An Elementary School Tobacco Prevention Program: Designed by and for Public Health Nurses

by

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ABSTRACT

This paper presents the outcome of Public Health Nurses adopting a comprehensive school health framework that included social marketing strategies and attention to Diffusion of Innovations theory. The result was the design and implementation of a tobacco prevention program for Grade five students by these nurses. The effect of the program on its participants' knowledge and attitudes towards tobacco use and the program was studied.

The findings suggest that the program was successful at maintaining the students' anti-smoking attitudes and reducing the social myths that normalize and support tobacco use by youth. The study also demonstrated that the methods employed to plan and implement the program were effective.

Recommendations from this thesis include the provision of Public Health resources to: continue the Grade five program annually; augment the program with a tobacco prevention program for Grades six through twelve; develop and coordinate a community coalition for Tobacco Reduction; encourage Public Health Nurses to include social marketing and Diffusion of Innovations theory in their practice of health promotion; and to support nurses as researchers in the field.

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ACKNOWLEDGMENTS

This work would not have been possible without Mary Hill's patience with, and support of, my adventures in nursing. The program, "Most Kid's Don't" would never have succeeded without the endless efforts of my peers, Pat Hocker and Joy Stott. The program would have never come to life without the enthusiastic participation of the Grade five teachers and students of School District 79.

I would like to acknowledge the kind editorial work of Muriel Heggie, Mary Hill and Joy Stott. As well I would like to acknowledge the academic guidance of my supervisor, Dr. Laurie Baxter.

DEDICATION

To my friends, family and community who inspired, encouraged and supported me in my work. This work is especially dedicated to Shane and Ciara who in their mother's eyes represent the future of youth.

INTRODUCTION

Tobacco, divine, rare, superexcellent tobacco, which goes far beyond all the panaceas, potable gold, and philosophers' stones, a sovereign remedy to all diseases.....but as it is commonly abused by most men, which take it as tinkers do ale, 'tis a plague, a mischief, a violent purger of goods, lands, health; hellish, devilish and damned tobacco, the ruin and overthrow of body and soul. Robert Burton (1577-1640)

Tobacco use is the leading cause of preventable death in Canada and is, therefore a major public health concern (Health Canada, 1994). It is directly responsible for twenty percent of all deaths as well as many other chronic health conditions including heart and lung disease (Health Canada, 1994). The morbidity and mortality from tobacco use place an enormous financial burden on the health care system (Cunningham, 1996). As well, early death and disability are responsible for inestimable social and emotional costs to families and their communities.

Although the devastating health effects of tobacco have always been suspected, clever marketing by the industry encouraged social acceptance that contributed to an increase it its consumption until the late 1960's (Cunningham, 1996). In 1964, the U.S. Surgeon General made public the causal link between tobacco use and lung cancer (Ministry of Health, Ottawa, 1994). Since then the evidence has

continued to mount demonstrating that tobacco use causes numerous health problems. As information about the 'scientific' link between tobacco and cancer became more public, its use began to decline. Health Canada (1994), reports the following. Between 1966 and 1991 the rate of adult males who smoke dropped from 50% to 27%. Over the same time period the decline has been less dramatic for females dropping only from 32% to 28%. The smoking rate for adolescent (15 to 19 years) males peaked in 1965 at 55% while female adolescent smoking trends peaked later in 1975 at 48%. By 1990 the adolescent rates had dropped dramatically to 20% for both sexes (Cunningham, 1996). Conversely, in 1991 the decreasing rate of tobacco use by adolescents reversed its downward trend (Public Health Officer's Report, 1994). The Canadian Youth Health Survey (1994) demonstrated that 24% of males and 25% of females ages 15 to 19 use tobacco.

Initially the use of tobacco is a choice, albeit not a rational one. Its highly addictive nature usually traps its victims into a 20 to 30 year habit (Cunningham, 1996). Although the majority of teens do not smoke, the current rate of 25% is significant considering that 85% of adult smokers report starting their lethal habit before the age of 16 (Health Canada, 1994). B.C. Ministry of Health (1997) reports that "nearly two-thirds of current smokers aged 10-19 have attempted to quit smoking at least

once." Research indicates that the nicotine in tobacco is more addictive than heroin or cocaine (Cunningham, 1996).

Tobacco use typifies the dilemma of public health, "the gap between what health professionals believe people should do and what the general population actually does" (Glans, 1990, p. 238). Even more complex is the gap that exists between individuals' knowledge and their behavior. Adult tobacco users are well aware of its dire health consequences as are teens when they initiate its use (Ministry of Health, Ottawa, 1994). The reasons for initiating and maintaining tobacco use are complex and arise from multifactorial interpersonal, intrapersonal and social influences (Abernathy, 1992). There are no simple solutions to the tobacco problem and National and Provincial goals outline a comprehensive and collaborative approach that includes protective public policy, prevention and cessation programs (Ontario Tobacco Reduction Strategy, 1994).

In the area of this study, Cowichan Valley, School District 79, the number of youths aged 15 to 19 who use tobacco is 31% (Central Vancouver Island Health Survey 1995). This rate is higher than the national and provincial averages. In January 1996, three public health nurses, including the researcher, began a difficult yet rewarding journey to address our community's serious problem. The purpose of our journey shifted as we became aware that we were seeking an effective

way to fill the gap between research based community solutions and their adoption.

This paper will discuss four aspects of this journey. Firstly, it will highlight the changes to the health care system that began the shift of the public health nurse's role. Secondly, it will discuss one outcome of this change; the process of nurses adopting a comprehensive school health conceptual framework. Thirdly, it will demonstrate why nurses who practice health promotion need to replace the existing community development model with an alternative health promotion model: one that includes innovation diffusion processes and social marketing techniques. Finally, the design and implementation of a tobacco prevention program for Grade 5 students called, "Most Kids Don't" will provide an example of the outcome of this change in public health nursing practice.

The "Most Kids Don't" program is founded on the model of comprehensive school health where health promotion activities ripple out to affect more than the primary recipient of the service. Although the students are the central participants, the teen and classroom teachers, parents, principals and their community became vicarious participants. The program could not have been implemented without their support.

The purpose of the study is to examine the program's effect on the participants' knowledge and attitudes. It is also intended to examine

their opinions on the following aspects of the program:

a) which components interested and engaged them and why;
b) which components they believe will reduce the use of tobacco and why;
c) and which components of the program should be revised.

As well, the study will examine the outcomes arising from the application of social marketing and innovation diffusion to community health promotion. It is not intended to measure the program's effect on the tobacco use rates of its participants. Although the former is worthy of study, it is beyond the capacity of the researcher's resources.

EVOLUTION OF THE PUBLIC HEALTH NURSE'S ROLE

The depth of the public health nurses involvement in tobacco reduction is unique to School District 79. The impetus for this work was our nursing administrators' response to the changes in our Provincial health care system.

In British Columbia, Public Health Nurses have traditionally provided preventative health services to communities defined by geographical boundaries. These services included immunizations, communicable disease control, and health promotion activities to individuals and groups from the prenatal period through to adulthood. The nurse's role was defined by the demographics and the subsequent health needs of her designated community. There was a clearly defined organizational hierarchy and a central Provincial office that determined the protocol for nursing services.

'New Directions'

The Royal Commission of Health Care and Costs, (1991) initiated a dramatic process that altered the role of, at least, Public Health Nurses. The Commission's document, 'Closer to Home' defined a different course for health care called 'New Directions'.

In their background paper Labonte and Little (1992) state:

> New Directions for Health Care" is a major initiative to influence changes in health care. The program promotes a primary health care system for British Columbia. It also advocates a shift of health care resources to health promotion and illness prevention" (RNABC, 1992).

A principal objective of 'New Directions' was the devolution of the Ministry of Health. In other words, the transfer of authority for health from the central Provincial office to more local regions. In theory, "health programs developed at the community level are more relevant and appropriate to the people involved" (Green, 1991, p. 4). Ideally, community participation in program development enhances their ownership and commitment to sustain programs they identify as beneficial.

Another objective was to shift the focus from costly illness care to disease prevention and health promotion. The rationale for this objective was based on evidence that an increase in "health care" expenditures does not result in an increase in health of the population (Labonte & Little, 1992). The commission acknowledged that factors outside of the health care sector are the major determinants of health.

These determinants include:

1. level of income and social status;
2. social relationships and support from family, friends, or community;
3. level of education;
4. unemployment and poor working conditions;
5. physical factors in the natural and human-built environments;
6. biology and genetic factors;
7. personal health practices and coping skills;
8. prenatal and early childhood experiences;
9. health services.

(Federal, Provincial and Territorial Advisory Committee on Population Health, 1994).

A Public Health Nurse's role includes health promotion strategies, such as lactation consultation, well baby clinics, and parenting workshops that have a positive affect on the health determinants two, five and seven through nine. While 'New Directions' advocated a "shift of health care resources to health promotion," (Labonte & Little, 1992) it did not include an increase in funding for Public Health Nurses. In fact, staffing levels were "frozen" despite the increased complexity of our rapidly growing communities. This dilemma created a need to change the way we provided our services.

Strategic Plan Central Vancouver Island Health Region

Fortunately, our Central Vancouver Island Health Region (CVIHR) nursing administrators are progressive leaders. They were able to view these changes in health care as an opportunity for transformation. In early 1995, they began to develop the draft of a strategic plan, a vision for changing the delivery of Public Health Nursing services. These administrators requested that field nurses provide input to the strategic plan through consideration of the following questions:

- What do public health nurses do, how and why;
- What difference does your work make to your clients' health and how do you evaluate this;
- Is there research that supports your endeavors;
- Can this work be done most efficiently and effectively by yourself or by others?

Our administrators provided us with a variety of opportunities for feedback on these difficult questions but few nurses invested any energy in the visioning and drafting of our strategic plan. The nurses' lack of enthusiasm may have been a symptom their of heavy workloads or of grieving as they let go of the old, well-prescribed way of practicing their art.

In June 1995, the draft Strategic Plan was somewhat unenthusiastically adopted by the nurses of CVIHR. At the same time, the Public Health Nurses in the Duncan office changed from the

traditional generalist practice to focused or specialized public health nursing. In School District 79, the specific area of this study, Public Health Nurses were given a choice of becoming a member of one of three specialized teams. The researcher and two other nurses formed the "School-Aged Health, (SAH)" team.

School Health Nursing

Prior to June 1995, Duncan Public Health Nurses provided health services to the schools that were part of their geographical area. These services included immunizations, vision and hearing screening and identification and coordination of treatment for children with special health problems. Time permitting, individual nurses responded to their school's requests for a wide variety of health education classes, from nutrition to prevention of sexually transmitted diseases. There was no model or framework for health promotion. It depended on the nurse's interests and the schools' requests. Coordination of health services and promotion activities were lacking between individual teachers within a school, between schools, with other service providers and throughout the wider community. Clearly, this fragmented approach made it difficult to demonstrate any difference to the health of our school communities.

The goals of CVIHR's strategic plan for school-aged health care addressed this oversight. As well as delineating coordinated services for individuals, the plan outlined the following expected outcomes for population health:

1. A comprehensive school health team is established for each School District;
2. Priority health issues are identified in each School District
3. Strategies are selected and implemented to address priority health issues in each School District
   (Strategic Plan CVIHR, 1995, p. 19).

These goals were daunting considering that the three nurses had practiced independently for a sum total of 32 years and now needed to function together as a 'team'. Each of us had different visions of how our team that consisted of 2.2 full time equivalent nurses for 9,000 students, (in 23 schools), could address the goals set out for us.

The first endeavor of our SAH team was to clarify and develop consensus of how to initiate comprehensive school health in our community. We began this venture by reviewing the literature on comprehensive school health.

COMPREHENSIVE SCHOOL HEALTH

The Canadian Association of School Health (1993/4), defines comprehensive school health as a framework for providing school health promotion. The framework coordinates the health related activities of educators, service providers like public health nurses and social workers, parents and the local community. It includes the provision of health services to individuals, health instruction, strategies and resources to improve the physical and social environment, and a school and community that interrelates and supports its members with resources and healthy policies. The framework's primary goal is to provide children with the knowledge, skills, materials and attitudes for healthy behaviors. A secondary goal is providing an environment that reinforces and encourages them to practice healthy behaviors until they become habits. Comprehensive school health includes services like health education and an environment that supports the health of teachers and parents.

Comprehensive school health's effectiveness is widely supported. The World Health Organization proposes that the school years are the best time to disseminate health knowledge and skills to develop healthy attitudes and habits. They propose that nurses promote the health of school children who in turn improve the health of their community. "Children are excellent health messengers and activists with their own families and communities" (Dhillon, 1992, p. 17).

The Canadian Association of School Health proposes that schools are an effective and efficient way to promote health to a broad audience, "after all most children attend school, 30% of population are parents with children in schools and 20% of the Canadian work force is employed in schools" (Wilson, 1993, p. 3).

The Ministry of Education's rationale for the Personal Planning Curriculum (1995), also supports comprehensive school health. The curriculum acknowledges that, "The health and well-being of school-aged children directly affects the health of the community. Similarly, the health of the community through its involvement in and commitment to the health and well-being of children, has a direct impact on the school" (Ministry of Education, 1995, p.6). The Personal Development component of the curriculum is designed to "help students acquire the knowledge, attitudes and skills needed to lead healthy and productive lives" (Ministry of Education, 1995, p.2). In our experience, due to crowded curriculums, time and financial constraints, teachers, parents and administrators consider school health promotion a dispensable luxury. Clearly, the SAH team needed to become advocates of comprehensive school health promotion.

Initially, we decided that our role included instigating the formation of a comprehensive school health team. We thought this team would collaboratively identify a priority health issue to address collectively.

As the following discussion reveals, between January and June of 1996, we learned how and why the reverse approach can be more successful. We learned that a well-marketed health issue has the capacity to instigate the formation of a school health team.

Kane's (1993), work "Step by Step to Comprehensive School Health" provided us with a useful planning guide. He proposes that the foundation of school health programs must be built upon information from the following four sources:

1. family and community values and aspirations;
2. epidemiologic data;
3. community, school and family resources;
4. educational and behavioral research.

(Kane, 1993, p. 7).

Family and Community Values and Aspirations

We began our journey by using Kane's model that stressed the importance of assessing the family and community values and aspirations towards health. We adopted two of his proposed techniques that included questionnaires and open discussions with parents, teachers and students to elicit their opinions. It seemed possible that these techniques might also engage the participants to "buy-in" and become members of a comprehensive school health team. In turn, this team could provide valuable input for assessment and enhancement of their school's health. Trusting that a successful demonstration of comprehensive school health

at one site may excite other school communities to join the process, we selected one school as a 'pilot' site. The following criteria defined our choice: close proximity to the Health Unit (low travel time); an active parent advisory committee (PAC); an average size student population; multicultural; families from a variety of income levels; and most importantly, a Principal and School Secretary with whom we had a good working relationship.

The principal at the selected school helped to organize a meeting with himself, interested parents, four student representatives and ourselves. He stated that no teachers were available. At the meeting the SAH team reviewed the health questionnaires we had adapted from Kanes's (1993) work. Cognizant that health promotion requires 'doing with' rather than 'doing to', or 'doing for' clients our key objective was to discover how they viewed health and what their concerns and desires were for their community's health. We were uncertain of whether, or how, to share our findings from our current review and analysis of the community's epidemiological data. Concerned that revealing our opinions would be viewed as 'expert' by the participants and silence their views, we decided to listen first.

The parents seemed mildly interested in our explanation of health and health promotion possibilities and hesitantly agreed to distribute questionnaires to other parents. They forewarned us not to expect a

high questionnaire return rate as parents were busy fund-raising for field trips. The students agreed to complete some questionnaires but only with "little kids" younger than themselves. The principal seemed uncertain about the process of collaboratively determining health needs and the wisdom of taking teachers' time to do so. In his opinion, "they were already overwhelmed with the new science and math curricula."

The poor rate of questionnaire return and further discussion with the principal led us to conclude that our initial attempt at forming a comprehensive school team was a resounding failure.

The SAH team discussed the idea of developing a wider health forum for School District 79. Conceivably this forum would include all members of the school community: students; teachers; counselors; school administrators; parents; service providers, such as public health nurses and social workers; and community members including local politicians. We were hesitant that such a plan would be successful due to apathy created by the draining process of New Directions community meetings. In our perception, these meetings had created a climate of distrust. Many of our community members had volunteered their time to participate in lengthy meetings that lead to more meetings rather than action. Therefore it seemed ideal yet unrealistic to organize a forum to develop a district wide vision for school health.

We wondered how we could share what we were coming to believe was the most significant health problem in a way that was consistent with a comprehensive school health approach. Given the experience of 'New Directions' and our own failed attempt at team formation, we realized it was crucial to clarify our vision and goals before consuming any time of future partners. Following Kane's (1993) model, we sought information from another cornerstone for the development of school health programs: epidemiological data.

Epidemiology

A review of our Provincial Health Officer's 1994 Report focused our attention on tobacco reduction strategies. This document confirms that British Columbia's experience with tobacco is consistent with the national one. It is responsible for 1/5 of our province's deaths and consumes 1/5 of our health budget. The rate of teen use in our province is rising. Three statements in this report seeded the ideas that lead to the development of our tobacco prevention program. These statements were:

1. experimentation with smoking is occurring at younger ages, before the age of 11;
2. those who start early are very likely to become highly addicted;

3. the key to reducing death and disability from tobacco use is to prevent young people from starting to smoke. (Provincial Health Officer's Report, 1994).

We decided to conduct a survey of our community's tobacco reduction strategies to identify what resources existed. Our goal was to uncover gaps in service that might contribute to our community's appalling smoking rates. Conceivably, once these gaps were identified we could consider what role to take in enhancing or providing the needed service. This survey was consistent with Kane's (1993) proposal that the assessment of existing school and community resources is another cornerstone for building school health programs.

Our community survey revealed the availability and use of the following resources for tobacco prevention, cessation and protective policy.

Community Resources

Prevention Programs

Drug and Alcohol Agency: The two school-based prevention workers have developed a one-half day drug and alcohol avoidance workshop for Grade 6 students called, "Strengthening Our Schools." Approximately ½ of the our district's schools utilize this service.

Cancer Society: Volunteers offer a variety of educational sessions. They are lecture-style approximately ½ to 1 hour in length, about the effects of smoking. This service is poorly accessed.

B.C. Lung Association: There is one nurse educator for Vancouver Island. She travels to schools at teachers' requests to deliver a one hour workshop for Grade 6 students about the effects of smoking. This provincial program needs to be booked 6 months in advance. In our school district three Grade 6 teachers accessed this service.

Heart and Stroke Foundation: In 1995 they designed a Grade 6 tobacco prevention program called, 'Heart Smart Kids.' Teachers access this program through attending a four hour training program. One teacher in School District 79 is a trainer for the program. Only two of twenty-seven Grade six teachers in the school district use this program.

The above programs operate independently of each other. The individual teacher's interest in tobacco prevention determines whether or not these programs are accessed, implemented or coordinated with other.

Smoking cessation programs are another strategy of tobacco reduction. As the survey demonstrates, our community had a paucity of such resources that appealed to a broad audience.

Cessation Programs

Cancer Society: In 1995 they introduced a new program called "Fresh Start." The Duncan chapter of the society has two trained facilitators. Although advertised, no sessions have been held, due to lack of consumer interest.

Canadian Mental Health Association, Duncan: They received a Federal government grant of $60,000 to initiate the "Behind the Smokescreen" project. This project included a cessation component for three "difficult to access" groups: First Nations' youth, mental health consumers, and "fringe" youth. Its goal was to study and to address the lifestyle issues that contribute to smoking, exclusively for these segments of the population. One visible outcome was the formation of an alternate school theatre group that produced an anti-smoking play for elementary school children. Although the project funding ended in May 1997, they are seeking further funding to continue this endeavor.

The third strategy of tobacco reduction is the provision of a healthy public environment, one that discourages tobacco use through protective policy. Our survey revealed the following about our community's environment.

Protective Policy

Clean Air Bylaw: This is a voluntary bylaw. It requests that building owners designate and publicly sign whether or not their premise permits smoking. The bylaw's intent, is to allow the public to make informed choices about entering a building that may expose them to environmental tobacco smoke. The voluntary nature of this bylaw makes it unenforceable.

School Policy: There is no written policy. Students are not permitted to smoke in the building but, with parental permission, they are allowed to smoke in designated areas on the school grounds. All three Senior High Schools have 'smoke pits.' The School Board has urged teachers to refrain from smoking in the buildings or on school grounds. The majority of teachers adhere to this request.

Sales to Minors: This is attended to by Environmental Health Officers. This service is provided by one officer from the central office in Nanaimo. He has conducted one compliance check of 33 stores in our area in June, 1996. He found that 69.7 % of the stores were non-compliant.

This portion of the survey demonstrated:

- poor uptake of tobacco prevention programs;
- no public interest in cessation programs;
- unsupportive community policy;

- inadequate enforcement of provincial policy;
- lack of coordination amongst existing resources.

