

**EVALUATING SCHOOL HEALTH CAPACITY BUILDING IN CUBA:  
A CASE STUDY OF CONDUCTING RESEARCH IN A DEVELOPING COUNTRY**

BY

LEANNE LECLAIR

A Thesis

Submitted to the Faculty of Graduate Studies  
In Partial Fulfillment of the Requirements for the Degree of

MASTER OF SCIENCE

Department of Community Health Sciences  
University of Manitoba  
Winnipeg, Manitoba

© Leanne Leclair, December 2003

**THE UNIVERSITY OF MANITOBA**  
**FACULTY OF GRADUATE STUDIES**  
\*\*\*\*\*  
**COPYRIGHT PERMISSION PAGE**

**Evaluating School Health Capacity Building in Cuba:  
A Case Study of Conducting Research in a Developing Country**

**BY**

**Leanne Leclair**

**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University  
of Manitoba in partial fulfillment of the requirements of the degree  
of  
MASTER OF SCIENCE**

**LEANNE LECLAIR ©2003**

**Permission has been granted to the Library of The University of Manitoba to lend or sell copies of this thesis/practicum, to the National Library of Canada to microfilm this thesis and to lend or sell copies of the film, and to University Microfilm Inc. to publish an abstract of this thesis/practicum.**

**The author reserves other publication rights, and neither this thesis/practicum nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.**

This thesis is dedicated to the memory of my mother,  
Marlene Louise Leclair.

## **ABSTRACT**

In 2001, INHEM instituted a Computer Mediated Distance Education (CMDE) SHD, in collaboration with the University of Manitoba (and later the University of British Columbia) through an AUCC-CIDA Tier II project, in an effort to more rapidly build capacity of school health professionals. The purpose of this study was: to gain a better understanding of school health in Cuba; to gain a better understanding of the CMDE SHD; to evaluate if there was a change in knowledge and skills of participants pre and post the CMDE SHD and; to gain and share insights on the process of conducting research in a developing country. Key informant interviews were completed. Direct observation of school health environments and relevant school health policy documents were reviewed. Qualitative data were used to develop questionnaires and indicators to test the knowledge and skills of diploma participants. A sample of 125 students from three regions of Cuba was recruited to participate in the pre assessment of the second iteration of the CMDE SHD in 2002-2003. However, several challenges were encountered during the course of the study. No control group was recruited due to difficulty locally with organizing and recruiting suitable candidates. Post-test results were not obtained due to attrition and delays in dissemination. However, a greater knowledge of school health programs in Cuba and Cuba's innovative approach to dealing with the education and training of school health professionals was acquired. Several lessons were learned in conducting research in a developing country. Students need to have a well-defined project that is feasible and over which they can have some control. As well, they need to know how to



negotiate effectively and work independently in an unfamiliar environment at times without a supervisor readily available. There are some aspects over which a student may have very little control and this depends on many factors. The nature of the collaboration needed among partners; perceived benefits of the project for the partners; the various players that are involved in the project; changes that may occur in the larger environment; the funding that is available; and the flexibility of the timelines.

## ACKNOWLEDGEMENTS

To my advisors, Dr. Annalee Yassi, and Dr. Bob Tate and my committee member Dr. Jerry Spiegel, a most sincere thank you for providing me with the amazing opportunity to participate in research in Cuba and for all of your insight, support and assistance. This experience has been truly life altering and I can never express to you my full gratitude. You have opened my eyes to a whole new world.

And to my Cuban colleagues at the *Instituto Nacional de Higiene Epidemiologia y Microbiologia* (INHEM), in Havana specifically Dr Juan Aguilar Valdes, Director of the School Health Department, Dra Barbara Tobaoda, Investigator in the School Health Department, Dr Luis Munoz, International Liaison Officer, Dra Mayra Ojeda del Valle, Vice-Director of Education and Research, Dr Mariano Bonet, Director of INHEM, Dr Pedro Mas former Director of INHEM, and Maricel Garcia Melian, Director of the Environmental Health Department, thank you for your assistance with this project.

Thanks also to my colleagues in the Department of Occupational Therapy at the University of Manitoba who have supported me in my work and have been extremely flexible while I traveled back and forth to Cuba. Thank you to my family and friends for their continued encouragement and support over these past few years. Above all, I extend my deepest gratitude to my husband, Vicente, whose love and support kept me going when I was sure I would not get through it all.

A special thank you to those that assisted and welcomed me into their communities in Havana, Cienfuegos and Santiago, to the many school health professionals in Cuba who shared their knowledge and experience, and to my *tías*, Gogi and Carmen, who always made me feel at home during my stays at INHEM.

Finally, I wish to acknowledge, with gratitude, the financial assistance of the Manitoba Health Research Council Studentship awarded for 2000-2002, and the Canadian International Development Agency and the International Development Research Centre for funding of the research.

# TABLE OF CONTENTS

|                                                                                       |           |
|---------------------------------------------------------------------------------------|-----------|
| <b>ABSTRACT .....</b>                                                                 | <b>ii</b> |
| <b>ACKNOWLEDGEMENTS.....</b>                                                          | <b>iv</b> |
| <b>LIST OF FIGURES.....</b>                                                           | <b>ix</b> |
| <b>LIST OF TABLES.....</b>                                                            | <b>x</b>  |
| <b>Chapter 1: Introduction</b>                                                        |           |
| 1.1 Statement of the Problem.....                                                     | 1         |
| 1.2 Evolving Canadian Interest in Global Health Research .....                        | 2         |
| 1.3 Cuba the Country of Study.....                                                    | 7         |
| 1.3.1 Geography of Cuba.....                                                          | 9         |
| 1.3.2 Government and Politics of Cuba.....                                            | 11        |
| 1.3.3 Building of a Social State.....                                                 | 18        |
| 1.3.4 Current State of Affairs.....                                                   | 26        |
| 1.3.5 Population of Cuba.....                                                         | 29        |
| 1.3.6 Income.....                                                                     | 30        |
| 1.3.7 Housing.....                                                                    | 31        |
| 1.3.8 Education.....                                                                  | 32        |
| 1.3.9 Public Health.....                                                              | 35        |
| 1.3.10 School Health.....                                                             | 39        |
| 1.3.11 School Health Diploma.....                                                     | 40        |
| 1.4 AUCC-CIDA Tier II Project.....                                                    | 41        |
| 1.5 Study Objectives.....                                                             | 43        |
| <b>CHAPTER 2: BACKGROUND AND LITERATURE REVIEW</b>                                    |           |
| 2.1 School Health Internationally.....                                                | 44        |
| 2.2 School Health Promotion in the Caribbean and Latin America.....                   | 53        |
| 2.3 Role of Healthcare Professionals in Comprehensive School Health<br>Programs.....  | 57        |
| 2.4 Use of Technology to Build Capacity and Disseminate Educational<br>Materials..... | 61        |
| 2.5 Building Capacity and Changing Practitioner Behaviour.....                        | 64        |
| 2.6 Conducting Health Research in a Developing Country.....                           | 68        |
| <b>CHAPTER 3: STUDY DESIGN AND METHODOLOGY</b>                                        |           |
| 3.1 Theoretical Framework.....                                                        | 74        |
| 3.2 Research Design.....                                                              | 80        |
| 3.2.1 Qualitative Methods for Study Objective 1, 2, 3 and 4.....                      | 81        |
| 3.2.1.1 Key Informant Interviews for Study Objectives 1 and 2.....                    | 82        |
| 3.2.1.1.1 Sample.....                                                                 | 82        |

|                                                                             |     |
|-----------------------------------------------------------------------------|-----|
| 3.2.1.1.2 Interview Procedures.....                                         | 83  |
| 3.2.1.2 Documentation Review for Study Objectives 1 and 2.....              | 85  |
| 3.2.1.2.1 Sample.....                                                       | 85  |
| 3.2.1.2.2 Documentation Review Procedures.....                              | 86  |
| 3.2.1.3 Observations and Fieldnotes for Study Objectives 1, 2<br>and 4..... | 86  |
| 3.2.1.3.1 Sample.....                                                       | 87  |
| 3.2.1.3.2 Field Procedures.....                                             | 88  |
| 3.2.2 Quantitative Methods Used for Study Objective 3.....                  | 88  |
| 3.2.2.1 Questionnaire.....                                                  | 88  |
| 3.2.2.1.1 Sample.....                                                       | 90  |
| 3.2.2.1.2 Questionnaire Administration Procedures.....                      | 91  |
| 3.2.2.2 Performance Indicators.....                                         | 92  |
| 3.2.2.2.1 Sample.....                                                       | 92  |
| 3.2.2.2.2 Procedures for Gathering Performance<br>Indicator Data.....       | 93  |
| 3.2.3 Analysis.....                                                         | 94  |
| 3.2.3.1 Qualitative Data Analysis (Study Objectives 1, 2 and 4).....        | 94  |
| 3.2.3.2 Quantitative Data Analysis (Study Objective 3).....                 | 95  |
| 3.3 Ethical Considerations.....                                             | 97  |
| 3.4 Limitations of the Research.....                                        | 99  |
| 3.5 Changes to the Methodology Related to Study Objective 3.....            | 101 |
| 3.6 Statement of Significance of Proposed Research.....                     | 101 |

## **CHAPTER 4: FINDINGS AND DISCUSSION**

|                                                                                                          |     |
|----------------------------------------------------------------------------------------------------------|-----|
| 4.1 Cuba's Achievements in School Health (Study Objective 1).....                                        | 103 |
| 4.1.1 School Health Organization and Human Resources in Cuba.....                                        | 107 |
| 4.1.2 School Health Programs in Cuba.....                                                                | 111 |
| 4.1.2.1 Integral Medical-Pedagogical Attention to Students and<br>Workers in the Educational System..... | 111 |
| 4.1.2.1.1 School Health Surveillance System.....                                                         | 122 |
| 4.1.2.1.2 School Health Diagnostic and Analysis of the<br>School Health Situation.....                   | 128 |
| 4.1.2.2 National Education System Health Promotion and<br>Prevention Program.....                        | 130 |
| 4.1.2.3 Health Promoting Schools and Universities.....                                                   | 134 |
| 4.2 Computer Mediated Distance Education School Health Diploma (Study<br>Objective 2).....               | 137 |
| 4.3 Implementation of Questionnaires and Indicators (Study Objective 3).....                             | 146 |
| 4.4 Conducting Research in a Developing Country (Study Objective 4).....                                 | 158 |
| 4.4.1 Communication and Negotiation.....                                                                 | 159 |
| 4.4.2 Cultural Differences.....                                                                          | 161 |
| 4.4.3 Funding.....                                                                                       | 162 |
| 4.4.4 Limited Technological and Physical Infrastructure.....                                             | 164 |
| 4.4.5 Reliance on Cuban Team Members.....                                                                | 166 |
| 4.4.6 Sharing of Data.....                                                                               | 167 |

|                                                                  |     |
|------------------------------------------------------------------|-----|
| 4.4.7 Parallel                                                   | 168 |
| Projects.....                                                    |     |
| 4.4.8 Working within the Larger Political Structure of Cuba..... | 169 |
| 4.4.9 Hurricane Michelle.....                                    | 171 |
| 4.4.10 Dengue Outbreak.....                                      | 175 |

## **CHAPTER 5: SUMMARY AND CONCLUSIONS**

|                                                                                             |     |
|---------------------------------------------------------------------------------------------|-----|
| 5.1 What Can we Learn from School Health in Cuba?.....                                      | 177 |
| 5.2 How Can the CMDE SHD Assist in Building Capacity in School Health<br>in Cuba?.....      | 183 |
| 5.3 What Lessons Have Been Learned Conducting Research in an<br>International Context?..... | 186 |
| 5.4 Significance of the Study and Conclusions.....                                          | 189 |

|                             |            |
|-----------------------------|------------|
| <b>REFERENCE LIST .....</b> | <b>192</b> |
|-----------------------------|------------|

## **LIST OF APPENDICES**

|                                                                                                              |     |
|--------------------------------------------------------------------------------------------------------------|-----|
| Appendix A: Theoretical Framework.....                                                                       | 216 |
| Appendix B: Interview Guide Related to School Health in Cuba .....                                           | 217 |
| Appendix C: Self-report Questionnaire on Knowledge, Attitudes and Practices<br>related to School Health..... | 219 |
| Appendix D: Problem-based Questionnaire related to School Health<br>Practices.....                           | 230 |
| Appendix E: Questionnaire related to School Health<br>Diploma.....                                           | 238 |
| Appendix F: School Health Performance Indicators.....                                                        | 240 |
| Appendix G: Letter of Support from INHEM.....                                                                | 250 |
| Appendix H: Letter of Application to Health Research Ethics<br>Board.....                                    | 251 |
| Appendix I: Letter of Approval from Health Research Ethics Board.....                                        | 253 |

**LIST OF FIGURES**

Figure 1.1: Map of Cuba Showing the 14 Provinces..... 9

## LIST OF TABLES

|           |                                                                                                                       |     |
|-----------|-----------------------------------------------------------------------------------------------------------------------|-----|
| Table 3.1 | Distribution of key informants based on their role in School Health.....                                              | 84  |
| Table 4.1 | Morbidity of the Most Common Diseases among Children and Adolescents less than 20 Years of Age from 1980 to 1995..... | 124 |
| Table 4.2 | Age and Sex of CMDE SHD Participants.....                                                                             | 147 |
| Table 4.3 | Professional Background of CMDE SHD Participants.....                                                                 | 147 |
| Table 4.4 | Number of Years Experience in School Health (SH).....                                                                 | 148 |
| Table 4.5 | Workplace of CMDE SHD Participants.....                                                                               | 148 |
| Table 4.6 | Number of Years Worked in the Current Workplace.....                                                                  | 150 |
| Table 4.7 | Pre-test Scores of CMDE SHD Participant Self-report Questionnaire.....                                                | 150 |
| Table 4.8 | Pre-test Results of Participants Scores on the Definitions Related to the CMDE SHD Content.....                       | 152 |
| Table 4.9 | Participants Pre-test Results on Problem-based Questionnaire.....                                                     | 153 |



# CHAPTER ONE

## INTRODUCTION AND OBJECTIVES

### 1.1 Statement of the Problem

It is widely accepted, internationally, that health is directly linked to educational achievement, quality of life and economic productivity (Federal Provincial and Territorial Advisory Committee on Population Health, 1994; World Health Organization, 1997). Research in both developing and developed countries demonstrates that school health programs can simultaneously reduce common health problems, increase the efficiency of the education system, and advance public health, education and social and economic development (Farrior, Engelke, Collins, & Cox, 2000; Mackie & Oickle, 1997; Meresman & Bundy, 1998; Pan American Health Organization, 1996; Symons, Cinelli, James, & Groff, 1997; Xu et al., 2000).

Furthermore, school health programs are said to be among the most cost-effective of public health interventions capable of alleviating many of the most prevalent health problems affecting school-age children at a remarkably low cost (Meresman et al., 1998; National Center for Chronic Disease Prevention and Health Promotion, 1998; Pan American Health Organization, 1996; World Bank & Division of Adolescent and School Health, 1993; World Health Organization, 1998). What is not yet clear is how best to promote school health and build the capacity of those charged with this task. (Bingler, 2000; Drummond, 1998; Hawe,

Noort, King, & Jordens, 1997; Kolbe, Collins, & Cortese, 1997; Lear, 2002; Lear, 2003; Thyer, 1996)

## **1.2 Evolving Canadian Interest in Global Health Research**

"Today, all issues are international – the traditional distinctions between 'international' and 'domestic' issues are increasingly fuzzy, and for purposes of research and policy making, almost irrelevant" (Report of the ADM Sub-Committee, 1997). The continued need to collaborate with our southern partners in conducting and disseminating research that examines a variety of issues, be it school health or other, poses many challenges to both developed and developing nations. The limited funds available to developing countries for international research necessitates the assistance of developed countries. However, funding sources are scarce for research in international settings. (Neufeld, Johnson, Council on Health Research for Development, & International Development Research Centre, 2001; Neufeld, MacLeod, Tugwell, Zakus, & Zarowsky, 2001) Thus the rich-poor gap in health research investment persists, while for many parts of the world, health disparities between and within countries are widening.

A recent editorial by Neufeld et al (2001b) examining global health research notes that the landmark report by the Commission on Health Research for Development (Commission on Health Research for Development., 1990) released thirteen years ago, "found that health research spending, when viewed from a international perspective, was grossly skewed. Only 5% of the total funds was spent on research addressing the problems of developing countries whose

citizens bore 93% of the global preventable health burden..." (p.1158).

Furthermore, the report made recommendations about strengthening international partnerships and monitoring progress. Ten years later, only around 10% of research funds were still being allocated to 90% of the world's health problems, the so-called 10/90 Gap (Global Forum for Health Research, 2000).

"Thanks to technological innovations... borders have become more porous to the flow of ideas..." (Government Statement, 1995) ... If Canada is to achieve maximum impact for investments in building a more sustainable world, direct access to relevant knowledge and local conditions in the developing world will be essential (Strong, 1995). Neufeld et al (2001b) outline opportunities for health research for equitable development, and state that in order to affect change health professionals must become more knowledgeable about global health problems and young scientists and researchers must become engaged in research on the health problems of developing countries.

Under the auspices of the WHO, an 'Adhoc Committee on Health Research Relating to Future Intervention Options,' was established in 1995. It carried out an extensive review of health needs and related priorities for research and development in low and middle-income countries (Haddad, Zakus, Mohindra, & Wei, 2002). The committee identified a gap in Health Policy and Systems Research, and in 2000, the Alliance for Health Policy and Systems Research (HPSR), a global network of over 400 partner institutions, was launched. The aim of the alliance was to develop capacities for HPSR, improve the knowledge base for health systems and health policies, strengthen international health

collaborations and identify global level issues affecting health systems. It identified that there remained a great need for more research to promote equitable, effective and sustainable health systems in the South.

While Canada has always prided itself on its global citizenship, its readiness to address global-health issues declined considerably in the 1990s. Those agencies in a position to contribute to international health promotion, defined their roles narrowly, hence little contribution was made to global health research (Spiegel, Labonte, Hatcher-Roberts, Girard, & Neufeld, 2003). In Canada, research for global health in general is under-funded, with less than 1% of research budgets in universities targeting global health issues (Ronald, 2001).

Canada has significant expertise in the field of HPSR and interest in Global Health Research (GHR) (Haddad et al., 2002). However, several barriers have been found to contribute to the lack of involvement of Canadians in HPSR (Haddad et al., 2002). The perspective in current public health research, which creates rigid barriers between domestic and global research, as well as between Population Health Research (PHR) and HPSR, produces an obstacle to greater Canadian participation. The lack of concern/commitment from universities, funding agencies and federal and provincial governments means there have been very few incentives for researchers, especially young researchers, to enter the domain and invest in GHR activities.

Financial support for GHR and HPSR has been limited (Haddad et al., 2002). Canadian researchers in HPSR have been clearly disadvantaged compared to their colleagues interested in domestic issues. Those who were

interested in pursuing research careers in transnational perspectives have been deterred from adopting a global agenda and subsequently focused solely on domestic issues, thereby reducing Canada's current and future potential for HPSR and reducing Canada's opportunity to learn from a whole world of experience (Haddad et al., 2002). GHR has not benefited from capacity building opportunities such as training initiatives supported by universities and Research & Training Funding Agencies. Institutional mechanisms for knowledge transfer have been inadequate and almost non-existent. Collaboration among researchers working on GHR is insufficient, as are the mechanisms that permit the exchange and networking of the diversity of researchers in GHR. More collaboration in research activities is needed to reinforce the expertise and continue building a strong Canadian research community for GHR.

