponsor, school or state concerns about acceptability by the surrounding community; by contrast STI diagnosis and treatment is offered by 70% of US SBHCs [3].

#### 4.4 Impact of School Based Health Care on medical issues

A variety of studies show improvements in health indicators for students who attend SBHCs such as receiving more comprehensive health assessments, including vision and hearing assessments and being more likely to receive and complete a course of immunization than those accessing community clinics; and to have improved health knowledge [3, 84]. For young people with asthma, access to a SBHC significantly improves attendance and also is associated with a decreased need for and cost of emergency department visits and hospitalizations [85]. These improvements might reflect the timeliness of care in an onsite SBHC, such as when an adolescent experiences onset of asthma symptoms, as well as an ability to return to class after treatment if symptoms completely settle.

Some studies summarized by Keeton (2012) [3] have shown positive impact of SBHCs in promoting healthy nutrition and being more physically active; in detecting hypertension, diabetes and dyslipidaemia and referring to community dieticians and in coordinating with school cafeteria staff to offer healthy food. However, these have not resulted in firm evidence for obesity treatment or prevention.

Keeton also describes the potential of SBHCs to impact on the care and education of students with special needs as 30% of US SBHCs partner with schools to support these children by monitoring their medications and assisting with implementation of education plans, however, there is limited evidence for the effectiveness of SBHCs in these approaches.

While dental health is important in comprehensive primary care, only 25% of SBHCs in the US provide dental health care and these are very limited services.

#### 4.5 Student and parent satisfaction with School Based Health Care

The SBHC census result that a mean of 64% of students at schools where SBHCs exist enrol in this service and there is an 84% utilization rate, indicates, and other work reveals, that student satisfaction with care at SBHCs is high [3, 4]. Students themselves are supportive of SBHCs, particularly if they have visited the service, while strong predictors of enrolment with the SBHC are peer and social support and having health problems [86].

There is limited literature about parental support but one study has shown support from parents for provision of comprehensive services at their children's schools for mental health, drug and alcohol use and reproductive health care for sexually active teens [87].

There is strong evidence that SBHCs offer benefits such as increased access to primary health care, particularly for those with greater health needs and those without insurance coverage in the most disadvantaged areas and ethnically diverse populations. SBHCs are, therefore, achieving their primary aim [4, 84].

## **5. Drivers of policy around providing school-based access to comprehensive primary health care**

It appears that policy guiding the development and work of SBHCs has undergone cycles of change, particularly in the US where it has been in train for much longer [29]. In the early 1900s school health services addressed health needs at the school, for example to curtail infectious diseases outbreaks. In the 1920s and 1930s health professionals believed that health care should occur in community/private clinics and that school programs should only focus on preventive health such as screening and immunisations. The pendulum began to swing back toward health care delivery onsite when it became evident that children were not receiving the help that was recommended during screening and many resources were expended addressing the same issues year after year. In more recent times, US policy around SBHC varies from state to state. Many states invest in SBHCs beyond their basic components for several reasons: evidence that health facilitates learning, the gaps in health care for low income young people, evidence that early intervention provides cost-savings, and experience that when parents are unavailable, caring for sick children falls onto staff [29].

Expansion of the SBHC program was accelerated in the US by The Robert Wood Johnson Foundation, which in 1987 awarded 19 six-year grants of up to \$600,000 each to public and private institutions to set up SBHCs that responded to mental health as well as physical health needs [29]. This was in response to data on the appalling state of young people's health, with six million teens in the US experiencing at least one major health problem, five million uninsured and increasing rates of substance use, accidents, STIs and unplanned pregnancies.

Of the 223 SBHC located in New York, 25% serve communities where more than 1/3 of the population lives below the 100% Federal Poverty Level; 79% of students are non-white with more than 30% identifying themselves as Black or African American [1]. Studies have shown that families with a limited English proficiency are recipients of sub-standard health care and have immunization statuses that are not up to date. Adolescents from these families are less likely to access appropriate community-based care [2].

Research also shows that adolescents do not seek regular medical care and are likely to present to clinicians only when a problem has arisen [2]. Adolescents are 10 times more likely to feel comfortable presenting at a SBHC than at any other health care centre for some services, particularly for mental health care, which represents a large percentage of SBHC consultations: 13% of 12 to 17 year olds have emotional or behavioural concerns and over 20% of adolescents have one severe health problem including mental illnesses. Much mental health counselling relates to drug and alcohol abuse and sexually transmitted infections. Overall, adolescents present to SBHC 70% of the time to receive physical medical care, 20% for mental health care and 10% for reproductive care [2]. A more recent survey indicates that 45.6% of adolescents attending SBHC have at least one mental health concern [88].

The barriers to accessing routine health care for adolescents, particularly for sensitive issues, have been well documented [89] and are a key driver in the rationale for SBHC worldwide. These barriers include: gaining access, waiting times for appointments, availability of a 'suitable' doctor (such as same-gender), cost and hours of operation; fears about confidentiality breaches, embarrassment and self-consciousness, and inadequate knowledge of the range of services commonly available through general practice. This has been supported by a Malaysian study [90]. Of 175 students aged 15-17 years, none admitted using primary health care services in their area for mental health problems, with the major barrier being lack of awareness of the availability of these services for them.

In Australia there is evidence that young people under-utilise primary health care. The BEACH program (Bettering the Evaluation and Care for Health) collects data from 1000 Australian GPs randomly selected each year from the Health Insurance Commission's list of GPs. Each GP collects information on 100 consecutive patient encounters using a standard template at the end of the consultation. BEACH data from 1998-2004 showed that Australian adolescents have the lowest attendance rates at general practice of all population groups. For 10-14 year olds and 15-19 year olds presenting problems were most likely to be respiratory, skin, and musculoskeletal issues, or fever, injury and weakness [91]. Mental health issues, preventive health care and health education were very infrequently managed.

Schools are where students spend most of their time away from home [92]. Therefore they are in the unique position of being able to address the health needs of their populations. SBHC can provide health care in a confidential, convenient, age-appropriate and culturally competent manner and thereby address common barriers to health care access for adolescents [93]. Most SBHC are located in areas that enable them to serve multi-ethnic students, many

of whom are from immigrant and undocumented resident alien families with limited English proficiency [93].