Clearly this survey revealed a community that does not effectively support and encourage a tobacco free lifestyle for its population. To consider where to intervene, we examined what resources were available for tobacco reduction within the schools.

School Resources

Aware that most tobacco user's initiate their habit before the age of 16 and as early as 11 we decided our assessment should focus on elementary school resources. An important resource for anti-tobacco education is the Personal Planning curriculum (1995). The curriculum guide includes prescribed learning outcomes for each of its interrelated elements, the Planning Process, Personal Development and Career Development. The Personal Development element groups learning outcomes for each grade within six 'suborganizers,' healthy living, mental well-being, family life education, child abuse prevention, substance abuse prevention and safety and injury prevention (Ministry of Education, 1995, p. 4-5). Due to the age of tobacco initiation we were particularly interested in the grade five's substance abuse prevention prescribed learning outcomes. They state: "to develop in students the ability to make responsible decisions regarding substance use as they develop a healthy lifestyle

Students will:

- describe the effects and consequences of substance abuse on self, family, others, and society
- describe the factors that contribute to use and abuse of substances
- describe decision-making processes and problem-solving strategies to prevent substance use and abuse in various settings and relationships

(Ministry of Education, 1995, p. 98).

The guide recommends several learning resources including 'Heart Smart Kids' program and the 'PAL' (Peer Assisted Learning), program (Ministry of Education, 1995). The use of these programs in School District 79 seems minimal. Our brief community survey highlighted that only 3 of the district's 27 Grade 6 teacher use the 'Heart Smart Kids' program while none of them use the 'PAL' program. It was critical to understand why this was so before investing any further nursing time in reviewing, revising or developing "more useful" programs.

One source for teachers' explanations and opinions were discussions with teachers in my Masters of Curriculum Studies program at the University of Victoria. These discussions led me to believe that the demands on teachers continue to escalate. The explosions of technology, parental and societal demands, as well as the expectations of the school system are some of the forces that bring pressure to bear on the teacher. I heard teachers describe their urge to leave the 'Personal

Planning' curriculum in the box, put "it" on the shelf or to have the "new teachers" implement "it". A recurring theme was the teachers' dismay at the number of new curriculums, including 'Personal Planning,' that the Ministry of Education expects teachers to implement with little training or support.

My nursing peers reminisced about the "Decisions" Tobacco Prevention Program (1986) which the Ministry of Health designed and Public Health Nurses delivered. Retrospectively, my coworkers were embarrassed that they had merely hand delivered the packages and suggested it would be a good idea for the schools to use them. Although they had offered to be "expert guest speakers" they recalled that very few teachers had accessed the program videos or speakers (all located at the health units.)

The 'Decisions' program (1986) and the Personal Planning Curriculum (1995) had similar faults. They were both planned for the teachers rather than with the teachers. Neither the Decisions program nor the Personal Planning curriculum included training for the teachers. As a later discussion on diffusion of innovations reveals, these faults are common reasons that new programs are not adopted, implemented or maintained.

Our SAH team began to consider how we could mesh our strategic plan's goals and public health nurses' capacities with what we had learned. We concluded the following from our investigation of comprehensive school health, the participants' vision or lack thereof, epidemiological data and our communities' resources:

- tobacco is a major public health concern;
- our community lacked resources in all three areas of tobacco reduction;
- primary health promotion, (prevention of health problems before they emerge), is a major concern of Public Health Nursing therefore, tobacco prevention strategies are a reasonable use of nursing resources;
- the school community was uncertain of the depth of the tobacco problem for school children and the nurses' capacity to address it;
- schools are an appropriate place to reach the population 'at risk' for tobacco initiation;
- prevention programs need to focus on students before the usual age of initiation, Grade 5;
- teachers lack the resources to implement available programs.

Our next step was to consider if the 'School-aged Health Team' had the capacity and resources to address tobacco prevention for Grade 5 students.

Nurses as Teachers

The SAH team nurses considered our capacity as health educators. On reflection, we decided that the essence of a Public Health Nurse's role is teaching about health formally and informally to individuals, groups and communities. Amongst the three school health nurses exists a wide array and depth of teaching experience both in the classroom and the community. One of our team had been a prenatal instructor for ten years; another had pioneered many health programs that required educating the public, politicians and participants (for example a program to prevent low birth weight babies called 'Healthiest Babies') and I had been a nursing instructor for several years. Our experience with the schools requests for health education classes led us to believe they viewed our role, in part, as health educators. A study by Santi, S., Best, J., Paye, M., Brown, K., & Cameron, R., (1992) supports the former conclusion.

This study examined and compared the instructional experience and performance of teachers and nurses delivering the same smoking prevention program. Their study focused on "the provider types and quality assurance factors which are critical for effective diffusion of smoking prevention curricula" (Santi, S., Best, J., Payne, M., Brown, K., & Cameron, R., 1992, p. 433).

In the study they found that nurses rated their teaching abilities lower than teachers', despite the nurses wide range of teaching experience in multiple settings in and outside of schools. The study noted that the nurses implemented the curriculum more completely than the participating teachers, an important aspect of quality assurance of program objectives. This was attributed to their finding that more nurses than teachers believed smoking was a critical problem in schools. Following a half-day workshop on teaching techniques, nurses out performed teachers who did not attend the workshop. The authors concluded the teaching experience of nurses combined with their health knowledge made them most suitable health educators.

We lacked the opportunity to attend such a teaching technique workshop. To fill this gap we reviewed teaching and learning literature and existing tobacco prevention programs. As Kane (1993) proposes, this type of research is another important cornerstone for building school health programs.

Educational and Behavioral Research

The purpose of this portion of our investigation was two-fold. First of all, this knowledge would enable us to identify the teaching and learning principles that guide existing tobacco prevention programs. We could then consider how to revise, adapt or adopt program ideas that fit with our Grade 5 participants' needs. Secondly, we would be more able to develop engaging teaching techniques that encouraged the participants to learn and integrate health information into healthy habits.

We began by examining the education plan for British Columbia that outlines three learning principles that "guide all aspects of educational practice including curriculum development, instructional planning and practice, resource selection, school and classroom organization, assessment, evaluation and reporting. These principles are:

1. Learning requires the active participation of the student
2. People learn in a variety of ways and at different rates
3. Learning is both an individual and a group process (Ministry of Education, 1995, p.1)

School district 79 has a dynamic group of teachers whose role it is to encourage teachers' professional development, including adoption of new curriculums, like personal planning. This group brings to life the principles of the Personal Planning Curriculum through workshops and newsletters. Recently, they organized a workshop with the educator and author Susan Close (1992) that encompassed application of Jensen's

(1996) brain-based learning and Gardner's (1993) multiple intelligences work. We studied Close's, Gardner's and Jensen's work with the purpose of developing a deeper understanding of the three learning principles that the B.C. Ministry of education had outlined. These authors' works provided us with useful and exciting ideas for classroom teaching strategies.

Close's work provides practical guidance for teachers and, in this case, nurses who choose to teach in school classrooms. Her work is founded on active learning and utilizes Gardner's Multiple Intelligence theory to focus on a variety of ways that students learn. Close recounts a conference given by Walsh (1986) on critical thinking, that has implications for nurses who are interested in students' retention and application of their knowledge to healthy habits. Close adapts Walsh's work to provide a diagram that symbolically represents collaborative strategies that encourage the latter. She posits the following hierarchy order of strategies from least, to most effective, at promoting content retention:

1. lecture;
2. lecture with visuals;
3. learners participation in content through writing, sketching and talking;
4. learners presentation to others;

5. teaching and demonstrating an understanding to others.

Close describes and groups specific strategies by three categories; "connecting new information with known information; processing new information; transforming or personalizing the new information" (Close, 1992, p.9). She provides practical examples of the latter such as, the gallery walk and art activities that appeal to all of the types of intelligences that Gardner's (1993) work describes.

Gardner (1993) defines intelligence as, "the ability to solve problems, or create products, that are valued within one or more cultural settings" p. x. He describes seven different aspects of intelligence including: linguistic; logical-mathematical; musical; spatial; bodily-kinesthetic and personal. According to Gardner (1993), individuals learn in different ways depending on their dominant type of intelligence, these intelligences are not hierarchical. Gardner (1993) illustrates how these intelligences develop within a culture that "honors the individual's learning style and cultural norms and values" p. x. This concept needs to be incorporated into our program's design as our school district has a large proportion of First Nation's students. My experience as the Inner City School Nurse at a local school with a First Nation's student population of 60% supported Gardner's (1993) premise that learning styles have a cultural component. Unless these are incorporated, learning can not occur. Erik Jensen (1995) takes a different approach to

arrive at the same conclusion, that learning is enhanced when a variety of strategies are utilized.

Jensen's work held particular appeal to the three nurses who were steeped in an environment that held 'scientific truth' in highest regard. His anatomical explanations for learning theories allowed the nurses to consider the importance of "fun" teaching activities such as role-playing alongside the formal "real teaching and learning" that were more familiar to the SAH nurses.

From his work on brain-based learning Eric Jensen (1995) provides evidence of the complexity of the brain and the individual variation. He proposes that each individual's brain has its own timetable and inner clock. He demonstrates how learners are capable of far more than once thought. For these reasons he proposes that teachers must utilize a wide variety of teaching strategies to "tap the potential of all learners." This provided the rationale for the "group activities" such as the gallery walk that we found difficult to implement.

Jensen (1995) provides a detailed description of how the brain "prefers and is designed to process many inputs at once" p. 8. He suggests that orderly sequential linear instruction to a large group may actually impair the individuals learning. An appropriate learning environment is one that is "rich , multi-sensory and offers options for learning" (Jensen, 1995, p. 10). He suggests reducing whole class

instruction and offering learning centers grouped by interest levels. The school nurses agreed that this was an area we needed to develop as we were most familiar and comfortable with a didactic, 'guest expert,' lecture style of teaching.

Jensen (1995) provides further neuroscience evidence to support the need for options for learning. He proposes that individual variation of anatomical brain areas and environmental stimuli results in a diversity of thinking and perception between students. As Jensen (1995) suggests, it is critical that the teacher encourages students to "learn and express their leaning in a variety of ways including sound, mind maps, song, role play, journals, models, movement, and picture pages " (Jensen, 1995, p. 13). The nurses began to consider a variety of teaching possibilities that included these learning strategies for each of content area.

Erik Jensen (1995) proposes that the human brain is designed for survival rather than formal learning. Jensen posits that the brain is responsive to change and although genetically "pre-wired" to learn needs an appropriate environment and stimuli to do so. The implications for our program included using teaching strategies that situate tobacco use in a context that reflects the students' social, economic and personal realities. The inclusion of teen teachers in our program ensures that its information is relevant to the students' 'survival' needs. Jensen's 'scientific' rationale provided the nurses with an explanation that fit

with our intuition and experience that younger students learn this type of information best from peers. Consequently we became committed to the amount of ongoing work required to organize and improve the teens' teaching session.

Jensen (1995) describes the importance that emotions play in learning. He provides examples of how negative emotions impede learning. He suggests that learners need to be taught how to process negative moods through strategies like goal setting and conflict-resolution. It is critical to weave such positive problem solving strategies into our program as issues related to tobacco use create at least two dilemmas for students. Firstly, the program's content about tobacco's health effects naturally evokes concern in students whose parents smoke. They become concerned for their parent's health and for their own, due to the ill effects of environmental tobacco smoke. As well the program engages students to think about the financial cost of smoking which creates a difficulty for students who wish their parents would spend their money on something more worthwhile than tobacco. This is especially difficult for students of the working poor or those who live in poverty.

The work of these authors encouraged the school health nurses to develop criteria for developing our program and teaching techniques. The criteria is outlined on page 36 and 37.

Another part of our journey was the search for information describing the content that is critical to the success of prevention programs. The following section describes literature the SAH team reviewed.

TOBACCO PREVENTION PROGRAMS

Over the last decade multitudes of prevention programs have been developed by a variety of agencies. However, as the statistics demonstrate, the rate of tobacco use by adolescents continues to rise. We had uncovered one potential contributing factor, the lack of adoption of apparently well designed programs. As previously discussed, the nurses decided we were capable teachers of tobacco prevention programs therefore we began to consider in greater detail what we would teach and how we would teach it.

Program Development

Payne's (1995) work "School Based Smoking Intervention" provided an excellent guideline for our work. She clearly describes the process of developing, marketing and implementing successful elementary school tobacco prevention programs within a comprehensive school health framework. This useful document evaluates and describes existing successful programs including: PAL; Lungs are for Life; Lions-Quest; Skills for Growing, Adolescence, Action; Your Choice....Our Chance and Smoke-Free Schools Kit (Payne, 1995, p. 18-20). Payne (1995) defines criteria, content, strategies and evaluation of such programs based on Glynn's (1989) research.

Glynn's (1989) article was written following a meeting of tobacco reduction "experts" organized by the American National Cancer Institute. He synthesized and analyzed two decades of research about tobacco prevention programs. Glynn (1989) concluded that successful programs delay the initiation of tobacco use, if they include the following:

- five classroom sessions in each of two years, especially in the transition from elementary to middle and middle to high school;
- information about the social consequences and short-term physiological effects of tobacco use, social influences, training in refusal skills that integrate the norms of the community;
- peer involvement in implementation;
- parental support;
- teacher training which is modeled on the program implementation, i.e. role playing;

His recommendations were cited as program guidelines by the U.S. Surgeon General (1994) in his report that focused on prevention of tobacco use by young people. This is one indicator of the widespread adoption of Glynn's (1989) work for tobacco prevention programs (Nutbeam, 1994). As the nurses adapted and incorporated the

framework suggested by Glynn (1989) and Payne (1995) we began to review the literature that evaluates these existing tobacco prevention programs. Conceivably this review would provide us with guidance for the development of a successful program.

Tobacco Prevention Program Evaluation Literature

Bruvold (1992) in his meta-analysis of adolescent smoking prevention programs concluded that, "behavior is the most important of the variables analyzed here and the current findings indicate that intervention programs based on social reinforcement, developmental, and social norms orientations were more effective in preventing adolescent smoking than were those based on a rational orientation" p. 878.

Oei and Baldwin (1992), study agreed with Bruvold's findings. They suggest that the thought and concerns of children and adolescents' lie in the present, rather than the distant future (1992). For this reason, the long-term health threats of tobacco use are irrelevant to them. Oie and Baldwin (1992) propose that successful programs must take the former into account by demonstrating the immediate relevance of tobacco avoidance to children's lives. They also propose staging prevention education to correspond to the children's developmental stages. This requires varying the content, messenger and program site from one stage

to the next to ensure its relevance to the children's developmental agendas.

For our clients, pre-adolescents ages 10 and 11, Oei and Baldwin (1992) suggest that parents are the best agents of drug education. According to these authors, education at this stage occurs primarily by parental influence through modeling. They cite statistics that suggest that children are more likely to intend to smoke if they have at least one parent who smokes, and the likelihood of later smoking increases if both parents smoke. If Oei and Baldwin (1992) are correct, then our community's youth stands little chance of adopting a tobacco-free lifestyle for, as we were to find out, more than 50% of each pilot class indicated that at least one adult member of their family smoked.

Oei and Baldwin (1992) propose that it is important for tobacco prevention programs to identify what children perceive as benefits of smoking. This encourages youth to consider how the positive attributes of smoking "can be achieved through non drug-related means" p. 168. These authors conclude that the most successful programs include all four orientations: developmental; rational; social reinforcement and social norms.

Flay, B., Koepke, D., Thomson, S., Santi, S., Best, J., & Brown, K., (1989) conducted a six year follow-up of the Waterloo "Keep it Clean" prevention program. It is based on a social influences approach that

raises students' awareness of the social pressure to smoke from peers, parents and other adults, and the mass media. It includes teaching them behavioral skills to resist such pressures. Flay et al's (1989) study demonstrated that, "the program has reduced levels of smoking onset by 50% when students experiencing the program are compared to control students" p.1371. The study showed this effect was short term, of two to three years duration. Through using retrospective non-intervention studies the authors propose that "delayed onset is associated with improved prognosis for quitting and lower incidence of total morbidity and mortality" p. 1374.

Flay et al. (1989) hypothesizes that prevention programs that induce delays in onset may reduce total lifetime exposure to tobacco carcinogens which may be an important program outcome. For this reason they propose "booster doses" of education to prolong the programs effects. Flay et al. (1989) admit that over time there has been an improvement in curriculums and that "the current versions of social influence programs may produce more durable effects" p. 1374. As well, they conclude that current social norms are more supportive of nonsmoking than ever before. They recommend a longitudinal study to prove this optimistic prediction.

Abernathy, T., & Bertrand, L, (1992) conducted a four year study to evaluate the Peer Assisted Learning (PAL) program. This too is a social

influence approach to smoking prevention "designed to provide adolescents with information concerning the benefits of not smoking, as well as fostering the interpersonal skills necessary to resist peer pressure to smoke" p. 226.

Abernathy et al's (1992) position on long term program effects disagrees with Bruvold's (1992) and Flay et al.'s (1989) as they suggest it is impossible to project short term delay in tobacco initiation will have any long-term effects. They join the consensus that a rational approach to tobacco prevention is ineffective.

Of particular interest were their findings that there was a significant difference between adolescent males and females exposed to the same programs. Where 9% of the males decreased their rate of initiation none of the females did. Although they suggest this translates into substantial health effects, they acknowledge that males and females should not be treated as subsets of the same population when designing prevention programs. There is an apparent gender difference in adolescents' motivation for tobacco use that needs to be incorporated into adolescent prevention programs to ensure their success.

Sussman, S., Clyde, D., Stacy A., Ping Sun, Craig, S., Simon, T., Burton, D., & Flay, B., (1993) work disagreed with the conclusions of others, regarding the success of social influence programs. Their study demonstrates that it is not necessarily what is taught but how it is taught

that is the key to success. They support this with evidence that the early "rational" programs used a didactic approach and that social influence programs demonstrated greater student engagement and effect because of their "new" approach. For example, they suggest that information about diseases when role-played may be as influential as refusal skills. The main objective of their study was to determine which of the three most common components of social influence programs is the most effective in preventing the use of tobacco-containing products. Sussman et al. (1993) concluded the rational approach that teaches about the physical consequences of tobacco use condition was as effective as the social influence programs. On the other hand, in their study the "rational curriculum included several original features such as correcting myths about tobacco experimentation and addiction, role-playing diseases and probabilities of consequences information in ways more personally relevant to youth" (Sussman, et al. 1993, p. 1248). The study found that teaching refusal skills and facts about classmate peer disapproval of tobacco use were ineffective. For this reason Sussman et al. (1993) suggest that teaching students how to interpret sources of social information is more important than teaching refusal skills.

Glantz (1996), supports Flay et al.'s (1993) conclusions. He argues that Public Health falls into the Tobacco Companies trap by targeting youths with resistance programs that inadvertently feed the myth that

tobacco use is a rite of passage. All studies reviewed agree that pre-adolescents consistently overestimate the number of teens that smoke. In part, this error is due to the successful lifestyle advertising by the tobacco companies. Prevention programs unintentionally reinforce this overestimation of teen smokers by focusing on teaching refusal skills. This strategy implies most kids must smoke if they are being taught to resist it. Glantz (1996) also faults public health's "sting operations" designed to uncover illegal sales to minors as merely showing them how easily these products can be obtained. Glantz (1996) proposes that the primary message of prevention programs should be, "be like your friends, be a nonsmoker" p. 157, rather than learn to resist your peer's pressure. He states that the primary goal of prevention programs should be to keep kids from **wanting** tobacco.

Leventhal, H., Keeshan, P., Baker, T., & Wetter, D., (1991) fault programs that emphasize the acquisition of skills for resisting social influence. Their work suggests the decay of their 'successful' effects is due to basing program design on a false assumption. This assumption is: "there is agreement between the audience and intervenors that smoking is both a bad habit and a health threat" (page 584). Leventhal et al. (1991) propose that more attention should be paid to the goal and purpose that smoking plays for adolescents. This is consistent with the previously discussed works of Oie & Baldwin (1992) and Jensen (1995)

that suggest that learning takes place when it holds personal relevance and meets students 'survival' needs. Leventhal et al.'s (1991) work suggests that programs should make a distinction between what the adolescent 'can do' and what he or she 'wants to do.' They conclude that program strategies that improve self-efficacy are successful as the adolescent will want to resist smoking because they believe they can.

Nutbeam (1994), holds a contrary opinion. He argues that school based prevention programs can not solve complex health and social problems such as tobacco use. Nutbeam (1994) supports his argument with evidence that prevention programs have short lived effects unless they are supported with continued booster sessions, community wide activities and supportive mass media campaigns. In his view "successful" programs are unrealistic as they depend "upon schools following a highly defined set of procedures, sacrificing a large slice of curriculum time, supporting expensive teacher training, adopting unfamiliar teaching techniques and involving parents." He concludes that firm regulatory government intervention like high tobacco taxation would be more successful than "reliance on the actions of schoolchildren who are among the weakest and most powerless in society."

