

# **CHANGING SCHOOLS, CHANGING HEALTH? THE DESIGN AND IMPLEMENTATION OF THE GATEHOUSE PROJECT**

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## **Purpose**

Preventive health interventions have increasingly addressed settings rather than individuals. School based health interventions have lagged in that with a few notable exceptions most of the focus has remained on health education with few programs having more than a short-term effect. The Gatehouse Project, developed to promote a positive social environment within schools, is described.

## **Methods**

Three distinct elements of the program were its conceptual framework, implementation process and evaluation design. The conceptual framework derived from attachment theory and focussed on 3 aspects of the school social context: security, communication and participation. The operation process was standardized around three steps: a survey of the school social environment, creation of a school-based Adolescent Health Team, delivery of a curriculum component and the implementation of strategies matched to a school's profile of need.

The evaluation design was based on a cluster randomized trial involving 26 schools. It adopted both a follow-up of an individual cohort and repeat cross-sectional surveys to capture outcomes at an individual student and whole school level.

## **Results and Conclusions**

The Gatehouse Project has drawn on both health and education research to develop and coordinate a broad based school health promotion intervention. It indicates a promising direction for school health promotion work.

## **Background**

There are sound reasons to consider schools as important health promotion settings. Young people spend well over a third of their waking hours in school (1). It is the principal setting in which formal education takes place and for most adolescents a centre of their social lives. Twenty years ago Rutter and colleagues described the effect of school ethos on educational achievement and social disruptive behavior (1). That study emphasized the quality of social relationships within the school as the principal determinant of a school's ethos and flagged the scope for health promotional intervention addressing the school social environment. More recent research in North America has established the protective effect of a sense of connection to school on indices of adolescent health ranging from substance use to sexual risk behavior, emotional problems and educational outcomes(2). Thus the proposition that the establishing positive relationships with teachers and other students might affect health related behavior, emotional well-being and social development has a strong rationale.

Despite this growing evidence that schools affect adolescent health and behavior, few interventions have focussed on the school context. Most school-based interventions have used the strategies of health education to address specific issues such as tobacco and substance use, sexual health or cardiovascular risk factors commonly within the confines of the health or physical education curriculum(3). Such approaches are understandable given that schools are one of the few close to universal points of access to young people at a time when behaviors and emotional problems with far reaching effects on health are emerging(4). However the evidence to date has been that health education has little effect beyond the short term. Even where extended to include social influence strategies, the results have been disappointing(5). Furthermore because schools are increasingly reluctant to give up curriculum space to an ever-growing number of specific health topics, there are doubts about the longer-term sustainability of such approaches.

One response to the disappointing findings from health education in schools has been a call for more broadly based approaches to health promotion(6). The Health Promoting Schools development, for example, advocated drawing the principles of the Ottawa Charter for health promotion into a more comprehensive 'whole of school' approach(7;8). The Charter outlined five areas for health promotion: development of personal skills, creating supportive environments, reorienting health services, strengthening community action and advocacy. To date few school-based programs have moved beyond a focus on personal skills(3). The reasons for this are complex but include difficulties in standardizing and implementing more complex interventions, and in designing studies to evaluate them.

The Gatehouse project was developed to address some of these limitations in earlier school health promotion work. This paper outlines the conceptual framework, implementation process and evaluation strategies adopted.

## **Conceptual Framework**

School based health education has drawn heavily on the social learning paradigm in recent decades. More diverse theoretical frameworks used in other settings, whether focussed on individual behavior (e.g. theory of reasoned action, health locus of control) or dealing with the broad social and economic determinants of health (e.g. communication theory) have been used less in school settings (9). The choice of conceptual framework tends to be influenced by its utility in a particular setting and ideally will communicate the idea behind the program simply and plausibly with workers in the relevant setting (10). [are you advocating this or stating this is what most people do? It is not clear to me which from this sentence]

Attachment theory proposes that a sense of secure emotional connection to key individuals provides a base for psychological and social development(11) (12). Although the focus of much recent work on attachment theory has been in early childhood, sound attachments underpin social and emotional adjustment throughout life. Emotional and behavioral problems are more likely to arise when social and interpersonal bonds are threatened or insecure. Work on the effects of life events, social support, disruption of social relationships and social connection to family and school have to a large extent affirmed John Bowlby's views and support its relevance outside of early childhood(13).