## **6. Quality standards and elements affecting successful implementation of programs**

In contrast to the Swedish and European models, there is no universal policy to guide the implementation of health practices in US schools; States and Districts tailor the recommendations of professional bodies to suit local need. The challenges faced in monitoring school health policies and practices is being addressed by the School Health Policies and Practices Study (SHPPS), the largest and most comprehensive survey of school health policies and practices. It has been conducted periodically since 1994 by the Centers for Disease Control and Prevention (CDC). Over the years, the CDC has developed a range of strategies to address challenges in monitoring school health [94] including:

- The use of two complementary surveillance systems, SHPPS and Profiles, to assist decision making by providing data at national, state, district and territorial levels;
- The use of additional methods to provide a more complete picture than that which can be provided by surveys of state, district and school teachers and principals. Methods include using SOFIT (System for Observing Fitness Instruction) to conduct standardised classroom observations, having data collectors to observe and take digital photographs of the contents of sampled vending machines, and the collection of data on process measures, for example the numbers attending a professional development workshop;

The SHPPS 2012 results indicated that most districts in the US had policies requiring schools to administer medications, CPR, first aid, report notifiable diseases, screening for vision and hearing problems based on core school health services recommended by the American Academy of Pediatrics (AAP) [95].

There was also an increase in policies about core school health services, including policies requiring schools to provide identification or management of acute and chronic illnesses, policies stating that school nurses will participate in the development of Individualised Health Plans (IHPs), and policies permitting students to carry and self-administer medications for emergency use. Such policies reflected the positions of the American Academy of Pediatrics

(AAP) and the National Association of School Nurses (NASN) on the role of the school nurse. The areas that were least likely to have policies are child-care and pre-natal referrals.

The AAP highlights three critical requirements to provide optimal care to students. They are 1) appropriate school nurse staffing levels, 2) adequate pre-service preparation of school nurses, and 3) ongoing in-service education (i.e. professional development) for school nurses. However, in 2012, few districts in the US had adopted policies related to nurse-to-student ratios (1:750). The SHPPS 2012 report recommends the implementation of staffing policies to motivate schools to improve their nurse-to-student ratios.

District policies similarly do not seem to provide much support for the pre-service professional preparation of school nurses. Both AAP and NASN recommend ongoing education for school nurses. It is, nevertheless, increasingly challenging for school nurses in the US to obtain continuing education from their school district. Policies that require school nurses to earn continuing education credits and provide funds or offer professional development to school nurses would better support these recommendations.

The SHPPS 2012 report noted an increase in immunization policies since 2000 as a result of districts updating their requirements for school entry to be consistent with recommendations of the Advisory Committee on Immunization Practices (ACIP) [95].

Finally, the SHPPS 2012 report recommended establishing infrastructure to improve health care to students who do not otherwise have access to such services. Better integration of school and community health services (e.g., arrangements with providers not located on school property to provide health services to students) and reducing the barriers schools face in providing health services can help reduce health disparities among students.

Berson et al. (2004) also found that any fragmentation of existing healthcare services and conflicting program rules for SBHCs and community centres inhibits the capacity of SBHC [96]. Napp (2006) recommended that establishing new professional relationships and strengthening existing relationships both within and across agencies and programs as setting clear, achievable goals would assist in addressing HIV, STD, unintended and teen pregnancy prevention programs for youth [97].

A snapshot of school health practices was also provided by the US Health Resources and Services Administration (HRSA) Bureau of Primary Care 'Healthy Schools, Healthy Communities' User Survey [88]. The survey was administered from May to September 2002 to adolescents aged 12 to 17 years (n=414) who had at least one medical visit at a SBHC. At

the time of data collection, about 20% of all SBHCs were funded, serving over 160,000 youth in 255 schools across the United States.

Findings from the study show young people with risky behaviours are no more likely to receive primary or preventive services. However, it also showed that those from disadvantaged racial or ethnic groups were more likely to attend preventive care, but less likely to feel that SBHC staff communicated effectively with them (suggesting a need for culturally competent care). The findings suggested improvement was needed in targeted outreach and education for those who have the greatest need. For adolescents who are ‘high-risk’ or ‘frequent flyers’ for a number of reasons, SBHC providers should provide opportunistic anticipatory guidance, screenings or targeted counselling [88].

SBHC providers and administrators should conduct regular evaluations to ensure that the breadth of services meet the specific needs of the particular community of adolescents that attends each school. Policymakers should strive to support SBHCs through sustained funding and policies such that a comprehensive array of health services and outreach is available to all young people.

The study of behavioural health care offered in Florida schools [96] identified many barriers to the delivery of appropriate healthcare to students including: 1. the parents of students (service-related stigma, language barriers, guardianship issues); 2. clinical staffing issues (staff turnover, lack of appropriate and qualified providers); 3. lack of follow-up services; 4. length of time required to complete paperwork; 5. lack of transport in rural areas; 6. breakdowns in communication that impact service coordination between schools and community providers; 7. lack of resources (volume of needs, long waiting lists); and 8. high turnover and difficulty finding qualified health sector staff.

Lessons learned from the implementation of mental health providers in low-income Boston area schools [98] that might address some of those issues above are to: 1. ensure a strong commitment from all levels of the school district and participating mental-health agencies; 2. reduce the stigma of seeking mental-health services; 3. build a secure support framework inside the school; 4. facilitate extensive collaboration between the school and the provider agency; 5. implement the program progressively; 6. time the inception of services carefully; 7. make provision for parents to meet with clinicians in familiar surroundings; and 8. contemplate developing a shared-risk model between the project sponsor and the agencies



that provide clinicians. The project proved cost-effective, economically feasible and sustainable, as well as valuable to its students and families.

The Robert Wood Johnson Foundation developed strict criteria for establishing SBHCs in their funded scheme based on prior experience [29] (pp. 345-346). They needed to be:

- operated by a local hospital/clinic/qualified health provider directly or under contract
- staffed by one or more part-time doctors, a nurse practitioner, a full/part-time social worker and an office assistant
- planned in consultation with broad-based community groups e.g., parents, school boards, faculty, churches, youth agencies, local health and welfare departments and local business and firm. Members of community advisory groups also were required to generate funds to help support the establishment and ongoing financing of the centre once the grant had expired.
- required to cooperate with existing school nurses, teachers, coaches, counsellors, and principals
- set up to function in coordination with the community advisory committee
- financed by a coalition of public and private institutions which underwrote the establishment and worked with the advisory committee for ongoing funds. Financial plans were required.

The evaluation of the Robert Wood Johnson program did show increased access to adolescents in need. An increase in presentation for mental health concerns was noted, once youth learned the service was confidential. In addition to policy, there are a range of other elements which can affect successful implementation of programs. Table 3 summarises some of the issues various models have encountered in implementing SBHCs and mitigations against these.