Recently, the four main federally funded Canadian agencies with a stake in health and development signed a Memorandum of Understanding to cooperatively promote GHR. These agencies (Canadian International Development Agency (CIDA), the Canadian Institutes for Health Research (CIHR), the International Development Research Centre (IDRC), and Health Canada) also joined with researchers and non-governmental organizations to establish a not-for-profit organization now known as the Canadian Coalition for Global Health Research ([www.ccghr.ca](http://www.ccghr.ca)). This renewed commitment to funding GHR by all agencies "has the potential not only to produce important new research findings, but also to mobilize multilateral, national, and civil society constituencies (Spiegel et al., 2003)p. 918)." However, conducting research in

developing countries poses many challenges (Costello & Zumla, 2000; Spevacek, 2001).

Costello & Zumla (2000) examined the research models used in developing countries, and noted the "semi-colonial" model is still predominant among many funding agencies supporting research in developing countries. The authors question whether current practice overemphasizes the results of research and ignores issues like ownership, sustainability, and development of national research capacity. They stress that much care must be taken to ensure that truly cooperative research partnerships are established with developing countries. They believe this partnership rests on four broad principles: mutual trust and shared decision making; national ownership; emphasis on getting research findings into policy and practice; and development of national research capacity. They suggest that partnership research models must become the norm for investment.

Haddad et al (2002) discuss in their paper some unique Canadian characteristics that make Canada a particularly good partner for GHR. First, as a bilingual country with a highly multicultural population, it can provide many additional language skills besides French and English that enhance the quality and quantity of research. Second, Canada is often valued as a partner since it does not have a history of colonialism looming overhead, thereby making researchers in the South more open to forming partnerships. As well, there is historically, an overall approach of Canadian researchers dedicated to fairness and ethical considerations, which has been noted and strongly appreciated by

partners from the South. Thus, young researchers should be encouraged to pursue GHR, but be aware of the challenges. One of the objectives of this thesis, therefore, was to explore these challenges through the experience of conducting a study in an international setting, so as to better inform others in this regard.

### **1.3 The Country of Study: Why Cuba?**

In Cuba, health and education are considered the right of every citizen and are delivered free of charge at every level (Uriarte, 2002). The Cuban health and education systems, frequently seen as one of the outstanding achievements of the 1959 Cuban Revolution, are recognized internationally for their successes. Although still considered a developing country, Cuba has a health profile similar to that of most developed nations (Macintyre & Hadad, 2002). It has passed through the epidemiological transition to a society in which chronic non-communicable causes of death dominate (Macintyre et al., 2002). Unlike most developing countries, infectious and parasitic diseases are no longer the main causes of disease and death. Most of the common tropical diseases that plagued Cuba at the beginning of the twentieth century have been eradicated (Macintyre et al., 2002). Education statistics reflect another achievement of the past decades. Illiteracy was high relative to Cuba's wealth in the 1950s, when about three-quarters of the population 15 years old or older were illiterate and had only a few years of primary education. Today, illiteracy has been totally eliminated (Macintyre et al., 2002). Total enrollments at all levels of education

stand at 76% of the population of appropriate age. Compared to the other countries selected for comparison, Cuban rates fall between the high enrollments found in Canada and the United States (97% and 95%, respectively) and the much lower ones found in Costa Rica (67%) and the Dominican Republic (72%) (Uriarte, 2002).

The infrastructure of Cuba's health and education systems is extensive and widely distributed in both rural and urban areas. However, in spite of all of its achievements in health and education, Cuba's economy presents some challenges and limitations that are not easily rectified (Macintyre et al., 2002). Concerns related to housing shortages, poor living conditions, quality and quantity of water supplies, poverty, and others are responsible for the increase in environmentally linked illnesses such as diarrhea, asthma, tuberculosis and hepatitis A among its population (Macintyre et al., 2002). However, despite these grave circumstances, Cubans retain the advantage of a sophisticated and equitable system with a large, experienced and well-trained human resource pool. More recently, Cuba has begun to collaborate with several international bodies and worked with officials of the World Health Organization (WHO), the Pan American Health Organization (PAHO), the Food and Agricultural Organization (FAO), the United Nations Children's Fund (UNICEF), and the United Nations Population Fund (UNFPA) on a variety of programs and studies to ease the impact of the economic crisis on health status. Although foreign expertise has started to be used in Cuba in recent years, much medical and public health expertise has flowed in the other direction: from Cuba to other parts



of the world. Hoping to learn from the Cuban experience, this thesis is conducted primarily in Cuba, as part of a much larger AUCC-CIDA Tier II project that involved researchers from Canada and Cuba and focused primarily on capacity building in environmental health.

**Figure 1.1: Map of Cuba Showing the 14 Provinces**



### **1.3.1 Geography of Cuba**

Cuba lies just south of the Tropic of Cancer at the mouth of the Gulf of Mexico. The Atlantic Ocean is to the north and the Caribbean Sea to the south. City of Havana Province, which houses the capital city of Havana, is 150 km southwest of Key West, Florida while Pinar del Rio Province is 210 km northeast of the Yucatan, Mexico, and Santiago de Cuba Province is 270 km northeast of

Montego Bay, Jamaica. Haiti is a mere 77 km southeast of Guantanamo Province – separated by the Windward Passage (Perez, 2003).

At 110,992 sq km, Cuba is one third of the size of Newfoundland, and almost four times the size of Vancouver Island. Largest and westernmost of the West Indies, Cuba forms part of the Greater Antilles along with Jamaica, Haiti, the Dominican Republic, and Puerto Rico. Cuba is three times bigger than the Dominican Republic and nine times larger than Jamaica; it is almost as big as all other Caribbean islands combined (Bloch & Torres, 1997).

Cuba's 5746 km of coastline includes more than 200 bays, 289 natural beaches and several small islands. Forested mountains make up a quarter of Cuba's territory, and fertile plains used for grazing cattle or growing sugarcane account for much of the rest. The Occidental Region from Pinar del Rio to Mantanzas Province consists of low hills or uplifted coral formation along the north, plains in the middle and swamps along the south. The Central Region between Santa Clara and Ciego de Avila centers on a area of medium-level hills surrounded by plains and swamps. The Camaguey Region is a vast savanna. The Oriental Region, or 'Oriente,' at the eastern end of the island, contains the country's greatest mountains, rivers and bays. Rich deposits of nickel, iron, and other metals are found in northeastern Holguin Province. Isla de la Juventud another region of Cuba is mostly agricultural, consisting of large grapefruit plantations (Bloch et al., 1997).

There are no pronounced seasonal variations in temperature. The only seasons in Cuba are the rainy summer season from May to October, and the

drier winter season from November to April. The hurricane season runs from June to October, with the worst storms generally occurring in September and October. Havana and Pinar del Rio are generally hit harder and more frequently than the provinces to the east. Hurricanes can cause significant destruction, which have a huge economic impact on the country (Perez, 2003).

Cuba is divided into 169 municipalities, including the Special Municipality of Isla de la Juventud (2398 sq km), and 14 provinces: the city of Havana (727 sq km), Havana Province (5731 sq km), Pinar del Rio (10,925 sq km), Matanzas (11,978 sq km), Villa Clara (8662 sq km), Cienfuegos (4178 sq km), Sancti Spiritus (6744 sq km), Sancti Spiritus (6744 sq km), Ciego de Avila (6910 sq km), Camaguey (15,990 sq km), Las Tunas (6589 sq km), Holguin (9301 sq km), Granma (8372 sq km), Santiago de Cuba (6170 sq km) and Guantanamo (6186 sq km) (Perez, 2003).

### ***1.3.2 Government and Politics of Cuba***

The history that has led up to the current state of the Cuban government and politics is long and rich, and beyond the scope of this study. However, to gain a better understanding of the current situation in Cuba, it is important to have some knowledge of the events that transpired over the last century.

Cuba's historical development has been deeply affected by its location. An island astride a network of vital sealines that feed the Caribbean basin, Cuba was first discovered by Christopher Columbus in 1492, and soon became a staging ground for the Spaniards' many expeditions to the Mexican and North

American mainland. The relatively small indigenous population was destroyed within years of the first arrival of the Europeans. Cuba's commercial and strategic importance grew in the eighteenth century with the expansion of regular fleets between Spain and its American colonies (Skidmore & Smith, 1997).

The nineteenth century saw Cuba develop as an agricultural phenomenon. A brief coffee boom gave way to the cultivation of tobacco, which became a major crop by mid-century – a position it still holds, as Cuban cigars continue to be regarded as among the finest in the world. But the most important source of wealth, the one that would shape the contours of Cuban society and history, was another product: cane sugar. Emphasis on sugar began in the eighteenth century and continued over time. By 1860, Cuba was producing nearly a third (500,000 tons) of the world's entire sugar supply (Skidmore et al., 1997). The human resource to support this industry came from the slave trade, which delivered more than 600,000 Africans to Cuba between 1800 and 1865. Slavery itself lasted until 1886, longer than anywhere else in the Americas except Brazil.

Thus, Cuba's economic development had been typical of tropical America: a monocultural, slave-based, export-oriented agricultural society. When Cuba was less than a decade away from the twentieth century, it was still a colony. An earlier independence effort had failed in the bitter "Ten Year War" (1868-78), when the nationalist Cubans, those who rose against the Spanish were slowly defeated by Spanish troops. Spain's continued political control of the island was becoming anachronistic, however, as since the 1880's Cuba's trade and

investment were almost exclusively with the United States (U.S.). The U.S. economic interest in Cuba led to numerous offers to purchase the island country. The Spaniards invariably refused, but some prominent Cubans strongly favoured annexation by the United States. A handful of Cuban nationalists, who had never accepted their defeat in 1878, fled into exile and planned a new rebellion. The most famous was Jose Marti, an eloquent revolutionary poet-lawyer whose long exile in New York produced Cuba's most memorable anti-American rhetoric. A new revolt for independence broke out in 1895 (Skidmore et al., 1997). Cuba was soon engulfed in another war with Spanish forces. The war dragged on for three years, before the U.S. under public pressure to intervene, and having a huge economic stake in Cuba, declared war on Spain. This battle over Cuba lasted seven months. The Spaniards were defeated and forced to grant Cuba independence in December 1898 (Skidmore et al., 1997).

Cuba began its new status as an independent nation under the occupation of the U.S. military. The U.S. authorities immediately disbanded the rebel army, thus removing the only potential source of armed opposition to U.S. rule. The U.S. built badly needed schools, roads, sewers, and telegraph lines. But, it was all with the intention of integrating Cuba more closely with the U.S. orbit. In 1901, the U.S. government harboured doubts about the new country's ability to govern itself, so Washington forced Cuba to incorporate the "Platt Amendment", which gave the U.S. the right to oversee the Cuban economy, veto international commitments, and intervene in domestic politics at will. This proviso remained in force until 1934, making Cuba an American protectorate. During Cuba's years

as a protectorate, it underwent a great sugar boom. As output increased, sugar came to dominate Cuba's economy and, eventually, to have a lasting effect on class structure and social relationships (Skidmore et al., 1997). In 1903, following independence, Cuba had signed a reciprocal trade agreement with the U.S., which gave Cuban sugar a 20 percent reduction from the existing U.S. tariffs. In return, Cuba gave U.S. exports reductions of 20 to 40 percent in Cuban tariffs. For the next thirty years U.S. Cuban trade relations grew ever closer, as the Cuban economy was for all intents and purposes integrated into the U.S. economy. The Cuban currency was made interchangeable with the U.S. dollar. Cuban monetary policy was actually set by the Federal Reserve Bank of Atlanta, since the Cuban authorities had in effect surrendered any control over the movement of monetary assets between Cuba and the U.S (Skidmore et al., 1997).

By the early twentieth century, Cuba was producing nearly one-quarter of the world supply of sugar around World War I, about 10 percent during the depression years, close to 20 percent just after World War II. Throughout this entire period sugar exports earned approximately 80 percent of the island's foreign exchange (Skidmore et al., 1997). Such dependence on a single product obviously placed the Cuban economy in an extremely vulnerable position. Another feature of the sugar boom was concentration of ownership, especially in the hands of American investors. The independent growers, whose small and medium sized farms had produced most of the cane before the 1870s, now sold out in growing numbers to the big sugar companies. Under the protectorate,

U.S. investors poured capital into the building of modern mills and the consolidation of cane-growing lands. By 1928, American owned mills produced about 75 percent of Cuba's sugar, up from 10 percent in 1906. In 1950, this figure dropped to 47 percent, thanks to loan defaults by Cuban owners. Not only did the U.S. take over major ownership of plantations and mills, it became by far the largest customer for Cuba's sugar exports, usually purchasing 75 or 80 percent of the total (Skidmore et al., 1997). This created a complex political dimension to Cuba's economic dependency on the U.S. Cuba was dependent upon U.S. decision for the fate of its major industry.

The government of Cuba in the 1920s and 1930s, under the direction of Gerardo Machado, was among the most corrupt and brutal of the republic's history. Machado's repressive measures and the growth of nationalist opposition, especially among students and urban labour, brought out the uglier realities of the U.S. protectorate. When the depression hit, Cuba's export-oriented economy suffered. The bottom dropped out of world sugar prices yet again, and the Cuban economy contracted even further. Total income plummeted and unemployment mushroomed.

With the collapse of the world economy in 1929-30, Cuba soon suffered for its dependence on one trading partner. The U.S. Congress, under pressure for the domestic sugar beet producers, passed the Smoot-Hawley tariff in 1930, burdening Cuban sugar with new duties (Skidmore et al., 1997). The reliance on sugar and the dominance of the U.S. in Cuba brought enormous social and economic disparity to the island. It created a volatile social structure, one in

which rural and urban elements of a long-deprived working class maintained communication with each other. Contact and communication between urban and rural elements of the Cuban working class would eventually have a decisive effect on the course of the country's history, because it permitted the sort of unified, class-wide social movement that has been found so rarely in Latin America.

A successful general strike in August 1933, led by a coalition of students, labour leaders, middle-class reformers, and disgruntled politicians helped prod the army toward undercutting the dictator, Machado, who fled Havana. A new government moved in and proclaimed a socialist revolution. Washington became deeply worried over the sharp leftward turn by its protectorate. U.S. navy ships took up stations off the Cuban coast. On signal from the U.S., Fulgencio Batista, a Sergeant of the Cuban army, ousted the newly established socialist government and became the new "frontman" president acceptable to Washington. U.S. hegemony was so certain at this point that Washington abrogated the Platt Amendment in 1934 (Skidmore et al., 1997). Some relief came under the leadership of Franklin Roosevelt who lowered tariffs with the Reciprocal Trade Agreement of 1934 which cut duties on Cuban sugar imports, while Cuba gave increased favour to U.S. imports. Also, in 1934, Congress mandated fixed quotas among domestic and foreign suppliers of the U.S. sugar market. Cuba's quota was 28 percent, a share that endured, with modifications, until 1960. It gave Cuba a privileged access to the U.S. market (Skidmore et al., 1997). It also made Cuba constantly subject to political or economic blackmail.



Most important, it tied Cuba to the will of the U.S. Congress, which could change the legislation at any time. The quota was an economic bonus and a political liability. It symbolized all the vulnerability which "independence" had brought Cuba in the era of American dominance.

For the next twenty-five years Cuban politics was dominated by Batista. Between 1934 and 1940 Batista ran his country through puppet presidents. He ruled directly from 1940 to 1944, then went back to a behind-the scenes from 1944-52. He retook the presidential reins in a coup in 1952 and thenceforth ruled with dictatorial powers until 1959. Cuban politics saw little change between 1934 and 1959 (Skidmore et al., 1997). The futility of the electoral system was repeatedly demonstrated, as the perennial strongman (yesterday Machado, today Batista) worked his will. Until on July 26<sup>th</sup> 1953, a young Fidel Castro launched his first assault on Batista's army in the barracks at Moncada in the city of Santiago. Fidel led a band of 165 youth who stormed the garrison. Many of the young men were killed, wounded or arrested. Among them Fidel and his brother Raul, who were captured, tried and sentenced to fifteen years in prison. The Castro brothers were lucky. They stayed in prison only eleven months before Batista granted amnesty in an attempt to court public opinion and to improve his political image. Given his freedom, Fidel immediately fled to Mexico to begin organizing a new revolutionary force.

In 1956 Fidel set out with a new band of revolutionaries in the Granma, an ancient yacht whose name would later be immortalized as the title of revolutionary Cuba's official newspaper. With him was his brother Raul and

Ernesto (Che) Guevara. The mission went awry and seventy of the eighty-two men were lost at the hands of army units to whom they had been betrayed by local peasants. Fidel, Raul, and Che managed to flee into the Sierra Maestra mountains where they rebuilt the rebel band and once more launched their war against Batista. In February 1957, Fidel, with the assistance of an American journalist from the New York Times, exposed Batista as a brutal and impotent leader to the international world (Skidmore et al., 1997). Thus, eroding the dictator's foreign support and letting the world know that Fidel was still alive. In April 1958, after waiting patiently for the right moment, the 26<sup>th</sup> of July Movement, led by Fidel, launched their attack (Skidmore et al., 1997). Guerrilla warfare was being waged in the mountains on the eastern side of the island. In May, Batista sent his army to deal with the rebels. However, they were badly defeated by their own poor leadership and faulty training and by superior intelligence and dedication on the rebel side. Support for Batista began to evaporate quickly. In November 1958, Batista carried out a presidential election, running a new front-man candidate in the hope that removing himself from the limelight might improve the situation. Most of the voters abstained. Batista knew that his time as dictator was up, and on New Year's Eve 1958 he fled Cuba. The rebels moved into Havana on January 1<sup>st</sup>, 1959 (Skidmore et al., 1997).

### ***1.3.3 Building of a Socialist State***

Prior to the revolution, Cuba was a very poor developing country with health and education indices like other poor developing countries. "When Cuba's

revolution came to power in 1959, its model of development aimed to link economic growth with advances in social justice. From the start, transforming economic changes were accompanied by equally transforming social initiatives" (Uriarte, 2002), p.6). From the beginning of the Cuban revolution in 1959, the model of social development has emphasized equity across society and universal access (Uriarte, 2002). These values have framed the development and implementation of social policy during the last 40 years. In 1959, Cuba began the process of transforming the health status of its population. At this time, most health care was concentrated in urban areas, and was offered through a network of private clinics and a weak public system that was generally regarded as deficient (Uriarte, 2002). Only 8% of the rural population had access to health care (Uriarte, 2002) with only one rural hospital in a nation that was still largely agrarian (Macintyre et al., 2002). In the first years after the revolution, about one-half of the physicians left the country, many in the wake of the socialization of medicine. Cuba was left with the burden of caring for its people with greatly diminished resources and the need to train almost all its medical personnel. But it was also left with the opportunity to develop a health care system from the ground up, a system that has attracted the attention of the world for its reach, its access, and its orientation to prevention. Health outcomes worsened during the first decade of the revolution as the system was put in place, but outcomes recovered by 1970 and have continued to improve to this day. In the 1950s, infant mortality stood at 35 deaths for every 1,000 live births in Cuba. Illiteracy was high relative to Cuba's wealth in the 1950s, when about

three-quarters of the population 15 years old or older were illiterate and had only a few years of primary education (Macintyre et al., 2002). Early literacy campaigns, following the Cuban revolution, reduced the illiteracy rate from 23% to 4% in the space of one year (Uriarte, 2002).