A synthesis of this literature contributed to our commitment to address the tobacco problem in a comprehensive fashion. Our starting point was the development and implementation of a tobacco prevention

program based on the literature's recommendations. Following is an outline of the program the nurses devised for the Grade 5 students of School District 79.

Most Kids Don't

Goal: To assist Grade 5 students to develop knowledge and attitudes that keep them from wanting to use tobacco, and ultimately to decrease the rate of youth who initiate the use of tobacco in our community.

Objectives:

1. To develop knowledge and skills that discourage initiation, experimentation, occasional and habitual use of tobacco;
2. To engage students in learning about the short and long term health and social consequences of tobacco use;
3. To provide students with awareness of and the skills to resist social influences for tobacco use including media, peer and family pressures;
4. To improve motivation to use resistance skills;
5. To dispel the myths that normalize tobacco use,
6. To assist the students to develop strategies to avoid environmental tobacco smoke;
7. To engage parents in supporting and enhancing the curriculum at home and in the community.

Content:

- normal structure and function of the respiratory and circulatory systems
- health and social effects of tobacco use
- influence of the media
- financial and environmental costs
- decision making, refusal and peer pressure skills with teen teachers

Teaching and learning strategies:

1. provide information that is relevant to the student based on their social, economic and personal agendas;
2. minimize large group instruction;
3. use a variety of teaching strategies that appeal to the diversity of intelligence's and abilities;
4. use techniques that engage students in constructing knowledge through discovery and critical thinking;
5. provide a learning environment rich with stimuli;
6. provide opportunities for problem solving to encourage optimism especially given the emotional tone of the subject of tobacco;
7. link the learning to previous experience in a context meaningful to the student;
8. give students a choice in how they demonstrate and assess their understanding.

As we developed this program we remained cognizant that tobacco use is a complex problem that requires a comprehensive and collaborative approach between all school and community members. We considered how we could implement our program in such a way that it pulled these members together. The U.S. Department of Health and Human Services (1992) has written a manual that outlines the steps in planning health communication programs. This guide includes aspects of various communication models, theories and practices, two of which were relevant to our program's development, Kotler's (1981) social marketing; and Roger's (1983) diffusion of innovations (National Institute of Health, 1992).

SOCIAL MARKETING

Kotler and Zaltman (1981), define social marketing as, "the design, implementation, and control of programs calculated to influence the acceptability of social ideas." The framework that Kotler (1981) introduced twenty-five years ago is a hybrid of sociology, politics and military strategies. In health promotion it has the capacity of marketing health information, ideas and programs that will influence positive changes in individuals or social groups (National Institute of Health, 1992).

The product, in this case a program, to be marketed is planned and designed with knowledge of the clients' wants and needs. Their perspective is the central focus for planning. Successful marketing depends on careful identification of three types of clients: the primary client or "target"; the secondary influencer and the secondary intermediaries. The following discussion illustrates the application of these social marketing strategies to our program, "Most Kids Don't."

Primary Client

Kotler (1981) defines the primary client as the people whose knowledge, attitudes, beliefs and behaviors you most want to influence (National Institute of Health, 1992). In this case we wanted to address the problem of tobacco from the prevention angle and focus on children

one year before they typically experiment and initiate the addictive habit. Therefore children ages 10 and 11 became our primary clients. As previous discussions illustrate, "Most Kid's Don't" was designed with guidance from educational and program evaluation literature. However the cited literature considers the needs and desires of an audience slightly older than ours.

Our years of experience teaching Grade five maturation classes combined with Stevenson's (1992) work Teaching 10 to 14 year olds, provided us with practical ideas to ensure our program appealed to and engaged its intended audience. After all, increasing the student's knowledge about tobacco was not our goal, choosing not to use it was. Stevenson (1992) suggests there are special considerations for our program's target, learners in the 10 to 14 age group..

According to Stevenson (1992), the rate of intellectual and physiological change in 10 to 14 year olds is "the most dramatic and dynamic of any age group" p. 15. The change is "unpredictable, irregular and idiosyncratic" within and between individuals (Stevenson, 1992, p. 15). The result is a wider variation of students' attributes and capabilities than during any other school year. This supports the previously discussed suggestion of the importance of encouraging a variety of learning strategies that tap students' potential and styles of learning.

Students in grade five are starting to experience the changes of puberty. The rate of body change in relationship to peers may have a profound effect on students' self-concept. Teaching strategies related to anatomy and physiology must be respectful of the physical changes these students experience and are pre-occupied with. For instance, when discussing the cardiovascular system, listening to their own heartbeat would be less threatening than listening to the nurses' or fellow student's. Stevenson (1992) attributes students' lethargy and restlessness to their irregular growth and metabolic rates. To minimize restlessness, teaching strategies must include movement within the classroom.

Socially, "cliques and crowds are the norm" for these students (Stevenson, 1992, p. 40). Students are selective of whom they will work with. Group formation must be carefully planned to facilitate learning. Therefore classroom teachers, who know the students well, should select student groupings.

This age group wants to please adults and will work diligently to do so. However, as their peers' approval starts to become more meaningful, it is important that adults make requests that produce socially acceptable products that will be admired by their peers. Engaging students in activities they perceive as "childish or uncool" will negate the purpose of the activity. Students of this age need to "fit in."

Stevenson (1992) proposes that students of this age group usually accept morals as expressed by adults. "They have a strong sense of fairness and like to behave in a fashion that enables others to think well of them" p. 42. Consequently they usually state and believe that they would never use tobacco. As they begin to "examine their own beliefs and redefine their self-concept" the importance of fitting in with their peers becomes more important (Stevenson, 1992, p. 44). As previously discussed, most students of this age grossly overestimate the numbers of teens who smoke and begin to weigh out their parents' and teachers' anti-tobacco messages against the pressure to fit in. Unfortunately if they believe the myth that most teens smoke then it makes sense for them to do the same.

Stevenson's (1992) observations agree with the previous discussion of teaching learning strategies. He proposes that students produce and integrate knowledge best through a process of discovery. According to Stevenson (1992), group work, drama, art, writing, music, experimentation and discussion all facilitate discovery learning. These teaching strategies facilitate learning and the competence these students so desire and need for the development of self-efficacy and a positive self concept. In part, these are the keys to tobacco prevention.

"Most Kid's Don't" incorporates the students wants and needs, the criteria for successful prevention programs and recommendations from

program evaluation literature. However, the students can not be reached without the commitment of their teachers.

Secondary Influencers

In social marketing terms, the secondary influencers of our program are the parents and teachers of Grade five students. These clients are people whose attitudes and beliefs influence the primary clients.

Oei and Baldwin's (1992) work highlights the important role that parents' smoking behavior plays in influencing their children's choices. This work implies that parents' smoking habits should be addressed through cessation programs in concert with their children's prevention program.

Teachers' choices of content and implementation strategies within the prescribed curriculum have an enormous effect on their students' learning and ultimately lifestyle choices. Kane (1993), reproduced a graph from Journal of School Health (1985, 55 (4), p. 22) that visually demonstrates the number of classroom instruction hours that are needed to effect change in students knowledge, practices and attitudes. This graph shows that it takes approximately fifty hours of health instruction to make a difference to health behaviour. From a public health nurse's perspective, this is worthy of attention considering lifestyle choices are the greatest contributor to health. In Canada, "50% of premature death

and disease can be linked to unhealthy lifestyle" (Wilson, 1993, p. 2). Teachers have the choice of extending what the prevention program offers and are more likely to do so if their needs are considered.

Conversations with teachers persuaded us to ensure our program reduced rather than increased their demanding workload. Considering the nurses' experience with the "Decisions" program it was clear that we needed to provide the resources to embody our proposed program. Nutbeam's (1994) article that suggests "successful" programs are too demanding for schools to implement added credence to our assumption. However, if our program complimented the teachers' work this could increase its appeal. Therefore we considered how to integrate our programs' components into the existing Grade five curriculum.

The Education Ministry's Personal Planning Curriculum (1995) seemed to represent an area of discomfort for teachers. We reviewed this curriculum to see if we could meet some of its learning outcomes and alleviate some of the apparent tension it was creating for teachers. As previously discussed our program fits well the Grade 5 substance abuse learning outcomes.

Our program's content also paired well with B.C.'s grade 5 learning outcomes for science. Parallel topics include respiratory, circulatory body systems and natural resources. The program's design included teaching about these body systems in the first of five sessions. The

fourth session includes a discussion of the effects of tobacco production on the earth's natural resources.

B.C.'s curriculum overview for math content includes "develop and implement a plan for the collection, display, and analysis of data gathered from appropriate samples and..... to use the results of measurements to solve problems in real-life contexts" (Ministry of Education, 1996, p. 4). Our program's activity 'The Hunt,' Appendix 1 a, integrates this aspect of the curriculum by having students gather, analyze and display information about tobacco advertising.

The English Language Arts curriculum offered guidance for another activity of our program. Following session four, that includes the effects of environmental tobacco smoke, the students are encouraged to write letters to places and people who affect their environment. They write to politicians, local businesses, tobacco industrialists, farmers and their parents. This optional activity fits well with the creative writing aspect of the curriculum.

From the beginning of our program's development and implementation we had nurtured the commitment from the programs' secondary intermediaries: the school nurses, our nursing administrators, the school board and principals.

Secondary Intermediaries

According to Kotler (1981), secondary intermediaries, as outlined above, are those clients who have a relationship with the marketer and have the ability to be or not to be gatekeepers, partners and sponsors (National Institute of Health, 1992).

Initially the most important client to facilitate or block this program was my "team-mates," the two other nurses involved in school health. At the outset, the differences between our philosophies of health promotion hampered our work. One nurse believed that our role should be to raise the teachers' consciousness about the tobacco problem to encourage them to use existing programs. Another nurse believed we should focus on working with teachers to supplement their use of one selected program, at a few designated schools. I had a different vision. I envisioned a district wide prevention program that would heed Stanton Glanz's (1996) warning, to de-normalize tobacco use.

Glanz's (1996)work encouraged me to incorporate his idea that a major thrust of prevention programs must be to dispel the myths that surround tobacco. These myths include the idea that most people smoke and that it is a habit that will increase the smoker's social appeal. The greatest desire of children in the ages identified as highest risk for tobacco experimentation is to "to fit in." This made it critical to alter the childrens perceived norm that the majority of teens use tobacco.

In School District 79 all elementary schools feed into 4 middle schools. These middle schools include Grades 7. and 8. which are the most common years that students start to use tobacco (Health Canada, 1994). It seemed of paramount importance that all students had the same knowledge that "most kids don't smoke" in order for them to support their peers in tobacco avoidance. Over time and with much discussion my team mates agreed that a locally planned program was both possible and desirable. We agreed to start small with two schools as pilot sites for "focus testing" our program. The two schools were selected because of their close proximity to our Health Unit.

Focus Testing

We met with the teachers and principals at our pilot sites once we had considered the following steps of social marketing, its five "P's":

1. Price: What were we asking the teachers to give up? The program requires five periods of their class time.

2. Product: What is the health belief we want the teachers to buy into? The rate of teen smoking is on the rise and students are starting to smoke at an earlier age than ever before. There is substantial research to support the efficacy of well designed and implemented programs in delaying the onset of smoking. This may save lives.

3. Promotion: What are the benefits for them? Our program complements the Grade 5 Science, Math, English and Personal Planning curriculum. Public health nurses will prepare and teach the 5 classes while the classroom teacher's focus will be classroom management. The program will not increase teacher's workload.

4. Place: The sessions will take place in the classroom so there is no travel time or cost to schools.

5. Participation: The nurse will meet with the teacher briefly before the first session and give ample opportunity for their feedback during and after the program. Although the program can "stand alone" teachers are encouraged to extend the sessions through optional activities outlined in the program guide. Grade 11 and 12 students from the Career and Personal Planning program and peer leaders will present part of the program. Activities and resources will be prepared and brought by the nurse.

We met with the two Principals and the Grade 5 teachers and explained that we wanted to teach an anti-tobacco curriculum to their students. They asked us when we could start. The Grade 5 teachers vehemently expressed their concern about their students risk for tobacco use and suggested that several of their students already smoked. Their concerns are statistically supported due to the high enrollment rate of First Nations students at their schools. The proportion of First Nation's students at one of these schools is approximately 60% while the other is

20%. In 1991, Health Canada conducted a study revealing the tobacco use rate of First Nations people at 56% (Cunnigham, 1996, p. 16). The teachers expressed their relief that we were expending our energy on this project.

Our nursing administrators applauded and facilitated our work as we were, "bringing the strategic plan to life." They allowed us time for planning and encouraged our efforts. They spoke to school administrators about the purpose of our focused nursing and encouraged us to seek funding for program resources.

The school board and principals have the authority to permit or deny school entry to programs from outside their system. The current financial constraints within the education system and wealth of new curriculums indicated to us that we needed to demonstrate to these clients that our program was self-sufficient and met their curriculum's needs. In October 1996 we made a successful presentation to the School Board's Education Committee who subsequently endorsed our program.

At the same time we were mindful that an important component of comprehensive school health and the development of health habits is the support of the larger community. We investigated and assessed ways to engage them.

School District 79 has a community relations person who is responsible for publicizing innovative school events. We contacted her and she excitedly agreed to interview a nurse, student and teacher involved with our tobacco program for the local radio and television stations. As well, the liaison person organized a local news reporter to interview a public health nurse to discuss the program. The reporter wrote a brilliant account of our program and plan of community action, Appendix 2. This elicited response from the community including several parents who phoned to request our program at their child's school. As well, the editor for the B.C. Teachers magazine "Snapshots" who resides locally, became aware of the program and asked us to write an article about it to share with the province's teachers. It was published in the Summer issue, 1996.

Through discussion amongst ourselves and with pilot site teachers we decided to evaluate the program informally through observations and comments from all participants.

Pilot program evaluation

The pilot program was delivered to the two Grade five classes of one school. These students appeared engaged and their teachers' comments were encouraging. The program was implemented at a second school. Following its completion these students continued art and drama

activities from the program on their own initiative. They produced posters and a video about the dangers of smoking for a parent-teacher night. On their own the students were drawing in the members of their community. Again the teachers' process evaluations were positive. Of interest were some of their comments: "this kind of program needs the expertise of nurses; students listen to guests about this topic more carefully, and teachers are unable to do this type of program due to their burden of new curriculum." This confirmed our earlier impression that a written program without the personnel and resources to deliver it would **not** be implemented.

We observed which components of the program engaged students and verified our observations with them by asking what they liked and what they didn't. At the end of the program in each class we asked if the students thought next years Grade five students should have the same classes, they unanimously agreed. Also, the teachers requested that we return next year to provide the same sessions. Our process evaluation demonstrated that our program successfully met its goals and objectives at the two 'pilot' schools. The next step was to consider how to disseminate or diffuse the program throughout the school district. If we were successful in this process of diffusion it could increase the likelihood of dispelling the key myths that support tobacco use: that most teens smoke and that smoking improves sociability.

DIFFUSION OF HEALTH INNOVATIONS

The original intent of Roger's (1981) model of diffusion of innovations was to "scientifically" examine and describe how to "determine the most consistently effective way to apply solutions that are developed in test settings to problems in real-world settings" (Glans, 1990, p. 289). Modifications of this model (e.g. Steckler (1992); Kolbe & Orlandi in Glans, 1990), have provided a series of sequential steps and possible points of failure that if attended to will "facilitate the effective transfer programs from one setting to another" (Stecker, 1992, p. 219). Orlandi (Glans, 1990) proposes that the application of the diffusion theory to health promotion innovations will "bridge the gap" between what health professionals "believe people should do and what the population actually does" p. 238. Orlandi (Glans, 1990) suggests another important contribution to effectiveness of diffusion is the inclusion of participants through social marketing strategies. These strategies include "segmentation of the population affected by the innovation and researching their needs and desires through quantitative and qualitative data" (Glans, 1990, p. 296). We applied this model to our work with the goal of identifying gaps in the dissemination process that would hamper the adoption of the program throughout School District 79.

Steckler et al. (1992) outlines the sequential steps of diffusion as:

1. encouraging awareness of the innovation among potential adopters;
2. facilitating decisions about adopting the innovation;
3. assuring implementation of the innovation;
4. encouraging institutionalization or maintenance of the innovation over time by adopters (p. 215).

Steckler (1992) suggests there are several variables that positively affect the process. The first is a supportive organizational climate. Secondly is the "awareness, concern and interest" in the curriculum's focus, in this case, tobacco prevention. Thirdly, the curriculum is more likely to be adopted if it is perceived as better than the current one, not too complex and has "observable outcomes." Finally Steckler (1992) proposes adoption is more likely when a curriculum is compatible with other curricula.

Orlandi's (Glans, 1990) adds that it is critical to pay attention to "potential failure points" p. 292. These points may occur at each step and therefore must be considered and overcome to "achieve a lasting and meaningful impact." These potential failure points and our actions to overcome them include:

1. " Innovation failure. The system can fail if the innovation does not bring about its intended effect" p. 292. "Most Kids Don't" program

was developed and implemented through examining the literature that describes criteria for successful programs.

2. "Communication failure. An innovation can be genuinely efficacious and have the potential to achieve its intended effect yet fail to do so because it was communicated ineffectively" p. 292. We met with teachers at the pilot site, communicated the essence of the program through a district wide newsletter, local newspaper and television and B.C. teachers magazine, "Snapshots."
3. "Adoption failure. Though efficacious and properly communicated, an innovation may not be adopted because of a host of factors ranging from differing value and belief systems to a lack of necessary resources" p. 292. In our communications about our program we had highlighted the extent of the adolescent tobacco problem and the magnitude of the problem in School District 79. We attended to "necessary resources" through the complimenting the Grade five curricula. Our program required little work from the teachers or resources from the school board.
4. "Implementation failure. Despite being successfully adopted, an innovation may not be implemented properly or even implemented at all. This frequently occurs when specific program components (such as instructor training) that are considered instrumental to the program's efficacy are omitted or drastically abbreviated. This is

more likely to occur when programs are adopted at the organizational level (for example, the corporation or school level) and then implemented by the organization among its members" p. 292. We listened to teachers concerns about overburdened curriculums and provided the resources, ourselves, to implement the program.

5. "Maintenance failure. Even though an efficacious program may be successfully communicated, adopted, and initially implemented, it can lose its momentum and dissipate rapidly over time. From a health promotion perspective, program maintenance over time is critical" p. 292. Before embarking on this journey we calculated the nursing hours such an endeavor would require and decided we could meet this challenge, annually. We sought and received our nursing administrators' support.

This review and the previous discussion on social marketing suggests that we were successfully following the steps of diffusion and positively influencing the variables of adoption. In June 1996 we contacted the Principals of all elementary schools of District 79 to ask if their teachers would like to request our program. All of them did.

Between January and June 1997 we taught 33 Grade 5 classes the five session program. Consistent with step 3 of the diffusion process we assured the implementation of our program through meeting with Grade

five teachers prior to the program. The meeting included an opportunity for them to express their concerns and for us to provide them with a clear program outline including: content, required audio-visual aids, their role and optional activities. As well, we offered ongoing opportunities for their formative evaluation and provided a tool for summative evaluation at the program's completion.

At this point we were able to conclude the following:

- our program met the literature based criteria of "successful" tobacco prevention programs;
- nurses are capable teachers of this tobacco prevention program;
- our attention to social marketing and diffusion of innovation models had been successful in its appeal to district wide adoption;
- School District 79 administrators and our nursing administrators were supportive of our endeavors and
- students seemed to enjoy the program.

The next step was to study the program's effect of knowledge acquisition and attitude change on its primary client's, Grade five students. We also needed to consider what effects the program had on its secondary clients: nurses; teen and classroom teachers and parents of Grade five program participants. At this point it was important to consider in further depth which aspects of the program were most effective and which needed revision.

METHODOLOGY

Egon Guba and Yvonna Lincoln (1996), developed model of evaluation called "Fourth Generation" that provides a helpful framework for this study. Of particular interest is Guba & Lincoln's (1996) proposal that there is no singular reality therefore the study must include the multiple realities of the "stakeholders" or participants. This requires inclusion of their claims, concerns and issues. They fault conventional evaluation with negating the richness and depth of anecdotal and contextual data in it's "preoccupation with precision." Furthermore they propose that the conventional approach's pursuit of universality and generalizability negates its application to actual contexts. Guba and Linclon's (1996) views hold particular interest to this case study that is concerned only with the participants of the program "Most Kid's Don't." The study examines the participants' knowledge acquisition and views of the program implemented by the SAH nurses in School District 79. It is not intended to be generalizable to other School Districts.

Guba & Lincoln's (1996) model involves hermeneutic dialectic with all "stakeholders" with the goal of developing consensus. Hermeneutic dialectic is defined as, "a method of logic based on the resolution of contradictory opposites, thesis and antithesis, leading to synthesis (World book 1991.)" In Guba & Lincoln's (1996) model the

researcher's goal is to facilitate the discussions and "cross-fertilize" ideas from one group of stakeholders to the next. The result is a case report that includes the consensus of claims, concerns and issues from all groups. Guba & Lincoln (1996) suggest that the inclusive nature of such a report activates the participants to follow its recommendations because they have ownership of it.