**Table 3. Barriers and Enablers in implementation of successful School Based Health Care**

Theme	Issue	Reference
<b>Program Implementation: Support</b>	Guidelines and Frameworks can assist in establishing and implementing programs [2, 3, 73, 53, 59, 99], for example the HEEADSSS assessment [53]. However, they are not always used as intended [34]. An orientation process is needed for the nurse, as well as to ensure the school has clear expectations of what the role of the nurse is [26]. Clarification of links and potential overlap between Departments of Health and Education is also necessary [3, 26, 53].	Safe Schools Hub Australia; Victor Harbor High School SA Australia; Wirreanda Case Study; European Child Health Services and Systems: Lessons without borders; Background to the Youth Mental Health Project; Expanded school-based health services making a difference, Gisborne NZ; Review of the Secondary School Nursing Program 2009; An evaluation of the Victorian Secondary School Nursing Program 2004
<b>Program Implementation: Quality Control</b>	The development of Quality Indicators informed by young people's views and incorporating practical ideas and strategies can be used for the purposes of continuous quality improvement and to make the service more client-responsive [60, 100].	Youth Health Care in Secondary Schools; Youth-friendly health policies and services in the European region
<b>Program Implementation: Addressing Community Expectations</b>	Some school programs offer sexual and reproductive health services [101], while others don't [51]. Community consultation may be required to explain the need for services and seek community input into services offered [72, 102-104].  Programs that address the needs of local communities are valued [34, 75, 62], and designing Frameworks which allow flexibility in tailoring programs to specific needs [65] avoid disparities between services offered and services needed [3].	NorthPoint Teen Clinic, North Minneapolis, Minnesota, USA ; Health Services in New Zealand Secondary Schools and the Associated Health Outcomes for Students, Improving Access to Primary Care for Adolescents: School. Health Centers as Service Delivery Strategy; School based health centres - bringing health care to kids; Wirreanda Case Study; Improving Access to Health Care: School-Based Health Centers; SSNP 2009 Review; Healthy School Age Kids Program; Health and Well-being in Schools Project Final Report; European framework for quality standards in school health services and competences for school health professionals; European Child Health Services and Systems: Lessons without borders

<b>Program Implementation: Accessibility</b>	<p>Locating health care services at schools has the advantage of easy accessibility during school hours [9, 10, 54, 103, 105], especially for those with chronic problems [3]. An added advantage for primary care providers is easy access to students who need follow up [11, 103]. However, these services are not accessible out of school hours [106]. In some US programs this problem is alleviated by the service being provided as an outstation of an existing service [11].</p> <p>Placing a high priority on health education and policies that adequately provide for gender-specific needs and disadvantaged students assists in addressing the health care needs of all young people [60].</p>	<p>Improving Guidance and Counselling for Students in Secondary Schools; Improving Access to Primary Care for Adolescents: School. Health Centers as Service, Delivery Strategy; Improving Student's Access to Health Care: School-Based Health Clinics; School-Based Health Service providing better access to care; European Child Health Services and Systems: Lessons without borders; Improving Access to Health Care: School-Based Health Centers; Improving Access to Primary Care for Adolescents: School Health Centers as Service Delivery; Roosevelt High, St Louis, Missouri; Youth-friendly health policies and services in the European region</p>
<b>Partnerships/ Relationships</b>	<p>Good relationships within the school with the welfare team, teachers and especially school leadership is essential [3, 34, 53, 62]. It is also important for the nurse to have sufficient external support [26] and be familiar with local service networks [34, 103]. Establishing relationships with referral agencies and other care providers can help provide timely access to services [2, 10], as this is often a significant issue [34, 10]. Establishing how nurses and schools work together while maintaining privacy and confidentiality remains an issue in some circumstances [26].</p>	<p>European Child Health Services and Systems: Lessons without borders; Health and Well-being in Schools Project Final Report; Review of the Secondary School Nursing Program 2009; Background to the Youth Mental Health Project; An evaluation of the Victorian Secondary School Nursing Program 2004; Improving Access to Primary Care for Adolescents: School. Health Centers as Service Delivery Strategy; GPs in schools - implementation options [Doveton College].</p>

<b>Site</b>	A discreet entrance to school health service encourages use [2], with students likely to avoid the service if privacy cannot be assured [2, 6], which is especially important in rural and regional communities [73].	GPs in schools - implementation options [Wellington Secondary College]; Health Services in New Zealand Secondary Schools and the Associated Health Outcomes for Students; GPs in schools - implementation options [Upper Yarra Secondary College]; Doctor on Campus (DOC) A Mental Health Early Intervention Model for Secondary School
<b>Funding</b>	Access to reliable sources of funding is a problem for many school based primary care programs [72, 60, 103], and stringent procedures are needed for monitoring valuable resources [53]. Careful consideration of how funding is best distributed within school health programs may permit some efficiencies [10, 62].	Wirreanda Case Study; Improving Access to Primary Care for Adolescents: School. Health Centers as Service Delivery Strategy; Youth-friendly health policies and services in the European region; Background to the Youth Mental Health Project; Health and Well-being in Schools Project Final Report; Improving Guidance and Counselling for Students in Secondary Schools
<b>Staffing</b>	Many school based health care systems report difficulty in finding enough primary care staff [2, 3, 60, 103]. School primary care staff also may not be adequately training for the complex issues they often have to deal with [3, 10, 34, 73], and find administrative requirements limit their ability to provide quality service [6, 26, 34]. Having a diverse health care team available has benefits in terms of service provision [10, 62].	GPs in schools - implementation options [Doveton College]; Youth-friendly health policies and services in the European region; Improving Access to Primary Care for Adolescents: School. Health Centers as Service Delivery Strategy; European Child Health Services and Systems: Lessons without borders; Review of the Secondary School Nursing Program 2009; Doctor on Campus (DOC) A Mental Health Early Intervention Model for Secondary School; Improving Guidance and Counselling for Students in Secondary Schools; An evaluation of the Victorian Secondary School Nursing Program 2004; Health Services in New Zealand Secondary Schools and the Associated Health Outcomes for Students; Health and Well-being in Schools Project Final Report

<b>Rural/ remote issues</b>	Geographical isolation in rural and remote areas presents issues around collegial support, access to referral sources and professional development for school nurses that are less apparent in metropolitan areas [6, 26].	An evaluation of the Victorian Secondary School Nursing Program 2004; Health Services in New Zealand Secondary Schools and the Associated Health Outcomes for Students
<b>Evaluation</b>	While there appears to be some benefit in school based health care [62], the limited data available evaluating services [103] makes forming any strong conclusions difficult. Any beneficial outcomes may only be apparent after a longer time frame [62]. There is more data available on what students value about school based health services, which include having an independent, impartial adult to speak with confidentially [10, 34, 64]. Some students still felt that there was stigma attached to using guidance and counselling services [10], and providing staff who are experienced in dealing with culturally and linguistically diverse communities may also be an issue [26, 53, 103].	Improving Access to Primary Care for Adolescents: School. Health Centers as Service Delivery Strategy; Health and Well-being in Schools Project Final Report; Review of the Secondary School Nursing Program 2009; Improving Guidance and Counselling for Students in Secondary Schools; Student health and support in upper secondary school; An evaluation of the Victorian Secondary School Nursing Program 2004; Background to the Youth Mental Health Project

## 7. Sustainability issues for School Based Health Care

SBHCs in the US have faced decades of pressure to prove their health and educational outcomes largely due to the challenges in sustainability and scalability of the model [3, 4, 48]. Advocacy for SBHCs has usually led to state government initiatives, often within health departments, to establish a SBHC program, allocate funding and authorize legislation for SBHCs, set program standards and monitor performance and impact through data collection [3]. Multiple funding streams from both government and private sector have sustained the model but many clinics spend considerable resources searching for additional funding streams, which may explain why the model is not more widely replicated [3, 4]. In the US health system, without a universal Medicaid system, it has even been suggested that SBHCs extend beyond serving the under-served to gain access to public and private sources of funding [4]. However, federally, there has been recognition of SBHCs as a vital part of health care reform with funds being made available for capital works [3]. Ongoing federal funding is seen as important for sustainability [4].