In 1959, following the Cuban Revolution, Fidel Castro was named prime minister of Cuba. This led to the mass exodus of thousands of professionals, managers, and technicians who did not share President Castro's vision for Cuba. Most of the first decade of the revolution was devoted to agrarian reform, making more than two thirds of Cuban farmland state owned (Bloch et al., 1997). Maximum private holdings were fixed at 65 hectares (Skidmore et al., 1997). As relations with the United States deteriorated due to the land seizures, Cuba made overtures to the Soviet Union to provide balance. The Nationalization of US oil refineries, telephone and electricity companies, banks and sugar mills, worth millions of dollars in US assets led to even poorer relations with the US and eventually led to a partial trade embargo on Cuba by Washington, in October 1960, to which Cuba responded by nationalizing all remaining US businesses in the country (Skidmore et al., 1997). As a result, Cuba's economy grew more and more dependent on the USSR. After being defeated at the Bay of Pigs, the Americans declared a full trade embargo in June 1961, and in January 1962 managed to have Cuba expelled from the Organization of American States, followed by OAS economic sanctions (Haverstock, 2002). The Cuban Missile Crisis in October 1962, led to even worse relations (Skidmore et al., 1997).

Meanwhile, in 1960, the Committees for the Defense of the Revolution (CDR) were formed as neighbourhood-based units to consolidate grassroots support for the revolution (Bloch et al., 1997). Later, these neighbourhood bodies would play a decisive role in health, education, social, and voluntary labour campaigns. As well, rental housing was nationalized in the same year. In 1968, some 55,000 surviving small businesses and holdings were nationalized, and self-employment and private trading were banned (Skidmore et al., 1997). Despite massive Soviet aid, the Cuban economy languished during the late 1960s. Conditions improved slowly during the 1970s as a new generation of technicians and managers dedicated to the revolution graduated from school to replace those who had left for the US. As well trade with the Soviet bloc gradually increased from 65% of the total in the early 1970s to 87% in 1988, a degree of dependence that would cost Cuba dearly (Skidmore et al., 1997). The collapse of Eastern European communism in 1989, led to what became known as the "Special Period" in 1990. Soviet economic subsidies, in the form of above-market prices for Cuban exports, totaled around US\$5 billion a year, and the loss of this support had severe repercussions for Cuba. During this time, the US continued to impose greater sanctions on Cuba with the 1992 Cuban Democracy Act (Torricelli Bill), which forbade US companies from trading with Cuba. Ninety percent of the trade banned by this law consists of food, medicine and medical equipment (Skidmore et al., 1997).

By 1993, the effects of the Soviet withdrawal had minimized, and since that time the Cuban economy has grown considerably. In 1993, the state turned

over the land formerly used by state farms to cooperatives called Basic Agricultural Production Units (UBPCs). This led to the privatization of large sectors of agricultural production. In 1994, the government opened the Farmers Market (for private farmers and state producers), which allowed for the sale of food products in pesos. "Prices were determined by supply and demand in an open, legal commercial relationship between private farmers and consumers" (Uriarte, 2002), p. 25). This meant additional sources of food for a population that sorely needed them but also food at a very high price. In August 1993, the constitution was amended to allow Cubans to hold foreign currency, to open dollar bank accounts, and to spend cash dollars at hard-currency stores (Uriarte, 2002). Finally, also in 1993, the government expanded sources of self-employment for Cubans, permitting private enterprise in a broader number of areas. Self-employed workers are charged both a tax on their gains and a significant amount in fees, justified as their contribution to public services such as health and education. In September 1993, self-employment in more than 100 trades ranging from taxi drivers, hairdressers, and fishermen to restaurant and guesthouse owners was legalized. In 1995, 138,000 Cuban workers were self-employed (Uriarte, 2002). The high rate of fees and taxes, competition, and the harsh conditions of self-employment have tended to discourage this type of work. In 1994, the National Assembly passed a series of measures aimed at reducing the deficit and controlling inflation. The state established the mechanisms by which it could collect some of the gains of the growing private sector and also removed some gratuities. An income tax was established for gains from private

activities, and fees were collected to pay for the state's supervision of tax payment of this new sector (Uriarte, 2002).

In September 1995 a law was approved allowing foreign companies to run wholly owned businesses and possess real estate in Cuba, although the Cuban state was to continue to control the workforce. Previously, only joint ventures with state-owned companies had been permitted (Perez, 2003).

These measures improved the economy. The GDP inched upward consistently after 1994, the deficit narrowed, and imports expanded slightly. As a result, caloric intake improved, as did transportation; electricity, gas, and some consumer goods became more available. In general, the quality of life of Cubans improved somewhat, though it was still far from the level enjoyed in 1990 (Uriarte, 2002), p. 26).

By 1996, the post-Soviet crisis had subsided. However, as Uriarte (2002) states, "The most critical effect of the reforms has been the increase in income inequality, propelled primarily by the transformation in the structure of the labor market" (p. 26).

The question of Cuban-American relations continues to this day with the ongoing development and enforcement of legislation aimed at overthrowing the Cuban government. For example, the Cuban Liberty and Democratic Solidarity Act (Helms-Burton Bill) passed in March 1996, imposed even greater restrictions on the US embargo. In January 1997 President Clinton submitted to Congress and released publicly a major report entitled "Support for a Democratic Transition in Cuba," as mandated by Title II of the Cuban Liberty and Democratic Solidarity

Act. The transition plan describes the many issues that will confront a democratic transition government in Cuba, and how the United States and other nations will be able to assist. The report indicates that a democratic transition government can expect to receive between \$4-6 billion in international assistance. The report is an incentive to all those in Cuba who favour this transition (Rannenberg, 1998).

Furthermore, over the years, the U.S. immigration policy, as set forth in the Immigration and Nationality Act (INA) and the Cuban Adjustment Act (CAA) of 1966, favoured Cuban entrants, allowing them entrance to the U.S. even if they reached American shores illegally (Ministry of Foreign Affairs, 1999). An amendment to the INA, and subsequently the CAA, in 1996 served only to further clarify eligibility of Cubans for parole and permanent residence in the U.S. under the CAA. Immigration and Nationality Services Commissioner, Doris Meissner, (as cited in Ministry of Foreign Affairs, 1999) stated,

that Cubans — along with their spouses and children— who arrive at other than designated ports-of-entry into the United States are eligible for parole, as well as eventual adjustment of status to that of permanent resident, under the 1966 Cuban Adjustment Act (CAA). A designated port of entry includes airports, seaports, and land ports located at the border.... The fact that a Cuban national arrived in the United States at a place other than a designated port of entry will not make him or her ineligible for permanent residence under the CAA (unless the individual is ineligible on



other grounds such as having a criminal record). (Clarification of Eligibility for Permanent Residence Under the Cuban Adjustment Act, para 1)

More recently, President George Bush announced several new initiatives "intended to hasten the arrival of a new, free, democratic Cuba" (Bureau of International Information Programs, 2003), para 4). As part of his address, President Bush stated,

we are working to ensure that Cubans fleeing the dictatorship do not risk their lives at sea. My administration is improving the method through which we identify refugees, and redoubling our efforts to process Cubans who seek to leave. We will better inform Cubans of the many routes to safe and legal entry into the United States through a public outreach campaign in southern Florida and inside Cuba itself. We will increase the number of new Cuban immigrants we welcome every year. We are free to do so, and we will, for the good of those who seek freedom. Our goal is to help more Cubans safely complete their journey to a free land (Bureau of International Information Programs, 2003) para 27.

Despite U.S. economic sanctions and the effects of the special period, Cuba maintained its commitment to social benefits – education, health care, social security, and social assistance to the poor. In fact, social assistance increased in absolute terms through the period of 1990 to 2000, with the exception of education, which experienced a reduction in 1990 to 1994. By 1998

social expenditures were 23% higher than they had been in 1990 despite a dip in the GDP of 40% between 1990 and 1994 (Uriarte, 2002). The fact that social expenditures increased even as the GDP decreased tends to indicate a strong protective inclination toward social expenditures. In 1998 Cuba's financial commitment to social programs, at 32% of GDP, was still the highest in Latin America (Uriarte, 2002). Like Cuba, other Latin American countries experienced a rise in the share of GDP dedicated to social expenditures during this period; but at 60%, Cuba's rise has been much more pronounced than those of other Latin American countries, which experienced an average rise of 30%. Only Paraguay and Colombia had higher rates of increase of social expenditures in relation to GDP.

#### ***1.3.4 Current State of Affairs***

Cuba's government is organized as a three tier system - national, provincial and municipal - and at all levels there are policy making and legislative structures as well as administrative ones. The Constitution of February 1976 provides for a 607-member Asamblea Nacional del Poder Popular (National Assembly of Popular Power) elected every five years (Bloch et al., 1997). In 1992, as part of the effort to establish greater decentralization and afford greater responsiveness to local populations, the constitution was amended to allow direct elections by universal suffrage and secret ballot (Perez, 2003). Although, the National Assembly remained elected indirectly by the municipalities, half of the candidates are nominated by mass organizations, while the other half are chosen

by elected municipal delegates from among their ranks. Previously, all were nominated by Communist Party committees. Only one candidate contests each assembly seat, and a negative vote of at least 50% is required to reject a candidate (Bloch et al., 1997). The 1192 delegates to the 14 provincial assemblies are elected in the same way. The municipal assemblies are elected in districts, with several candidates for each seat (Bloch et al., 1997).

The National Assembly elects the 31 member Consejo de Estado (Council of State), which has a president, first vice president, five additional vice presidents, and a secretary (Bloch et al., 1997). This body represents the National Assembly between its twice annual meetings, and the Council's president is the head of government and state. The president nominates a 44 member Consejo de Ministros (Council of Ministers), which must be confirmed by the National Assembly (Bloch et al., 1997). The only political party is the Partido Comunista de Cuba (PCC), which was formed in October 1965 by merging cadres from the Partido Socialista Popular and veterans of the Revolution. The present party has 780,000 members and is led by First Secretary Fidel Castro (Perez, 2003). Every five years, party congresses elect a 150-member Central Committee, which in turn chooses the 24 members of the Political Bureau, or Politburo (Bloch et al., 1997). Fidel Castro is the world's longest serving government leader, having held the post of President since 1976, and in 2003 he was reelected for another five-year term. He is also commander-in-chief of the National Defense Council. Cuba has one of the largest armed forces in Latin America. Approximately 105,000 men and women serve on active duty in the

Cuban army, navy, and air force. An additional 135,000 men and women serve in an army reserve. All Cuban men must serve two years of active duty after they reach the age of 16 (Perez, 2003).

At the provincial level, the Provincial Assembly of Popular Power is the deliberative body. Its administrative counterpart is the Provincial Administrative Council (CAP), which administers the resources available to the province (Uriarte, 2002). Each of the municipalities has a Municipal Assembly of Popular Power, which is the deliberative body closest to the base, and a Municipal Administrative Council (CAM). The CAM is charged with administering most of the government services that Cubans encounter on a day-to-day basis (Uriarte, 2002). The population directly elects delegates to the Municipal Assembly from among its neighbours. These delegates report on the situations facing their area and also help address the specific problems of constituents.

One of the most important advocates of local issues and the institution that has the greatest potential to transform life at the local level are the Popular Councils. The Councils were formed to help bridge the gap between the municipalities and the neighbourhoods by focusing on horizontal networks at the neighbourhood level. Through their work, the Councils look to support the efforts of the local delegate to the Municipal Assembly. Pilot Councils were first founded in 1988 and then four years later were implemented throughout the country. Today there are approximately, 1505 Popular Councils in the country; Havana alone has 105 Popular Councils, each serving an average of 20,000 residents (Uriarte, 2002). The Popular Councils consist of volunteer delegates elected

directly by the population as well as representatives of the main economic, social and service institutions in the area. Neither the President of the Popular Council, the Council itself, nor the delegates have any administrative authority in their territory (Uriarte, 2002). However, it works to improve medical, educational, cultural and social services at the local level addressing the specific needs of their population, establishing coordination and promoting collaboration between the different entities in the area of the Council (Uriarte, 2002).

Other important mass organizations established by the PCC are the Confederacion de Trabajadores Cubanos (CTC), a trade union confederation with 80,000 branches; the Asociacion Nacional de Agricultores Pequeños (ANAP), an association of small private farmers; the Federacion de Mujeres Cubanas (FMC), a woman's federation founded in 1960; the 500,000-member Union de Jovenes Comunistas (UJC), a student group; and the Comites de Defensa de la Revolucion (CDR), a neighbourhood-based organization with more than 7 million members, also founded in 1960 (Perez, 2003). Both, the FMC and the CDR, are organized at the block level of the municipality (Uriarte, 2002). Frank and open discussions of the economic problems facing the country take place regularly at assemblies of these organizations, and union members have a say in decisions on production targets and investments.

### ***1.3.5 Population of Cuba***

Cuba, a developing country, is the largest island in the Caribbean with a population of approximately 11,200,000. The largest cities are the capital

Havana (2.2 million), Santiago de Cuba (440,000) and Camaguey (300,000).

The most heavily populated regions of the country are around Havana, between Cienfuegos and Santa Clara, and Oriente. Since May 1998, Cubans have required official permission to migrate to Havana (Perez, 2003). Thus, unlike most major Latin American cities that have become mega-cities beyond control, Havana's population has remained relatively stable.

### **1.3.6 Income**

Prior to the Special Period, the highest-paid Cuban workers – mainly professionals such as doctors or engineers – were paid only 4.5 times as much as the lowest-paid workers. This built in a significant equity based on income. But during the Special Period, this was greatly altered in an unusual way. Now it is possible for a waiter in a tourist hotel, which is one of the lowest-paid jobs in Cuba, to obtain a set of rewards – salary in pesos, tips in dollars, the “extras,” and improved working conditions – worth many times more than the rewards that could accrue to a top professional who works for the state and earns a top salary, but only in pesos. Cubans call this the “inverted pyramid,” a phenomenon that reflects the devalued return on education and professional preparation in the new economy. The immediate result has been the exodus of public service workers into low-level service jobs in the tourism industry. During 1993-1994, for example, almost 8% of teachers made this leap. Some of the contradictions are striking such as a taxi driver earning more in one day than a physician might earn in six months.

Cubans employed by the government or in joint ventures are reported to take home an average monthly wage of 200 pesos, or US\$10 at the semi-official market rate of exchange (Perez, 2003). Although housing, transportation, health, and education are heavily subsidized by the Cuban state, life on official wages is extremely difficult. Every Cuban has a ration book (Libreta) used to purchase basic food and other necessities at state-operated stores or bodegas, but these supplies are insufficient lasting for about two weeks out of the month. Hence, families must buy additional food in the peso farmers' markets at much higher prices, and from the dollar stores where purchases can only be made in hard currency. Food purchases can take up to 66% of the average salary (Uriarte, 2002). In addition to the ration book (Libreta), Cubans are covered by several subsidies that are also universally available and provided by the central government. These include subsidized meals at schools and work places; subsidies in the cost of water, gas, and electricity; subsidized slots in day care for children of working mothers, and subsidies to rents and mortgages. These subsidies add significant strength to the Cuban "safety net" (Uriarte, 2002). However, those with access to dollars from tourists or remittances from relatives abroad often live far better than those completely dependent on the avails of Cuba's socialist system.

### **1.3.7 Housing**

Since 1962 rent payments have been limited to 10% of family income (Uriarte, 2002). The Urban Reform Law of 1960 converted rent payments into

mortgage payments on a five to 20 year basis, making owners out of renters. Almost half a million Cuban families acquired title to their homes or lands this way (Uriarte, 2002). The sale of such housing is prohibited, but units can be traded among owners. Today a large majority of Cubans own their own homes and pay no property taxes. However, housing in the most populated regions of the country is scarce, and in poor condition because of a shortage of materials. Some individuals live in very unsafe and unhealthy conditions for lack of more suitable housing. However, the past decade has seen many new developments in some of the most affected areas of Havana through the provision of funds to improve the physical infrastructure and surroundings of many homes (Yassi et al., 2003).

#### **1.3.8 Education**

The greatest successes of the revolution have been in the fields of health and education. Aside from Canada, Cuba is the only country in the Americas that provides free and universal access to both health care and education. Prior to the revolution a quarter of adult Cubans were illiterate and another million were semiliterate (Bloch et al., 1997). In 1959, the educational attainment of Cubans was third grade. Forty-five percent of primary school children did not attend school (Uriarte, 2002). Ten thousand teachers were unemployed, and 70% of the rural population had no schools. After 1959, all private schools were nationalized and education became free and universal. Former military garrisons were also turned into schools (Bloch et al., 1997). In 1961, all schools were



closed and some 100,000 students and teachers were sent to rural areas to teach reading and writing (Ripley, 1999), resulting in a literacy rate of nearly 97% among people 15 and older in 2001, compared to 99% in Canada, 95.7% in Costa Rica, and 84% in the Dominican Republic (United Nations Development Program, 2003). The early literacy programs were followed up with continuing programs to ensure that nearly every adult attained a sixth-grade education level.

The Cuban educational system includes pre-primary, primary (1 to 6), secondary (7 to 9), and pre-university or technical/professional education (10 to 12). University education is also available. Today education is compulsory up to the 12<sup>th</sup> grade. Education is free from kindergarten through to university, and schools are accessible to virtually all children. In all, some 300,000 teachers instructed some 3 million students (Valdes, Abreu, Ojeda del Valle et al., 2002). The Federacion de Mujeres Cubanas runs free day-care centers (circuitos infantiles) for children under seven years of age. The enrollment in pre-primary school increased from 52% in 1970 to 94% in 1995. The net primary school enrollment/attendance in 1980 was 98.8% (Uriarte, 2002) and between 1995-2001 was 99% (UNICEF, 2003). Secondary school enrollment has increased from 14% in 1960 to a high of 90% in 1990 (Uriarte, 2002). The primary, secondary and tertiary enrolment is estimated to be 81% (United Nations Development Program, 2003). Today, educational attainment for Cubans stands at the ninth grade.

The Ministry of Education administers the educational system from pre-primary to grade 12. A national curriculum provides a uniform set of guidelines

that are meant to offset the differences in quality of education available to children in different areas of the country, especially urban and rural. A special effort has been made to build schools in rural areas that previously had been totally neglected. Since 1970, many secondary schools have been constructed in the countryside (Bloch et al., 1997). At these schools, agricultural work is combined with study, making it financially possible for this developing country to offer a high school education to every child. At the hundreds of such schools, students divide their time between classes and work in the fields, allowing the facilities to be used in two shifts. Room and board are provided free of charge to all students. Schoolbooks are provided at no charge, when they are available. Enrollment in Cuban universities is highly competitive.

The Ministry of Higher Education is responsible for university education. Access to programs of study at the university and post-graduate levels is granted through competition. Availability of slots is closely linked to economic priorities and may not always respond to students' choices. Enrollment in post secondary education increased from a low of 7% in 1970 to a high of 21 % in 1990. However, the Special Period has significantly affected university enrollment, dropping to 12% in 1996 (Uriarte, 2002). University students, upon graduation must perform two years of social service work in their fields at a low rate of pay before accepting permanent positions in their professions. There are 46 centres of higher education, with a total of 22,000 professors, 20% of whom hold doctorates, and some 574,000 persons have graduated with professional degrees since 1959 (Valdes, Abreu, Ojeda del Valle et al., 2002). The

education system in Cuba has provided a highly educated workforce: of all Cuba workers, 14% have a university degree (Uriarte, 2002).