Although the purpose of this study is not purely a program evaluation Guba & Lincoln's (1996) perspective invited me to consider all participants' perspectives of the program. From previous discussion of teachers' and nurses' time constraints it was clear that the lengthy process of hermeneutic dialectic was not feasible. However there were other alternatives to discourse that, if employed correctly, could meet the goals of hermeneutic dialectic. These included reiteration of observations and assumptions from the researchers' field notes and student program artifacts.

The study was not intended to produce findings for this cohort that were generalizable to other locales and programs. This is congruent with the purpose of a descriptive case study which considers a particular group and attempts to describe the variables that are important to them. Of importance was understanding why the group under study does what they do or responds as they do to the environment. The latter is an important element of the evaluation because smoking initiation and

habituation are complex behaviors, they do not simply reflect a lack of knowledge. Apparently, 91% of youth know tobacco is addictive and 87% of those who smoke do so despite "the fact that they know and believe cigarettes are harmful" (Ministry of Health, 1994, p. 75). Of interest to this study was which components of the curriculum engaged its participants. This was measured by the secondary influencers' and intermediaries adoption of roles as sponsors of the program. The engagement of the students was measured by their behavior in the sessions' activities, pre and post program questionnaires and focus group comments.

The literature suggests that all components of prevention programs are effective if implemented in an engaging fashion. Therefore it is crucial to evaluate all aspects of the curriculum from all participants' points of view. For this reason the study will include the following multiple sources of data: pre and post program student questionnaires; teachers survey; focus group discussions; examination of program products and future program uptake.

The researcher's interest was to note whether or not a change in knowledge about tobacco resulted during the 5 week period of the program. Questionnaires are a useful method of generating this type of quantitative data. However there are many variables, other than the program, that may have affected the knowledge base of the students.

Therefore the results can not be attributed solely to the program. For instance, the media may have had an effect on the students' knowledge about tobacco. For example, during one 5 week program period, the following situations were well covered by several forms of media: the Ligget tobacco company case; passage of Canada's bill C-71 (anti-tobacco legislation); B.C.'s health minister, Joy McPhail's plan to sue the tobacco companies for health costs; and the introduction of anti-tobacco public policy within school district 79. Therefore the questionnaire was designed to measure if a change in knowledge occurred not to ascribe causality. The qualitative research methods of a focus group are more likely to highlight what meaning, if any, the participants ascribed to these changes in their environment, including the program, "Most Kids Don't."

According to Bogden (1992), qualitative research has five general criteria. Firstly, data collection occurs in the natural setting or context where the researcher is the key instrument. They propose that data collected out of context loses its significance. Secondly, it is descriptive. Thirdly, qualitative research is concerned with process, with how the participants make meaning which translates into their behavior. A fourth component is that the research is inductive, it is not designed to test hypothesis. Finally, they posit that the participants' perspective is of primary concern. Thus, strategies for this study were contextual,

descriptive and designed to allow the researcher to consider the participants' perspective.

Focus groups are a useful method for gathering qualitative data. Their purpose is to find out what and why participants think as they do (Morgan, 1988). This study's group discussion was designed to encourage the participants to interact with each other rather than the researcher. The researcher's intention was to understand the students' opinions of the program and tobacco use in general.

The teachers' opinions were evaluated in part by administration of a magnitude scaling questionnaire. Their enthusiasm, or lack of, to complete optional activities that enhanced the program also provided a limited measure of their opinions.

The researcher collected and examined student products from the program. This provided insight into which aspects of the program engaged the students' interest and reflected their attitudes to the program and tobacco.

SAMPLING

The program was delivered by the researcher and two other School Nurses to all Grade 5 students of School District 79. This included 17 elementary schools, 650 students. This study was limited to participants from two elementary schools, four classes of Grade 5 students, where

the researcher implemented the program. The questionnaire, Appendix 3, was administered to one hundred and five students at the two schools. Fifteen questionnaires lacked either a pre or post match and were discarded. A focus group of eight students was formed at one school. The participant selection was based on the following criteria: current participants in the tobacco prevention program; willing to consistently attend three 20 to 30 minute lunch hour meetings; competent communicators and able to function in group settings. Student products were collected from both schools. Questionnaires (appendix 4), were mailed to all thirty-three participating teachers.

DESIGN

The researcher developed the questionnaire to determine if the participants' knowledge about tobacco changed following the program. Demographic information was coded asking only initials of name, age, sex and school to afford confidentiality and matching of their pre and post questionnaires. The researcher's peers, two other school health nurses involved in the curriculum design and implementation, reviewed and revised the questions. The questionnaire was further refined from input obtained from three Grade 5 teachers. The teachers' input insured that the questionnaire was at the educational level of the participants.

The refined tool was focus tested on 50 participants, they completed it in 10 minutes without difficulty.

The eleven multiple choice questions were derived from the essential content of the curriculum. The questions were posed as opinions, for example "what do you think, what's your guess" rather than tests of knowledge to ensure student comfort and encourage completion of the questionnaire. The content included: the depth of the tobacco problem, the short and long term consequences of its use, awareness of the media's influence, myths surrounding its use and their personal decision about tobacco use. The researcher planned to administer the questionnaire prior to implementation of the program and one week following its completion. However time constraints within the classrooms required completion of the post questionnaire at the beginning of the fifth session for three of the four classes.

The formation of the focus group required the cooperation of the School Board, Principal, teachers, parents and students. The School Board approved this study on March 23, 1997.

The focus group met in the music room of their school. This room was private and sound proof. We met three times for 25 to 30 minutes over the lunch hour period. The students were able to eat their lunch during this time and still have time for physical activity following our meeting. The activity time was important to enable them to "pay

attention" in afternoon classes and to encourage ongoing support from their teachers.

The group met after the second session of the program to give the students time to feel comfortable with the program and myself. This was not difficult as I had met most of these students through other "nursing encounters" including: puberty classes earlier this year, various other health education classes, hearing and vision screening and immunizations.

Krueger (1988) and Morgan's (1988), discussions of focus group facilitation provided a useful guide for myself, a neophyte researcher acting as group facilitator. They describe the process of developing predetermined, open-ended questions that are logical to the participant and encourage interaction and discussion. Krueger (1988) suggests that framing the questions in a meaningful context will increase the reliability of the responses. He proposes that by asking participants to, "think back" to a time when they experienced the situation under discussion they are able to respond from their actual, rather than intended or ideal, frame of reference. The "The Hunt (Appendix 1a), Poison Box (Appendix 1b) and Mind-reading activity (Appendix 1c)," are examples of program artifacts that the researcher took to the focus group sessions. These examples provided context to assist the students to think back to their experience of the topics.

Greenbaum (1993), and Morgan (1988), emphasize the importance of the researcher developing a focus group guide prior to the group's meeting. They suggest that the researcher should identify areas of interest and develop potential questions and probes to ensure that the discussions are thorough and remain on topic. In this study the participants' age required high involvement of the researcher to achieve the latter, to engage the quieter participants and to quiet the more dominant ones. However, the overall goal was for the researcher to remain in the background and to encourage the participants to discuss topics of relevance and interest with each other. Therefore the focus group guide was just that, a guide. The researcher used an inductive process to revise and clarify questions as the participants provided insight into areas of the topic that had significance for them.

The data from the group was collected on audio-tape. The students assisted me selecting the "best spot" for taping as they were keen to be recorded. Although the participants had received an information sheet about the purpose and intent of the focus group I opened the discussion with a brief review of the latter. I proposed, and they agreed, to the ground rules that included respect for other participants' contributions and that only one person speaks at a time. I reminded the group that if they felt uncomfortable they could leave the group without explanation. Following each focus group session I transcribed the tapes to identify

themes that provided direction for the next session's questions and discussion.

A questionnaire for teachers provided a third method of evaluation. The school nurses developed the questions for a magnitude rating scale. The tool consisted of a line that had two extremes of data at either end. The teachers were asked to place a mark on the line that represented their standpoint on the question. The line mark was measured and used as the value (Burns, 1987, p. 321.) The questionnaire was focus tested with two Grade 5 teachers to ensure the questions and instructions were relevant and logical. The questionnaire consisted of six questions designed to elicit the teacher's feedback on: curriculum content; teaching methods; session length; nurses as teachers and future program scheduling. The questionnaire includes a short area for optional comments following each question. Demographic information included simply number of years of teaching and years of teaching Grade 5. The teacher's name and school were anonymous to promote both positive and negative feedback. As well, the questionnaire was mailed to the teacher with a self-addressed envelope to encourage an adequate return rate.

The fourth method of data collection was examination of the students' products elicited from the program.

DATA ANALYSIS

Student Questionnaire

Question 1 was designed to assess the participants' belief in the social myth that the majority of teens smoke. The findings from the Canadian Youth Health Survey, 1994, indicate that the tobacco industry has successfully perpetrated this myth and, most young people **do** believe that the majority of teens smoke. This belief leads to the normalization of tobacco initiation as a rite of passage for pre-adolescents.

Question one asked: How many Canadian teenagers (15 to 19 year olds) do you think smoke or chew tobacco? The results are shown on Table 1 and Figure 1.

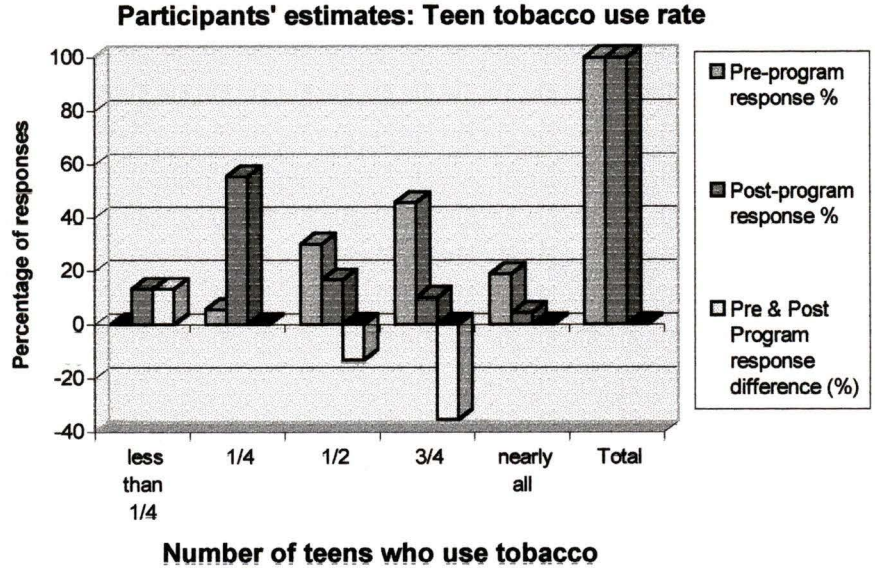
Table 1
Participants' estimates: rate of tobacco use by teens.

NUMBER OF TEENS	PRE-PROGRAM	POST-PROGRAM	PRE & POST PROGRAM
who use tobacco	response %	response %	difference
less than 1/4	0	13.3	13.3
***1/4**	5.5	55.5	50.0
1/2	30.0	16.7	-13.3
3/4	45.5	10.0	-35.5
nearly all	18.9	4.4	-14.5
Total	99.9	99.9	0
1/4 or less	5.5	68.8	63.3
1/2 or more	94.4	31.1	-63.3
3/4 to nearly all	64.4	14.4	-50.0

Note. N=(90), teens=ages 15-19, * correct response

These results agree with Health Canada's Survey (1994). Before the program, 94.4% of participants thought that ½ to nearly all teens use tobacco while only 5.5% of participants correctly estimated that ¼ of teens aged 15 to 19 use tobacco.

FIGURE 1



Following the program's completion the participants' estimates changed remarkably. Only 31.1% continued to respond that at least ½ of teens use tobacco while 68.8% responded with the more accurate estimate that ¼ or less do. Before the program 64.4% of participants estimated that at least ¾ of all teens smoked, while only 14.4 % made the same estimate following the program. These changes represent an important shift in knowledge indicating the de-normalization of tobacco use. Such a change in knowledge may decrease the participants' perception that tobacco experimentation is something that they will

encounter as a normal part of adolescence. It is hoped that the participants' learning will translate into behavior that increases peer pressure to choose a tobacco free lifestyle.

Question 2 asked: How many people do you think will die in Canada this year from tobacco?

This question was intended to measure the students estimates of the magnitude of the tobacco problem. The results are shown below on Table 2 and Figure 2.

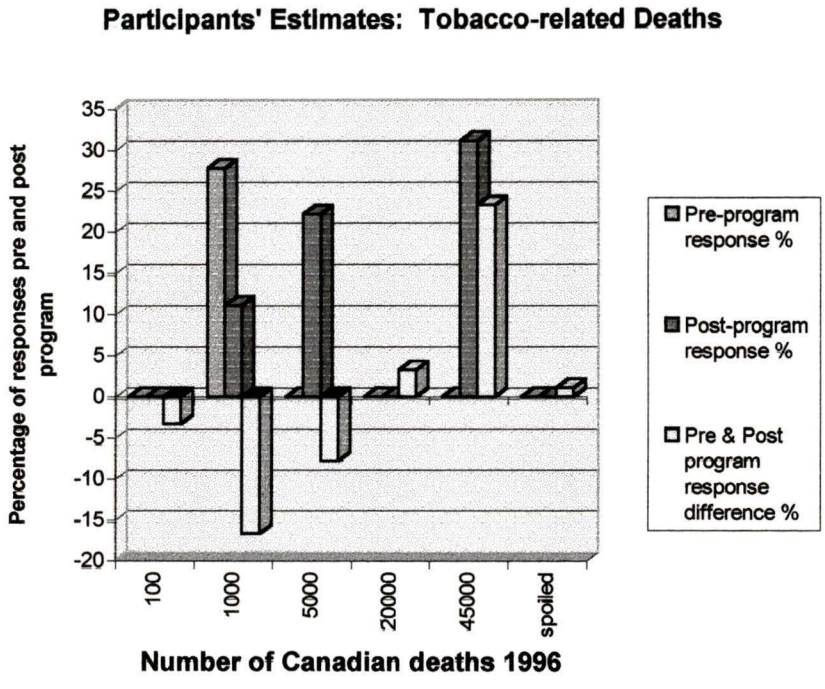
Table 2
Participants' estimates: Canadian tobacco-related death rate.

NUMBER OF DEATHS per year	PRE-PROGRAM response %	POST-PROGRAM response %	PRE & POST PROGRAM difference
100	5.5	2.2	-3.3
5,000	30.0	22.2	-7.8
20,000	28.9	32.2	3.3
***45,000**	7.8	31.1	23.3
spoiled	0	1.1	1.1
Total	100	99.9	-0.1

Note. N=(90), participants' estimates are for 1996, * correct response.

Prior to the program only 7.8 % of students estimated the correct response of 45,000 deaths due to tobacco in 1996. Following the program, 31.1 % of students responded accurately.

FIGURE 2



Although this is an increase of 23.3% in correct responses it represents less than 1/3 of participants. This may reflect the relative unimportance that youths give to the far off possibility of death or to the abstract nature of the information or that the 'number' is irrelevant to them. It would be useful to know if these students are aware of the population 'number' of Canada.

Question three asked: Which of the following problems do you think smoking or chewing tobacco can cause? This question was intended to measure whether the students knowledge of the scope and immediacy of health problems associated with tobacco use changed following the program.

Table 3
Participants' estimates: tobacco-related health problems.

TYPE OF HEALTH PROBLEM	PRE-PROGRAM	POST-PROGRAM	PRE & POST PROGRAM
	response %	response %	difference
cancer lung	42.2	11.1	-31.1
cancer voice box	1.1	1.1	0
asthma	0	0	0
heart disease	1.1	2.2	1.1
***all of the above**	48.9	83.3	34.4
spoiled	6.7	2.2	-4.5
Total	100	99.9	-0.1

Note. (N= 90), * correct response

The data demonstrates that prior to the program 42.2% of students were aware that tobacco use causes cancer of the lung and 48.9 % correctly responded that it is responsible for all of the diseases listed. This is consistent with the literature that reports children know how deadly tobacco is.

However, after the program 70 % responded correctly. They were not only aware that tobacco is deadly but that it causes a wide variety of health related problems.

FIGURE 3

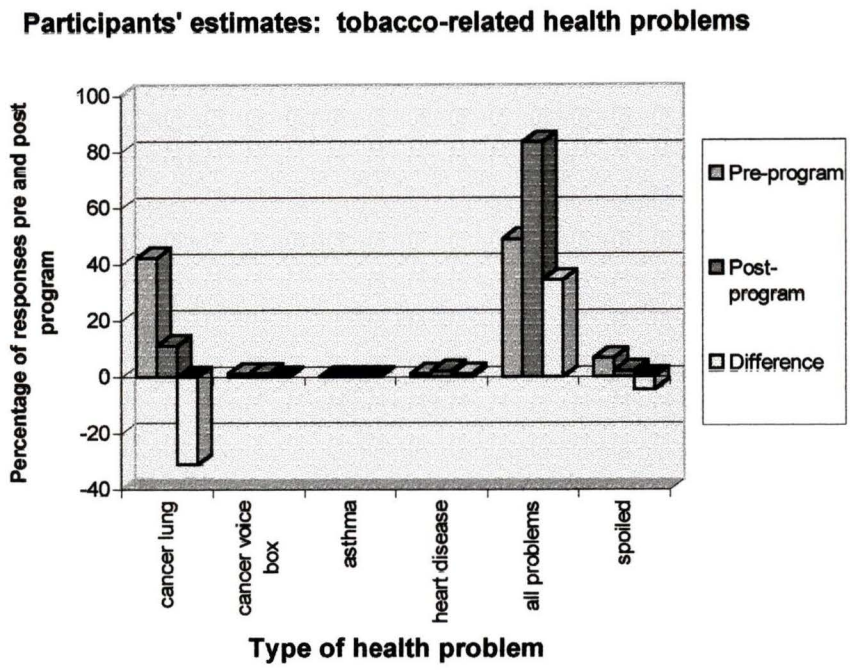


FIGURE 3

It is hoped this will change in knowledge will provide the students with more personal relevance of the health problems related to tobacco.

Question four asked: Which of the following chemicals do you think are in cigarettes? This question was designed to coincide with the 'poison box' activity. The goal of the 'poison box' is to bring to the participants' awareness the wide array (4,000), noxious and deadly chemicals that tobacco products contain. This teaching strategy is an interactive dramatic presentation about some of the 'facts' of smoking or chewing tobacco.

Table 4
Participants' estimates: cigarette constituents.

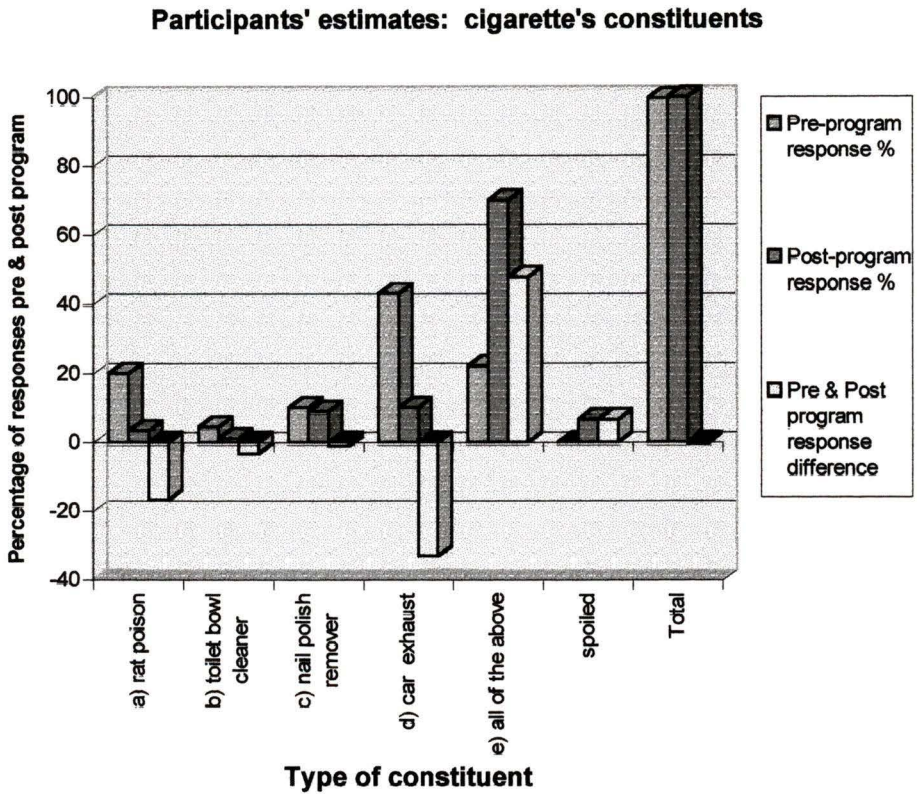
TOBACCO CONSTITUENTS	PRE-PROGRAM response %	POST-PROGRAM response %	PRE & POST PROGRAM difference
rat poison	20.0	3.3	-16.7
toilet bowl cleaner	4.4	1.1	-3.3
nail polish remover	10.0	8.9	-1.1
car exhaust	43.0	10.0	-33.0
***all of the above**	22.2	70.0	47.8
spoiled	0	6.6	6.6
Total	99.6	99.9	-0.3

Note. N= 90, * correct response

The data demonstrates before the program 22.2% of students were aware that all constituents named were in tobacco while following the program 70% of participants were. This is a 47.8% improvement in response rate.