The roll out of managed care<sup>1</sup> in the mid 1990s seemed to coincide with increased numbers of SBHCs and an increased burden of proof of their worth if they were to be accepted as legitimate primary care providers [48]. While managed care and SBHCs share a common goal of increasing access to comprehensive care, managed care has a key focus on containing costs while SBHCs encourage appropriate service use by those who do not normally use health care, and have a lesser focus on cost [4, 48]. Managed care organizations became concerned about the impact of SBHCs, whether SBHCs were duplicating services offered by other primary care sites and ‘stealing patients’ from other primary care providers [48]. It was also evident that adolescents had poor access to care under managed care organizations, prompting at least one state to contract a requirement for managed care organizations to link with SBHCs [48]. However, even when SBHCs are within managed care networks, billing for services rendered is complicated for SBHCs because each managed care plan has their own set of conditions and approval mechanisms [48]. Few SBHCs have enough administrative resources to chase re-imbursement [3, 48]. Furthermore, many services provided by SBHCs such as outreach, education and consultation with teachers are not

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<sup>1</sup> Under managed care, the patient seeks all services (hospitalisation, specialty services, emergency care, etc) through the primary care provider who functions as a gatekeeper. Patients do not have unimpeded access to services, but they benefit from a provider coordinating their care and a greater emphasis on preventive services [48].

directly reimbursed by managed care plans [3]. Further detail about managed care and other issues it raises for SBHCs can be read in the paper by Hacker and colleagues (1996) [48].

The US Health Resources and Services Administration (HRSA) Bureau of Primary Care ‘Healthy Schools, Healthy Communities’ User Survey [88] also reported that Medicaid and insurance plans do not consistently reimburse preventive care or counselling for adolescents—a particular problem for the primary care providers who typically staff SBHCs and who often require a more time-intensive and comprehensive approach when delivering such services. This could similarly be an issue for the Australian context as Medicare also has no item number for preventive health care assessments in adolescents, however counselling could be reimbursed with an appropriate mental health plan if a psychologist is required or with a longer consultation item number if counselling is provided by the GP.

Keeton and colleagues (2012) reported on a financial study of US SBHC operating costs, which, while quoted in US dollars and now most likely are out of date, might be indicative for the Australian experience. Median start-up costs ranged from USD\$50,000 to USD\$128,000 depending on the state of the space for the clinic; annual operating costs ranged from USD\$91,000 to USD\$209,000 based on scope of service and hours of operation with those operating all year round and offering expanded services costing USD\$400,000+ annually; and average annual revenue was USD\$287,000 with a wide variation based on size and scope [3]. Costing information for Australian models in operation is not available, however anecdotal information suggests they are cost-efficient given the low number of hours of consultation provided by a GP which is billed to Medicare, and given the provision of secondary school nurses through other state funding mechanisms. However, costs must be considered for implementing an actual clinical service on-site at a school, and expanding the scope of practice for secondary school nurses from health promotion only to include clinical care. Nurse practitioners, who have the scope of clinical practice needed, will attract infrastructure costs, professional development costs, and other processes to do with successful establishment described above.

A report based in California from the University of California San Francisco (Rosenberg and Torrey, 2007) highlighted the difficulties in staffing SBHC [93]. It showed that SBHCs encounter difficulties in securing licensed and qualified healthcare professionals such as nurses, psychologists, counsellors and social workers. Additionally, some SBHC could not afford support personnel or could not retain staff due to inadequate salaries and benefits or lack of affordable housing in the area.

Staffing difficulties were also the focus of the report by Dower (2010) examining workforce issues in California SBHC [108]. The report recommended mandating a dedicated funding stream and staffing ratios for student support services. Suggestions for improving retention of credentialed personnel stressed adequate funding, improved salaries and benefits, and support for optimum use of personnel by adequate staffing, appropriate role definition, and supportive professional development.

The report of the Children's Defense Fund [1] in New York also focused on the financial difficulties faced by their 223 SBHC. However, the Fund was also vocal about the cost-effectiveness of SBHC. It declared that SBHCs deliver an enormous benefit to their school communities and greater society in relation to their low running costs. In this way, SBHCs prove their benefit outweighs their cost. Costs are kept low as few referrals are required when extensive healthcare services are available to students on-site.

We located two papers on cost-effectiveness of SBHCs from the reference list in the Gonzalez-Camasta report (2014). One examined whether SBHCs eliminated access barriers and addressed health care disparities and whether they were cost-beneficial [85]. SBHCs seemed to reduce access barriers for African American and disabled students in the schools under study in one state, and resulted in a net social benefit of \$US1.35 million and a Medicaid saving of \$US35.20 per child per year. Students with SBHC use also reported greater quality of life to those not using SBHCs. The other study found that SBHC use also resulted in high health related quality of life scores, particularly psychosocial but also physical, and was associated with reductions in costs to Medicaid [109].



## Discussion

SBHC have a long history in the United States and more recently models have been developed in other countries. There is growing evidence that their services are cost-effective, address equality issues in healthcare, promote prevention and education, and have some positive impacts on child and adolescent health and educational outcomes including school attendance, grades and graduation rates, reduction in ED admissions, improved mental health and greater use of contraceptives and protection for STIs. SBHCs operate using varying models that provide a range of health services offered by qualified staff. They have persisted in the US for over 40 years even though their funding models are complicated mixtures of private and government sources and even though long term concerns about sustainability are always present [3]. In addition, their functions and growth tend to change in response to political will and community support that influence their missions, alongside the different requirements of the agencies that provide funding [3]. Despite many sustainability issues for SBHCs, especially financial sustainability but also workforce recruitment, they have continued to evolve and grow in number exponentially across the United States. Very few close their doors over time [3]. There is, however, no standard definition of SBHCs, nor is there a federal lead agency responsible for developing a framework to standardise SBHC and offer guidance on how they should operate. This has presented ongoing challenges.