### **1.3.9 Public Health**

The Cuban public health system is easily the finest in Latin America. In 1961 health care was nationalized in Cuba, and the State assumed full responsibility for the health care of its citizens. Today, the health care systems greatest strengths lie in its universality, accessibility and orientation to primary care and primary prevention. These principles have assisted in transforming the health status of the Cuban population. In 1960, the infant mortality rate stood at 57 per 1000 live births (United Nations Development Program, 2003), but in 2001, it was 7 for every 1000 live births under 1 year of age and 9 per 1000 for children under 5 years of age (UNICEF, 2003), giving it the lowest infant mortality rate in the Caribbean and Latin America, and making it among the lowest in the world. One hundred percent of births are attended by skilled health care professionals (United Nations Development Program, 2003). Since 1959, life expectancy has increased from 55 years to 75.9 years in 2001 (United Nations Development Program, 2003). This and a declining birthrate, the free availability of contraception and abortion, and continuing outward migration have led to a progressive aging of the population. It is estimated that by the year 2025 a quarter of Cubans will be over 60 years of age, as those born during the baby boom of the 1960s reach retirement age.

Since 1959, hundreds of hospitals, polyclinics (secondary care ambulatory centers with some inpatient beds), and clinics have been built, and tens of thousands of doctors and nurses have been trained to replace those who left for the US following the Revolution (Betancourt, 2000). In 1960, a rural health system was created and now medical graduates are required to do a two-year internship in the countryside after graduation. In 1958, there was only one rural hospital, but by 1975 that number had increased to 58. Between 1958 and 1975, Cuba's public health budget increased 20 times (Betancourt, 2000). In 1999, 39% of Cuba's budget was devoted to public health and education and a further 15% to social assistance and security (Uriarte, 2002). In 2000, some 421 clinics and 267 hospitals were spread throughout the country (Betancourt, 2000). All medical attention at state polyclinics, including dentistry and hospitalization, is free for Cubans, though medicines are in short supply due to the US embargo. The Cubans have constructed a massive health sector, dominated by a program of physician services. The government has trained far more doctors than had left the country following the revolution. In 1999, Cuba had one physician for every 175 people, although many of them work abroad as part of Cuba's medically oriented foreign aid program (Betancourt, 2000). In addition, between 1960 and 1990, over 26,000 Cuban doctors provided medical assistance to countries in Africa, Asia and Latin America. For example, in 1999, some 1300 Cuban Doctors served in 40 countries, including 400 in South Africa (Betancourt, 2000).

The administration of the national health system is organized on three levels: national, provincial, and municipal. The Ministry of Public Health

represents the national level. It serves as the lead agency and performs regulatory, coordination and control functions. It coordinates with other ministries that have a role in improving health within Cuban Society, such as the ministries of Agriculture, Education, Science, Environment, and Technology. The provincial and municipal public health offices are under the financial and administrative authority of the provincial and municipal administrative councils. At these levels, a health representative sits on the local council. These local councils are responsible for proposing and identifying the priorities and needs for their communities. Responsibilities of the provincial health office include supervision of major hospitals, the epidemiological monitoring systems, the blood banks and all training and medical education facilities. At the municipal level, the public health offices are directly responsible for the polyclinics; rural specialist hospitals; maternity homes; specialized clinics or centers for the elderly, mental health, and oral health; and epidemiological units at the local level. At the municipal level the popular councils participate actively in the decision-making process.

Family doctors' offices, polyclinics, and municipal, provincial, and specialized national hospitals are linked programmatically. Each of these elements also contributes to a national system of disease surveillance and control. The office of the Vice Minister of Public Health aggregates reports, some filed daily, from family doctors, polyclinics, and then municipal, provincial, and national hygiene or epidemiology units. The ministry of public health concentrates on four groups of problems: maternal and infant health; infectious diseases; non-infectious diseases; and the problems of the elderly. Long before

it has had a chance of becoming an industrial country in terms of production or personal income, Cuba's health statistics reflect the benefits of the comprehensive medical care system and the public health and sanitation efforts that have reduced occupational, food-borne, and waterborne disease to industrial world levels (Robbins, 1999).

A policy to integrate traditional medicine into the mainstream health system was first designed in 1993, at the peak of the economic crisis, when traditional medical treatments were seen as a cheap and acceptable method of filling the gap left by the absence of Western medicines. The system now includes a range of healing approaches, most of which existed in Cuba before the crisis but which have been incorporated and adapted much more rigorously since 1993. Although the original justification for integrating traditional medical beliefs with Western medicine was largely economic, other factors have ensured its continuation. The popularity of the traditional healing methods and their claimed efficacy in treating chronic, non-communicable diseases have ensured that these methods are further developed, tested, and implemented by many doctors in their daily practice, as well as by specialized clinics.

While Cuba has health and educational indicators similar to those of many developed countries, it still faces challenges similar to those of other developing countries. Despite a high level of funding to health and education programs, in proportion to its gross domestic product, the systems are strained as they face higher demands and decreased buying power. Delayed maintenance of facilities, hospitals and schools is a major problem. Shortages of medicine, medical

equipment and schoolbooks limit health care and education (Uriarte, 2002).

However, as new complex problems challenge the social system, solutions are being developed with more collaborative and integrated approaches, especially at the level of service delivery.

Traditionally, Cuba's health system has been a highly centralized system with a high degree of control concentrated at the highest levels of the ministry. Several initiatives have decentralized this system, and priorities and health promotion strategies are now identified at more local levels. The current intent is to operate a system where prioritization decisions are made at the community level, even if resource allocation decisions are made at the central level. In 1995, health councils were established at the national, provincial, municipal, and popular council levels. These health councils are made up of representatives of the various social sectors and civic organizations and are headed by the government representative at each level. They have facilitated intersectoral collaboration and have increased the capacity for social participation in the identification and solution of health problems in the community.

#### ***1.3.10 School Health in Cuba***

The programs and services offered in Cuba have evolved considerably over the years to become exemplary models for the international community. The strong emphasis on local community development offers an emerging model of small-scale, place-based, participatory planning and monitoring of services, which could greatly complement the reach and effectiveness of current models of

service delivery (Uriarte, 2002). School health services and programs are among those benefiting from the community development movement that has evolved in Cuba over the last decades.

Over the years, school health service delivery has seen many changes in Cuba. Following the Cuban Revolution in 1959, the Ministry of Public Health assumed the responsibility for school health programs and services. In 1985, under the leadership of the Office of Health in the Ministry of Education, the importance of school health was emphasized from kindergarten to post-secondary levels. Today, both the Ministry of Public Health and the Ministry of Education have assumed responsibility for school health (González S.T., 1996).

#### **1.3.11 School Health Diploma**

The Instituto Nacional de Higiene, Epidemiología y Microbiología (INHEM), founded in 1945, is part of the Ministry of Public Health and is a collaborating centre of the World Health Organization. INHEM is a national center of expertise, charged with the development of scientific investigations, specialized scientific and technical services, and continuing education in environmental health, epidemiology and public health. Through its School Health Department, INHEM is responsible for directing research and continuing education in School Health across Cuba. In 1995, INHEM was given the mandate by the Ministry of Health to promote the country's capacity in the area of environmental health and school health. There was a need to decentralize expertise and develop human resource in areas across the country. However, investments had to be well



targeted and utilized to their maximum potential given the scarcity of resources. The strengthening of human resources involved increasing knowledge and skills in the assessment and management of environmental health risks.

In 1997, INHEM, produced a Face to Face (FtF) School Health Diploma (SHDip). It was created to develop the capacity of school health professionals charged with the responsibility of implementing national school health programs. These programs involved an integrated approach to school health - combining the environment, the community, families, institutions and health education services and programs. A greater capacity of school health professionals was needed to increase the efficiency and quality of school health programs and services, and to improve the health and educational achievements of children and adolescents (Valdes, Abreu, Ojeda del Valle et al., 2002).

#### **1.4 AUCC-CIDA Tier II Project**

In 2000, INHEM, in collaboration with the Instituto Superior de Ciencias Medicas in the provinces of Santiago and Santa Clara, Cuba and with the Department of Community Health Sciences at the University of Manitoba and later also the Institute for Health Promotion Research and the Liu Institute for Global Issues of the University of British Columbia, initiated a project entitled *Building Interdisciplinary Capacity in Environmental Health Risk Assessment and Management Across Cuba*. The project is funded through a Tier II grant provided by the Canadian International Development Agency (CIDA) and administered by the Association of Universities and Colleges of Canada (AUCC).

It aims to strengthen capacity of the Cuban partner institutions to upgrade their teaching programs in environmental health, including school health, at the diploma, Masters and PhD levels across Cuba.

The project has 5 main objectives:

1. To assist INHEM to upgrade its current Diploma and Masters program in Environmental Health by utilizing new teaching methods that are more conducive to effective skill building;
2. To build university expertise across the country by upgrading the capacity of faculty in the central and eastern regions to deliver diploma programs and to develop Masters programs in these regional centers;
3. To contribute to PhD training in environmental health;
4. To strengthen the Cuban partners' capacity to manage projects and consolidate further collaborative partnerships; and
5. To promote internationalization of the University of Manitoba and its partner university, University of British Columbia. (This includes the involvement of Canadian graduate students in aspects of the project.)

In 2000-01, to assist in the rapid increase in capacity among school health professionals in Cuba and other countries, INHEM, as part of the AUCC-CIDA Tier II project, developed a computer mediated distance education (CMDE) school health diploma (SHD).

With the primary objective of increasing the capacity of professionals working in school health, the CMDE SHD is offered to individuals of various professional backgrounds such as doctors, nurses, psychologists, teachers, etc.

from various regions of the country and abroad that are working in school health programs and services. The CMDE SHD was developed in hypertext to be distributed using electronic mail across Cuba and other Latin American countries. The first iteration of the CMDE SHD was in February 2001. A second iteration of the CMDE SHD was offered in June 2002 until August 2003. While the school health diploma has been offered in Cuba for several years, the impact that it is having on the participant's knowledge and practices remains relatively unknown. A formal evaluation of knowledge uptake has not been completed.

### **1.5 Study Objectives**

The primary objectives of this study were:

- 1) To gain a better understanding of school health in Cuba,
- 2) To gain a better understanding of the computer mediated distance education school health diploma,
- 3) To evaluate if there is a change in knowledge and skills of participants pre and post the computer mediated distance education school health diploma; and
- 4) To gain and share insights on the process of conducting research in a developing country as a graduate student.

## **CHAPTER TWO**

### **BACKGROUND AND LITERATURE REVIEW**

#### **2.1 School Health Internationally**

Schools are essential in achieving health literacy (St Leger, 2001). The school is a fundamental institution in building the wealth and health of countries, and education has been shown to be a key factor in narrowing the differential between rich and poor (Jones & Furner, 1998; Koop, Pearson, & Schwartz, 2001; O'Byrne, Jones, Sen-Hai, & Macdonald, 1996; Parcel, Kelder, & Basen-Engquist, 2000). It is vital that schools be looked at to determine what can be done to equip young people with the knowledge and skills to enable them to be active participants in shaping those policies and practices that impact their health and the health of their community and country. School based health services have the potential for promoting health and improving service delivery for the billions of children and adolescents enrolled in schools internationally (Lear, 2002; Lear, 2003; Mackie et al., 1997; Rickert, Davis, Riley, & Ryan, 1997; Santelli, Kouzis, & Newcomer, 1996; Yaffe, 1998).

The past 20 years has seen massive expansion in the volume of programs and associated research to promote the health of young people through their experiences at school. Much of the activity has been initiated by public health agencies as part of efforts to reduce harmful behaviours and prevent disease in later life (Koop et al., 2001; Mackie et al., 1997; Parcel et al., 2000). This activity was driven by an understanding that many behavioural patterns have a profound

impact on health in later life such as tobacco use, dietary choices, and patterns of physical activity. These behavioural patterns are established during school age for many young people. In addition, many "problem behaviours" with more immediate impact, such as abuse of alcohol and illicit drugs, occur during the later years of school age (Lear, 2002; St Leger & Nutbeam, 2000; St Leger, 2001). School-based actions represent an integral part of public health activity in many countries and a substantial research effort has underpinned much of this action (Cohen, 1996; Farrior et al., 2000; Lear, 2002; Lee, Tsang, Lee, & To, 2003; Leger & Nutbeam, 2000; Lister-Sharp, Chapman, Stewart-Brown, & Sowden, 1999; Lynagh, Perkins, & Schofield, 2002; Mackie et al., 1997; Marshall et al., 2000; McGinnis & DeGraw, 1991; Mitchell, Palmer, Booth, & Davies, 2000; Mitchell, Robinson, Seiboth, & Koszegi, 2000). There has been a reawakening of mainstream interest in school health, in Australia, Canada, the United States to name but a few, which has created the possibility for strengthening its efficiency and effectiveness. School health interventions have evolved through different phases into comprehensive and sophisticated programs (Bingler, 2000; Farrior et al., 2000; Lee et al., 2003).

Several national and international organizations have endorsed the use of a comprehensive approach to school-based health promotion (National Center for Chronic Disease Prevention and Health Promotion, 1998; Canadian Association for School Health and Health Canada., 1993; Jones & Furner, 1998; Meresman et al., 1998; O'Byrne et al., 1996; World Health Organization, 1997; World Health Organization, 1998); it has been as a broad spectrum of programs,

policies, services, and activities that take place in schools and their surrounding communities. In Canada, this approach has been called Comprehensive School Health. In the United States it is called Coordinated School Health. In Europe, Latin America and in countries in the Western Pacific such as New Zealand and Australia, it is called the Health Promoting School. The World Health Organization (WHO) has developed a Global School Health Initiative that contains tools and fact sheets for the understanding and planning of national school health programs.

The health and well being of children and youth is a fundamental value of Canadian society. Health Canada has assisted in developing a comprehensive school health model for Canadian schools. Recently, urgent health and social problems have underscored the need for collaboration among young people, families, schools, agencies, communities and governments in taking a comprehensive approach to school-based health promotion (Canadian Association for School Health and Health Canada., 1993; Canadian Association for School Health, 2003; Health Canada, 2003; Raphael, 1998). A comprehensive school health approach includes a broad spectrum of activities and services which take place in schools and their surrounding communities in order to enable children and youth to enhance their health, to develop to their fullest potential and to establish productive and satisfying relationships in their present and future lives. The goals of such comprehensive approaches are: to promote health and wellness; to prevent specific diseases, disorders and injury; to intervene to assist children and youth who are in need or at risk; and to help to

support those who are already experiencing poor health (Canadian Association for School Health, 2003; Raphael, 1998).

In Canada, the attainment of these goals demands that an integrated approach be used which incorporates the following specific strategies and elements within four categories of means: instruction, services, social support and physical environment (Canadian Association for School Health, 2003; Health Canada, 2003). The successful implementation of this comprehensive approach necessitates leadership from elected officials, adequate funding, effective administrative support, and appropriate policy, legislation or regulations.

A comprehensive approach to school-based health promotion is designed not only to affect individual health behaviours but also to modify the environments in which young people live and learn. The programs, activities and services delivered within such comprehensive approaches to school health are the responsibility of young people, families and professionals, institutions, agencies and organizations concerned with children and youth, education, health, social services, law enforcement, the voluntary sector and the community as well as governments at all levels. Each of these individuals, organizations and government departments can potentially be involved in the delivery of instruction, services, social support or a healthy physical environment (Canadian Association for School Health, 2003).

Instruction, the first of four categories of means for comprehensive school health in Canada includes: a comprehensive, K-12 health curriculum; a K-12 physical education curriculum; a K-12 family studies/home economics curriculum;

the integration of health into subject areas; formal and informal learning; the development of awareness, knowledge, attitudinal change, decision-making, skill-building, behavioural change and social action; effective pre-service and in-service training; adequate teaching/learning materials; and appropriate teaching methodologies (Canadian Association for School Health, 2003; Health Canada, 2003).

Preventive Health Services, the second category of means includes: appraisals, screening services, early identification, child protection services, referrals, guidance services, counselling services for special needs students, treatment, rehabilitation, post-treatment support, pre-service and in-service training of health and other professionals active coordination of services and programs (Canadian Association for School Health, 2003; Health Canada, 2003).

Social Support, the third category, includes: role modelling by school staff and others, peer support, healthy public policy, media cooperation, community participation, community development, staff wellness programs, appropriate school discipline policies, effective school management practices, active student participation, and extensive parental involvement (Canadian Association for School Health, 2003; Health Canada, 2003).

And, finally, the fourth category of means in the Canadian comprehensive school health model, a healthy physical environment includes: safety procedures and regulations, sanitation, clean water, hygiene standards, environmental health standards, healthy food services, and smoke-free school policies (Canadian Association for School Health, 2003; Health Canada, 2003).



The Center for Disease Control (CDC) in the United States coordinates one of the most recognized comprehensive school health programs in the world. This model consists of eight interactive components: health education; physical education; health services; nutrition services; health promotion for staff; counseling and psychological services; health school environment; parent/community involvement (National Center for Chronic Disease Prevention and Health Promotion, 1998).

The School Health Policies and Programs Study (SHPPS) is a national survey conducted by the CDC (United States) to assess school health policies and programs at the state, district, school, and classroom levels. It was first conducted in 1994, and again in 2000. It is used to monitor the status of the United States school health policies and programs; describe the training, experience, and responsibilities of the personnel who deliver each component of the school health program; describe coordination among components of school health programs; describe relationships between state and district policies and school health programs practices; identify factors that facilitate or impede delivery of effective school health programs (National Center for Chronic Disease Prevention and Health Promotion, 1998).

The SHPSS provides information about the extent to which school health policies and programs are addressing the leading causes of death, illness, and social problems among young people. (National Center for Chronic Disease, 1998; Pateman, Grunbaum and Kann, 1999) Pateman, Grunbaum, and Kann (1999) analyzed responses to open-ended questions from the SHPPS conducted

by the CDC in 1994. Six recurring issues about the status of health education and factors that facilitated and hindered the delivery of quality school health programs emerged from the four levels of data collection: classroom, school, district and state. Respondents cited the need to 1) increase the value and priority of health education in the school curriculum; 2) advocate for professional preparation in health education for persons teaching health-related courses; 3) implement health education course curricula to address important and timely issues; 4) student testing in health education; 5) improve resources and support for health education, and 6) increase communication and collaboration within their schools and communities related to health education.

The CDC collaborates with the World Health Organization (WHO) around school health programs as part of the World Health Organization Health Promoting Schools Initiative (World Health Organization., 1992). The general direction of World Health Organizations Health Promoting Schools Initiative is guided by the Ottawa Charter for Health Promotion (1986) and the Declaration of the Fourth International Conference on Health Promotion held in Jakarta (1997). It is also guided by the recommendations of WHO's Expert Committee on Comprehensive School Health Education and Promotion (1995).

The social and cultural environment of today requires innovative responses and actions that are participatory in nature. Health Promoting Schools offer the opportunity to improve the health of students within the school environment. Ensuring the right to health and education is the responsibility of all. It is an investment that every society should make to generate a sustainable

future through the creative and productive capacities of students. If the most optimal mental and physical growth and development of students, our most valuable resource, is promoted along with the development of social responsibility, there is greater potential for the creation of a healthy world, harmonious social development and a greater quality of life (Ippolito-Shepherd, 2002).