During adolescence there are marked changes in attachment to family, school and peers. Disruption or insecurity in these relationships carries a risk of social, emotional and behavioral problems. A sense of security appears fundamental in that abuse within the family and victimization by peers is associated with high levels of mental disorder (14) [Bond et al – stronger paper than the one you sight for bullying but not family abuse]. A sense of connectedness, good communication and perceptions of adult caring have emerged in studies of schools and families as related to a wide range of behavioral and health outcomes (2). Lastly, a sense of active engagement and broader participation in a range of contexts has emerged as a characteristic of more positive social environments with benefits in terms of self-image(15). These three facets of the social context: security, communication and participation underpin an individual's sense of attachment and were the major focus in the Gatehouse Project (Figure 1).

### **Implementation Process**

A Health Promoting Schools approach points to using strategies at multiple levels within a school. Thus the promotion of interpersonal skills may take place within the formal curriculum and through informal interactions providing learning opportunities [education term –Helen could reference the term I think Lyndal is referring to is the “hidden curriculum” but it is more about how messages re culture, norms, roles are conveyed subtly but powerfully through practices, language and attitudes. I don't think we need to use that specifically – the description I have added conveys the potential to tap into informal learning.] while reorientation of services will operate at a level of the school within its local neighborhood. The promotion of the social environment of a school can take place in multiple settings ranging from the classroom to the schoolyard and sporting field. What is appropriate in one school therefore, may not be relevant in another, making it difficult to standardize an intervention.

Instead of standardizing the intervention, the Gatehouse Project standardized the process of intervention. The structured planning and implementation process incorporated three elements:

- i a survey of the school social environment from the perspective of students;
- ii the creation of an adolescent health team as a coordinating structure and
- iii a consultation process with a member of the Gatehouse Project team to steer implementation strategies.

This implementation process drew on methods that have previously been used in prevention and health promotion work (16;17). As has been noted in other school-based interventions, while the process was designed and introduced to schools as a standardised one, the timing and extent of implementation varied according to the readiness, existing practices and resources of individual schools. (refer to Earl, L. M. & Lee, L.E. (1998) Evaluation of the Manitoba School Improvement Program, Prepared by Lorna M. Earl, Ph.D. , International Centre for Educational Change at OISE?UT and LindaE.Lee, MA, Proactive Information Services Inc.)

## **i Survey of the school social environment**

The social climate profiles of schools used questionnaire data from students, a strategy pioneered in earlier prevention work (18). The questionnaire addressed the three areas of social interaction outlined in the conceptual framework: security, communication, and participation. Items derived for the most part from instruments previously used in surveys of bullying [with the loose interpretation of derived this is true], perceived social support and attitudes to school. The initial survey of the school climate profile (risk and protective factors) in year 8 students (13 to 14-year-olds) took place in 1997 prior to commencement of the program. This was repeated at intervals of two years. Each participating school was provided with a report of its own social climate profile compared to that found in the control schools [haven't mentioned this before?]. An example of one aspect of this profile is shown in figure 2.

The profiles assisted school teams in the setting of priority areas and strategies within a particular school. This allowed both coordination of existing health promotional work as well as the introduction of new strategies that met the needs of a particular school. The profile of school X indicates that perceptions of teachers are somewhat negative and that strategies to improve communication between students and teachers would be a worthwhile investment. Later repetition of the survey provided an indication of whether the social profile was changing favorably in response to the schools' work.

## **ii The Adolescent Health Team**

The Adolescent Health Team was created, or adapted from an existing team, to implement the relevant strategies in each school. The aim was to shift the focus from single health or social issues and a fragmented 'projects' approach to that of a coordinated social development program addressing a school's priorities. The strategies employed ranged from the introduction and coordination of health education in the curriculum to the changing of school structures (e.g. introduction of a teacher/student learning teams or mentoring systems) and the creation of opportunities for students to engage with their local communities. To this end, the adolescent health team drew staff from the school's senior administration, curriculum, student welfare and year level co-ordinators, as well as personnel from outside agencies linked with the school. This team took a formal place within the school's organizational structure.

The Gatehouse Project staff consulted with the Adolescent Health Teams within each of the intervention schools. The Centre staff consisted of educators with experience of secondary school teaching, student welfare, professional development and curriculum design. They acted both as 'critical friends' and in professional development of teachers (19). The role of 'critical friend' had a formal and informal dimension. The formal dimension included providing the report of the school social profile, consultation around the setting of priorities and support in the implementation of strategies. The informal dimension involved assistance in mobilizing resources within the local education system, building trust between staff, where necessary challenging pre-existing practices and general encouragement to maintain the momentum.

## **iii Strategies to promote school social and learning environments**

The development of a collaborative culture between those responsible for curriculum, student welfare and administration provided a powerful means of enhancing the quality of social and learning environments (20-23). Relationships between teachers and students in classrooms, broader opportunities for student participation and responsibility, and support structures for teachers have consistently emerged as associated with student progress and development (15;24;25). The three main areas for implementation were the school-wide strategies, the promotion of positive classroom climates and introduction of a curriculum promoting social and emotional skills.