According to tobacco prevention literature this portion of the program content could be construed as using the 'rational' approach that Bruvold (1992) and Oie (1992) fault as ineffective. However, the results from this study support Sussman's (1993) position that the approach, for example, social influences versus rational, is not as critical as teaching methodology.

Figure 4



Question five was designed to find out if the students were aware that they were the focus of the tobacco industry's marketing. It asked: Who do you think the tobacco companies want for new customers? Table 5 and Figure 5 demonstrate the findings.

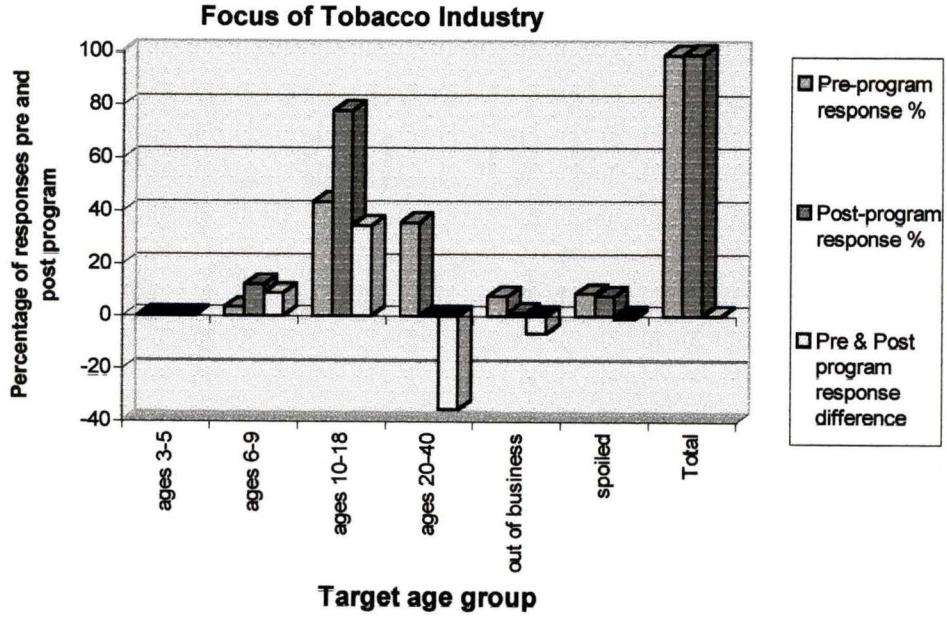
Table 5
Participants' estimates: focus of tobacco industry

FOCUS OF TOBACCO	PRE-PROGRAM	POST-PROGRAM	PRE & POST PROGRAM
marketing	response %	response %	difference
ages 3-5	0	0	0
ages 6-9	3.3	12.2	8.9
***ages 10-18**	43.3	77.7	34.4
ages 20-40	35.5	0	-35.5
out of business	7.7	1.1	-6.6
spoiled	8.8	7.7	-1.1
Total	98.6	98.7	0.1

Note. (N= 90), * correct response

This data demonstrates that before the program 43.5% of participants were aware that they were the focus of the tobacco industry. Following the program there was an increase in the correct response by 34.4%.

FIGURE 5



This shift in knowledge may dampen the social influence of advertising by raising the students awareness that it is aimed at their age group.

Question six asked: Where do you think the tobacco companies advertise? Similar to question five, this question was intended to measure whether the students' awareness of social influences changed following the program.

Table 6
Participants' estimates: advertising sources.

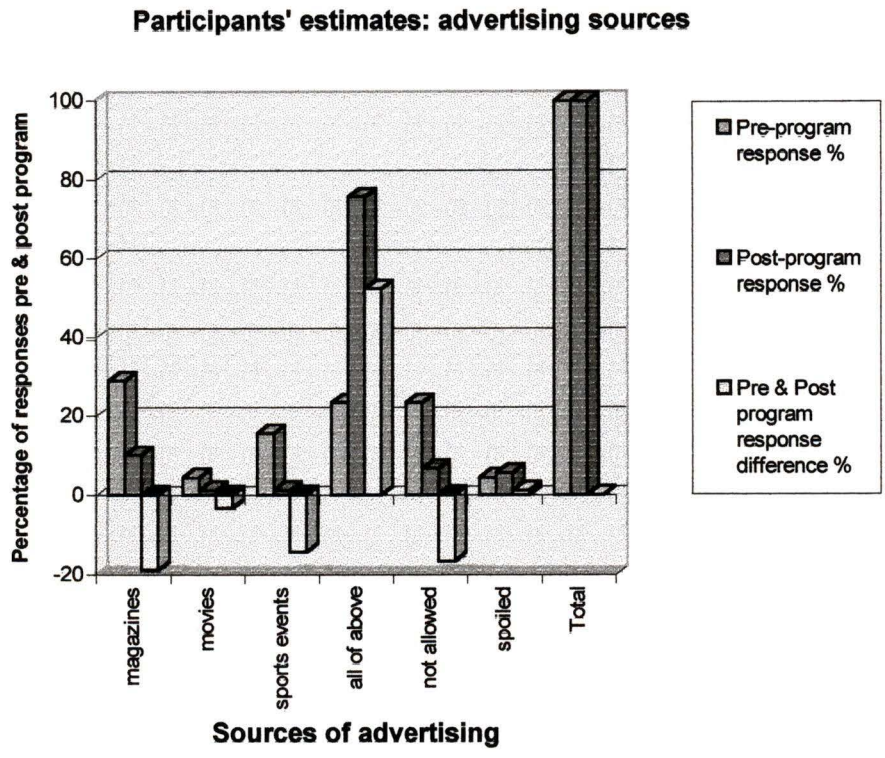
ADVERTISING	PRE-PROGRAM	POST-PROGRAM	PRE & POST PROGRAM
Sources	response %	response %	difference
magazines	28.9	10.0	-18.9
movies	4.4	1.1	-3.3
sports events	15.5	1.1	-14.4
***all of above**	23.3	75.5	52.2
not allowed	23.3	6.6	-16.7
spoiled	4.4	5.5	1.1
Total	99.8	99.8	0

Note. N=90, *correct response.

The data demonstrates that before the program only 23.3% of students were aware of the multiple advertising sites that tobacco companies utilize while 75.5 % were cognizant of this following the program. Interestingly 23.3% thought that tobacco advertising was not

permitted before the program while only 6.6 % thought so after the program.

FIGURE 6



The data demonstrates an improvement in the participants' level of awareness of multiple advertising sources. It is hoped this will diminish the social influence of the tobacco industry's sophisticated advertising.

Question seven asked: Tobacco is a plant grown on farms, what food group do you think it belongs to? The question was designed to demonstrate the information about tobacco's effect on the environment that is discussed in Session 4.

Table 7
Participants' estimates: nutritive value of tobacco.

FOOD GROUP	PRE-PROGRAM	POST-PROGRAM	PRE & POST PROGRAM
	response %	response %	difference
meats/proteins	5.5	0	-5.5
dairy products	4.4	1.1	-3.3
fruits/vegetables	15.5	14.4	-1.1
breads/cereals	6.6	6.6	0
*none	66.7	74.4	7.7
spoiled	1.1	3.3	2.2
Total	99.8	99.8	

Note. N=90, *correct response

The data in Table 7 reflects an unremarkable change in knowledge. This data in combination with the focus groups' comments indicates that this portion of the program needs revision. Clearly the content or presentation of this program segment held little interest for the participants.

Question eight asked: How long do you think it would take to clear the air of an average size room from the smoke of one cigarette (if it doesn't have a fan)? This question was designed to measure the students' knowledge before and after the program about the severity of environmental tobacco smoke.

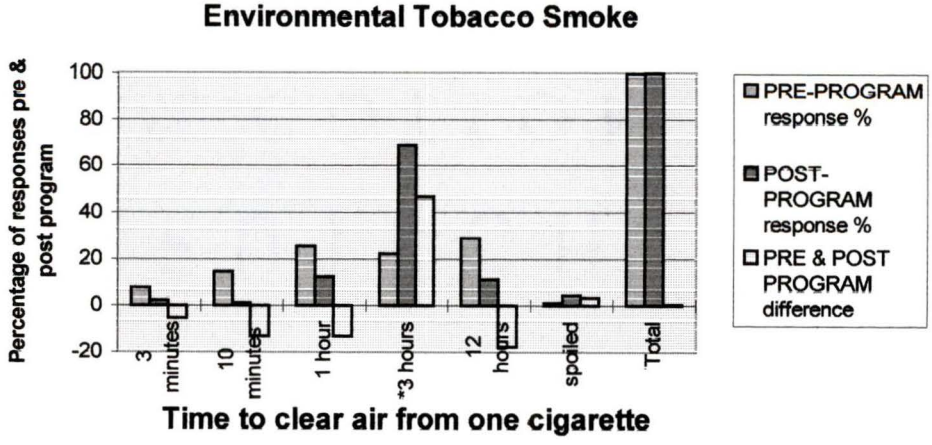
Table 8
Environmental tobacco smoke

TIME TO CLEAR AIR from one cigarette	PRE-PROGRAM response %	POST-PROGRAM response %	PRE & POST PROGRAM difference
3 minutes	7.7	2.2	-5.5
10 minutes	14.4	1.1	-13.3
1 hour	25.5	12.2	-13.3
***3 hours**	22.2	68.9	46.7
12 hours	28.9	11.1	-17.8
spoiled	1.1	4.4	3.3
Total	99.8	99.9	0.1

Note. N=90, *correct answer

The data reflects a significant difference before and after the program. Where 22.2% of students estimated the correct answer of 3 hours before the program 68.9% of them answered correctly following the program's sessions. This knowledge hopefully will affect their attitudes towards their exposure to environmental tobacco smoke.

FIGURE 7



Question nine asked: If a person smoked 1 package of cigarettes a day, how much money do you think they spend on cigarettes in one year?

The intent of this question was to measure the students' understanding of the discussion with the Teen teachers in Session five about the short term costs of smoking. The topic is also briefly discussed by the nurse in Session two. Unfortunately, due to the school's time restrictions in three of four classrooms the questionnaire was completed prior to Session five.

Table 9
Participants' estimates: cost of smoking

COST PER year	PRE-PROGRAM response %	POST-PROGRAM response %	PRE & POST PROGRAM difference
$100	3.3	0	-3.3
$300	6.7	4.4	-3.3
$500	15.5	11.1	-4.4
$1,000	30.0	25.5	-4.5
***$2,000**	43.3	57.8	14.5
Total	98.8	98.8	-1

Note. N= 90, * correct response

The data demonstrates a slight shift in knowledge about the financial costs of smoking tobacco. Prior to the program 43.5% of students correctly estimated that it costs $2,000 per year to smoke one pack a day while after the program 57.8% answered correctly.

Due to poor timing of questionnaire the data from question 9 will be deleted from the study.

Question ten asked: How many Grade 11 and 12 smokers wished they had never started? What's your guess?

Table 10
Participants' estimates: teens' attitudes

NO. TEENS WHO WISHED THEY HAD NEVER STARTED	PRE-PROGRAM RESPONSE %	POST-PROGRAM RESPONSE %	PRE & POST PROGRAM DIFFERENCE
less than 1/4	7.7	11.1	3.4
1/4	23.3	15.5	-7.8
1/2	25.5	20.0	-5.5
* 3/4	30.0	27.8	-2.2
all	13.3	24.4	11.1
spoiled	0	1.1	1.1
Total	99.8	99.9	0.1

Note. N=90, * correct answer.

This question was designed to demonstrate the students beliefs about teen's attitudes towards their habit and the difficulty of addiction. This data will also be disregarded as the content was not discussed with ¾ of the participants prior to the questionnaire's completion.

The final question was designed to elicit the students responses towards their personal choices about tobacco. It asked: What's your

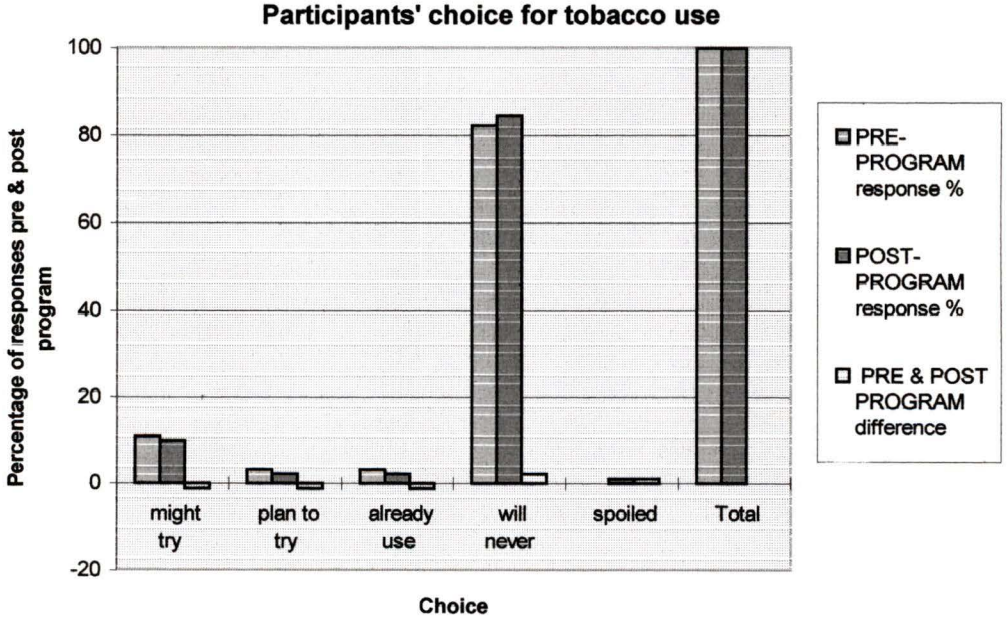
guess? Which of the following choices do you think you will make about smoking or chewing tobacco?

Table 11
Participants' personal choice

PERSONAL CHOICE	PRE-PROGRAM	POST-PROGRAM	PRE & POST PROGRAM
for tobacco use	response %	response %	difference
might try	11.1	10	-1.1
plan to try	3.3	2.2	-1.1
already use	3.3	2.2	-1.1
will never	82.2	84.4	2.2
spoiled	0	1.1	1.1
Total	99.9	99.9	0

Note. N= 90

FIGURE 8



The data demonstrates that the program maintained and minimally improved the tobacco free norm of youth ages 10 and 11.

Teachers' Questionnaire

The teacher's questionnaire, Appendix 4, consisted of a magnitude scale rating 6 aspects of the program. The expected return rate of mailed out questionnaires is 25 to 30% however "a response rate must be 50 percent or greater to be considered representative" (Burns, 1987, p. 314). In this study questionnaires were mailed to all 33 teachers that participated in the program. Questionnaires were promptly returned to us from 28 of 33 teachers. This constituted a representative return rate of 85 percent.

Demographic information included number of years of teaching and specifically of teaching grade five. The mean number of years teaching was 18.7 and the mean of years teaching Grade 5 was 6.5 years.

The participants placed a mark on an ungraded line to reflect their opinion of disagreement or agreement with six statements. The rating scale gradations are from zero to five with .25 increments. A mark of zero represents an opinion of completely disagree while a mark of 5 reflects complete agreement with the statement.

The first statement was, "The content of the program was relevant for the students and the Grade 5 curriculum." The mean was 4 which reflects strong agreement with this statement. Sixteen of the twenty-six participating teachers added additional comments. One-half of the latter commented that the curriculum was both relevant and age-appropriate.

The other half noted the variety of ways that the program matched their prescribed curriculum. One of these teachers expressed that although it matched the curriculum, "it was very hard sell."

"The teaching methods were appropriate for the subject and the students' abilities" was the second statement. Again the mean was 4.1. Teachers strongly agreed. Twenty of the participants added comments and all but one was positive. The comments applauded the program's variety and active involvement of the students. Several teachers related that their students looked forward to each session because, "they were fun and interesting." The same teacher who commented that the program was "hard sell" expressed the opinion that although the teaching methodology was good that "some sessions the message seems intended to frighten."

The mean response to the third statement of "Five sessions of 45-60 minutes are needed for this program to be successful" was 3.7. Three teachers identified that they were absent for more than one half of the sessions. These same teachers requested that the program be abbreviated to three, one hour sessions or five, one half hour sessions. Additional comments were received from eight other participants. Two teachers stated that the sessions should be extended to six or seven sessions while six others supported the five session program length with comments like "one shot sessions don't stay with them" and "you need

this length of time for attitudes to form." Therefore there were as many teachers requesting the program be abbreviated as those requesting it be lengthened.

The mean response to the fourth statement "I would prefer to teach some of the sessions myself' was 1. This represents a strong disagreement with the statement. Twenty-four of the 33 participants added comments to this question. Most comments described that the program's content was more potent for the students due to novelty of a guest "expert" in the subject area. More than one half of them stated they lacked the expertise to teach such a program. Three teachers identified that they extended the program with their students. One teacher felt they could teach the program with in-service education while another suggested they would like to team teach one or two sessions. The comments reflect strong support for nurses as teachers of this program.

When asked "I will request this program again" the response was positive. The mean was 4.2. Eight teachers added comments. Most comments were "definitely, yes, great job." However the one participant who identified the program as "hard sell" rated this statement as 2.5 and stated they were "uncertain, a few children were frightened in regard to smoking family members." Another teacher rated the statement with 4 and commented "done again with changes." This participant was

present for less than one-half of the sessions. Although they did not elaborate on their requested changes they signed their questionnaire which indicates a willingness to discuss their comments. One participant requested earlier notification of the program, "as their class is French Immersion and they would like to plan around it."

Finally teachers were asked to respond to the statement, "The program should be extended to deliver 2 sessions to each of Grade 6, 7 and 8. The mean response was 3.9 which reflects agreement. Eleven of the 26 participants added comments. Three teachers stated "no opinion." Four teachers expressed the need for more than two sessions for Grades 6,7 and 8. One of these teachers rated the statement with a one. They qualified this rating by commenting, "2 sessions are not enough time to properly deliver the message." The other four comments related to the importance of re-enforcement of our program's message.

When asked, "Please comment on program areas not included in this questionnaire that you feel were relevant, should be changed or deleted" fifteen teachers responded. One teacher who has a high rate of first nation's students suggested it is impossible to reach the wide range of learning abilities in his class. Five others made general positive comments like "Awesome program and well done." Two teachers sent unsolicited letters to the School Board commending the program. A different four teachers expressed how valuable the fifth session presented

by teens was in validating the program's first four sessions. One teacher commented on the theater presentation "Its Enough to Make You Sick" that one nurse produced as an alternate to session two. They stated, "a very successful way of involving the students and of reinforcing the key points." Two teachers expressed concern about the emotional effect that the program content had on students whose parents smoke.

The teachers' comments from the questionnaire were interesting and provided insight for further dialogue and program revision.

The nurses noted an immense difference between classrooms and teacher's styles. This seemed to have an enormous impact on our sessions. If the teacher engaged and became part of the program remarkable learning opportunities occurred. It is important to consider that Kane (1993) proposes that fifty hours of health education are needed to change children's' health behaviors. Therefore engagement and encouragement of the teachers' to extend our five, one hour sessions is a critical program goal.

Focus Group and Field notes

The focus group data was analyzed by transcription, coding, theme extraction and reiteration with the participants. This process took place at the beginning of the second and third meetings. The researcher returned to the group to verify the concluding analysis with the

members. The researcher recorded field notes following program and focus group session. From the groups' discussions and field notes the following areas of interest or themes occurred.

They included:

a. students' attitudes to program;
b. sessions 1 through 5;
c. teens as teachers;
d. learner's attributes;
e. knowledge about tobacco;
f. students' attitudes towards smoking;
g. participants' personal plans for tobacco use;
h. parent's, teacher's and principal's attitudes toward program;
i. tobacco solutions;
j. future program ideas.

a.) Students' attitudes towards the program.

The 8 members of the focus group were enthusiastic contributors to the discussions. Their teacher related that she had to "draw straws" to determine who would be in the group because all 30 of the class members wanted to attend. The chosen took their consent forms home and returned them the next day. In part, this exemplified their enthusiasm. Without fail the students were prompt for our discussions.

The participants unanimously verbalized that they "thought the program would be really boring, like a lecture but it turned out to be really fun." They isolated teaching strategies they particularly liked. "I

thought the classes would suck, except for the dissection." "I liked making the cartoons and buttons." Several of them said they thought they knew a lot about tobacco before the program. They said, "not as much as I know now, I learned a whole bunch of stuff I didn't know and I knew about lung cancer but I didn't know about all the other diseases smoking causes."