The WHO's Global School Health Initiative consists of four broad strategies: 1) Building capacity to advocate for improved school health programmes; 2) Creating Networks and Alliances for the development of Health Promoting Schools; 3) Strengthening national capacities; and 4) Research to improve school health programmes (Cohen, 1996; Jones & Furner, 1998; O'Byrne et al., 1996). The WHO recognizes that the success of the Global School Health Initiative or Health Promoting Schools rests on the extent to which partnerships can be formed at local, national and international levels. While promoting health through the schools has long been an important task of the WHO, the Health Promoting School moves away from the traditional delivery of health education. The Conceptual Framework outlines a holistic approach to foster health within a school and its local communities by engaging health and education officials, teachers, students, parents, and community leaders in making common efforts to promote health (World Health Organization, 1997).

A Health Promoting School: 1) strives to improve the health of school personnel, families and community members as well as students; fosters health and learning with all the measures at its disposal; 2) engages health and

education officials, teachers and their representative organizations, students, parents and community leaders in efforts to make the school a healthy place; 3) strives to provide a healthy environment, school health education and school health services along with school/community projects and outreach, health promotion programmes for counselling, social support and mental health promotion; and 4) implements policies and practices that respect an individual's self-esteem, provide multiple opportunities for success and acknowledge good efforts and intentions as well as personal achievements (Booth & Samdal, 1997; Cohen, 1996; O'Byrne et al., 1996; World Health Organization, 1997).

Health Promoting Schools view student health and learning as intrinsically interdependent. It considers that improved health will contribute to improved school performance and vice versa (Cohen, 1996; Symons et al., 1997). The conceptualization presents health promotion programs and activities as integral to the school's educational program and not external to the school's educational mission (National Center for Chronic Disease Prevention and Health Promotion, 1998; Health Canada, 2003; Cohen, 1996). Health Promoting Schools can help to change not only the health behaviours of individuals but also the environments in which students and educators live, learn and work. The policies, programs, services and activities that are delivered within this comprehensive framework are the responsibility of young people, parents, health and social services professionals, educators, institutions, agencies and governments.

Two meta-analyses argued that the health promoting school was a promising approach in that it provided a more coherent framework to address

school health in a more integrated and strategic way than traditional school health (Lister-Sharp et al., 1999; Leger et al., 2000). Work by Leger and Nutbeam (1999) on findings from their research review found a number of common themes emerging from the many intervention studies reported in the literature, the reviews, and the World Health Organizations reports. They report that the current levels of education and training for teachers to adopt comprehensively the health promoting school concept are inadequate (Lister-Sharp et al., 1999; St Leger et al., 2000; Symons et al., 1997). For students to achieve critical health literacy requires teachers to be cognizant with major health issues, competent in developing advocacy and social change skills, and aware of key agencies and organizations in the community that provide the contextualization of the issue for the students. They argue that school health promotion and education interventions are most effective at increasing knowledge, developing skills, and identifying and supporting health-enhancing behaviours provided, among other things, that they are comprehensive and holistic - linking the school with agencies and sectors dealing with health; the intervention is substantial, over several school years and relevant to changes in young people's social and cognitive development; and that adequate attention is given to capacity building.

## **2.2 School Health Promotion in the Caribbean and Latin America**

Several countries in the Caribbean and Latin America have explored various aspects related to school health. The Ministries of Education in most of

these countries have developed school health programs, emphasizing the importance of school health from primary school to university. In the majority, health services detect the most common health problems related to hearing, sight, postural and learning difficulties, malnutrition and dental problems. Many programs include themes of personal hygiene, nutrition, accidents and waste disposal.

In 1995, the Pan American Health Organization, affiliated with the World Health Organization in the Americas, launched the Health Promoting Schools initiative of the World Health Organization in the region of Latin American and the Caribbean to strengthen and modernize the capacity of countries in this region related to school health (Pan American Health Organization, 1995). The initiative called for an integrated approach in the development and strengthening of health education, the creation and support of healthy school environments, and the provision of health and nutrition services in the school (Cerquiera, 1996; Ippolito-Shepherd, 2002; Pan American Health Organization, 1996). This requires a commitment to involving not just the school but also the community and local and municipal health services. The objective is to strengthen the capacity of everyone concerned to create an environment that would encourage better knowledge, attitudes and health promotion practices, and would help to prevent the adoption of risk behaviours by the younger generation.

Initially, the implementation of the school health initiative included diffusing the concept of Health Promoting Schools all over Latin America and the Caribbean; creating networks through which schools could share and enrich their

experiences. The initiative was to ensure the enrichment of the processes already underway; develop programs to build capacity of school and health personnel and stimulate the preparation of didactic materials with a new focus and the use of participative methodologies. It would promote the use of electronic communication among those participating in the network, and strengthen the institutional capacity to develop school health programs that ensure the equal treatment of all individuals (Pan American Health Organization, 1995).

The Pan American Health Organization (1996) outlined a regional strategy and activities for Latin American and Caribbean countries incorporation of Health Promoting Schools. They include:

1. enabling the education and health sectors to formulate and put into effect joint policies through the revision of curricula, legislation related to school health, advocating for the mobilization of the public and social sectors; disseminating school health priorities and building alliances and social agreements;
2. helping to consolidate the mechanisms of intersectoral coordination, including mixed commissions to formulate public policy, coordinate a needs assessment, revise the curriculum and evaluate the strategy implementation;
3. developing, implementing and evaluating the various components of the health promotion plans in the school environment, including curriculum design with a focus on gender, integration of health on the

transversal axis and other areas of the school curriculum, capacity building of personnel, production of educational materials, development and implementation of the appropriate health and nutrition services, and activities to create and sustain healthy surroundings and environments.

4. coordinating educational activities with parent associations, community organizations, the health sector and others, with the intention of involving local leaders and decision makers so as to ensure that health promotion is included in development planning. As well, call upon society to participate in the implementation of actions that will prevent school drop-out and to involve children and adolescents that are outside of the school system.
5. develop and implement programs orientated toward joint initiatives between the school and the working world.

Technical cooperation to implement this strategy consists of “diffusing” knowledge and the methodology as well as encouraging the exchange of experiences among various countries. For this reason, several meetings have been held regionally since 1993 promoting the constitution of the Health Promoting Schools Network in Latin America and the Caribbean. The building and consolidation of the network has created a space for the exchange of ideas, resources, experiences and nurtured the enthusiasm of teachers, students and parents (Pan American Health Organization, 2000).



While many of the Latin American and Caribbean countries have taken steps to develop and implement Health Promoting Schools, most still face several obstacles (Ippolito-Shepherd, 2002; Meresman et al., 1998; Pan American Health Organization, 1996). These include: 1) a lack of political support, ongoing technical support, and coordination between the Ministries of Health and Education; 2) insufficient national capacity in terms of personnel, teachers and materials; 3) a lack of structure for follow-up and evaluation of programs; 4) lack of investigations on the needs of children and adolescents to orient school health programming; 5) national strategies that are poorly defined in terms of promotion, support, coordination, and administration of school health programs; and 6) a lack of innovative approaches in the development of educational materials.

### **2.3 Role of Healthcare Professionals in Comprehensive School Health Programs**

Public Health practitioners are in a unique position in communities. This is especially true for Cuba given the organization and funding available to the public health system. The science base of public health compels public health leaders to be active in assuring conditions in which people can be healthy. With the recognition of the unique role of the school as the centre of many communities, the science that public health brings to the table in the education community becomes vitally important (Allensworth, 1997; Brindis et al., 1998). Schools have the potential to be broad-based public health intervention sites.

These sectors must be better connected, not just with clinics but with the whole range of community building opportunities (Bingler, 2000; Lear, 2003).

In addition, the development of the systemic planning practices needed to implement more integrative learning environments must become even more of a collaborative enterprise than it is now. Public health planners have developed some effective tools for implementing community-based collaboration (Bingler, 2000; St Leger, 2001). These tools must be shared, modified, and expanded to serve a broader purpose in community-based planning, impacting on several areas of the community, one of which could be the school (Farrior et al., 2000). Through communication and collaboration, professional planners from a wide range of disciplines can develop powerful new tools and apply them to all aspects of community building.

The common ground between public health and education planners is also fertile in other ways. Some of the predictors of health status, such as mother's literacy and high school graduation rates, are derived from the discipline of education; at the same time, some of the most compelling challenges that educators face every day in the classroom have more to do with the physical and emotional health of their students than with any limits imposed by intellect. A stronger connection between the disciplines of education, public health, and health care could lead to a better understanding of the systemic qualities of learning (Bingler, 2000). School health can no longer remain apart from community health, and community health, to meet its obligations to school aged children, can no longer ignore school health.

Mackie & Oickle (1997) suggest that physicians play a major role in the implementation and development of comprehensive school health programs in communities as they are seen as community leaders in matters of health. This notion has been reinforced in many other countries (Chavasse, North, & McAvoy, 1995; Danzon, Quelier, Maitrot, & Carvalho, 1998; Elster & Levenberg, 1997). Mackie and Oickle (1997) also outline several strategies that physicians can apply in the office and the community to support comprehensive school health programs. They suggest that physicians become advocates for using a comprehensive school health approach within their schools and communities. The authors go on to state that a physician's role does not end in the office. Working with schools is one way that physicians can support the communities that they serve (Mackie et al., 1997; Reif & Elster, 1998; Yaffe, 1998).

Reif JC and Elster AB (1998) discuss the challenge providing healthcare services to adolescents can pose to a family physician's clinical skills and knowledge. While most physicians provide some preventive services, many provide the full range of services required to support comprehensive school health programs.

One way to support a stronger connection between the disciplines of education, public health, and health care, they note, is through interdisciplinary planning (Bingler, 2000). Agencies should seek stronger relationships and common cause with other professional and citizen groups pursuing interests with health implications. Everyone contributes to the design according to his or her own talents and skills. Leadership networks, established by public health

planners, can pave the way for education reform and vice versa. They argue that the opportunity to consolidate and integrate community resources, and create community-learning environments that can better promote physical as well as intellectual well-being is made possible through this collaboration (Bingler, 2000; Farrior et al., 2000).

In the early 1990's, the Office of School Health in the Department of Public Health in Massachusetts developed a strategic plan to strengthen school health, particularly its health services. Lear (2002) outlined part of the plan that included a program to develop certification for school nurses that would increase their education and training qualifications. This resulted in a 1995 publication of 'The Comprehensive School Health Manual', which provided guidance on establishing and managing a full range of school health services, including prevention and health promotion activities, infectious disease control, reproductive health care, health assessment, and acute care. Hence, a new school nurse certification program was implemented.

An array of continuing education across the state has continued to support the new requirements and expectations of the school health program. Although, the offerings focused primarily on school nurses, the participation of physicians in school health is also being sought. This role is to serve as a backup for school nurses, as a referral source and to provide physical examination on site at the school (Lear, 2002). While the inclusion of health care practitioners in school health has been explored and discussed in the

literature, there is very little literature or research identifying the effectiveness of continuing education programs in addressing this issue.

## **2.4 Use of Technology to Build Capacity and Disseminate Educational Materials**

There are an estimated 429 million people online globally, but even this staggering number is small when considered in context (Digital Divide Network Staff & Benton Foundation, 2001). For example, of those 429 million, fully 41% are in North America. Also, 429 million represents only 6% of the world's entire population. When assessed by region, Internet use is dominated by North Americans; 41% of the global online population is in the United States & Canada. Only 4% of the world's online population are in South America. The swift emergence of a global information society is changing the way people live, learn, work and relate. An explosion in the free flow of information and ideas has brought knowledge and its myriad applications to many millions of people, creating new choices and opportunities in some of the most vital realms of human endeavour. Yet too many of the world's people remain untouched by this revolution. A digital divide threatens to exacerbate already-wide gaps between rich and poor, within and among countries. With governments themselves acknowledging that they cannot successfully pursue development on their own, there is unprecedented scope for public-private partnerships that match real investment opportunities with the real needs of the poor (Digital Divide Network, 2003). Even small initiatives can make an enormous difference. In 2001, 1.1 per 100 people in Cuba had Internet access and 2.0 per 100 people had the use of a

personal computer compared to countries with high human development at 32.8 and 35.9 respectively (United Nations Development Program, 2003).

In an increasingly globalized society, many learners seem to appreciate the advantages of international courses and the opportunity to work collaboratively and closely with colleagues across the world, and to have access not only to the course instructors, but to the text book authors and experts from other institutions (Bartolic-Zlomislic & Bates, 1999; Bates, 1999). For programs struggling with small enrolments for face to face courses, the opportunity to widen the range of potential students through online learning may be critical (Bartolic-Zlomislic et al., 1999; Bates, 1999; Foulk & Dorman, 1998). For institutions, the benefits provided by the ability to partner with other international institutions is important at both an economic and educational level (Bartolic-Zlomislic et al., 1999).

Findings reveal that the learning outcomes of students using technology at a distance were similar to the learning outcomes of students who participated in conventional classroom instruction (Phipps, Merisotis, & O'Brien, 1999; Russell, 1999; Selwyn, 2000) or used self-study printed materials (Bell, Fonarow, Hays, & Mangione, 2000; Russell, 1999). The attitudes and satisfaction of student using distance learning also were characterized as generally positive. While, outcomes are generally similar if the same curriculum is provided, greater learning efficiency and satisfaction has been linked with computer mediated distance education over methods using self-study print materials (Bell et al., 2000). And the cost-effectiveness of many of these

courses could be substantially greater via computer mediated distance education (Bartolic-Zlomislic et al., 1999).

Online learning has been found to be particularly appropriate for lifelong learners (Bartolic-Zlomislic et al., 1999). The facility for interaction between learners separated by space and time is really important for mature adults who often have developed considerable knowledge and experience, which they can share and add to the knowledge provided by the instructor, but who cannot attend classes on a regular basis at a site that may be inaccessible to them. The flexibility of on online learning is clearly of great value to many mature adults trying to balance work, family and study requirements (Bartolic-Zlomislic et al., 1999; Bates, 1999; Foulk et al., 1998). Additionally in most cases there is a reduction of travel costs to attend on-campus lectures (Jafari, 1997).

Limitations of computer mediated distance education also exist. Research has shown that not all students are suited for Internet-based education. The cost of computer equipment and infrastructure may limit the number of students that can afford Internet-based instruction (Foulk et al., 1998; Jafari, 1997). Lack of technical support for software tools needed in Internet based instruction, may leave students discouraged and unable to participate. However, as computer mediated instructional activities expand in the school system and the price of computers and peripherals decrease, one should assume an increasingly technologically literate populace in the developed countries. Developing countries are also beginning to explore these

technologies and they present a great option for education in these settings as well (Kinyanjui, 1994; Lacey, 1999; Lewis & Romiszowski, 1996; Tam, 1999).

In 1998, the amount of health instruction offered on the Internet was not substantial, but was anticipated to grow exponentially over this decade (Foult et al., 1998). With efforts to enhance the influence of health education and the expanding need for continuing education created by the certification process and a constantly changing work environment, the need is great for technology-based health education programs in higher education. As noted by Foult et al. (1998), successful Internet-based instruction, as in any distance education, should focus on the instructional needs of the students rather than the technology itself. Initially, there can be difficulties related to technological competence on the part of students that need to be overcome. It can be difficult to learn the technology while at the same time learning the substantive content of the course (Foult et al., 1998).

## **2.5 Building Capacity and Changing Practitioner Behaviour**

Studies have shown that formal continuing professional education (CPE) does not always lead to changes in the health care practitioner's behaviour (Davis, Thomson, Oxman, & Haynes, 1992; Davis, Thomson, Oxman, & Haynes, 1995). The use of traditional CPE activities such as lectures has been widely criticized (Davis, 1998; Kanouse & Jacoby, 1988). This criticism appears justified because didactic interventions analyzed in a review by Davis et al (1999) failed to achieve success in changing physician performance or health care outcomes.



While such interventions may change other elements of competence, such as knowledge, skills, or attitudes, or may act as predisposing elements to change, didactic lectures by themselves do not play a significant role in immediately changing performance or improving patient care (Davis et al., 1999). In contrast the use of interactive techniques such as case discussion, role-play, or hands-on practice sessions were generally more effective at changing performance and health care outcomes of physicians and other health care professionals (Davis et al., 1999).

Both of these findings match closely those principles promoted by adult educators (Knowles, 1970; Candy, 1991), who describe successful adult education as learner-centered, active rather than passive, relevant to the learners' needs, engaging, and reinforcing-characteristics of CME interventions more frequently found in the interactive rather than the passive educational setting. Further, the learn-work-learn opportunities afforded by sequenced sessions, in which education may be translated into practice and reinforced (or discussed) at a further session, may explain the success of sequenced interventions (Davis et al., 1999). The recognition that learning not teaching causes physicians and other professionals to change their practice has led to a new educational focus applying adult learning theory (Fox & Bennett, 1998).

Systematic reviews of the educational literature found that although there were comparatively few rigorous evaluations of educational interventions, there were sufficient studies showing that continuing medical education (CME) could improve clinical performance and patient outcomes, indicating which methods

were best at bringing about change in doctor's behaviours (Davis et al., 1992; Davis et al., 1995; Davis, 1998). The most effective methods derived from these reviews include learning linked to clinical practice, interactive educational meetings, outreach events, and strategies that involve multiple educational interventions (for example, outreach plus reminders). Less effective strategies include audit, feedback, local consensus processes, and the influence of public opinion leaders. The least effective methods are also the most commonly used in general CME practice— namely, lecture format teaching and unsolicited printed material (including clinical guidelines) (Cantillon & Jones, 1999).

Reviews of effective educational methodologies in primary care generally concur with the findings of wider literature reviews of CME (Allery, Owen, & Robling, 1997; al Shehri, Stanley, & Thomas, 1993; Cervero, 1985; Stanley, al Shehri, & Thomas, 1993). Combinations of educational interventions were found to be better than single interventions (Kerwick & Jones, 1996; Wensing & Grol, 1994). Wensing et al (1998) found that organizational and management support were important additional factors in changing behaviour. Several authors highlighted the importance of relating educational activity to the work that physicians do (Horder, Bosanquet, & Stocking, 1986; Singleton & Tylee, 1996). Peer review and group learning models were proposed as particularly relevant in general practice settings (Wensing, van der, & Grol, 1998). Standard and significant event audits have been shown to be effective strategies for behaviour change if they include targeted feedback. Allery et al (1997) found that most changes were brought about by a combination of factors. Formal CME was

partly responsible for behaviour change in only one third of cases.

Organizational factors and contact with other health care professionals were equally important factors.

Evaluating change in practice behaviours or health care outcomes following formal continuing professional education (CPE) activities is a complex undertaking. Multiple variables need to be considered to determine why behavioural change does or does not occur. Cervero (1985) identified four variables that could explain the variation in the adoption of behavioural change in practice: characteristics of the individual professional (i.e. motivation of the professional to change); the characteristics of the social system in which the participant will be required to make the change (i.e. environment is supportive of change in practice); the participant's perception of the nature of the proposed change (i.e. perceived ability to implement change); and the participant's perception of the CPE offering (i.e. satisfaction with content in relation to practice needs). This model has been tested and supported in much of the CE nursing literature (Kiener & Hentschel, 1992; Peden, Rose, & Smith, 1992; Ryan, Campbell, & Bringham, 1999; Waddell, 1992).

Cantillon and Jones (1999) recommend piloting complex educational interventions before embarking on large studies. The importance of reinforcing learning has also been stressed, and a follow-up beyond 3 months. The authors state that there is a lack of robust evaluations of general practice based educational interventions. And of those who did produce "generalizable" findings, a very small proportion of the evaluative studies were designed to test

whether behavioural change was sustained. They also stress that evaluation of education interventions is complex and poses main difficulties to the researcher. However, despite these difficulties, evaluation remains an important part of the educational cycle. Self-report, practice audit and/or direct observation were the most common methods used in the nursing and physician literature to measure change in practice.