Unanswered questions in the debates about ongoing establishment of school based health services which are also important for Australia to consider [4, 29] include:

- What health activities should be undertaken in a school?
- Who should provide these services?
- Who/what organisation should control the program and be accountable for performance?
- How should care be organised so it does not duplicate existing services?
- How should we pay for these services?
- How do we ensure that services do not separate from community-based care where there are systems for ongoing care, continuing medical education, quality and risk management?
- How do we plan for sustainability of the service models? Can the health system support multiple points of entry for adolescents into the long term? Who will fund this?

- What is the minimally efficient and effective unit for Australian schools, given the most effective in US are of quite a large scale with comprehensive services and strong links with community?

## **What works well**

Most of the models of primary care provision are either school-based (located on school grounds) or school-linked meaning they provide an entry point in school but are linked back to services nearby. Linking services back can work well providing there are real attempts to integrate services with schools, not just coordinate services. Challenges with linkage include nurses not being able to source providers willing to see students [29]. Hence when the community service fully weaves the school based entry point into their service system this problem should be addressed. Having a one-stop shop for wrap around services for students in need is also the desired model but care needs to be taken to ensure that service provision is less focused on the convenience of the professions alone and more on student-centred care [110].

## **Key considerations in establishing School Based Health Care in Australia**

In addition to our own views arising from this rapid review, the US reviews have highlighted some key issues that require consideration in the future of SBHCs. These have been summarised by Keeton's paper and a number of other sources [3, 4, 29]. We will use the headings for these as a basis for considering these issues in the context of establishing SBHC models in Australia.

## **A framework to guide development of effective School Based Health Care**

Both NZ and US have noted an absence of a framework to guide effective SBHC development as leading to services of variable quality and effectiveness. Services would benefit from clear guidance of factors most likely to influence successful implementation and evaluation and outcomes. This guidance, however, has to be balanced with flexibility to allow for adaptation of programs to the local community and school's needs. For example, a recent criticism of headspace centres (Australia's Government funded one-stop-shop health service for young people seeking help with mental health, physical health, alcohol and other drugs or work and study support) was the failure to integrate well with local community needs and drivers [110].

## Staff mix, level and professional development of staff to work in clinics

A model requiring GPs to be the sole service providers in Australia will be costly and most likely unachievable given the hours required for a SBHC to produce benefits to students and the current demand for more doctors in underserved communities. Other countries have focused on nurses providing most of the care in consultation with doctors on a part-time basis. US models use nurse practitioners and physician assistants to provide the bulk of care as their scope of practice is broader than that of school health nurses. We have few nurse practitioners in Australia, although the development of nurse practitioner models is currently being funded in Victoria.

Most of the studies on effectiveness of SBHCs show that the higher the number of hours and the more comprehensive the service the more likely better health outcomes will result. This was particularly true for reproductive health outcomes [82] and mental health outcomes [51]. Australian policy makers need to consider whether programs that provide only a weekly two hour service are going to have the desired health benefits. US work started in a more modest way but as students were encouraged to attend, services expanded to meet the needs. Most of the established US models now operate fulltime and have ratios of one health care provider to 750 students as the ideal. NZ models revealed that students had better mental health outcomes when the provider:student ratio was more than 5 hours/week per 100 students [51].

To provide appropriate and effective health care that is acceptable to students, it is also essential that health staff be well educated in the principles of adolescent health care, including evidence-based treatments and communication skills required to screen young people for health issues while engendering their trust [89]. Staff also requires access to regular continuing medical education to ensure quality of service and reduce professional isolation.

Provision of mental health care in any SBHC seems essential from the experience of SBHCs in many countries, evidence of increased access to mental health care shown in many studies, and the high prevalence of psychosocial issues including depression, suicide risk and abuse. How might an Australian model seek to do this? Appropriately trained mental health professionals are required. US models used trained social workers but the level of morbidity encountered may demand links to psychologists in the community or psychiatrists [29]. GPs can at least prepare mental health plans for students to access

private psychologists but having services onsite offers a clear advantage as evidenced by the New Zealand work.

### **The medical home, linking with community-based services**

SBHCs which are providing comprehensive primary care services, including referral links with appropriate community based services, in a patient-centred and culturally responsive way, are already functioning as a ‘medical home’ in the US. Resoundingly, the advice for SBHCs to sustain and expand their functions is to partner with community-based providers to create an integrated, comprehensive approach. In schools without a dedicated SBHC, other health provision also needs to do this. This is important advice in Australia which already has a robust primary health care system. In cases where students already have a medical home in the community there could be a risk of fragmentation of care unless linkage occurs. Given many disadvantaged families lack a family practice, provision of a medical home for students will be a benefit – however given the short operating hours of schools, links through to a suitable clinical hub with a priori arrangements and permissions to access files will be vital to provide out-of-school hours access to care, especially during vacations. Currently, health workers in school do not always have a clear pathway to community health services for advice, support and also for continuing education.

### **Connection between community health organisations and School Based Health Care**

While the US models need their managed care health organizations to recognize SBHCs in their community-based suite of services, in Australia we would also have to ensure that any school based service model is fully integrated purposefully with both primary health network organizations and general practices in the region to achieve reductions in preventable and inappropriate hospital and emergency admissions. Quality assurance mechanisms that exist for community organisations such as accreditation standards for general practice must also be considered for school based health clinics. There will be a need to consider whether the SBHC fits into current standards of general practice accreditation in order to also qualify for practice incentive and other payments such as generation of chronic illness care plans through the Medicare system.

### **School Based Health Care and provision of wraparound services**

Chronic conditions in children and adolescents are increasing and impact on education. If a SBHC model can integrate care from medical, mental health and education professionals

from the basis of a school environment, they would achieve a more convenient, timely and continuous youth-centred approach to preventive education, screening, diagnosis and management for these conditions. Case management may also be possible, providing links with community services are strong and well established particularly for out-of-hours service. Policies are required around medication management, consent of minors, confidentiality, health data, and quality of care [29], (pp.23-26).

### Enhanced program development

More work needs to be done on the potential and value of preventive interventions for students and families as well as the potential for outreach, prevention, education, screening, detection, continuity of care and chronic disease management.

### Impact on adult health

Ideally investment in prevention and early intervention in the risky behaviours (e.g., tobacco, alcohol use, unprotected sexual activity) or at-risk health states (obesity, diabetes, depression) which can impact on adult health would have a focus in any school-based service.

### Evaluation and research gaps

There will inevitably be a need in any new SBHC initiative to measure the effectiveness and efficiency of SBHC in order to justify ongoing investment. There has been a call in the US for organisations and governments commissioning, funding and establishing the services to plan simultaneously for the evaluation of services. In this way, quality baseline data (pre-implementation) and comparison data could be obtained, and improvements tracked over time. More robust research is required on the health outcomes of SBHCs in general because only a small percentage of studies to date are robust in their methodology.