The students suggested I should come back after our talks to help them present "something" to the whole school. "You could come back after the times that you're supposed to be here, you could help us with a play." I had to steer the conversation away from them making detailed plans without their teacher's permission.

After each session at least five students stayed through their recess or lunch breaks to talk and help me to pack up my resources. Often they would relate their concerns about family members who smoked. Together we would strategize how they might support their relatives to quiet in a respectful manner while protecting their own health from exposure to environmental tobacco smoke.

Following the program's completion at several schools I noted an interesting phenomenon. Rather than the usual assumption that I was present to give "shots" students would gather around me to talk about a variety of topics including tobacco. They would comment on family members that were trying to or had quit smoking videos or advertising

they had seen that promoted smoking and what strategies they were using to avoid second hand smoke. They would ask me, "did I have anything else to dissect" or "had I heard anything from the Prime Minister or tobacco companies from their letters?" The other school nurses reported similar experiences.

b) Session One

The goal of session one is to inspire the students' awe of the normal anatomy and physiology of the respiratory and cardiovascular systems and increase their self-respect. It includes:

1. mind-mapping activities to ascertain existing knowledge about tobacco
2. interactive discussion about anatomy and physiology "where structures are and how they work"
3. the dissection of a pig's lung by the nurse

The grade 5 science curriculum includes the anatomy and physiology of the respiratory and cardiovascular systems. All classes included in this study had completed this portion of their science curriculum. The mind-mapping demonstrated a basic understanding of these body systems. As the dissection proceeded the tone of the classroom swung from excitement to absolute quiet. They appeared intrigued with each structure and I had to ask them to hold their questions until the end of the dissection in order to complete it during the allotted time. In two of

the four classes, several students returned from the school yard with friends from other classes. They proudly asked me to show their friends the lung "bits." These visiting students expressed their amazement at the lungs and, that it was true, their friends had witnessed a dissection. It seemed to raise the status of the Grade 5 students in the eyes of their friends.

The focus group had an animated discussion about the dissection. The students expressed their views excitedly,

- "I thought the dissection was really neat, especially the voice box."
- "it was cool, the thing where you stuck your two fingers in" (the eosophagus and trachea)
- "I thought the classes would really suck except for the lung dissection"
- "it was really fun"

When I asked what they learned they replied:

- "when you showed us the aorta, that it was that big and that it went into that small heart"
- "my favorite part was when you cut open the lung, it was shiny and I liked the spongy, what were they?"
- "I liked the part where you cut open that major vein, it was beautiful and shiny, and I thought the lungs would be more like your ear cartilage but it was spongy?
- "I liked the lungs cause they were really smooth"

We discussed the esthetics of the dissection. One girl stated that nearly all the girls would have fainted if their teacher had not warned them not to. The other students disagreed with her "oh come on Judy!" In reviewing the transcript with the focus group participants, I reported that some students "found the dissection gross." The girl who had made this statement was absent. Another girl disputed my transcript with the following explanation. "It's not at all gross, it's just that Judy is an environmentalist and they don't believe killing any animals is proper." One of the boys exclaimed "I hoped it would be more gory!" Another student's uncle is involved in a local pig farm and he engaged the other participants with a graphic description of how they slaughter pigs. I realized that it is important to inform the students that I retrieve the lungs for dissection from disposal at a slaughter house. The butcher kills the pigs for market not for our dissection.

I asked them if seeing the lungs helps with learning about the health problems caused by tobacco. They nodded agreement. One student reported, "I think it helps a lot because you can see a healthy lung, you can see what it would look like if you didn't smoke."

In discussing the program's future they insisted that the dissection be included. One student suggested, "instead of getting the whole class around get a few kids to come up and help you."

Their comments demonstrate that the dissection is a valuable learning tool.

c) Session two

This session is designed to help the students learn about the short and long term health and social consequences of tobacco use.

It includes the following activities:

1. 10 minute video that reviews the structure and function of the respiratory tract
2. the "Poison Box" an interactive drama presentation of tobacco constituents
3. alternate to "poison box," a play by students "Its Enough to Make You Sick."
4. a "trip" down the respiratory tract and heart to deposit tobacco's chemicals and note their effect.
5. "Mr. Gross Mouth" a tool for demonstrating the effects of chewing tobacco
6. "Who am I" game about the diseases
7. Word game "Smoking Stinks"
8. "What does it cost?" activity
9. "Mind-reading" role play and explanation of handouts
10. explanation of homework "The Hunt."

This is a very demanding session. It requires the teachers assistance to facilitate rapid transition from one activity to another.

During the "Poison Box" activity the students were quiet and looks of amazement crossed their faces as the tobacco industrialist (the nurse) encouraged her new Vice President (student volunteer) to see what ingredients the poison box held. The poison box was a central topic within the focus group. The participants "thought it was really neat, funky and fun." Their enthusiasm for this learning tool is exemplified by their unanimous request to develop a play around the idea of the poison box , "I'd like to do the poison box in front of the whole school." I asked if it helped them to understand the dangerous ingredients in tobacco. "I think like the poison box is really good, cause it really gives it meaning and stuff, actually see that that stuff's in there, cause I was bugging some of my sisters friends when they were all smoking in a room and I was telling them that cigarettes have rat poison in them and then every one started laughing at her that she was smoking rat poison."

The next activity was "a trip down the respiratory tract" that includes a "side trip" to the cardiovascular system. The goal of this activity is to review the normal anatomy and physiology of these systems and to explain what changes occur when the chemicals from the "poison box" are applied to the various anatomical structures. This ten minute activity is designed to present factual information in a way that engages students. The students are instructed information from their "trip" gives them the answers they will need for the activity that follows, a game called

"Who am I." Without fail the students listened quietly and intently, made notes and asked for clarification when needed.

The tone of the classroom changed during the game "Who am I?" Initially there was absolute silence as I took the roles of the various diseases including "Cruella Cancer" and "Evil Emphysema." In character, I told them where I liked to work, what I liked to do and who I liked to work with and then asked them: who am I? For example: One character (asthma) thinks of themselves as very cuddly, they love to hug and squeeze, in this case airways. They prefer to have "best friends" and often make these friends with kids who are around smokers or who smoke themselves. Their favorite activity is to hug and squeeze until their "friend can't run off with other kids to play games" and they just have to sit quietly with them. Unfortunately, like superman they have an enemy, a "puffer" that loosens their arms. Tension, similar to that of a game show, mounted as the students wiggled and whispered excitedly to their neighbors about possible answers to the game's questions. Cheers and expressions of disappointed filled the room as I called out the correct answers.

The focus group offered a wide range of ideas on how to improve the "Who am I" game including harder questions. They suggested that they would like to act out the parts "give us a topic and then we could make our own sort of play." One student illustrated this point by suggesting

"like if we wanted to do emphysema, is that the one where it blows up the walls, well we could hold hands and that would be the alveoli and then you could just come through and break our hands apart." When I asked about preparation time they suggested "well I was thinking that that would be part of the challenge that the person has to remember stuff about it, so we could do it at the end, like a sum up." Clearly the students enjoy being actively involved in dramatic presentations.

The teachers helped me to form the students into groups of 6 for the next activity, a word game called "Smoking Stinks." It involves teams of students conjuring up as many words as possible, in three minutes, that describe the smell of tobacco smoke on hair, clothes, furniture and breath. I recorded their answers on a flip chart decorated with an enlarged photo of a pig's nose. With great excitement the teams of students would call out their descriptors vying for the position of most number original of words. This was a noisy yet entertaining portion of the session as the students offered a wealth of descriptors I had never heard of, including "dumpster breath."

Turning to the financial costs of tobacco I simply asked the students to tell me what they would do with $2,000.00 per year. They quickly offered a variety of suggestions including: a trip to Disneyland; a horse; a dirt bike; a stereo system; and lots of junk food. Due to time constraints I had to limit their suggestions to five. In each class I asked

the teacher to designate one volunteer to come up to the board to calculate the cost of a pack a day tobacco habit over one year: two thousand dollars.

The goal of the next activity, "mind-reading" is to have the students consider the social effects of tobacco use. Although it is an optional activity I demonstrated it through a quick role play. I asked for two volunteers who "play together" outside of school. I directed the play where one of them steals a cigarette from an older sibling and tempts their friend to smoke it with them. The students created the setting, action and dialogue. In one class two boys who play hockey together volunteered to role play "sneaking a smoke before hockey practice behind the arena." As they began their acting I asked them what would happen if their hockey coach walked by and saw them sharing this cigarette. The boys stopped their acting and looked guiltily at each other when I asked them to imagine what this important person in their lives might be thinking about their smoking. I asked them what they would be feeling and thinking. How would they explain their actions? They hung their heads and mumbled a variety of possible answers from "guilty" to "stupid" to "they would never do it again." This opened a discussion with the class about trust and how in this example their actions might affect the older brother and the adult who witnessed their first attempt at smoking. I left the various scenarios with the teachers.

Several of them covered bulletin boards with completed mind-reading sheets.

This session closes with an explanation of their homework, "The Hunt." This activity is designed to increase the students' awareness of tobacco advertising within their own community and home. It has the potential to involve parents and it sets the stage for Session Three.

d) Session three

The goal of this session is to address the social influences that Sussman states are the most important determinants of adolescent cigarette and smokeless tobacco use. Sussman proposes there are two main types of social influence that promote the use of tobacco by youth. The first is normative social influence which is the pressure that peer groups impose to accomplish group acceptance. The second form of social influence is informational for example the lifestyle advertising employed by the tobacco industry. This type of information covertly suggests that most people use tobacco as it helps them to achieve a desired social image including success, attractiveness, and wealth. The session's objectives are that the students will:

- identify that the majority of youths do not smoke
- identify sources and types of media that influence their choices

Activities include:

- video "Selling Lies"
- identification of types of media and messages
- button making
- gallery walk

The 20 minute video "Selling Lies" illustrates how the tobacco industry perpetuates their lies through a variety of mediums. I gave the students three questions to focus their attention on important aspects of the video's content. In each class the students appeared absorbed through the first 15 minutes. This segment of the video illustrates the tobacco industry's tactics and motives. They meet the "Winston Man" who explains why he quit both smoking and his job. The students become restless during the last five minutes of the video that includes in interview with a physician. Several factors that may contribute to their restlessness include: the complex language of the physician; less action scenes in the last 5 minutes and the video's length. However, each class unanimously agreed that they liked the video. The focus group concurred.

Students were able to name most forms of media. Most often they failed to identify movies or clothing as a source of implicit advertising. I used an activity from the "Heart Smart" program that directs the students to examine their clothing and if it bears a brand name, to stand up. The students were consistently surprised to find everyone standing.

They seem equally surprised that this is a form of advertising. In one class a student was wearing a Joe Camel baseball hat. His classmates had thought it was "cool." Yet at the next session I noted this cap pinned up on the bulletin board display alongside with tobacco ads.

One student in two of the four classes was wearing a T-shirt decorated with a brand name symbol without words. I asked the students if they knew the slogan for this symbol. Without fail they chanted the correct slogan. I used this "teachable moment" to have them guess what brand of cigarettes came in blue and white packages and what activity they associated with these colors. The majority of students easily identified the brand and the lifestyle advertising. They shook their heads in amazement as I explained that this exercise shows how successfully the tobacco companies have marketed their products. I explained that even as tobacco advertising becomes more restricted the companies only have to show their colors for people to "get their message."

The button activity was popular with the focus students. They identified it as "fun" a "keeper." The messages on the buttons were imaginative and unique including: Smoking is like bungy jumping....without a cord; smoking is with you for life..... and death; Just don't do it; and You're smoking rat poison. Their illustrations were colorful and appealing. In several classes students offered their buttons

to me and the rest proudly sported their own. In one class the teacher laminated the buttons and students continued to wear them throughout the following program sessions. We discussed how these buttons contribute to their influence as a role model as they express their attitude towards tobacco to younger students and to family members. The students worked feverishly on their buttons and it was difficult to shift their attention to the gallery walk. In two classes the teachers promised the students they could continue working on their buttons during Art. This activity was successful at engaging the students in deconstructing tobacco media and reconstructing health messages.

The gallery walk provides the students with an opportunity to work in groups to examine magazine advertisements at 8 different stations. They circulate from station to station to answer each poster's questions. This is a very noisy part of the session and flowed best when the teacher and nurse circulated with the groups to help them reach consensus.

One teacher had his students work in groups on media presentations including collages of magazine ads, graphs of tobacco advertising surveys, posters, and a three dimensional display of the constituents of cigarettes that included a 6 foot cigarette that lit up by flashlight. I was astonished when I arrived for session four as every surface of the classroom was covered with this work. The teacher asked and I agreed

that we could take some of the session's time to create a video of the displays that included the students explaining their work to me.

Completion of the connecting homework activity, "The Hunt" occurred in three of four classes. Students were diligent in observing the number of times they witnessed smoking on television programs. They uncovered an alarming media trend. "The Hunt" demonstrated that the characters who smoke are more often portrayed in movies and on television as "winners" rather than "losers." Although there was inadequate time to discuss their findings during the sessions, it was encouraging to note that teachers, in 2 of the 4 classes, assigned Social Studies marks to this activity. Most students in the focus group reported that their parents were unaware that they were conducting "The Hunt" survey of media.

I asked the focus group participants what aspects of session three they enjoyed they said, "Keep the buttons, and the posters, sticking up the ads and stuff."

e) Session four

The goal of session four is to discuss the environmental problems related to tobacco and to assist the students in devising solutions. The session includes:

- interactive discussion about tobacco production

- interactive discussion about environmental tobacco smoke (ETS)
- review of problem solving process
- identification of personal exposure to ETS
- role playing of ETS scenarios by students
- explanation of letter writing (optional activity)

This was a less active session than the first three. Students were attentive but not lively. Three or four students volunteered to share where they were exposed to ETS and have the class work with them on potential solutions. Students suggested a wide variety of solutions that the class accepted or discarded based on whether it met the problem solving criteria.

The focus group made excellent suggestions on how to improve this session. They stated clearly that "there was too much sitting and well we could do another little skit like....." Together we clarified a strategy that involved giving groups of students scenarios where students commonly experience exposure to environmental tobacco smoke (ETS.) I followed their suggestion with a different class and noted that the students were much more engaged. At the following focus group session I reported my observation and they were clearly impressed that I integrated their suggestions. I explained that the expanded role-playing took time away from portion of the session that explains how destructive the growth and production of tobacco is to the environment. Their response to my question if this deletion was a

problem was a resounding, "no." One student added, "if kids want to look up about it they can, its not really what its about, like basically the image that you're trying to put out is like DON'T smoke." Another student contributed, "skip out things that don't really have a message"

Teachers in 2 of the 4 classes in this study implemented the suggested connecting activity of writing letters about tobacco concerns to politicians, tobacco industrialists and farmers or parents. I wrote covering letters explaining the purpose and origin of the letters and forwarded them as addressed by the students to the: Prime Minister; Health Minister; Premier of B.C. and local bowling alley. The students expressed pleasure in their copy of the cover letter and continue to ask me if I have received any replies "because they haven't." We all await. Samples of these remarkable letters are included in appendix 5.

f) Session five

The goal of the final session is to summarize and add further relevance to the program through a presentation by local Grade 11 and 12 students.

The teen teachers included both Career and Personal Planning Students and members of a "Quit Smoking" group. They developed their presentation under the guidance of their school counselor and drug and alcohol prevention worker. The counselor was provided with a brief

program guide to facilitate the teens' presentation. This guide explained that a critical problem is youth's overestimation of the number of teens who use tobacco. Included in the guide was the local Grade 5 students' estimation that approximately 50 to 90 % of their High School Population smoked. The teens were appalled and set out to survey the smoking rates of their student population. They included the following topics in their presentation:

- school survey results of the number of teens who smoke
- kids motivation for starting smoking and the "flip side"
- personal stories of illnesses and social problems they have experienced or witnessed due to tobacco
- addiction numbers of teens who wished they had never started and why
- how to be cool without using tobacco
- role play of refusal skills
- the cost of smoking, what they could have bought with the money wasted on tobacco
- the plan to get rid of their school's smoking pit

Two male and two female students comprised the team of teen teachers at each of the two schools in this study. One new male member joined the group for two of the four sessions. One of the male students sported a long pony tail, black leather jacket and jeans and cowboy boots. Several students recognized him as their local Pizza Delivery Driver. The other young man was his antithesis in appearance. He is a

local football hero and volunteer firefighter. The two girls were fashionably dressed in typical baggy shirts and jeans. A large hoop adorned one of the girl's noses and the other wore countless earrings. Many students recognized one of the young women from her work as a corner store clerk.

The group observed for this study worked well together. They took turns being the moderator, recorder, and facilitator of their presentation. Interactive discussion was their primary teaching technique. They took control of the room in a relaxed but firm manner and their session transfixed the Grade 5 students. At times it seemed as if the younger students were at the feet of the teens, mesmerized by their every word.

In each class the teens asked the Grade 5 students to estimate how many kids at the local High School are smokers. They placed a large graph representing the results of their school survey. It showed that 13% of their schools population smokes and one-half, of those who smoke, want to quit. The teens asked the students to tell them why they think kids start to smoke and they recorded these answers on the blackboard. For each answer they demonstrated the "flip side" of how the reasons for smoking often have the opposite effect. For example the Grade 5 students suggested that kids start to smoke to be cool and the teens flipped this by explaining how their peers regard smoking as uncool, it's just an expensive and "stupid" addiction. The teen teachers

suggested things they like to do that are cool, that don't include smoking.

The teens' session included a discussion of health problems related to smoking. The teens and their counselor expressed their surprise at the Grade five students' sophisticated level of knowledge. The counselor suggested, "someone has taught you well." However the teen teachers added to the depth of knowledge through examples of their personal experience with health problems related to tobacco use. This portion of the presentation was riveting.

One by one the students told their personal tobacco stories. One young man explained how hockey had been his "life" until he started smoking. Within one year of starting smoking he had lost his coveted team position due to his "lack of wind." He explained how angry he was at himself, so angry he can't remember his withdrawl symptoms as he quit smoking and began serious training. He attributed his return as the "winger" to smoking cessation. One of the young women shared that she had lost her "excellent singer's voice" due to her pack a day addiction. Although she enjoyed the jazz group, she quit because "her voice was useless." Another student explained how she developed asthma through smoking which affected her ability to be a "jock." She explained that she had started smoking for the same reasons that lots of girls do, to lose weight. However she gained weight because she

developed asthma and could no longer keep her commitment to sports. In her experience "quitting smoking was one of the hardest but most rewarding things she had ever done." She reported that once she quit her asthma disappeared. This progress allowed her to resume sports which has stabilized her weight. The teen who is a volunteer firefighter told a story of how he missed "fighting a fire" because of a friends smoking habit. Apparently his "beeper" went off at a beach party and although he was able to run quickly up a hill to his car his companion, who is a smoker, experienced an asthma attack. He retold his frustrating experience of carrying her to his car, racing to the firehall, only to take care of her breathing rather than attending the fire. He blamed her smoking for his missed experience.

The financial costs of tobacco were addressed through calculating how much money each of the teens had spent on smoking. In their first presentation one teen looked visibly distraught upon realizing he could have purchased his "perfect machine" a motorcycle with the money he "had blown on smokes." The woman who had quit smoking calculated how much she had saved and how this money enabled her to keep her "beater" car "on the road."

The teens took turns acting out a short role play. It showed how to say no in a "cool" way that would not threaten a friendship. A particularly powerful statement by one student was, "sharing a cigarette

is not sharing friendship, it's just sharing a cigarette." He related how after he quit smoking people his "smoke-pit friends" ignored him because, "they couldn't bum smokes from me anymore, some friends."

In two of the four presentations a new member joined the teens. Unfortunately his level of knowledge about tobacco was not matched by his enthusiasm to share what he believed "were the facts." He consistently confused the government with the tobacco companies and explained to the audience how the "government wants kids to smoke because they make a lot of money from the taxes." I addressed my concerns with the counselor by note during the presentation and she wrote back, "I'll deal with this gently because he has had problems learning at school and this presentation is one of the best things that's happened for his self-esteem." At an appropriate time within the session I carefully corrected the misinformation.

The teens discussed that the myth that most teens smoke may be due to the visibility of the "smoke-pit" at the front of their school. The "Quit Group" is currently working with the parents group to raise money for a basketball hoop for the "pit" and a pool table for the student lounge. They explained that not everyone is a jock and that smokers need other things to do, to keep them out of the pit. The students hope that the basketball hoop will change the nature of the pit and like the pool table

keep the hands of the smokers busy. They hope this will reduce the smokers cigarette consumption.

The teens closed their presentation by giving each Grade 5 student a certificate that is a personal contract to respect their bodies and never smoke, Appendix 6. They explained it was voluntary contract with themselves and that they should "put it up where it's in your face." The Grade 5 students asked for the teens' autographs which pleased the teen teachers. Autographs became a routine part of their presentation to other classes.