### ***Whole School Strategies***

The strategies adopted by schools varied greatly. Examples included the adaptation of guidelines and practices for responding to and preventing bullying, introduction of mentoring programs, the use of peer support and peer leadership strategies and increasing the opportunities and skills for students to participate in decision-making at all levels of the school.

Bullying was an important focus. Schools were encouraged to take a pro-active stance on bullying prevention by developing policies and procedures and training all staff and students in those procedures. Much of this focus was on more subtle forms of bullying, such as being deliberately left out, having rumors spread and being teased. Pikas' (26) method of shared concern was, for example, widely adopted as a useful strategy for teachers in responding to bullying as well other instances of conflict between students.

Schools can provide diverse opportunities for engagement with staff and other students outside a focus on the standard curriculum. Where the social profile indicated limited opportunities to engage with peers or teachers, this became a prime focus for the adolescent health teams. Strategies adopted ranged from organization change e.g. altering class structures to facilitate more collaborative relationships between peers and between peers and teachers, to professional development of teachers around engagement with students in and outside the classroom. In all instances, teams were encouraged to undertake a review of school-wide strategies for rewarding and recognizing achievements academically, in sport, socially and other relevant areas (27). The aim was to provide opportunities for each student to establish positive attachments to individual teachers and have an experience of being valued in school.

### ***Promoting a Positive Classroom Climate***

Classroom climate has a major influence on perceptions of school connectedness (15). Characteristics of a more positive climate include consistency in teacher behavior, student participation in rule setting and the use of pro-active teaching strategies that encourage student participation.

Two broad approaches were used in the promotion of positive classroom climates: clear classroom management and interactive teaching styles. Classroom rules were negotiated between teachers and students, where possible early in the school year and were displayed in classrooms. Examples of common rules which emerged were 'no put downs', listening to others' points of view, and treating the belongings of others with care.

Teacher-student relationships and student-student relationships were enhanced through strategies such as small group work, class discussion and interactive teaching. In using the Gatehouse Curriculum (reference? Glover, S., Patton, G., Butler, H., Di Pietro, G., Begg, B. & Cahir, S. (2002) *The Gatehouse Project: Promoting Emotional Well-being: Team Guidelines for Whole School Change*, Centre for Adolescent Health, Melbourne.

Glover, S., Patton, G., Butler, H., Di Pietro, G., Begg, B., Ollis, D., Cahir, S. & Watson, J. (2002) *Teaching Resources for Emotional Well-being*, Centre for Adolescent Health, Melbourne.

The value of using questions to open up discussions and facilitate looking at ideas from different perspectives was emphasized. Teachers were encouraged to maintain a not knowing or inquisitive stance and to listen to and facilitate an exchange of differing points of view and the opportunities to challenge and debate ideas. Where appropriate, acknowledgment of the value of all student contributions was promoted. This included authentic displays and presentation of student work to 'real' audiences such as parents, other students and teachers and members of the community. Such changes in instructional practices takes time and moves towards greater collaborative relationships among students and teachers are a particular challenge(28).

### ***Using the Curriculum***

The scope for siting curriculum for promoting behavioral and emotional competence in schools has grown as schools have come to play a broader role in equipping young people for adult life. Thus Australian schools have been willing to foster critical and reflective skills, problem-solving abilities and the emotional capacity to work effectively with other students. Such skills have relevance not only for academic and workplace learning but also broad social and emotional development. This broader view of the role of schools aided the introduction of curriculum modules focusing on cognitive and interpersonal skills.[not sure about this last sentence – in fact it sounds like we followed a trend – perhaps we want to say something like the materials were informed by a curriculum, education perspective rather than a health promotion perspective??]

Factors that were considered in the development of the curriculum materials included:

***Relevance to everyday life:*** The materials were designed to address universal and everyday occurrences rather than exceptional or extreme adversity. The curriculum modules for year eight students therefore dealt with communication in the classroom, dealing with feelings of anxiety or low mood, recognizing and reframing common difficulties (for example, conflict with friends, or parents), developing a sense of trust in others and coping with internal and external expectations.

***Integration within the mainstream:*** The curriculum materials were designed for use both within English classes as well as those more traditionally concerned with student health and wellbeing (Health and Physical Education, Personal Development and Pastoral Care programs). The materials met not only health objectives but also allowed teachers to use the Gatehouse Project curriculum to meet essential educational objectives.