Some issues to consider in establishing SBHCs from the outset so that they can be effectively evaluated and improved include:

- Consultation with academic experts in research and evaluation from an early stage, before full scale implementation, to ensure innovative yet robust evaluation designs, such as step-wedge designs<sup>2</sup>. Robust evaluation/research designs create the potential

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<sup>2</sup> Step-wedge design is suited to a population health intervention being rolled out over time. In this design an intervention is rolled out sequentially to the subjects in a random order and measurement is undertaken at each time a new group enters the intervention (new step) with the remaining ones who are waiting acting as

for additional funding streams such as the Australian National Health and Medical Research Council (NHMRC) Partnership Grant scheme as well as providing more robust evidence of effects.

- Obtaining permission from the outset for linking datasets on educational outcomes (e.g., data gathered through Australia's national literacy and numeracy assessment program, NAPLAN) with health outcomes and health service use (e.g., Medicare). Data linkage can occur with de-identified data to preserve confidentiality. SBHCs are more likely to be retained in schools if the link between health and educational outcomes (core school business) can be shown.
- Installing secure software solutions (such as GRHANITE [112]) at all participating clinics to enable collection and examination of de-identified data on students' health records, including presenting issues, tests and prescriptions ordered, referrals, management plans.
- Development of standard measures which capture health and education outcomes and other agreed quality indicators such as numbers of sexually active teens using contraception and STI protection or vaccination rates.
- Measuring whether new services attract the hard-to-reach clients who do not otherwise access care and whether these SBHCs detect hidden morbidity. Service duplication should be avoided. The recent research presented in this review [78, 79] suggests that SBHCs are likely to be synergistic and complementary to mainstream services and where there is access to SBHCs there is less use of emergency departments and lower cost of overall care. These studies need to be replicated to ensure any new Australian model is functioning according to best practice.

Finally, it is worth noting that The Young and Well Cooperative Research Centre (YAWCRC: 2011-2016) is currently evaluating the potential role for technology to provide wrap-around access to services for mental health care. Models where students 18-25 years can visit an online program with concerns and be directed to options for health care either locally or in communities have been trialled in a University setting (Univirtual clinic) [113]

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controls. By the end all units will have received the intervention and have baseline data to compare post-intervention data to and have a control group [111].

and there is also a trial underway of an online help navigation program for 18-25 year olds that can be accessed through a variety of online services or social media sites (Link project). [114]. Furthermore there is research on virtual mental health clinics also being undertaken (e-mental health clinic) [115]. These services are experimental at present and results on effectiveness not expected until around June 2016. However, if effective these models are being explored for their suitability to function in secondary school settings and for younger adolescents. In any case, technology may play an increasing role in school health services either through face-to-face app-interventions or in helping to integrate services which cannot be made available on site.

A list of key recommendations for successful establishment of SBHC Programs has been developed following consideration of the issues above and has been included in the Executive Summary.

## Conclusion

This rapid review of both academic and grey literature has shown that in recognition of the health needs of school-aged populations, several countries have developed school based health centre models of primary care delivery. Many of these utilize an on-site nurse or co-ordinator, with referrals off-site for comprehensive care options. Some offer complete primary care clinics on-site, with a range of visiting health professionals.

Several pilot projects in Australia have tested the primary care delivery model with a GP or paediatrician working in partnership with a particular school on a sessional basis each week or fortnight. Evaluation reports on the impact of these models are lacking, but hours of service currently fall below levels found to be associated with improved health and educational outcomes. While many evaluations have been methodologically challenged, evidence has emerged for benefits of SBHC in access to health services, mental health issues, sexual health, school attendance and performance, and cost-effectiveness. Yet in the US SBHCs still only deliver care to 2% of the student population, indicating scalability is an issue. The challenge for Australia in establishing SBHCs will be designing an appropriate overarching policy framework to guide design and implementation which has eluded other countries and that will result in flexible, locally relevant models which will be financially sustainable, efficient, effective and scalable. In addition, establishing an evaluation framework for ongoing measurement and monitoring of outcomes will be essential. Good SBHC services provide wrap around care for students, are supported by well- trained staff, and by schools, families and communities. They are also integrated into local community services to provide comprehensive care and to cover out-of-hours and school holidays.

A list of 21 recommendations that have emerged from this rapid review has been provided to guide the development of SBHCs in Australia and is located in the executive summary.



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115. YoungAndWell Cooperative Research Centre. *e-Mental Health Clinic*, 2013. Retrieved July 1, 2015, from <http://www.youngandwellcrc.org.au/research/user-driven-and/emental-health-clinic/>.

## Appendices

### Appendix 1. Academic literature search results

Article	Country of origin
<b>CARE MODEL: PRIMARY CARE LOCATED OFF CAMPUS</b>	
Aida, J., M. Azimah, et al. (2010). "Barriers to the utilization of primary care services for mental health problems among adolescents in a secondary school in Malaysia." <i>Malaysian Family Physician</i> 5(1): 31-35.	Malaysia
Booth, M. L., S. Knox, et al. (2008). "Encounters between adolescents and general practice in Australia." <i>Journal of Paediatrics &amp; Child Health</i> 44(12): 699-705.	Australia
^Kirby, D. (2002). "The impact of schools and school programs upon adolescent sexual behavior." <i>Journal of Sex Research</i> 39(1): 27-33.	*US
#Owen, J., C. Carroll, et al. (2010). "School-linked sexual health services for young people (SSHYP): a survey and systematic review concerning current models, effectiveness, cost-effectiveness and research opportunities (Structured abstract)." <i>Health Technology Assessment</i> 14(30): 1-228.	*US
<b>CARE MODEL: SCHOOL HEALTH NURSE</b>	
Blaakman, S. W., A. Cohen, et al. (2014). "Asthma medication adherence among urban teens: a qualitative analysis of barriers, facilitators and experiences with school-based care." <i>Journal of Asthma</i> 51(5): 522-529.	US
Brewin, D., A. Koren, et al. (2014). "Behind Closed Doors: School Nurses and Sexual Education." <i>Journal of School Nursing</i> 30(1): 31-41.	US

Lear, J. G. (2011). "Astoria Revisited New Hope in the Struggle to Link Community- and School-Based Care?" Archives of Pediatrics & Adolescent Medicine 165(3): 279-281.	US
Banfield, M., K. McGorm, et al. (2015). "Health promotion in schools: a multi-method evaluation of an Australian School Youth Health Nurse Program. ." BMC Nursing 14: 21.	Australia
Barnes, M., A. Walsh, et al. (2004). "School based youth health nurses' role in assisting young people access health services in provincial, rural and remote areas of Queensland, Australia." Rural & Remote Health 4(4): 279.	Australia
<b>CARE MODEL: SCHOOL-BASED HEALTH CENTRES</b>	
Brindis, C. D., J. Klein, et al. (2003). "School-Based Health Centers: Accessibility and Accountability." Journal of Adolescent Health 32S: 98-107.	US
Davis, T. K., C. R. Montford, et al. (2005). "Interdisciplinary teamwork in a school-based health center." The Nursing Clinics of North America 40(4): 699-709.	US
Juszczak, L., P. Melinkovich, et al. (2003). "Use of health and mental health services by adolescents across multiple delivery sites." Journal of Adolescent Health 32(6 Supp): 108-118.	US
Kaplan, D. W., B. N. Calonge, et al. (1998). "Managed care and school-based health centers. Use of health services." Archives of Pediatrics & Adolescent Medicine 152(1): 25-33.	US
Keeton, V., S. Soleimanpour, et al. (2012). "School-Based Health Centers in an Era of Health Care Reform: Building on History." Current Problems in Pediatric and Adolescent Health Care 42(6): 132-156.	US
^Kirby, D. (2002). "The impact of schools and school programs upon adolescent sexual behavior." Journal of Sex Research 39(1): 27-33.	*US