When I asked the focus group which part of the program was boring. One student said "nothing from the teens session." His sentiment was echoed by a chorus of "yeah, it was cool, yeah cool." They thought the contracts were a good idea "because you can take those home." One student identified that they might be especially good if you had adults in your house that smoked, "especially for kids like Barry who have a Mom and Dad and Grandma and Grandpa who all smoke, like they can put it up on their fridge or something."

Two classrooms wrote letters to the teen teachers thanking them for their presentation. The counselor called to say how much the students appreciated this. The teen participant who works on weekends as a corner store clerk stopped me in the store to say, "we had no idea how

much power we have with these kids, I started crying when I read their letters.....I'm glad I quit....it means a lot to me that I made difference."

g) Students' knowledge and attitudes towards tobacco use.

The mind mapping activity at the beginning of session one demonstrated a sophisticated level of knowledge about tobacco. The students identified the health hazards of smoking, second-hand smoke and chewing tobacco. They identified many constituents of tobacco and that nicotine is addictive. In two of the four classes they noted how costly it is and that advertising and peer pressure are reasons that people smoke.

When asked about what they thought about tobacco the focus group participants comments included, "disgusting, stupid and gross." They discussed second-hand smoke and typically suggested, "I don't understand why they have the tables right together because the smoke drifts right over, they should have a wall or door to separate the smokers at restaurants." When I asked them to describe the cigarette companies as a person they said, "he's a couch potato, an alcoholic, he smokes so he's going to die" or a "rich poker player, actually a really boring person because he lives in a hospital and his friends are other people taking chemotherapy who used to be his golf buddies." Two participants spontaneously made up a jingle about "nicorette" chewing gum and

explained its purpose to the group. They talked about the difficulty their parents had in quitting smoking and what addiction meant for them. They all estimated that addiction to tobacco occurred after smoking 20 or less cigarettes.

None of the focus group participants claimed to have tried smoking cigarettes although one boy stated he had smoked some leaves and twigs once. Several of them said, "they were never going to smoke anyways, but now they won't for sure, it's definite."

i) Teachers', Principals' and Parents' attitudes towards the program.

Following the program I bumped into one of the focus group participant's mothers who shared how pleased she was that her daughter had the program because both she and her husband used to smoke. She hoped it would make a difference and "wished she had something like the program when she was at school." All parents of focus group participants approved and returned their child's consent form within one day.

Two of the teachers echoed the parent's views. They both had daughters in Grade 7 and asked if the nurses were planning a program for older students, as they thought this would be a good idea. The teachers were welcoming and helpful within the program and facilitated this study by promptly sending and retrieving consents. They did not

complain that the program interrupted their curriculum and commented, "this fits perfectly with what I did or plan to do."

The principals at both schools included in the study facilitated meeting with the teachers and organized a suitable space for the focus groups. All schools that received the program in 1996 have requested it for next year along with the two sessions we have offered for Grade 6 classes.

j) Student's ideas for future programs.

At every opportunity the students engaged in dramatic presentations. The focus group requested more opportunities for drama. They emphatically stated that they didn't like "too much sitting down." At each meeting they asked if they could do a play including the poison box to the whole school.

One student wanted to talk about the quiz. He suggested that we make sure to present all of the material that will be tested. There was a chorus of agreement with his suggestion and they unanimously agreed that they liked to do the questionnaire. Another student proposed doing the questionnaire one year later to "not when we know you are coming and ask what we remember."

When I asked if next year's Grade 5's should experience this program they unanimously agreed.

All three nurses involved with this program have commented on the improved rapport with the students they taught.

A letter was sent to all elementary school principals about our program inviting them to request it for next year. All schools requested the program.

FINDINGS AND DISCUSSION

Between June of 1995 and 1997 the Duncan School-Aged Health Nurses have made remarkable changes to how we practice our art. We have moved from independent, geographically defined practices to specialized, research based, team nursing. The success of this change hinged on: supportive administration; adoption of a health promotion planning and evaluation model; application of social marketing and diffusion strategies and a dedicated researcher. This has been a difficult process, as change always is, consuming an inordinate amount of personal time and effort. At this juncture it is critical to examine the outcomes of this process and to consider which of these changes to capture and apply to further Public Health Nursing practice.

Adoption and adaptation of a Health Promotion Model

Prior to our adoption of the Comprehensive School Health Model nurses reacted to health problems and requests for health education rather than researching and responding to their community's needs in a planned, coordinated fashion. Our past experience with community development encouraged us to give more weight to one of the four cornerstones of Comprehensive School Health, the participants' aspirations. We soon learned that participants expect and need nurses to have a clear vision for their community's health. This requires

assessment of all the four cornerstones of information that Kane (1993) describes. Once the SAH team attended to the former, the foundation was secure and the framework for our tobacco prevention program began to take shape.

While identifying this key school health issue we learned how to address it effectively through the use of social marketing techniques. This process necessitated further research and refinement of our plan. It required us to segment our audience and to adapt our program to fit each of their specific needs. Pilot testing demonstrated that we had been successful in our design and implementation of the program yet we needed to consider how we could share it throughout our school community. Our attention to Roger's (1983) diffusion of innovations resulted in the effective uptake of the prevention program throughout our community. All schools within our community experienced the program and all have requested it for next year.

Team formation and focus nursing

The success of the program required a drastic departure from our individual practices to team formation. In itself, this change required our attention and energy. We learned the importance of shared leadership, common vision and how to harness and acknowledge each others' strengths. Unfortunately, we learned how to function as a team through

experience rather than as a planned process. In part, this was due to the financial restraints and accountability of our work environment. Retrospectively, attention to the process of team formation would have streamlined our ability to work collaboratively and cooperatively.

One aspect of the program's development was our dedication of time and energy to planning. This depth of planning is a luxury not usually afforded in the busy practices of Public Health Nurses. Three factors made it possible. Firstly, from the outset he SAH team had the support of our nursing leaders. Secondly, we examined our 'usual' ways of practicing and developed more effective and efficient ways to do our work. Thirdly, my decision to dedicate my Curriculum Studies to the study and development of a tobacco prevention program.

These studies included how to incorporate a model of health promotion and planning, social marketing and diffusion of innovations with the educational and tobacco program literature. These efforts encouraged us to develop a program in such a way that it appealed to its audience, the teachers and students.

Effect on teachers

The data indicates that the Grade five teachers' view of Public Health Nurses as health educators has been strengthened. The SAH team has increased their visibility throughout the community through our in-depth

focus on tobacco prevention. The SAH nurses have noted an effect throughout the school community. Since starting our program we have experienced less requests for 'traditional nursing services' that research has demonstrated are ineffective. For example, schools are now willing to listen to the nurses' research-based explanations of why school wide head lice checks and pedulocide treatments are ineffective. This change has allowed us to focus our energy and services.

Effect on students

The students expressed their opinions clearly about the program. The teaching strategies they found interesting were those that were: active, such as dramatic presentations; exciting, such as the lung dissection; multi-media, such as video tapes and the gallery walk; appealed to variety of learning styles, such as art activities and letter writing; and encouraged discovery learning such as group work on word games. Their comments and behavior suggests that the teens' session had a powerful impact on their learning about tobacco use. The literature supports these findings.

The strength of the teen session, in the students' view, requires the SAH team to provide accurate information or information sources for the teens to use to develop their presentation. This will reduce the

possibility of sharing misinformation with the participants yet retain the teens' autonomy, creativity and spontaneity.

The data demonstrates that the program effectively addressed the critical issues of tobacco initiation, the myths that normalize its use. As the study demonstrates we successfully shifted our participants view that most teens smoke to most teens don't. As a result of the program the participants became more aware of the social influences that affect their decisions and how to address these. The program also altered the participants' view of the personal relevance of health problems related to tobacco's use.

However, the literature warns us that these positive changes will not be maintained unless the program is augmented throughout the school years. The SAH team nurses have reviewed our resources and decided we are able to continue to offer the "Most Kids Don't" program and a follow up two session program to the Grade six students throughout School District 79.

One unintended effect of the program, that requires immediate attention, is the dilemma it creates for students whose parents smoke. Students have difficulty learning when the topics generate personal stress. The SAH team is currently exploring ways to offer a cessation program for the parents of our program's participants using health promotion and social marketing strategies.

RECOMMENDATIONS

As previously discussed, tobacco use is a complex social problem that requires a well planned, coordinated and comprehensive solution including prevention and cessation programs and protective public policy. The school health nurses logically immersed themselves in the prevention aspect of the problems. However while developing, marketing and implementing our program we remained cognizant that it was not a panacea. We realize that to effectively address our community's appalling rate of tobacco use a coalition needs to be developed. Our youth need an environment that supports a tobacco-free lifestyle. The school nurses have demonstrated that they are effective health educators and researchers and have the capacity to lead such a tobacco coalition, yet, this is beyond our current resources. This is worthy of consideration.

Our program demonstrated that the adoption of a health promotion model that included social marketing and diffusion of innovation strategies was a successful framework for practice. This success behooves schools of nursing and public health education to incorporate the teaching and learning of these strategies into their curriculum and inservice training.

This study demonstrates the positive effect that the application of research has on nursing practice. Also it demonstrates the success of the

application of a framework that includes in-depth planning. Public Health Nurses who choose to embrace the changes required to work in focus nursing or teams would be wise to apply research and planning to the process of team formation, function, structure and maintenance. The synergy created by a team is a worthwhile endeavor.

The 'Most Kid's Don't' program would not have been possible without encouragement of my Master's in Curriculum Studies. A change in nursing practice of the magnitude required for such a program requires the dedication of resources for a nursing researcher, in the field.

As I reviewed the past two years I had the desire to describe my learning on two levels. One is the above static description from which others can make their own meaning and create their own experience. The other is on a more personal level. And so, I invite you through the arbor, to experience the meaning this work has held for me and how I envision its future.

PERSONAL REFLECTIONS, 'THROUGH THE ARBOR'

A tree that can fill the span of a man's arms
Grows from a downy tip;
A terrace nine stories high
Rises from hodfuls of earth;
A journey of a thousand miles
Starts from beneath one's feet.
Lao-Tzu (6th centry B.C.)

As I complete my Masters studies to return to the work a day world, I realize I am leaving the company of adventuresome travelers. Many times during my studies I have felt exhausted and confused about how to proceed. My fellow travelers and teachers in Curriculum Studies have inspired and guided me, to examine the personal strength and knowledge this journey has created, and to use these, to plan my route. This has been a remarkable journey and yet, it's not over. Once again, I have arrived at a juncture where I must ponder where I have come from, and what I have learned. This thoughtfulness will permit me to capture the essence of my studies, to inspire me, in the absence of my invigorating companions.

Although I am a Public Health Nurse, I am also at heart, a gardener. My nursing practice mirrors how I attend to the soil that nurtures me. Throughout the past two years, I have felt as if I had stumbled upon a

large rambling plot of west coast earth, fraught with potential and problems. As I envisioned its future I felt, at times, overcome by the complexity and breadth of the work it would require to tame. I knew this piece of land would require the help of others and so I encouraged, invited and cajoled the other nurses to join me on my adventure.

Tobacco is indeed, a tangled web of problems. Like the hardy buttercup, it springs up unexpectedly and presents a vision of beauty as it chokes the plant it embraces. Weeding can be an endless and exhausting process, if one neglects to consider how to discourage its growth. Some gardeners choose extreme solutions like herbicides, that poison the earth. They overlook the toxicity of such temporary solutions and disregard the source of weed, an environment that supports and encourages its growth. To me, a more inviting solution is to alter the environment, to one that discourages the unwanted guest. I also believe that it is fundamental to strengthen the plant that you wish to survive. This requires researching and learning all one can about the plant's needs. These beliefs led me to engage in this tobacco prevention program. In my view, with careful planning, nurses can alter the environment and strengthen our community's children to disentangle tobacco's choking grip.

The three school health nurses were guided to this plot of tobacco by the political changes of 'New Directions.' Although our strategic plan

directed us to subdue the entangled school health environment, we lacked a common view of how to proceed. It was as if we had arrived at the same place, with different visions of how the garden should look and what tools to use. Our invitation to other gardeners, including parents, teachers and students, to work with us, failed. We were unable to direct them to where and how use the tools they had in hand. This failure at forming a comprehensive school health team was our first lesson. Every viable garden needs a well researched plan.

Winter

Like gardeners in winter, we curled up with our seed catalogues to research, plan and develop a common vision of our land. We read about comprehensive school health and learned how and where to seek further sources of information. This information focused our energies on tobacco prevention in schools and guided us to find out more about our participants and their environment. We considered how the techniques of social marketing had profited the tobacco industry and learned how to harness this process for our population's health. As we made our plans, we looked to find already existing gardens that could provide a blueprint for ours. However, we found only withered plants, tagged and labeled in their pots, that no one had embedded in the soil. At this point, we realized we would have to become not only the planners but the

gardeners. Whatever we planted, we would need to weed, water and maintain or watch it die. This was a difficult realization. We came to understand that the complexity of our endeavor would require cooperation and acknowledgment of each others' strengths and abilities. We were embracing a radical change in our nursing practice. The depth of research required to seed the development and tend the growth of our tobacco prevention program is one that our work environment could not afford. Over time, our team began to acknowledge that we could harness my personal studies, for research that supported our work. It was a stormy winter of discussion from which the 'Most Kids Don't' program, emerged.

Spring

We set forth to work in a manageable portion of our land. Through the winter, we had examined the tools and resources we had to work with and realized our limitations. We knew that tobacco is an insidious weed that requires the coordinated efforts of many. Our knowledge of social marketing encouraged us to undertake a plan that would attract others to join in our work. And so we set out to plant a small appealing garden at two schools.

As we worked we heeded the guidance of Roger's theory of diffusion. We planted seeds and used techniques that teachers were

familiar with. They began to see how our work enhanced theirs and how they could assist its growth. We began to share seeds, tools and the work of maintaining our mutual plot. Within a few months, teachers throughout our school district joined our venture. The garden began to take shape and to flourish.

Summer

The work we were undertaking was new to us and so we watched its growth carefully and adapted our techniques when needed. This phase of program implementation was like the long summer hours of intense weeding, thinning and watering. We learned to support each other by reviewing how each nurse engaged the program's sessions. Our discussions of what worked, and what didn't, enriched our teaching repertoire.

Autumn

As the feverish activities of our first summer of implementation drew to a close, we began to sift through our harvest. Had we reaped what we had sown, had we realized our vision?

Our vision of a tobacco prevention program, for all Grade five students in our district, had come to fruition. We had altered the environment, so that the students recognized the myths that surround the

diabolical beauty of the tobacco weed. The strength that comes from this knowledge will encourage them to support each other, for now.

We learned from our reading that, within two years, the noxious weed returns in full force unless we tend and support what we have planted. Once again, we totted up our resources and concluded that, with judicial planning, we could offer two tobacco prevention sessions to the Grade six students throughout our district.

As we looked over our garden site we recognized that we had planned and nurtured a garden that was attractive to teachers. Once the garden was planted and had started to take shape, the teachers began to work within it. This synergy encouraged us to consider the possibilities of harnessing the energy of the larger community. We hoped that others would take our lead, leaving us to sustain what we had originally planted.

From the outset of our journey, we had dabbled with the formation of a tobacco coalition. It was exciting to consider the outcome that a cooperative effort could make. Yet the first meeting resounded with a cacophony of visions. It reminded us of our first winter's experience. The winter had taught us that the creation of a common vision is critical, yet exhausting. We concluded that we lacked the resources to adequately lead the development of a community coalition. Perhaps once the dormant period of winter has rekindled our spirits, we will find

the energy for planning, seeding and tending a coalition. At this point, our energies need to remain focused on tending what we have already planted.

While examining our evaluations, we thought over our successes and failures to deliberate which seeds to save, discard and replace. Each of the five sessions had their strengths yet sessions four and five had outstanding weaknesses that needed to be culled. As well, there was an underlying current of concern that disturbed the students' learning, that of parental smoking.

The Culling

The questionnaires, focus group comments and our observations led us to believe that the environmental issues related to tobacco production in session four are irrelevant to the program's intent. This information did not address the students' survival needs that Jensen speaks of, or their personal agendas' that Abernathy discusses. Future programs will set this information aside. Although interesting, tobacco production is not critical to the students' growth

The teens' session was applauded by all, yet it held a critical flaw. Misinformation, if presented in an appealing fashion, has the ability to flourish. Witness tobacco. The student who had been grafted onto the session did not share the common roots of knowledge of the others. We

realized that we needed to apply social marketing to this important session to develop, with teens, accurate knowledge that they could share in a meaningful way.

How could we still the disquiet of the students' anxiety about their parents addiction? We need to revisit the journey we had undertaken to develop the students' program, to create an environment that invites parents to consider smoking cessation. If Oie's proposal is correct, that parental modeling is the greatest factor in students' initiation of tobacco use, this is a worthy endeavor. This is one of the places to focus our energies in our next winter of program planning.

The Winter To Come

I imagine myself curled up on the couch, with my seed catalogues, contemplating what has gone before and what lies ahead. I invite the novice gardener to sit beside my fire and hear my tale and dreams. She asks me if I would have considered this journey without the driving force of my Master's Studies. "Probably not," I reply "yet what I have learned has altered the foundation of my nursing practice."

"What is the essence of this change," she asks. "Praxis," I say, "research into practice, the adoption of a health promotion model, like comprehensive school health that thoughtfully includes social marketing and diffusion of innovations. These types of processes encourage the

long term sustainable growth that is the goal of health promotion. These are the roots of our program's success."

I imagine her asking me, "should nursing sustain these changes?" I smile, and say, "examine the success of this program, yet consider its costs. The depth and breadth of changes could not have happened without the energy of a designated nursing researcher. This must be considered for any future changes within the field of nursing. This field needs someone who is able to till what they read, into their soil."

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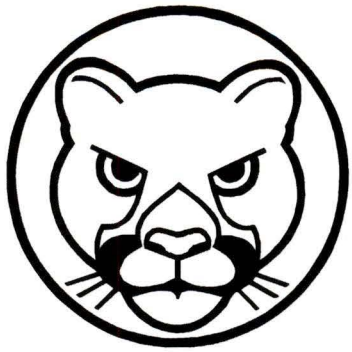
Appendix 1 a



THE HUNT

1. Look in a store near you to find advertisements for smoking. Describe one of the pictures that is advertising the cigarettes. (For example, the pictures shows racing car drivers.) Did you like the picture?

_____

_____

_____

_____

_____

2. Does this advertising **picture** show any of the problems that smoking causes, like yellow teeth or shortness of breath?

Yes_____ No_____

3. Is anyone really smoking in the picture?

Yes_____ No_____

Appendix 1 a

4. Look for tobacco ads in the magazines and newspapers you have at your home. Ask your parents if you can bring the ads to school. Is the magazine from Canada?
Yes_____ No_____

5. If you watch T.V. or a movie write down the number of times you see people smoking and the number and type of tobacco advertisements you see. Ask your parents to help you.