## **2.6 Conduction Health Research in a Developing Country**

Why should countries in the North care about the health of people in developing countries? Humanitarianism, self-protectionism and mutual benefits resulting from working together are important reasons. Humanitarianism is clearly a longstanding trait of Canadians, and is needed in the pursuit of reducing global inequities. Self-protectionism is becoming more important due to increasing 'globalization', and the subsequent increased threats to Canadians (e.g. wider traveling patterns promote the spread of infectious diseases, particularly drug resistant diseases.) Finally, working together may provide mutual benefits, through the exchange of knowledge. Haddad et al (2002) discuss some additional gains from greater involvement in HPSR. Canada's health systems, and users of the systems stand to benefit. The improvement of Canada's overseas development assistance and the strengthening of Canada's academic institutions are other benefits of taking on a larger role in HPSR.

Haddad et al (2002) completed a survey of North and South researchers asking them what they felt the benefits were to Canada from involvement in

HPSR. They indicated that the development and implementation of primary health care experiences, especially in strengthening community based health systems (e.g., to better address the needs of our diverse cultural and ethnic base), community participation and empowerment of women, youth and other community members would be of great benefit to Canada's health systems. They believed it would enhance policy development and the translation of policy into practice. It would assist in determining better priorities, especially in public and community health, preventative care and health promotion. And, in the area of globalization, it would assist in gaining a better understanding of how it affects Canada and Canadian health policy in the world order.

Larson (1997) outlined key issues that significantly impact on the success of a research project in a developing country. While she did not speak specifically about doing graduate work within a developing country, the same principles could be said to apply. Project feasibility was the first issue discussed. The time required and available to do the research must be realistic. As well, access to the study population and the sample size requirements must be carefully examined taking into consideration the researchers environment. Both human and physical resources needed must be clearly laid out and discussed with all those involved in the research prior to commencing. The study population's acceptance of the research methods must also be explored as this will determine the feasibility of the project.

Local and institutional supports can have a significant impact on the outcome of the investigation. Local leaders, health practitioners, regional or

national program directors as well as academics from the country of study should be included whenever possible (Larson, 1997). Larson (1997) states that local and institutional supports must be involved in the ongoing sharing of information, the coordination and modification of the project and must be ensured participation. Obtaining the required support needed to complete the project such as government agencies and training facilities, must be explored prior to commencing the investigations as this will have a significant impact on the overall success of the research. Costello & Zumla (2000) emphasize that it is imperative to include national academics and institutions in the research process as this improves the chances of findings being translated into national policy and practice. A research project team should be created based on quality, relevance, and expectations related to the research (Larson, 1997). Selection and training of staff that will be involved in the project must be carefully contemplated in consultation with national partners. As well, roles of the various project team members should be clearly defined from the outset. Data management such as ownership/collection/compiling of information should also be discussed from the outset to avoid potential conflicts later.

The preparation of a budget is essential (Larson, 1997). All potential costs need to be considered prior to implementing the research project. It should include personnel needed to facilitate research; equipment and supplies; travel needed to conduct the study and ensure the dissemination of the results; hardware, software, data entry and consultants that may be needed to complete the analysis of the results; communication costs and finally shared costs. This

could be a limiting factor for a graduate student depending on their source(s) of funding. All costs must be justifiable in an absolute and relative sense. The direct costs of doing the investigations and the indirect costs to those participating must be carefully examined.

Consent and ethical issues were also identified as a potential key issue that could significantly impact on the success of the research project. The rights of individuals, communities and populations that will be involved in the investigation must be considered at all times. The cultural influences that may exist within the country must also be explored for the impact they may have on consent and other ethical issues. Also, the international conventions that pertain to research must all be adhered to when doing research in any country.

Changes occurring in the research environment during the investigation such as policies and services that will affect exposures and/or outcomes in an intervention study are essential to anticipate and monitor. Cut-off rules need to be established; the research team must decide whether or not to continue when it becomes clear that the study has reached its objectives or that it cannot (Larson, 1997). While many of the principles that Larson discussed could be said to apply to all research, extra attention must be given to these details when embarking on international research projects.

Langmaid (1996) authored a report for USAID describing their experience conducting development programs with limited field mission presence. As part of this report, he outlined the factors that make for the successful implementation of a research project. They include establishing consensus on program outcomes

and the strategy to achieve those outcomes which are owned by all participants. He also suggested that these outcomes are best accomplished through joint strategic analysis and program design processes that involve local experts in their implementation. And finally, he stated that the workplan needs to be developed and agreed to before the program is implemented. Langmaid (1996) also outlined within the report, the important characteristics of foreign researchers. They include: having a good understanding of local conditions; having political and cultural sensitivity; having ready access to host country officials; maintaining sustained day to day involvement; setting a good example and addressing politically sensitive issues.

Costello & Zumla (2000) negate the use of semi-colonial models for foreign-led research in a developing countries due to the negative effects it may have on partner countries, and support the use of the partnership model in which nationals lead research projects, with only technical support from outsiders. Langmaid (1996) also supported a partnership model, however states that there is no single model for effective programs in countries around the world. Each needs to be tailored to individual, institutional and developmental capacity of the local environment. The capacities of local institutions, the adequacy of their policy framework, and the skills of their human resource vary dramatically as does the political and cultural environment in which they work. Langmaid (1996) goes on to say,

Given the dynamics of most developing countries, plans developed this year for a particular situation could require significant redirection or even



termination and new plans initiated in another development sector.

USAID needs the capacity to understand these changes and anticipate their consequences. (p. 15)

Participatory action research brings outside researchers and local participants together in a process of inquiry, education, and action on problems of mutual interest. However, participatory action researchers sometimes sacrifice quality of scientific rigour for pragmatic utility (Newman, 2000). Ideally, all parties become learners; they share control over the research process; they commit themselves to constructive action rather than detachment; and their participation promotes empowerment as well as understanding. Outside researchers who undertake participatory action research projects join with local participants to define problems, design data collection methods, analyze results, and utilize research outcomes. Outsiders and locals together learn about the forces operating to create local problems, organize to take collective action, and examine alternative strategies for improving the situation. In this way, people become aware of common interests and mobilize other actors in planning processes and decisions that affect the local community (Newman, 2000).

## **CHAPTER THREE**

### **STUDY DESIGN AND METHODOLOGY**

#### **3.1 Theoretical Framework**

Professionals from a number of disciplines have used the theories of innovation diffusion to increase the adoption of innovative products and practices. Diffusion is defined as the process by which an innovation is adopted and gains acceptance by members of a certain community (Rogers, 1995). Diffusion research, in its simplest form, investigates how these major factors, and a multitude of other factors, interact to facilitate or impede the adoption of a specific product or practice among members of a particular adopter group. The study of diffusion theory is valuable to continuing professional education interventions (Dusenbury, Brannigan, Falco, & Hansen, 2003; Kiener et al., 1992) learning related to clinical practice could be defined as a decision to adopt an innovation. Diffusion theory could also apply to computer mediated distance education practices and products (Surry & Farquhar, 1996). Four of the theories discussed by Rogers (1995) are among the most widely-used theories of diffusion. These widely-used diffusion theories are: Innovation Decision Process; Individual Innovativeness; Rate of Adoption; and Perceived Attributes.

The Innovation Decision Process theory states that diffusion is a process that occurs over time and can be seen as having five distinct stages (See Appendix A). The stages in the process are Knowledge, Persuasion, Decision, Implementation and Confirmation. According to this theory, potential adopters

of an innovation must learn about the innovation, be persuaded as to the merits of the innovation, decide to adopt, implement the innovation, and confirm (reaffirm or reflect) the decision to adopt the innovation.

Individual innovativeness theory states individuals who are predisposed to being innovative will adopt an innovation earlier than those who are less predisposed. On one extreme of the distribution are "the innovators". Innovators are the risk takers and pioneers who adopt an innovation very early in the diffusion process. The next group called "early adopters" are different from innovators. They are self-conscious experimenters, and they do not tend to search quite so widely as the innovators. Then comes the "early majority". They are readier to hear about innovations relevant to current, local problems than general background improvements. While the early majority look to the early adopters for signals about what is safe to try, the next group the "late majority" look to the early majority. They will adopt an innovation when it appears to be the new status quo, not before. On the other extreme are the laggards who resist adopting an innovation until rather late in the diffusion process, if ever.

The third widely-used diffusion theory discussed by Rogers (1995) is the theory of Rate of Adoption. Rate of Adoption theory states that innovations are diffused over time in a pattern that resembles an s-shaped curve. Rate of Adoption theorizes that an innovation goes through a period of slow, gradual growth before experiencing a period of relatively dramatic and rapid growth.

The theory also states that following the period of rapid growth, the innovation's rate of adoption will gradually stabilize and eventually decline.

The Theory of Perceived Attributes (Rogers, 1995) states that potential adopters judge an innovation based on their perceptions in regard to five attributes of the innovation. These attributes are: trialability; observability; relative advantage; complexity; and compatibility. The theory holds that an innovation will experience an increased rate of diffusion if potential adopters perceive that the innovation: 1) can be tried on a limited basis before adoption; 2) offers observable results; 3) has an advantage relative to other innovations (or the status quo); 4) is not overly complex; and 5) is compatible with existing practices and values. Perceptions of an innovation predict between 49% and 87% of the variance in the rate of spread (Rogers, 1995).

Contextual and managerial factors within an organization or social system that encourage and support or discourage and impede, also influence the rate of diffusion of innovations. For example, organizations may be nurturing environments for innovators, offering them praise, resources, and security for their inevitable failures, or they may discourage innovators by asking all employees not to rock the boat and by regarding those who propose change as troublemakers. Similarly, because the early majority tends to learn about innovations best for local and social interactions with early adopters, organizations that foster such social exchanges may see faster dissemination of changes than organizations that develop habits of isolation. Research has shown that successful diffusion depends more on how an organization or social

system deals with its innovators, early adopters, and the interface between early adopters and the early majority than with any others groups or phases (Berwick, 2003).

Fidelity of implementation is one of the less emphasized components of the diffusion of innovation theory (Dusenbury et al., 2003). Fidelity of implementation refers to the degree to which physicians and other program providers implement programs as intended by the program developers. While there is agreement generally about what is intended when research refers to fidelity, in fact, fidelity has come to refer to a broad and loosely collected set of specific definitions.

The diversity of definitions given to fidelity of implementation include (1) strict adherence to methods or implementation that conforms to theoretical guidelines (particularly when the intervention is adapted to meet the needs of specific circumstances), (2) completeness and dosage of implementation, (3) the quality of program delivery (the way a physician implements a program), (4) the degree to which participants are engaged, and (5) program differentiation (the degree to which elements which would distinguish one type of program from another are present or absent). A singular term that defines fidelity has not yet emerged (Dusenbury et al., 2003).

Among the early studies to raise questions about fidelity of implementation was the Rand report on the Implementation of Educational Innovation which analyzed federal programs supporting educational innovation (Berman & McLaughlin, 1976). The study assessed the implementation of nationally

disseminated educational innovations and found that teacher-proof programs or 'pure technologies' did not exist in practice. A central conclusion of this study was that there was a consistent lack of fidelity in the implementation of school programs. The Rand report observed three patterns of implementation in innovative educational programs: (1) adapting the program without any changes in organizational behavior, (2) mutual adaptation in which the program is adapted at the same time there are changes in the organization, and (3) non-implementation and non-adoption in which neither happened.

Fidelity of implementation is important to this study for a variety of reasons, all of which are related to gaining an understanding of how the quality of implementation can be improved when programs are disseminated. First, in studies in which there is a failure to implement the program as planned—known as a Type III error—there is the potential to conclude erroneously that observed findings can be attributed to the conceptual or methodological underpinnings of a particular intervention (Dobson & Cook, 1980). As Yeaton and Sechrest (1981) point out, when we understand that an intervention was not implemented with fidelity, data suggesting that it failed to have an effect become 'totally uninteresting' (Yeaton & Sechrest, 1981). A second important reason for studying fidelity of implementation is that it often helps to explain *why* innovations succeed and fail. If interventions succeed or fail depending on the dose or quality of intervention, this is crucial information. Third, an assessment of fidelity of implementation allows researchers to identify what has been changed in a program and how changes impact outcomes, i.e. diffusion can often be observed

to affect not only primary behavioral outcomes, such as change in practice, but to affect mediating variable outcomes such as changes in attitudes and beliefs as well. Understanding how fidelity moderates such effects can be crucial to guiding refinements in interventions. Finally, fidelity of implementation reveals important information about the feasibility of an intervention—how likely it is that the intervention can and will be implemented with fidelity. If it is difficult to achieve fidelity of implementation in practice, a program has low feasibility. Programs that are implemented with high levels of fidelity but fail to produce desired effects may need to be redesigned (Dusenbury et al., 2003).

Blakely et al. (1987) report that multiple methodologies for measuring fidelity have been under development since the mid-1980s (Blakely et al., 1987). Still, measures of fidelity of implementation have been weak (Brekke & Wolkon, 1988), no widely applicable standardized methodology exists for measuring fidelity (Waltz, Addis, Koerner, & Jacobson, 1993), and valid measures of program implementation and dissemination are needed (Dusenbury et al., 2003). In part, the challenge of developing measures involves not only defining concepts to be measured, but in developing measures that can be used for assessing fidelity for interventions that differ markedly in their approach. Understandably, measures that have been developed have often been specific to the program or policy being assessed. In general, fidelity of implementation has been measured in five ways (Dane & Schneider, 1998): (1) adherence to the program, (2) dose (the amount of the program delivered), (3) quality of program delivery, (4) participant responsiveness and (5) program differentiation

(whether critical features that distinguish the program are present). A common source of information about fidelity comes from surveys at the end of programs.

### **3.2 Research Design**

Both qualitative and quantitative methods were used to address the study objectives (per.p.39). Mykletun and Wickstrom (2000) discuss the integration of quantitative and qualitative methods noting how the two paradigms can add value to both the design and to the final lessons learned from the project. The quantitative study should be carefully designed on the basis of the knowledge gained through the qualitative processes, in order to ensure that the relevant issues are explored.

#### ***3.2.1 Qualitative Methods for Study Objectives 1, 2, 3 and 4***

A mini-ethnography was undertaken to address in whole or in part all of the study objectives. Four qualitative methods were used: semi-structured interviews, document review, direct observation and fieldnotes. All four methods were carried out concurrently to provide the investigator with a better understanding of school health in Cuba (Objective #1); to gain a better understanding of the Computer Mediated Distance Education (CMDE) School Health Diploma (SHDip)(Objective #2); to assist with the development of a questionnaire to measure the change in knowledge, attitudes and practices of individuals participating in the CMDE SHDip (Objective #3) and to gain and share



insights on the process of conducting research in a developing country (Objective #4).

The ethnographic approach distinguishes itself from other approaches by interpreting and applying findings from a cultural perspective (Patton & Patton, 2002). Ethnography is the task of describing a particular culture. Fieldwork leads to a higher level of concept comprehension than is possible by merely acquiring verbal definitions and examples. It enriches the investigator's appreciation for the nature of culture. It enables him to communicate with and accept people from different lifestyles and cultural traditions. Most important, it gives the researcher a new awareness of his/her own values; he/she becomes conscious of many implicit cultural premises that influence his/her behaviour (McCurdy, 1981). Ethnography has been used to examine programs particularly in the early stages of a program's development when its standards, goals, objectives are emerging or constantly adapting to changes (Cook & Campbell, 1979). Patton (2002) further adds that the flexibility in design supports adapting the inquiry to pursue emerging understandings. Schensul and Schensul (1990) have found

"ethnography works well when there is a stated design to seek expanded and unanticipated outcomes, accept and explore negative outcomes,... and the program is likely to affect that population in different and not fully predictable ways" (p.55).

### **3.2.1.1 Key Informant Interviews for Study Objectives 1 and 2**

Much qualitative research is interview based (Flick, 2002; Mays & Pope, 1996; Morse, Field, & Field, 1995; Silverman, 2001). Qualitative interviewers aim to go below the surface of the topic being discussed, explore what people say in as much detail as possible, and uncover new areas or ideas that were not anticipated at the outset of the research (Britten, 1996; Morse et al., 1995; Whyte & Whyte, 1984). Interviews can also serve to clarify other sources of information. Key informants are defined as individuals with important knowledge in specific areas.

#### **3.2.1.1.1 Sample**

One of the most important steps for the maintenance of reliability and validity in qualitative research is the selection of the sample (Morse et al., 1995). Morse and Field (1995) indicated that two principles guide sampling in qualitative research: appropriateness and adequacy. Appropriateness consists of the identification and use of participants who will serve as the best informants given the objectives of the research. The purpose is not to establish a random or representative sample drawn from a population but rather to identify informants who will enable exploration of a particular aspect relevant to the research – purposive sampling (Mays et al., 1996; Morse et al., 1995). Adequacy means that enough data is available to develop a full and rich description of the phenomenon – preferably that the stage of saturation has been reached. That is, no new data will emerge by conducting further interviews and all negative cases have been investigated. Without meeting criteria of appropriateness and

adequacy, qualitative results are thin, and the reliability and validity of the studies are possibly threatened. Sample size in a qualitative study is unknown based on the above principles (Morse et al., 1995).

Purposive sampling was used to select key informants for the interviews. Key informants were identified with the assistance of the staff in the Department of School Health at INHEM. Individuals were selected based on their individual experience with School Health, or their present role in the coordination and implementation of school health programs at the national, provincial, and/or municipal levels. Interviews focused on school health programs and activities and elements of the school health diploma.

#### **3.2.1.1.2 Interview Procedures**

A semi-structured interview guide (see Appendix B) was developed in collaboration with the staff in the school health department at the Instituto Nacional de Higiene, Epidemiologia y Microbiologia (INHEM). All interviews were arranged with the assistance of INHEM, and were conducted in the months of May, June, November and December 2001 in Spanish using open-ended questions, to avoid imposing the researcher's structures and assumptions as far as possible. Table 3.1 shows the distribution of key informants in terms of their role and involvement at the national, provincial or municipal levels in the schools.

**Table 3.1 Distribution of key informants based on their role in School Health**

**National Level**

---

Director of Health Education, Ministry of Education, Havana  
 Director of School Health Programs, Ministry of Public Health, Havana  
 Coordinator of Health Promoting Schools, National Centre for Health Promotion and Education, Ministry of Public Health, Havana  
 Physician Consultant, Department of Education  
 Director of School Health Department, INHEM, Ministry of Public Health, Havana

**Provincial Level**

---

Director of School Health Department, Provincial Centre of Hygiene and Epidemiology, Ministry of Health, Cienfuegos  
 Director of School Health Department, Provincial Centre of Hygiene and Epidemiology, Ministry of Health, Santiago  
 Director of Health Education, Provincial Centre of Education, Ministry of Education, Santiago

**Municipal Level**

---

Director of School Health, Municipal Centre of Hygiene and Epidemiology, Ministry of Health, Santiago  
 Principal, Residential Pre-university, Contramaestra  
 Physician, Residential Pre-university, Contramaestra  
 Nurse, Residential Pre-university, Contramaestra  
 Vice-principal of residence and social activities, Residential Pre-university, Contramaestra  
 Health Surveyor, Municipal Centre of Education, Contramaestra  
 Health Surveyor, University Frank Pais, Santiago  
 Director, Preschool, Santiago  
 Physician, Preschool, Santiago  
 Director, Special School, Santiago  
 Physician, Special School, Santiago  
 Principal, Secondary School, Santiago

The researcher conducted twenty interviews in various parts of the country and in a variety of settings: schools, government offices, health units, etc.