Minguez, M., J. S. Santelli, et al. (2015). "Reproductive Health Impact of a School Health Center." <i>Journal of Adolescent Health</i> 56(3): 338-344.	US
#Owen, J., C. Carroll, et al. (2010). "School-linked sexual health services for young people (SSHYP): a survey and systematic review concerning current models, effectiveness, cost-effectiveness and research opportunities (Structured abstract)." <i>Health Technology Assessment</i> 14(30): 1-228.	*US
Hacker, K. (1996). "Integrating school-based health centers into managed care in Massachusetts." <i>Journal of School Health</i> 66(9): 317-321.	US
Pastore, D. R. and B. Techow (2004). "Adolescent school-based health care: a description of two sites in their 20th year of service." <i>Mt Sinai Journal of Medicine</i> 71(3): 191-196.	US
Walker, S. C., S. E. Kerns, et al. (2010). "Impact of School-Based Health Center use on academic outcomes." <i>Journal of Adolescent Health</i> 46(3): 251-257.	US
<b>CARE MODEL: SBHC providing SCHOOL BASED / CURRICULUM PROGRAM FOR SPECIFIC NEED</b>	
Armbruster, P. (2002). "The administration of school-based mental health services." <i>Child and Adolescent Psychiatric Clinics of North America</i> 11(1): 23-41.	US
Armbruster, P. and J. Lichtman (1999). "Are school based mental health services effective? Evidence from 36 inner city schools." <i>Community Mental Health Journal</i> 35(6): 493-504.	US
Dobbins, M., H. Husson, et al. (2013). "School-based physical activity programs for promoting physical activity and fitness in children and adolescents aged 6 to 18." <i>Cochrane Database of Systematic Reviews</i> 28(2): Feb 28.	*Canada
Faggiano, F., S. Minozzi, et al. (2014). "Universal school-based prevention for illicit drug use." <i>Cochrane Database Syst Rev</i> . ;12:CD003020. doi: .CD003020.pub3. Epub 2014 Dec 1. 12.	*Italy

<b>CARE MODEL: CURRICULUM-BASED INTERVENTION</b>	
Jackson, C., R. Geddes, et al. (2012). "Interventions to prevent substance use and risky sexual behaviour in young people: a systematic review." <i>Addiction</i> 107(4): 733-747.	*Scotland
Johnson, B. T., L. A. Scott-Sheldon, et al. (2011). "Interventions to reduce sexual risk for human immunodeficiency virus in adolescents: a meta-analysis of trials, 1985-2008." <i>Archives of Pediatrics and Adolescent Medicine</i> 165(1): 77-84.	*US
Martin, A., D. H. Saunders, et al. (2014). "Lifestyle intervention for improving school achievement in overweight or obese children and adolescents." <i>Cochrane Database of Systematic Reviews</i> March 14(3).	*Scotland
Merry, S. N., H. S.E., et al. (2011). "Psychological and/or educational interventions for the prevention of depression in children and adolescents." <i>Cochrane Database of Systematic Reviews</i> (12).	*New Zealand & Australia
Sawyer, M. G., S. Pfeiffer, et al. (2010). "School-based prevention of depression: a randomised controlled study of the beyondblue schools research initiative." <i>Journal of Child Psychology and Psychiatry</i> 51(2): 199-209.	Australia
Stice, E., H. Shaw, et al. (2009). "A meta-analytic review of depression prevention programs for children and adolescents: factors that predict magnitude of intervention effects." <i>Journal of Consulting and Clinical Psychology</i> . doi: 10.1037/a0015168. 77(3): 486-503.	*US
Thomas, R. E., J. McLellan, et al. (2013). "School-based programmes for preventing smoking." <i>Cochrane Database of Systematic Reviews</i> Apr 30(4).	*UK & Canada
<b>CARE MODEL: PARTNERSHIP WITH SCHOOLS AND GPs</b>	
Rickwood, D. J., F. P. Deane, et al. (2007). "When and how do young people seek professional help for mental health problems?" <i>The Medical Journal Of Australia</i> 187(7 Suppl): S35-S39.	Australia

<b>WHOLE SCHOOL APPROACH</b>	
Busch, V., J. R. J. de Leeuw, et al. (2013). "Changing Multiple Adolescent Health Behaviors Through School-Based Interventions: A Review of the Literature." <i>Journal of School Health</i> 83(7): 514-523.	*Netherlands
Christian, D., C. Todd, et al. (2015). "Community led active schools programme (CLASP) exploring the implementation of health interventions in primary schools: headteachers' perspectives." <i>BMC Public Health</i> . 2015 Mar 13;15:238. doi: 10.1186/s12889-015-1557-0.	Wales
Hawe, P., L. Bond, et al. (2015). "Replication of a whole school ethos-changing intervention: different context, similar effects, additional insights." <i>BMC Public Health</i> 15: 14.	Canada
Hung, T. T. M., V. C. L. Chiang, et al. (2014). "Understanding of Factors that Enable Health Promoters in Implementing Health-Promoting Schools: A Systematic Review and Narrative Synthesis of Qualitative Evidence." <i>Plos One</i> 9(9): 13.	*Hong Kong & Australia
Langford, R., C. P. Bonell, et al. (2014). "The WHO Health Promoting School framework for improving the health and well-being of students and their academic achievement." <i>Cochrane Database of Systematic Reviews</i> Apr 16(4).	*International
Kann, L., N. D. Brener, et al. (2007). "Overview and summary: School health policies and programs study 2006." <i>Journal of School Health</i> 77(8): 385-397.	US
<b>POLICY REPORTS</b>	
Brener, N. D., H. Wechsler, et al. (2014). "Challenges in and Strategies for the Surveillance of School Health Policies and Practices: A Commentary." <i>Journal of School Health</i> 84(11): 687-689.	US
Division of Adolescent and School Health, U.S. Department of Health and Human Services "School Health Policies and Practices Study". Centers for Disease Control and Prevention, 2013	US
Parasuraman, S. R. and L. Shi (2014). "The role of school-based health centers in increasing universal and targeted delivery of primary and preventive care among adolescents." <i>Journal of School Health</i> 84(8): 524-532.	US

\*Review articles; ^Same articles; # Same articles.