Name of Program	**Number of times you saw someone smoking**	**Put an "X" if the smoker was a "loser". Put a tick mark if the smoker was a "winner".**

Appendix 1 b

RECIPIE FOR A SHORTER LIFE

Ingredients:

- carbon monoxide (car exhaust)
- tar (thick brown stuff which causes cancer)
- arsenic (rat poison)
- cadmium (from batteries)
- formaldehyde (preservative for dead bodies)
- ammonia (toilet bowl cleaner)
- naphthalene (moth balls)
- acetone (nail polish remover)
- 3982 other chemicals

Method:

- Mix all the ingredients
- Add some sugar so it doesn't taste so bad
- Sprinkle a pinch of nicotine in so people will want more and more and more
- Cut down a lot of trees to make paper to roll this stuff up in

Cook's Hint:

Make some advertising to convince people to put it between their lips and smoke it

Don't smoke it yourself or you won't be able to enjoy all the money you make

PRESENTATION:

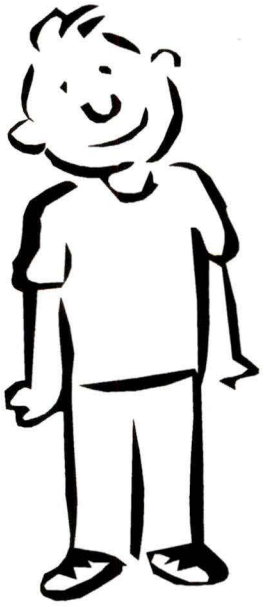
Use the stuff in the poison box to show and tell the other students what you've made

Appendix 1 c

IF YOU COULD READ THEIR MINDS

What if you decided to try smoking and Michael Jordan caught you. What would he think? Fill in the balloon below---

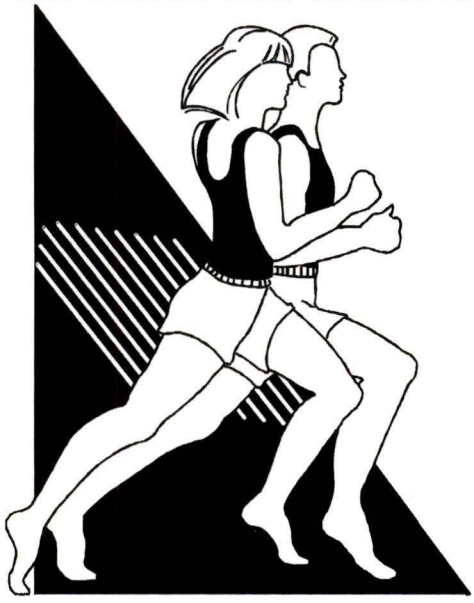
How would you feel about yourself, how could you explain your actions?
Fill in the balloon----



Appendix 1 c

IF YOU COULD READ THEIR MINDS

What if you decided to try smoking and your coach caught you. What would she think? Fill in the balloon below---

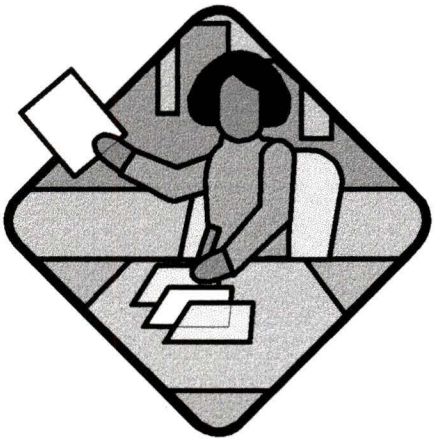


How would you feel about yourself, how could you explain your actions?
Fill in the balloon----

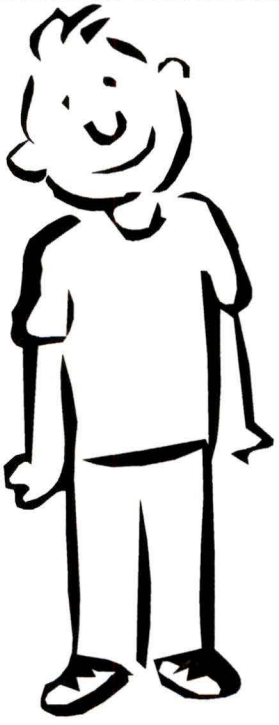
Appendix 1 c

IF YOU COULD READ THEIR MINDS

What if you decided to try smoking and your teacher caught you. What would she think? Fill in the balloon below—



How would you feel about yourself, how could you explain your actions?
Fill in the balloon below--



Appendix 2

PAT COPPARD

Fresh from a role in Woody Allen's latest film Mighty Aphrodite, American actress Mira Sorvino poses for an US magazine photographer, all pouty lips and plunging neckline, hair falling fashionably around her face.

By her left elbow is a glass of red wine; in her right hand, inches from her face, is a burning cigarette.

Young, glamorous, a smoker.

The connection isn't lost on most teenage and pre-teen girls.

And it's the kind of image public health nurse Pat Hocker must combat when she and colleagues Cathy Whitehead and Joy Stott deliver their anti-smoking message to Grade 5 classes at area elementary schools.

But how does a small-town school-based health team take on the international advertising industry and tobacco corporations, which employ the top marketing minds in the business to guarantee a new crop of tobacco consumers every year? - Especially since studies have shown almost all smokers get hooked before the age of 18, usually between 12 and 14.

"It's a big battle," acknowledges Hocker.

But Hocker believes the tools are at hand to dispel the smokescreen of glamor that helps lure young people into the habit.

The primary weapon the team wields is knowledge - not just of tobacco's health effects, but of the multi-billion dollar industry's impact in countries where it's grown as a profitable cash crop, often at the expense of rainforests and much-needed local food crops.

"What's happening in the Third World is they're growing tobacco instead of food," Hocker says.

"Kids have a clear sense of right and wrong. If they understand what the tobacco companies are all about, I think that's one approach that can help them stop."

Hocker and her team also provide kids the skills to dissect advertising images critically, to examine what's being sold, to whom and how.

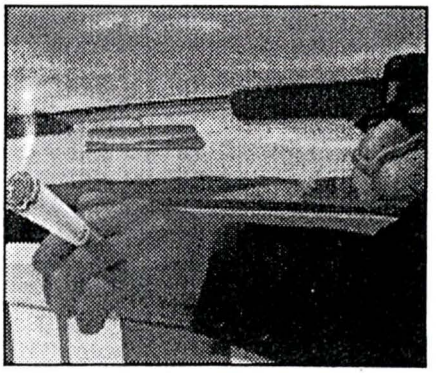
That ability is important, since studies have shown Joe Camel, the cartoon camel in fedora and dark glasses used to promote Camel cigarettes, is recognized by children as young as three and four.

"It's a very powerful advertising tool," says Hocker, adding although cigarette advertising is banned in Canada, this country is saturated with American media.

With their nascent social awareness, children are outraged when they hear Sylvester Stallone signed a half-million dollar contract to smoke Brown and Williamson cigarettes onscreen in five feature films.

The goal is to build kids' resistance to the multiple marketing images bombarding their developing psyches, preying on desires to fit in, to be popular, to rebel.

Hocker likens the process to inoculation.



"We want to give them some protection," she says. "The longer they delay it, the less likely they are to start."

The first "shot" is a five-week session in Grade 5, followed by a booster in Grade 6.

The price for failing to inoculate can be a lifetime addiction to nicotine, as habit-forming as heroin and cocaine, and often a "gateway drug" for kids.

"They cross a line - it's a way of rebelling," Hocker says.

"That's why kids are such a great market for tobacco companies - kids will rebel anyway."

It's a new approach to instilling the anti-tobacco message in schools, one that expands discussion of health effects of smoking to include the wider economic and social context.

The emphasis is on understanding media, giving skills to deal with peer pressure, and teaching decision-making skills

"What we know is scare tactics don't work," she says.

"We need to look at how we can influence long-term health in the most effective way."

One effective argument relies on basic economics: since the average smoker spends $8.25 daily on cigarettes, the team tells kids the same amount of money would buy 25 pairs of rollerblades and four large pizzas every week for a year.

But by far the biggest response comes from a lesson on the chemical constituents of cigarettes: kids are disgusted when they find besides tar and nicotine, cigarettes contain cyanide and ammonia.

To drive home the message, the nurses bring visual aids: a bottle of toilet bowl cleaner and an exhaust pipe.

"I found that was very, very effective," says Rosemary Devoe, a Grade 5 teacher at Alexander Elementary. "They certainly will remember that."

Launched in March, the program was restricted to Koksilah and Alexander elementary schools this year, but the team hopes more schools will become interested.

Eventually, Hocker says she'd like to see a program from kindergarten to Grade 12, so the message is reinforced throughout the childhood and teen years.

Devoe agrees.

Continued on page 32

Appendix 2

SMOKING:
Not a one-shot deal for youth

Continued from page one

"I don't think a one-shot deal is enough for these kids," she says.

"Unfortunately, a lot of it's not being done at home, or if it is, the peer pressure is very strong."

Devoe notes 92 per cent of the 40 kids who participated in this year's program come from families where parents smoke. Some have already been caught sneaking a puff by school officials.

"A lot of things are starting earlier with these kids. It seems like every year, they try to grow up a little faster."

Devoe wants to see the program extended to include alcohol products, noting one student recently brought a wine cooler with his packed lunch.

"It's not good enough just to give needles anymore," she says. "We have to talk about things like that and bring it out."

The three public health nurses - who also conduct immunization programs and regular youth clinics - spent six months devising the program through intensive reading and studying on their own time, after Whitehead attended an inspirational workshop last year.

Lenore Underhill, intermediate program coordinator for School District 65, is planning an interactive role play on peer pressure to reinforce the classroom lessons.

"Kids listen better to older kids than old fogies like us," she says.

"Those are their role models."

Hocker also called on the community at large to help stop cigarette sales to minors, noting tobacco-related illnesses killed 45,000 people in Canada last year.

"Prevention is where it's at. If we can just keep a few kids from smoking we'll have accomplished a lot."

Appendix 3

TOBACCO PROGRAM QUESTIONNAIRE

Date:_____

Initials: first_____ middle_____ last_____

Birthdate: Month_____ Day_____ Year_____

How old are you: _____

Check one. Are you a boy ____ or girl _____ ?

School's name _____

Circle one answer.

1. How many Canadian teenagers (15 - 19 year olds) do you think smoke or chew tobacco?

   a) less than ¼

   b) ¼

   c) ½

   d) ¾

   e) nearly all

2. How many people do you think will die in Canada this year from tobacco?

   a) 100

   b) 1,000

   c) 5,000

   d) 20,000

   e) 45,000

Appendix 3

3. Which of the following problems do you think smoking or chewing tobacco can cause?
    a) cancer of the lung
    b) cancer of the voicebox
    c) asthma
    d) heart disease
    e) all of the above

4. Which of the following chemicals do you think are in cigarettes?
    a) rat poison
    b) toilet bowl cleaner
    c) nail polish remover
    d) car exhaust
    e) all of the above

5. Who do you think the tobacco companies want for new customers?
    a) preschoolers (age 3-5)
    b) children ages 6-9
    c) youths ages 10-18
    d) adults ages 20-40
    e) no one, the tobacco companies are going out of business

6. Where do you think tobacco companies advertise?
    a) magazines
    b) in movies
    c) at sports events
    d) all of the above
    e) no where, they are not allowed to.

Appendix 3

7. Tobacco is a plant grown on farms, what food group do you think it belongs to?
    a) meats and proteins
    b) milk and dairy products
    c) fruit and vegetables
    d) breads and cereals
    e) none

8. How long do you think it takes to clear the air of an average size room (if it doesn't have a fan) from the smoke of one cigarette?
    a) 3 minutes
    b) 10 minutes
    c) 1 hour
    d) 3 hours
    e) 12 hours

9. If a person smokes 1 package of cigarettes a day, how much money do you think they spend in one year?
    a) $100
    b) $300
    c) $500
    d) $1,000
    e) $2,000

Appendix 3

10. How many Grade 11 and 12 smokers wish they had never started? What's your guess?
    a) less than ¼
    b) ¼
    c) ½
    d) ¾
    e) all of them

11. What's your guess? Which of the following choices do you think you will make about smoking or chewing tobacco?
    a) you might try it
    b) you plan to try it
    c) you already smoke or chew
    d) you will never smoke or chew tobacco

Appendix 4

TOBACCO PREVENTION PROGRAM

TEACHER EVALUATION

How many years have you been teaching? _____

How many years have you taught Grade 5? _____

INSTRUCTIONS

Place a slash on the scale. This will be used as a measure of your agreement. Your comments are appreciated.

EXAMPLE:

Dogs are better pets than cats.

Completely Disagree — Completely Agree

Comments: *I am allergic to cats.*

1. The content of the 5 sessions was relevant for the students and the Grade 5 curriculum.

Completely Disagree — Completely Agree

Comments: _____

Appendix 4

2. The teaching methods were appropriate for the subject and the students' abilities.

Completely Disagree — Completely Agree

Comments:_____

_____

3. Five sessions of 45-60 minutes each are needed for this program to be successful.

Completely Disagree — Completely Agree

Comments:_____

_____

4. I would prefer to teach some of the sessions myself.

Completely Disagree — Completely Agree

Comments:_____

_____

5. I will request this program again.

Completely Disagree — Completely Agree

Comments:_____

_____

Appendix 4

6. The program should be extended to deliver 2 sessions to each of Grade 6,7 and 8.

Completely Disagree	Completely Agree

Comments:_____

_____

Please comment on program areas not included in this questionnaire that you feel were relevant, should be changed or deleted.

_____

_____

_____

_____

_____

_____

Thank you for your assistance with this evaluation.

Yours sincerely,

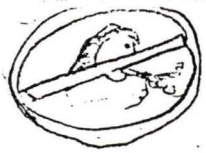
Pat Hocker

Joy Stott

Cathy Whitehead

School Health Nurses

Appendix 5



VoRILO
Febuary 5

Excuse me Mr. Prime Minister:

I am disappointed on how you are letting this smoking law pass by. Did you know that if you stopped farmers from planting tabacco you could feed eighteen million starving people?

If you ban smoking it would save thousands of lifes especially it would save thousands of underage smokers.

Let me remind you that every time a person smokes three hundred cigarettes you cut a average size tree. Just think how you would save our enviorment and our lives. Also you would make people happy but you would not just make adults happy but you would make kids happy too.

Half the people that get lung cancer get it from second hand smoke. This has gone so far that house pets are dying of second hand smoke too.

I wish that you would make smoking illegal so that you could save peoples lives and you could save yours. If you do not want to do that you could at least make the price of cigarets higher so kids could not buy them. From
Grade five (please write back)

Appendix 5

Dear Prime Minister chretieng
Peaple die from smoking, three Jumbo
Jets worth of people die from smoking
in one week. It is the biggest killer
in the world. Please ban smoking.
Lung cancer is very painful.
My grandad died in 1994 from
smoking Please, at ileast make
cigarettes cost more money. smoking
is very bad. kids are smoking how
They make candy cigaretts and
it is not funny or cute.

Appendix 5

Febuary 20, 1997

Dear Jean Chrietien

I am a grade 5 student on vancover island I am writing to you because I am upset. I want you to imagine that you were going on a trip overseas. You are taking an air line that every week (kills) crashes 3 jumbo jets you would not want to take that airline and as prime minister you would most likely make them close down. In Canada every week enough people are killed from smoking that it could fill 3 jumbo jets. As Prime minister I think you should do something about this. You make from under aged people in gst and pst $180 000 000. You give towards helping stop smoking $48 000 000. But I see something wrong with this picture $180000000 and 48 000 000 a big differenee! I wish that the money earned from the taxes spent by under aged people buying tobacco was spent on educational programmes to help stop under aged people from smoking. We children are the future if we are killed then so is our Race Please take my advice and help stop smoking

Yours Sincerely

Appendix 5

Thursday February 6th 1997

Dear Prime Minister Chretien,

My name is _____ *and I'm 10 years old and go to Mill Bay School in Cobble Hill B.C.*
I am writing to you because I am upset that you allow people to grow tobacco on farm land. If people grew food on farms instead of tobacco, 15 million starving people would be fed each year.
Did you know that the tobacco companies are getting more and more underage teenagers to smoke. They are doing it by putting hidden messages in ads to make teenagers think everybody smokes.
I wish you would make it illegal to have tobacco farms in Canada.
What I know is that lots of people are dying from smoking or from second hand smoke.

After all, kids are the future.

Thank you for your time.

_____

Appendix 5

NOTES

Cobble Hill BC
World Po
Febuary

Dear: Mr. Chretein

I am sending you this letter to notify you of how angry me and my friends are here at: mill Bay School. I am angry because you are not doing all you could about smoking. In our class we are learning about tabacco and how many people are dying because of smoking. It is rediculas. Did you know 300 cigarettes takes up one average size tree? also smoking is like 3 jumbo jets crashing full of people every week. Now that is stupid isnt it?. Please do something.

Yours truly

age6 97

Appendix 5

Dear: Cigarette Manufactuer,
I am writing to you because I am upset that you put hidden messages in magazines to get kids smoke. Did you know that all of the people that smok give off second hand smoke. This second hand smoke causes lung cancer leading to death. I wish you would stop putting hidden messages in magazines.
After all, kids are the future.

from [redacted]

Appendix 5

Dear: Cigarette Manufacturer

I'm writing to you to tell you how angry I am with you for making cigarettes and for putting rat poison, nail polish remover, toilet bowl cleaner and many other things. Did you know that people dyeing is like three jumbo jets crashing a week and every one in them dyeing from smoking.I wish you would stop putting hidden messages in magazines.It's almost like your on T.V and your trying to take over the world. But your never going to get everyone to smoke because some people are not going to fall for your tricks.Did you know that every 300 cigarettes you make it takes down one average size tree.

yours truly

Appendix 5

Febuary 14, 1997

Dear Duncan Lanes,

Attention: Mr. Howard Kenney

My name is _____, and I really love bowling. (especially rock-and-bowl!!) However, there is only one problem... to many SMOKERS!!

We are taking lessons at school from a public health nurse, Mrs. Whitehead. We learnd that only 25% of the people in our community smoke. That means that if you allow too many smokers, some, or maybe most people will leave because of the deathley second hand smoke. One cigarette take 3 HOURS to clean from the room. Please consider that!

I wish you would make your bowling alley 100% smoking free!

Appendix 5

Feb 21 1997

Dear Duncan Lanes

attention: Mr. Howard Kenney

My name is ... , I'm ten years old, and I'm in grade five. I'm writting this letter, to tell you my main concern about the bowling alley. My main concern is about the smoking there.

Did you know it takes 3 hours to clear a room from one Cigarette? I know that for a fact. Not only that but there are lots more other things that are bad about smoking. I wish you would make the ally a non smoking place. If you do, your business is sure to impro

From .

Appendix 5

Feb 14, 1997

Dear Duncan Lanes

Attention: Mr. Howard Kenney

I am [redacted] a grade 5 student from Maple Bay Elementary school and a costamer of your bowling alley. I am writing because I am upset about the smoke in you allow in your alley.

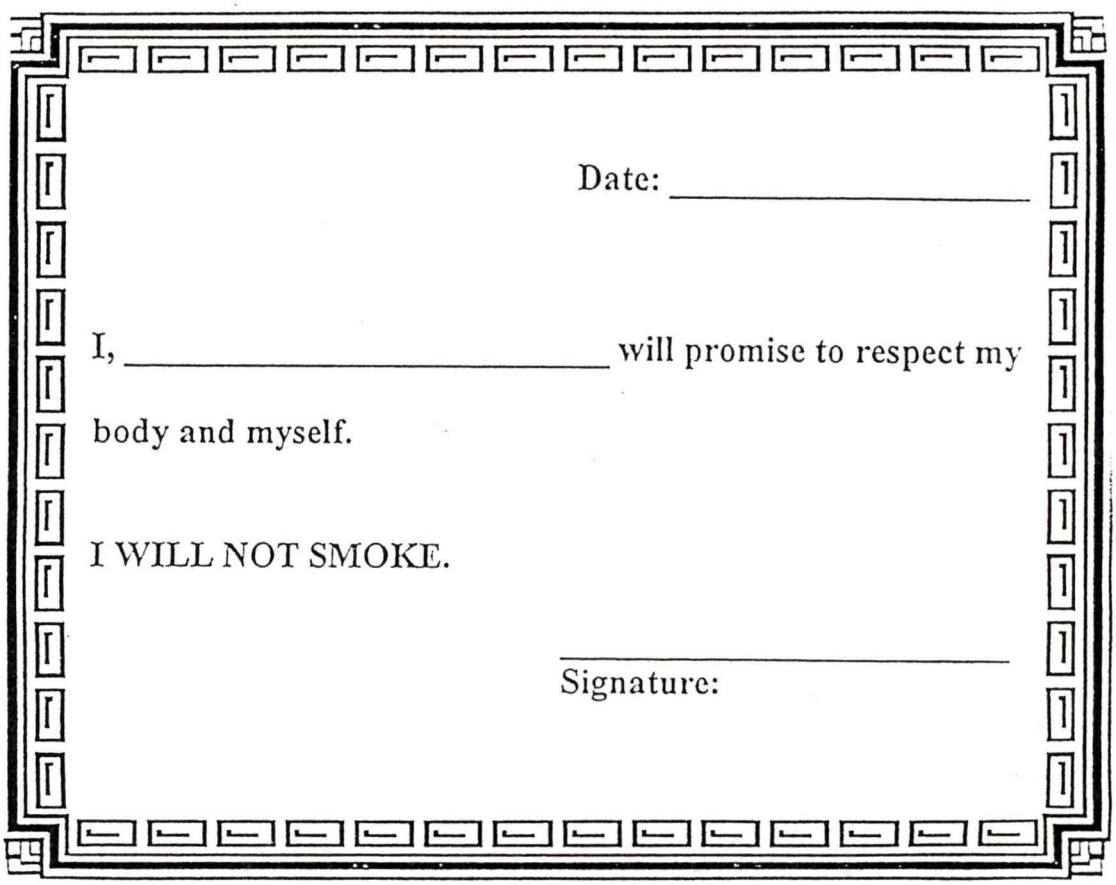
Mrs. Whitehead a public health nurse as been coming to our class for 3 weeks talking about smoking. Did you know that it takes 3 hours to clear a room from one cigarette but if you have a fan it takes 1 hour ~~in e~~. There are also 4000 chemicals in one cigarette only.

I really wish you would make your bowling alley a non smoking alley that way you might get more non smokers at your alley.

Your Sincerely

[redacted]

Appendix 6



Date: _____

I, _____ will promise to respect my body and myself.

I WILL NOT SMOKE.

_____

Signature:

VITA

Surname: Whitehead Given Names: Catherine Jane

Place of Birth: Burnaby, British Columbia, Canada

Educational Institutions Attended:

University of Victoria 1985 to 1990

Degrees Awarded:

B.S.N. (with distinction) University of Victoria 1990

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Title of Thesis:

An Elementary School Tobacco Prevention Program: Designed by and for Public Health Nurses.

Author 

Catherine Jane Whitehead

September 25, 1997