Informed consent was obtained from all individuals participating in the interviews.

All key informants were interviewed in person and when possible tape-recorded.

Some of the environments in which the interviews took place did not permit an audible tape-recording, therefore notes were taken using the interview protocol.

This protocol included: instructions to the interviewer; the key research questions to be asked; probes to follow key questions; transition messages for the interviewer; space for recording the interviewer's comments, and space in which the researcher records reflective notes. Interviews were audio recorded when possible, or notes were taken during the interview and reviewed as soon as possible following the interview to ensure the salient information was included.

### ***3.2.1 .2 Documentation Review for Study Objectives 1 and 2***

One particularly rich source of information is documentation. A document is a written, audio, or visual image record (Bowling, 1997). Documentation can be used to increase knowledge and understanding about a programs activities and processes. It can also be used to generate ideas about important questions to pursue through more direct observations and interviewing (Patton et al., 2002). Pickin and St. Leger (1993) suggested using the following criteria when assessing documentary sources: authenticity, credibility and freedom from distortion, representativeness and clarity of meaning.

#### ***3.2.1.2.1 Sample***

There is no systematic comprehensive record of school health documentation in Cuba. Key Health and Education policy documents that refer to school health (such as official and unofficial documents, rules, regulations,

publications, etc) were identified using snowball sampling. Snowball sampling is also used for qualitative research when there is no list of documents with the knowledge and expertise sought (Bowling, 1997). Documents were identified based on the recommendation of key informants and INHEM staff. Most documentation reviewed was in Spanish. Access to documentation had to be negotiated with the assistance of INHEM staff, the Ministry of Education, and the Ministry of Public Health. School Health Diploma content was also reviewed to gain a better understanding of school health in Cuba.

#### **3.2.1.2.2 Documentation Review Procedures**

Documents were interpreted through content analysis, a rigorous procedure for analyzing text data by creating categories (Bowling, 1997). Content analysis is limited to examination of recorded information, and poses challenges of coding, reliability and validity. The School Health Diploma content and processes were also reviewed to gain a better understanding of the content and processes used to share the information. The documentation review was carried out by the writer with the assistance of INHEM school health staff, at various locations in Cuba, but primarily in Havana.

#### **3.2.1.3 Observations and Fieldnotes for Study Objectives 1, 2 and 4**

Field observations were recorded throughout the research process. Observations focus on the content and include the reactions of individuals in the social setting and the structural-functional aspects of the society being studied. Observation enables the researcher to view the society objectively and assists in

validating and interpreting information provided by participants. Fieldnotes are the most important determinant of later successfully carrying out a qualitative analysis (Patton et al., 2002). Fieldnotes contain the description of what has been observed rather than mere impressions. They should contain everything that the observer believes to be worth noting.

Silverman (1993) suggested developing a coding sheet to record observations. This is done to narrow the focus of the observations and categorizes the data. The field researcher is always torn between the need to narrow down analysis through category construction and to allow some possibility of reinterpretation of the same data. The ideal form for this is a tape-recording or original document. Where these cannot be used, the field researcher must attempt to transcribe as much as possible of what is said and done – and the settings in which it is said and done. Fieldnote observations should include what can be seen as well as heard.

#### **3.2.1.3.1 Sample**

Fieldnotes contain the descriptive information that will permit the observer to return to that observation later during analysis and eventually permit the reader of the study findings to experience the activity observed through the research report (Patton et al., 2002). Lofland (1971) suggests five types of materials which should be included in fieldnotes: 1) running descriptions; 2) recalled material that had been forgotten; 3) ideas that interpret the meaning of a situation; 4) personal impressions and feelings; 5) notes for additional information all of which were considered in the study.

### **3.2.1.3.2 Field Procedures**

To gain a better understanding of the implementation of School Health Programs, as well as the content and process of the School Health Diploma, the student researcher visited several regions of the country at various times during the research. Also, the student researcher participated in the face-to-face School Health Diploma offered at INHEM from April to June 2001. Direct observation of the Computer Mediated Distance Education School Health Diploma sessions also occurred in the province of Santiago de Cuba and Cienfuegos. Notes were also kept to document the research process.

Fieldnotes were recorded during the various field visits that occurred to: educational institutes; health centers; national, provincial and municipal school health centers in three provinces; and for every interview. They included: participant(s), date, time, goals, location, people present, description of the environment, content observed, the researcher's impressions, analysis (e.g. researcher's questions, tentative hunches, trends in data, and emerging patterns), and problems that arose.

## **3.2.2 Quantitative Methods used for Study Objective 3**

### **3.2.2.1 Questionnaire**

The analysis of the qualitative data was used to inform the development of three questionnaires (See Appendix C, Appendix D, and Appendix E). The questionnaires were developed in collaboration with staff in the department of school health at INHEM following completion of the interviews, document review



and some of the field observations. The objectives outlined for each unit of the course served in the development of questions to measure a change in knowledge, attitudes and practices related to school health pre and post the CMDE SHD (Objective 3).

One of the questionnaires was used to collect demographic data and included a self-report of attitudes and practices related to various components of the CMDE SHD and School Health. Participants were asked to respond to the self-report questionnaire using a 5-point likert scale (1= never and 5 = always) (See Appendix C). The other consisted of problem-based questions related to the primary objectives of the CMDE SHD. The problem-based questionnaire consisted of four different cases/situations dealing with different school health practices. Each situation had several questions and each question was worth five points. The first situation consisted of seven questions and required that participants analyze and interpret mortality and morbidity rates of disease, the effect environmental conditions have on these rates and the development of a problem tree and an intervention project based on the information. The second situation had three questions that asked participants to discuss the developmental differences between genders, the physical requirements of the school environment and factors associated with school drop-out. The third situation included a series of twelve questions aimed at determining the cause of a gastrointestinal outbreak in the school. And finally, the fourth situation, which consisted of four questions, asks participants to describe the steps involved in environmental risk assessment and management of the school environment.

(See Appendix D). And the final questionnaire was used to gather qualitative data related to the participants motivation to participate in the diploma, their history of continuing education in school health and their previous experience with computer mediated distance education (See Appendix E).

The evaluation tools were piloted on a small group of participants (n=9) that had participated in a previous iteration of the School Health Diploma (n=6) or had never participated in the School Health Diploma (n=3). The information from the pilot study was used to modify the questionnaires and develop the scoring system. Staff in the School Health Department at INHEM scored all the questionnaires based on the criteria developed. Each scored the questions that pertained to the content that they taught and developed for the SHD.

#### **3.2.2.1.1 Sample**

All individuals that registered for the CMDE SHD in 2002 in the provinces of Ciudad de la Habana, Cienfuegos, and Santiago de Cuba were invited to participate in the research study. Two subject groups were to be compared: the CMDE SHD cohort (N≈100), and a control group not participating in the CMDE SHD (N≈100). Informed consent was obtained from all participants. Recruitment of control group participants was to be done in conjunction with the staff at INHEM.

Review of the demographics of students from previous iterations of the SHD and the first iteration of the CMDE SHD assisted in defining the cohort. Previous iterations of the face-to-face course indicated that the majority of participants were physicians. However, individuals from various professional

backgrounds (i.e. nurses, doctors, teachers, etc.) were invited to participate. Inclusion criteria for participation in the SHD requires that the participant be working in School Health, must have participated in higher education, must have access to a computer, must have working knowledge of Windows, and must have access to e-mail or the internet. Students must submit a resume to INHEM and are admitted based on the above criteria.

#### **3.2.2.1.2 Questionnaire Administration Procedures**

The questionnaires were to be implemented using a quasi-experimental pre-versus-post concurrent control group study design. The post-test was to include questions from the pre-test as well as questions related to their satisfaction with the course content and process. The questionnaires were distributed to participants of the CMDE SHD prior to the commencement of the diploma. The researcher traveled to Cienfuegos to administer the questionnaires in person with a member of the INHEM School Health. Questionnaires in Santiago were distributed via e-mail to the Provincial Coordinator of the School Health Department in the Centre of Hygiene and Epidemiology who assisted with their administration for participants in this province. Participants in Havana received the questionnaires via e-mail either through a municipal coordinator or personally. The questionnaires were to be re-administered immediately following the completion of the CMDE SHD, and 4 months after completion of the SHD for a total duration of study of 1 year. The dissemination of the CMDE SHD was anticipated to last approximately 7- 8 months.

### **3.2.2.2 Performance Indicators**

The analysis of the qualitative data was also used to inform the development of the performance indicators. Practices were to be measured pre and post the diploma using a series of indicators (See Appendix F for description and list of indicators). The indicators were developed in conjunction with school health specialists who were involved in the School Health Diploma in the provinces of Santiago de Cuba, Cienfuegos and Ciudad de la Habana. A consensus process was used with the group to determine the essential performance indicators that were to be measured. The indicators were to be validated in this study for future use by INHEM School Health staff for further investigations related to change in performance in School Health practices. The performance indicators related to the diploma objectives and included indicators such as: the documentation of community involvement in the development of the school's action plan; the number of community meetings held in the year; and the number of parents, teachers, students, community organizations, others involved; as well as the capacity in which they were involved. Another indicator monitored the elaboration of intervention projects addressing health problems identified in the school's health diagnostic such as the number of projects and the number of proposals written.

#### **3.2.2.2.1 Sample**

Five physicians who were participants of the CMDE SHD and five physicians who were control group participants were to be randomly selected from each province to participate in this portion of the study. Only a small

number of participants were to be selected for this part of the study as the performance indicators were being piloted.

#### **3.2.2.2.2 Procedures for Gathering Performance Indicator Data**

The piloting of the performance indicators was to include visits to the schools of 5 CMDE SHD participants and control group participants from each province. The measurement of the indicators was to involve reviewing the annual School Health report. In Cuba, physicians working in the school are expected to write a report related to the status of the school's health status on a yearly basis. This is done in collaboration with other school staff, such as teachers, principals, cooks, janitors, etc. and includes a variety of findings which will be discussed in more detail in the findings - Chapter 4.

As well, chart reports, written by participants in the CMDE SHD and the control group, were to be reviewed prior to the commencement of the CMDE SHD and 12 months after the commencement of the CMDE SHD. Twelve months was chosen as physicians working in rural areas rotate on a yearly basis, therefore a later date would not allow for comparison of pre and post documentation. The rotation of physicians after 12 months of service in a school presents a great limitation to capacity building in school health, as physicians are not required to continue practicing in school health after they have completed two years in a school health setting.

Individual reports on children and adolescents seen at the clinic in the school were also to be reviewed on a random basis. Criteria for the chart review were developed in conjunction with the provincial SH coordinators, and INHEM

SH staff based on the SHD objectives and content. Incident logs kept at the school, interviews with the staff, students and principal at the school were also to be completed to measure a change in practice.

### **3.2.3 Analysis**

#### **3.2.3.1 Qualitative Data (Study Objectives 1, 2 and 4)**

Data collection, data analysis, and data interpretation were conducted concurrently for qualitative methods. Creswell (1994) suggested eight steps to engage the researcher in a systematic process of analyzing textual data that was used by this researcher to analyze interview data, documentation research and observation and fieldwork notes. 1) Get a sense of the whole. Read through all of the transcripts carefully. 2) Pick one document. Go through it, asking, what is this about? Think about the underlying meaning of the information, and type thoughts in the margin of the document. 3) When this task has been completed for several informants, make a list of all topics. Cluster together similar topics. Form these topics into columns that might be arrayed as major topics, unique topics, and leftovers. 4) Take the list and go back to the data. Abbreviate the topics as codes and type the codes next to the appropriate segments of the text. 5) Find the most descriptive wording for the topics and turn them into categories. Group topics together that relate to each other. 6) Make a final decision on the abbreviation for each category and alphabetize these codes. 7) Assemble the data material belonging to each category in one place and perform a preliminary analysis. 8) If necessary, recode the existing data.

Several authors recommend the use of triangulated methods, the use of three or more methods, to enhance the validity of the findings (Bowling, 1997; Denzin, 1978; Flick, 2002; Morse et al., 1995; Patton et al., 2002). Once a proposition has been confirmed by more than one independent measurement process, the level of uncertainty surrounding it is reduced. The most persuasive evidence comes through the triangulation of measurement processes, as well as through minimizing the error contained in the instrument. Denzin proposed the use of data triangulation (the data should be collected at different times and places and from different people or groups) and methodological triangulation (the use of multiple methods to collect the data and of multiple measurements within the same method). Therefore, the information obtained using the various methods were triangulated.

### **3.2.3.2 Quantitative Data (Study Objective #3)**

A coding system was developed for the questionnaires. Questionnaires were pre-coded with coding information on the instrument to simplify data entry. Open-ended questions included in the questionnaires were also coded in advance with a category "other" for those responses that do not fit the categories developed. Research assistants of the INHEM School Health Department completed the data entry as it was not possible to make copies of the questionnaires and time did not permit the investigator to complete the data entry while in Cuba. Questionnaires were kept on sight at INHEM. The researcher

was responsible for the data analysis and formulation of data tables in consultation with INHEM staff.

As previously mentioned, school health knowledge and attitudes were measured through questions derived based on the primary objectives of the CMDE SHD. The knowledge and attitude scores were continuous variables defined on scales with low scores representing low SH knowledge (or poor attitude toward SH) and higher scores denoting good knowledge (or positive attitude). Standardized or normalized scores were to be calculated and analyzed based on final results. The School Health “practice” component was to be obtained from the binary checklist of performance indicators developed in collaboration with Cuban School Health specialists who had completed the SHD.

Knowledge, attitudes and practices were to be obtained from individuals in the two groups previously described: the CMDE ( $n \approx 100$ ) participants and a control group (CMDEcntl) of the same size with similar characteristics not taking the course. Knowledge, attitudes and practices were to be determined at three points in time. Comparisons of interest were to be made over time between the CMDE SHD students and CMDESHD control group. The key outcome of interest in these comparisons is the change over time in knowledge, attitudes and practices. Change in knowledge and attitudes were to be analyzed using analysis of variance (ANOVA), with the two groups as main units. Binary practice items were to be analyzed using logistic regression, where baseline knowledge, attitudes and practices values and indicators for the two groups were to be



modeled against binary (dependent variable) indicators of practice items at the subsequent two points in time.

### **3.3 Ethical Considerations**

Community-based research by its very nature implies community involvement. In the past and still today, research in international settings have often been to the exclusion of the people for whom the results may have the largest impact (Costello et al., 2000; Rosser et al., 1997). In keeping with this approach of community-based research, the consultation process for this project was initiated from the outset. The feasibility of the study concept was initially explored with the Head of the Department of School Health at the Instituto Nacional de Higiene, Epidemiologia y Microbiologia (INHEM), Dr. Juan Aguilar Valdez, and the Director of Research and Education at INHEM, Dra. Mayra Ojeda del Valle. This Department is responsible for School Health Education, Research and Program Evaluation at a National level and was responsible for the development of the Computer-Mediated Distance Education (CMDE) School Health Diploma (SHD) Program. It was acknowledged that there was a need to determine if the CMDE SHD was having an impact on the knowledge, skills and attitudes of its participants. Given the relationship and consultative process used throughout the development of the study, it was deemed by INHEM personnel to be exempt from having to go through the formal ethical review process. However, it did go through several iterations prior to its implementation in conjunction with the staff of the School Health Department at INHEM.

Access to the various communities and participants involved in the study required prior approval from the appropriate government representative, the School Health Department Head or the Director of INHEM. Information regarding the study was shared with coordinators of School Health in each of the relevant provinces and communities participating in the CMDE SHD Program, as well as the National Directors of School Health in the Ministries of Education and Health. After some discussion, their verbal approval was obtained to complete the study. INHEM gave written permission and support to the study.

As the selection process of key informants proceeded, potential participants were provided with study information. A member of the INHEM School Health Department participated in some of the interviews, however she was not present for all. She was also present for the pre-testing of the CMDE SHDip participants along with the student investigator. The choice not to participate without penalty and the ability to withdraw at any point during the study were emphasized. Only after the significance and process of the study appeared to be well understood was consent obtained.

Approval of the research proposal and methodology was sought first from the thesis committee and the partner institution, INHEM, and then submitted to the University of Manitoba's Health Research Ethics Board, Bannatyne Campus and was granted. (See Appendix G, Appendix H, and Appendix I)

### **3.4 Limitations of the Research**

Issues of a non-Cuban investigator conducting the research pertaining to School Health in Cuba were offset by the participation of a member of the School Health Department in all aspects of the study. However, this could also serve as a limitation, in that individuals being interviewed may not have felt comfortable expressing ideas that were perhaps in conflict with the School Health Department. The researcher was very mindful of the potential bias that observational methods may pose. The presence of the researcher in the setting under study can interfere with the validity of the results. Subject reactivity to the researcher can be a problem. The focus on the present may blind the researcher to important events that occurred prior to his/her arrival. The degree of trust placed in the researcher also determines the nature of the data provided by the participant (Silverman, 2001).

It should be noted as well that the key informants all participate in the School Health System and in this respect largely share the same contextual backdrop, including their knowledge of school health programs and service delivery. While observation and informal interviews also occurred with other individuals such as school principals and teachers who have a different knowledge of school health services and programs, time did not permit the extensive interview of these individuals.

Several issues of methodological limitation have potential to affect the outcomes of this study and are declared here for the reader to take into consideration. The purpose of the research was in large part formative and

although that precludes the need to identify a sample large enough to provide generalizability, additional key informants, time permitting, would have added to confidence that the views expressed could be more widely held by a larger community of individuals working in the schools at the grassroots level.

As stated earlier, the rotation of physicians after 12 months of service in a school presents a great limitation to capacity building in school health, as physicians are not required to continue practicing in school health after they have completed 2 years in a school health setting. This also presented a methodological limitation, as follow-up after the CMDE SHD was limited to a year for many participants.

Furthermore, only three provinces were included in the pre-post testing which also presents some limitations to the data. 11 of the 14 provinces in Cuba participated in the CMDE SHD. The provinces that were included in the study were the suggestion of the INHEM school health department, and were chosen for a variety of reasons. Havana is the capital, and often school health service delivery and programs in this province are well coordinated with very experienced staff. However, the demands placed on services and programs in this region are greater than in other parts of the country. Cienfuegos was receiving the School Health Diploma for the first time in some of its regions, and often has young physicians with little training or experience in school health in the rural areas. Santiago is the second largest city in Cuba, and has well established programs and services in school health in the urban center, however,

the rural regions are mixed. Both experienced and less experienced physician's work in school health in this province.

### **3.5 Changes to the Methodology Related to Study Objective 3**

Several changes to the methodology occurred during the study which present significant methodological limitations.

1. A control group was not recruited for comparison with the study group.
2. No post-tests were completed with the participants due to large delays in the dissemination of the CMDE SHD.
3. It was also not possible for the investigator to participate in the validation of the performance indicators developed in conjunction with Cuban School Health specialists.

All of these methodological changes will be discussed in more detail in Chapter 4.

### **3.6 Statement of Significance of Proposed Research**

School health in Cuba is facilitated by a highly organized system of health and education in this developing country. This study served to provide insight in the method of service delivery and some of the determinants of the successes achieved in school health in Cuba. Secondly the instruments and performance indicators developed to evaluate changes in knowledge, attitudes and practices following a structured CMDE SHD could be used in Cuba and across the Americas, in those countries where the CMDE SHD is being disseminated.