## Appendix 2. Grey literature search results

Article Title	Country of origin	Article Link
Lake Munmorah High School Youth Health Clinic	Australia	<a href="http://www.lakemunmor-h.schools.nsw.edu.au/news/youth-health-clinic-2014">http://www.lakemunmor-h.schools.nsw.edu.au/news/youth-health-clinic-2014</a>
Doctor on Campus (DOC) A Mental Health Early Intervention Model for Secondary School	Australia	<a href="http://www.safeschoolshub.edu.au/safe-schools-toolkit/the-nine-elements/element-9/case-studies/victor-harbor-hs-element-9/">http://www.safeschoolshub.edu.au/safe-schools-toolkit/the-nine-elements/element-9/case-studies/victor-harbor-hs-element-9/</a>
Healthy school-age kids (HSAK) program	Australia	<a href="http://apo.org.au/research/healthy-school-age-kids-hsak-program">http://apo.org.au/research/healthy-school-age-kids-hsak-program</a>
Doctor on Campus (DOC) A Mental Health Early Intervention Model for Secondary School	Australia	<a href="http://www.vhhs.sa.edu.au/doctor-on-campus/">http://www.vhhs.sa.edu.au/doctor-on-campus/</a>
Doctor on Campus (DOC)	Australia	<a href="http://au.educationhq.com/news/28430/doctor-on-campus-program-hailed/">http://au.educationhq.com/news/28430/doctor-on-campus-program-hailed/</a>
Doctor on Campus (DOC)	Australia	<a href="http://www.victorharbortimes.com.au/story/2191534/victor-harbor-high-school-hosts-doctor-on-campus-forum/">http://www.victorharbortimes.com.au/story/2191534/victor-harbor-high-school-hosts-doctor-on-campus-forum/</a>
Review of the Secondary School Nursing Program	Australia - VIC	<a href="http://www.education.vic.gov.au/Documents/school/teachers/health/ssnpexecsum.pdf">http://www.education.vic.gov.au/Documents/school/teachers/health/ssnpexecsum.pdf</a>
An evaluation of the Victorian Secondary School Nursing Program	Australia - VIC	<a href="https://www.eduweb.vic.gov.au/edulibrary/public/stuman/nursing/ssnpevaluation.pdf">https://www.eduweb.vic.gov.au/edulibrary/public/stuman/nursing/ssnpevaluation.pdf</a>
Response to the Secondary School Nursing Program Review	Australia - VIC	<a href="https://www.eduweb.vic.gov.au/edulibrary/public/stuman/nursing/ssnpresponse09.pdf">https://www.eduweb.vic.gov.au/edulibrary/public/stuman/nursing/ssnpresponse09.pdf</a>



Secondary School Nursing Program	Australia - VIC	<a href="http://www.education.vic.gov.au/school/parents/health/pages/secnursing.aspx">http://www.education.vic.gov.au/school/parents/health/pages/secnursing.aspx</a>
Youth-friendly health policies and services in the European region Sharing experiences	Europe	<a href="http://www.euro.who.int/__data/assets/pdf_file/0017/123128/E94322.pdf">http://www.euro.who.int/__data/assets/pdf_file/0017/123128/E94322.pdf</a>
European Child Health Services and Systems: Lessons without borders	Europe	<a href="http://www.euro.who.int/__data/assets/pdf_file/0003/254928/European-Child-Health-Services-and-Systems-Lessons-without-borders.pdf">http://www.euro.who.int/__data/assets/pdf_file/0003/254928/European-Child-Health-Services-and-Systems-Lessons-without-borders.pdf</a>
What is the evidence on school health promotion in improving health, preventing disease and, specifically, what is the effectiveness of the health promoting schools approach?	Europe	<a href="http://www.euro.who.int/__data/assets/pdf_file/0007/74653/E88185.pdf">http://www.euro.who.int/__data/assets/pdf_file/0007/74653/E88185.pdf</a>
European framework for quality standards in school health services and competences for school health professionals	Europe	<a href="http://www.euro.who.int/__data/assets/pdf_file/0003/246981/European-framework-for-quality-standards-in-school-health-services-and-competences-for-school-health-professionals.pdf">http://www.euro.who.int/__data/assets/pdf_file/0003/246981/European-framework-for-quality-standards-in-school-health-services-and-competences-for-school-health-professionals.pdf</a>
Expanded school-based health services making a difference	NZ	<a href="http://www.health.govt.nz/our-work/mental-health-and-addictions/youth-mental-health-project/youth-mental-health-project-initiatives/expanded-school-based-health-services-making-difference">http://www.health.govt.nz/our-work/mental-health-and-addictions/youth-mental-health-project/youth-mental-health-project-initiatives/expanded-school-based-health-services-making-difference</a>
Youth '12 Health Services and Outcomes	NZ	<a href="https://www.fmhs.auckland.ac.nz/assets/fmhs/faculty/ahrg/docs/Youth%20e2%80%9912%20Health%20Services%20and%20Health%20Outcomes.pdf">https://www.fmhs.auckland.ac.nz/assets/fmhs/faculty/ahrg/docs/Youth%20e2%80%9912%20Health%20Services%20and%20Health%20Outcomes.pdf</a>
Background to the Youth Mental Health Project	NZ	<a href="http://www.health.govt.nz/our-work/mental-health-and-addictions/youth-mental-health-project/background-youth-mental-health-project">http://www.health.govt.nz/our-work/mental-health-and-addictions/youth-mental-health-project/background-youth-mental-health-project</a>

School-Based Health Service providing better access to care	NZ	<a href="http://www.midcentraldhb.govt.nz/News/Pages/School-Based-Health-Service-providing-better-access-to-care.aspx#">http://www.midcentraldhb.govt.nz/News/Pages/School-Based-Health-Service-providing-better-access-to-care.aspx#</a>
Youth Health Care in Secondary Schools: A framework for continuous quality improvement	NZ	<a href="http://www.health.govt.nz/publication/youth-health-care-secondary-schools-framework-continuous-quality-improvement-0">http://www.health.govt.nz/publication/youth-health-care-secondary-schools-framework-continuous-quality-improvement-0</a>
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Health and Well-being in Schools Project Final Report	Scotland	<a href="http://www.gov.scot/Resource/Doc/357884/0120933.pdf">http://www.gov.scot/Resource/Doc/357884/0120933.pdf</a>
Towards better health care for school children in Scotland : a report / by the Child Health Programme Planning Group of the Scottish Health Service Planning Council	Scotland	<a href="http://catalogue.nla.gov.au/Record/1458294">http://catalogue.nla.gov.au/Record/1458294</a>
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