***Professional Development of Teachers:*** A six hours introductory program of teacher professional development was followed by weekly, school-based sessions concerned both with curriculum implementation and strategies to promote a positive classroom climate. This included specific teaching strategies relevant to implementation, such as the use of small group work, personal journals, and improvisation and role-play to promote communication and the exploration of diverse perspectives within classrooms.

***Building the materials into multiple year levels:*** The materials were designed for initial use at the year 8 level (13-14 year-olds) corresponding to a time when behavioral and emotional problems are commonly emerging. Teachers were assisted to build the key elements of the teaching and learning approach into their programs at years 9 and 10, and indeed to inform their teaching at all year levels. ( *NB The work at year 9 & 10 was not in the form of programs*).

Further details and case studies are available from the project website at <http://www.gatehouseproject.com>.

## A Whole School Evaluation Design

The Gatehouse Project stands out from most earlier school interventions in targeting the school group as opposed to individual students. As a consequence the evaluation differs from that employed in earlier health education work. The limitations of many earlier evaluations of health education in schools have been well documented. They include samples sizes being too small to account for clustering, high attrition rates, absence of randomization, contamination of intervention effects and failure to include meaningful behavioral and health related outcomes (3;5).

Such considerations were relevant for the Gatehouse Project. Because the object of intervention was not only the individual student change but also change in the group there was a further question of using cohort or repeated cross-sectional samples. Most earlier studies of health education in schools have identified a cohort of individuals prior to randomization who are then followed over time. While this strategy to measure individual outcomes was both relevant and important it could not capture change at a whole school level over time. To achieve this the alternative strategy of measuring the prevalence of the outcomes of interest in each school community over time was also adopted(29).

A cluster randomization evaluation design was used to assess the impact of the Gatehouse Project (figure 3). Twelve educational administrative districts were randomly sampled from the sixty-four across metropolitan Melbourne. These districts were randomized to intervention and control status and schools pooled into the two groups. From within each pool 6 government and 6 independent/Catholic schools were selected. This approximates the proportion of schools within each of these strata within the metropolitan area. In the non-metropolitan area two school districts were selected from each of two larger regional centres and allocated to intervention and control groups. Three schools (two government, one independent/ Catholic) were selected from each pool. Two schools, one in the intervention group and one in the control, declined to participate citing involvement in other programs, and two further schools were unable to participate because of imminent closure. The final numbers participating were 12 intervention and 14 controls.

The study was designed to observe change at the school level with the three surveys of year 8 students conducted at intervals of two years. The initial survey took place in the school classroom early in the school year (Feb-March 1997) and took the form of a self-administered questionnaire using laptop computers provided by the research team. Absent students were surveyed at school at a later date or by telephone. Re-survey of year 8 students took place in 1999 (between April and May) and again in 2001 (between April & May) and used items derived from the initial survey but in a pencil and paper format. Student participation on each occasion was voluntary and required written parental consent. [Do we want to say something about the things we measured – school attachment, social attachments, substance use, mental health etc]

Figure 4 shows the change found in the prevalence of one index of tobacco use: the report of most friends being smokers in the index and comparison schools over three years, based on the intention to treat principle. The prevalence estimates were adjusted for clustering (30). The findings illustrate the powerful effects of clustering on confidence intervals around what appear to be substantial changes in the behavioral profile of students [too technical – need to unpack – the point estimates indicate a substantial change in the behavioural profile of students, while the width of the confidence intervals illustrate the powerful effects of clustering – not sure if that is clearer]. The findings from the follow-up of the 1997 cohort illustrate the extent to which health gains are sustained for an individual student moving beyond the program focus. In contrast the serial, cross-sectional surveys provide an indication of the extent to which health risks have changed for subsequent cohorts in the lower secondary school. These alternative strategies provide complementary data on the program's effectiveness.



## Summary

Health interventions have increasingly been developed to address settings rather than individuals. School based interventions have however, lagged in that, with a few notable exceptions e.g. The Comer Project(31;32), the focus for many school-based programs has remained on the health education of the individual. In contrast, the Gatehouse Project adopted an approach of focussing on the school social environment and the individual student within that context. The strategies employed in the intervention have incorporated innovations from health promotion and educational practice including:

- the use of the theoretical framework of attachment theory that allowed a focus on the individual within his/her social context
- the incorporation of data feedback to individual schools to allow priority setting
- the development of Adolescent Health Teams within schools to coordinate program development, consistent with and building on current school philosophy and practice
- the use of repeated cross-sectional surveys within a cluster randomized design to allow assessment of school change.

The project illustrates the value of drawing on both health and education research traditions together in building effective and sustainable school based interventions.

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