Thirdly, it provided further information related to the extent to which the SHD offered at INHEM can be used to promote SH in Cuba, as well as other Latin American countries and elsewhere. Thus, the study serves to highlight a method that could be used to support and promote capacity building in SH in Cuba and other developing countries, as well as developed countries including Canada.

This study provided the investigator with training in an important area of health that will build her capacity to be an effective researcher in Canada and abroad. Neufeld et al (2001) suggest that more career opportunities for young [Canadian] scientists to become engaged in research on health problems of developing countries are needed. This study is a concrete way to take up this challenge.

## **CHAPTER FOUR**

### **FINDINGS AND DISCUSSION**

#### **4.1 Cuba's Achievements in School Health (objective 1)**

Many events have lead to the development of the existing School Health structure, programs and services in Cuba. With the socioeconomic changes of Cuba from 1959, the Ministry of Public Health assumed the responsibility for school health care through its Department of School Hygiene. Since this time, schools and educators have played an important role in the health education of the population primarily children and adolescents, as well as their families. This was first evident, in 1961, during the literacy campaign when teachers and students were sent to rural areas of the country to teach not only reading and writing, but the most basic primers of sanitation and hygiene. From 1962 to today, schools have been part of the development of health promotion and prevention activities and education for students. Among these, the Immunization Program, which led to the decline in infectious disease as a major health problem, eliminating childhood illness and disease like polio and measles. In 2001, the immunization rate for children in Cuba was 100%, a significant accomplishment for this country (UNICEF, 2003).

In 1967, the Department of School Hygiene was dismantled and its activities were distributed to various departments under the direction of the vice-ministers of medical assistance and hygiene and epidemiology. In 1973, the National Direction of School Hygiene was created and appointed to the vice-

minister of Hygiene and Epidemiology (Dr. J. A. Valdes, personal communication, April 25, 2001). The Provincial Departments of School Hygiene were also developed and became the responsibility of the vice-minister of Hygiene and Epidemiology in the same year. At the same time, teachers were beginning to receive as part of their training content related to health education, which lead to the development of a corresponding bibliography to assist in forming future teachers in the "Escuelas Pedagogicas" (Dra M. A. Torres, personal communication, November 20, 2001). For several years, a group of public health technicians, mostly nurses, assumed responsibility for this task while teachers and professors of the Ministry of Education prepared to take on this role. Today, many teachers continue to participate yearly in continuing education related to health education (Dra M. A. Torres, personal communication, November 20, 2001). In 1979, a Department of School Hygiene was formed in the Instituto Nacional de Higiene, Epidemiologia y Microbiologia. This Department was given the mandate to assess and further develop school hygiene programs and services nationally. In 1980, a residency was created in School Hygiene for physicians, and in 1981 the Program Attention to the Student was introduced by the Ministry of Education and was in place until 1998. This program outlined the joint responsibilities of educators and physicians in maintaining and promoting the health of students. Nineteen eighty-two saw the development of a joint resolution between the Ministry of Education and the Ministry of Public Health (MINED/MINSAP 1/82) to further enforce the Program of Attention to the Student.



In 1983, parliament approved the Public Health Act. This law established the actions that would assist in developing the State in protecting the health of its citizens and helped shape the future of school health services. The Act established the organizational structure of Public Health Services directed through the Ministry of Public Health, and the directions of Public Health within the Provincial structures of the Popular Power. This Act led to another change in service delivery in 1984 with the reform of community family medicine when physicians and nurses were placed in clinics in the communities they serviced (Dr. J. A. Valdes, personal communication, April 25, 2001).

In 1985, provincial "laboratories" of School Hygiene were formed in all provincial centers of Hygiene and Epidemiology (Dr. J. A. Valdes, personal communication, April 25, 2001). As well, the Department of Health was created in the National Ministry of Education to help strengthen the health programs and services offered to students and teachers in the preschools to university, and to further assist in the training and development of school personnel (Dra M. A. Torres, personal communication, November 20, 2001). This structure facilitated the integration of the school with the various social actors that played a role in the improvement of the sanitary conditions of the schools and the strengthening of the work directed at health education. In 1985-86, additional joint resolutions between the Ministry of Education and the Ministry of Public Health were developed and accompanied by a series of health regulations for a range of educational levels: Preschool, Primary and Middle School, Special School, Secondary School, Pre-university, Technical and Professional Educational

Institutes. The health regulations outlined the various responsibilities of physicians, nurses and dentists in the protection of the health of students, health education and the prevention and cure of diseases. There were regulations related to the school environment, such as: food hygiene, waste disposal, and water control. Furthermore, the roles and functions of the dietitian and school sanitary inspector were included. Nineteen eighty-nine saw another reform to school health services. A nurse and a physician were assigned to all schools. They were responsible not only for the health promotion and disease prevention of the students, but also the school staff (Dr. J. A. Valdes, personal communication, April 25, 2001). These educational reforms created schools and educators that serve as vital agents in the preservation of health, ensuring that the entire population receives appropriate medical care and education.

Further health reforms in 1991, during the "Special Period" led to a greater emphasis on Primary Health Care (Dr. J. A. Valdes, personal communication, April 25, 2001). This brought about another shift in School Health Services and Programs, in the late 1990's, with the focus no longer just on children 16 years of age and under but under 20 years of age, and not just the school, but the community as a whole. There was a great need to not only collect epidemiological data, but analyze and interpret the findings to develop action plans for improved health and healthy environments (Dr. J. A. Valdes, personal communication, April 25, 2001). The emphasis shifted to a population health framework with a focus on the broader determinants of health. School health professionals were seen as health agents/promoters of health not just sanitation

inspectors. Schools no longer worked in isolation from the community. The importance of community involvement in the decision making process was strongly encouraged and supported at all levels of government.

#### ***4.1.1 School Health Organization and Human Resources in Cuba***

School Health (SH) in Cuba consists of a series of integrated programs aimed at families, communities, and other institutional sectors to improve the health of students and the larger community. The conceptualization presents an integrated approach to health promotion programs and activities as part of the school's educational program and not external to the school's educational mission; it views student health and learning as intrinsically interdependent. Comprehensive SH education, healthy and supportive environments, and adequate health services, food and nutrition programs are the main components of SH in Cuba. The implementation of this framework requires a commitment to involving not just the school, but also the community and local and municipal health services. The objective is to strengthen the capacity of everyone concerned to create an environment that would encourage better knowledge, attitudes and health promotion practices, and would help to prevent risk factors for the younger generation (Dra S.T. Gonzales, personal communication, November 15, 2001).

The National Health and Education Systems are organized in three levels: National, Provincial and Municipal, which correspond with the administrative structure of the country. At the National level, the health and education sectors

are represented by the Ministry of Public Health and the Ministry of Education. The provincial level is represented by the provincial departments of Public Health and Education that are funded and administered by the Provincial Administrative Council of the Popular Power. At the municipal level, there are also Departments of Public Health and Education that are administered and funded by the Municipal Administrative Council of the Popular Power. Each is responsible for various components of the health and education systems (Dr. C. O'Farill, personal communication, November 22, 2001).

The National Health System consists of a network of institutions that can be accessed by 100% of the population. Medical assistance is provided through a network of 281 hospitals, 11 research centers, 442 policlinics and a large contingent of family physicians situated in the community, in workplaces or in educational institutions. There are also some 164 medical posts, 209 maternal centers, 26 blood banks and 4 health resorts. There are 168 dental clinics. Social assistance provides for 190 personal care homes for seniors and 27 long-term care homes for persons with physical disabilities. Some, 97% of the population of Cuba, receive the benefits of the Family Physician and Nurse Program, which provides health services to the community (Betancourt, 2000).

In August 2000, there were some 66 505 physicians in Cuba with a ratio of 1:168 inhabitants, the highest of any country in the world, and 84,000 nurses of which 21,960 hold degrees from the faculty of Medical Sciences. Over the past few years, there has been an increase in the number of university trained nurses

in Cuba. There are 22 Schools of Medicine in Cuba and some 10,000 health professionals and technicians graduate from them every year (Betancourt, 2000).

In Cuba, there are more than 12 thousand educational centers, almost 200 thousand educators have attended universities, and there are 2,100,000 children and youngsters in the school system. It is estimated that there is approximately 1 teacher for every 42 inhabitants (Dra M.A. Torres, personal communication, November 20, 2001). In 2001, the country had 1112 preschools, 8928 primary schools, 940 secondary schools of these 748 are external and 192 are internal or residential, 194 pre-universities of which 7 are external and 150 are internal or residential and 479 polytechnical colleges (Dra M.A. Torres, personal communication, November 20, 2001). Furthermore, Cuba has several other institutions for specialized education that serve children and adolescents with hearing impairments, visual impairments, physical impairments, conduct disorders, mental retardation, autism, etc.

The country also relies on the strong organization of the field of health promotion and education with 11 Provincial Centers of Health Promotion and Education, 4 provincial departments and 169 municipal departments. These centers and departments have the social commission to work on lifestyle reform and to assess and develop strategies for health promotion and education, both intra-sectorally and inter-sectorally (Dra S. T. Gonzales, personal communication, November 15, 2001). With this human resource, Cuba is in a strong position to strengthen health promotion in the schools allowing for a greater quality of life of teachers and students.

Health education in the educational institutes is the responsibility of family doctors and nurses in collaboration with teachers, and other school staff. The institutional centres that receive priority for physician and nurse placement are: preschools, special schools, internal or residential centres, semi-internal schools with more than 600 students and polytechnical institutes that include labour and have identified risk factors and a student population greater than 300 (Dra C. O'Farrill, personal communication, November 22, 2001). Of these centres, the physician and nurse coverage rate has varied from 86.9% in 1997-98 to 99% in 2000-01 (Dra M.A. Torres, personal communication, November 20, 2001)(Dra C. O'Farrill, personal communication, November 22, 2001). It was estimated that there are approximately 2800 physicians and 3000 nurses posted in educational institutions across Cuba in 2001 (Dra C. O'Farrill, personal communication, November 22, 2001). All schools are also assigned a basic working group comprised of a pediatrician, an obstetrician, an internist, a psychologist and a dentist which provide health services to each of the schools in their service area on a rotating basis and participate in School Health programs/activities in various capacities (Dra C. O'Farrill, personal communication, November 22, 2001). All are involved in the identification and problem solving, as well as in the preparation of the diagnosis and analysis of the health condition of the school community. All assume the commitment to promote healthier knowledge, attitudes, and practices in future generations.

#### **4.1.2 School Health Programs in Cuba**

There have been several programs that have contributed to the development of School Health services and programs throughout the years. The interviews conducted and the document review assisted in identifying three major programs that were recognized to play a large role in the present state of School Health in Cuba. The following were explored in more detail during the study:

1. Program of Integral Medical-Pedagogical Attention to Students and Workers in the Educational System (Programa Integral de Atención Médico Pedagógica a Educandos y Trabajadores del Sistema Educativo (Ministerio de Salud Pública & Ministerio de Educación, 1998)
2. National Education System Health Promotion and Prevention Program (Programa Director de Promoción y Educación para la Salud en el Sistema Nacional de Educación) (Torres et al., 1999)
3. Health Promoting Schools and Universities Initiative (Escuelas o Universidades por la Salud) (Gonzales, 1996, 1997)

##### **4.1.2.1 Integral Medical-Pedagogical Attention to Students and Workers in the Educational System**

In 1999, the Program of Integral Medical-Pedagogical Attention to Students and Workers in the Educational System replaced the Program of Attention to the Student (Programa de Atención al Escolar) developed in 1981. This new program describes the joint actions needed to implement School Health Programs in all educational institutions in Cuba (Dra C. O'Farrill, personal communication, November 22, 2001). This program was developed based on the principles of a joint resolution of the Ministry of Public Health and the Ministry of Education (MINED-MINSAP 1/97) in collaboration with specialists from both

the Ministries and is the result of a multidisciplinary process. The strategies needed to achieve the objectives outlined in the program are adapted to the particularities of each of the regions and educational institutions. This program incorporates not only students, but the school staff who are also attended to in coordination with Occupational Health Physicians. The program serves all schools in Cuba (Preschool, Primary and Middle School, Special School, Secondary School, Pre-university, Technical and Professional Educational Institutes) and is complemented by Health Regulations for each of the levels of education. The Health Regulations were developed in 1985 and are currently being revised.

The Program of Integral Medical-Pedagogical Attention to Students and Workers in the Educational System has two general objectives. First, it is to contribute to better health status and management of educational institutions through the vital work of physicians and teachers and the active participation of students, families and communities. And, second, it is to contribute to the development of responsible health behaviours in students and workers (Ministerio de Salud Publica et al., 1998). The specific objectives of the program are as follows:

- To ensure that medical and teaching staff guarantee health conditions in the institutions that prevent the interruption of educational activities.
- To continue working to improve the living and working conditions of students and teachers creating pleasing and hygienic environments and strengthening educational actions in rural "School Camps", School



Camping Areas, Workshops and Laboratories, with an emphasis on Work Protection and Hygiene Rules.

- To ensure the inclusion of health issues in the course objectives and content and in the programmed activities and preschool teaching processes.
- To promote through the joint actions of medical and teaching personnel, the training and development of values and behaviours of responsible citizens, with an emphasis on sexual education and the discouragement of habits and practices that are toxic.
- To promote in the Reference Centers and in the Pedagogical Institutes, the health promotion and education actions of medical and teaching personnel through joint methodological training. To demonstrate in the Reference Centers the possibilities for the integration of actions of the Program for the Life and the Health Promoting Schools Movement.
- To continue working to improve the diet and nutritional levels of students and workers.
- To promote in the centers the joint educational actions of medical and teaching personnel in developing orchards and gardens which cultivate medicinal and nutritional plants, as well as the use of the natural and traditional medicine.
- To encourage the practice of sports and recreational and cultural activities in all the educational centers with a greater emphasis on the internal or

residential centers and to recover and develop traditional songs, dances and games.

- To achieve professional work beginning with the earliest ages which takes into consideration the aptitudes and social necessities of the students.
- To guarantee medical and educational coverage in all centers from the beginning and throughout the entire educational program.
- To complete the Analysis of the School's Health Situation with the participation of medical and dental, educational and non-educational personnel, the family and the community, in order to improve the health status of children and adolescents, people and workers, and to preserve the school's physical, mental and social integrity.
- To systematize the attention given to children and adolescents, as well as to ensure the periodic evaluation of children requiring special education due to physical, motor, mental and/or sensorial necessities, and to offer, rehabilitation of these children and the workers who may require it.
- To decrease the rates of morbidity and mortality in the educational centers.
- To perfect the dental program to the students 19 years of age or less.
- To evaluate the programs that were prioritized as part of the Joint Resolution MINED-MINSAP 1/97 through the execution of this Program.
- To orchestrate the development and enablement of the teaching and health personnel in the content that their joint work requires, in keeping with the identified necessities, prioritizing self-directed learning and

including the graduates, masters, doctorates, degrees, courses and others.

- To undertake joint investigations between the Superior Pedagogical Institutes, the various Faculties and Institutes of Public Health that respond to the pedagogical and health problems in the educational institutions, and profit from these results through their introduction to practice.
- To consolidate the working relations of the Ministries of Public Health and Education with national and international organisms and organizations related to these activities so that they may contribute to the accomplishment of the work.

The program implementation would not be possible without the assistance of the various levels of government: national, provincial and municipal; each having a distinct role in the process. At a National level, norms are established which guide promotion, prevention, treatment, rehabilitation, education, qualification and investigation activities to be developed in each structure of the Health and Education Directives at all levels. They establish policy to further develop health promotion and education through the curriculum and extracurricular activities, family and community education. They participate in the approval of new projects such as new school facilities and renovations, as well as establish norms for the school environment. The Ministry of Public Health is responsible for the health surveillance system, identifying and informing the Ministry of Education, along with other institutions, organisms and organizations, of the health problems

that may be present in the school or community so that they may all partake in finding solutions. They norm, orient, assess, control and evaluate annually the programs outcomes. They work to consolidate work relations with national and international organizations involved in school health.

At the provincial level, government works to adapt and modify the program based on the needs and characteristics of their province. The provincial departments of Public Health, Education and the Institutes of Public Health are all responsible for ensuring the development and implementation of health promotion and education programs within the school curriculum, in extracurricular activities, through family and community education. They are also responsible for the evaluation of the hygienic-epidemiological situation of the educational institutions and decide on the best methods to prevent any interruptions in school activities. Public Health ensures the delivery of medical and dental coverage for all students and workers with an emphasis on the priority centers (preschools, internal centers, special schools, primary schools with more than 600 students) and Education ensures the delivery of educational services and programs. Both are responsible for the delivery of medical and teaching services if a student must be admitted to a hospital for an extended period. The Provincial Ministry of Public Health is also responsible for establishing the methods and routes used to collect statistical information related to school health. It must ensure accurate statistical information and ongoing development and maintenance of its health surveillance system for the program. Health information is gathered at the Provincial Centres for Hygiene and Epidemiology

by the Statistical Units, and compiled at the National level. The province is responsible for orienting, assessing, controlling and evaluating the programs outcomes bi-annually.

The responsibilities at the municipal level are quite similar to those outlined already at the national and provincial level, however they require some modification and adaptation to suit the needs and characteristics of their different schools and health regions. At the municipal level, public health must also ensure the flow and trustworthiness of the statistical information collected for the health area and municipality. They also ensure that the program is meeting its objectives and evaluate outcomes three times yearly.

Several basic actions are outlined to assist in fulfilling the program objectives in each educational institution. The School Council, in coordination with community organizations and other entities, evaluates, and controls the hygienic living and working conditions of students and workers life regiment - primarily in residential schools, norms for the protection and hygiene of workers, interpersonal relations and others. The medical and teaching personnel control the fulfillment of the norms related to school life, discipline, inner order, personal aspects, norms of social living, among others. The School Council favours conditions that allow students and workers to join the Health Promoting Schools Movement integrating their actions with the Program For Life and less formal ways. The doctor and/or nurse, with the assistance of the institutional administration, participate with the health inspectors in the State Sanitary Inspection. The School Council must ensure that the inspections are completed.

It must also ensure that students and workers receive, through their daily diet, the required nutritional intake, and control the hygienic manipulation of foods, taking samples of all that is prepared. The Council supports the actions of students and workers as protagonists, promoters and communicators of their own health interests, with an emphasis on the promotion and prevention of accidents, HIV/AIDS, toxic habits, the development of healthy behaviours and values, and the development of strategies that guarantee recreational opportunities and the healthy use of free time. The medical and teaching personnel are to evaluate the level of health knowledge and the development of abilities and habits that students of all ages, and grades and in the different years of the pedagogical careers adopt over time.

The Council must use all means available to diffuse educational messages aimed at promoting health. They are also responsible for applying measures to implement and to develop the cultivation of the medicinal and nutritional plants in the centers with the possibility of using them to promote the development of educational activities to elevate the knowledge associated with the use of Natural and Traditional Medicine. The Council of Direction must establish strict control of all chemical substances in all the laboratories of the centers, avoiding the incorrect use by students and workers. The teaching and medical personnel value the need for specialized attention that students require based on individual differences and of those with special educative necessities, sending the indicated cases to the CDO (Centre of Diagnosis and Direction). In the special schools, camps for children with diabetes and asthma, and the sports

schools, the Council must manage the specialized treatment and the resources that they require, considering the particular conditions of study and work. It is responsible for the systematic update of the Analysis of the School's Health Situation. Consultation with students and workers define the action plans that tend to solve the problems that are identified. The medical and dental personnel complete an evaluation of the individual health status of its population and the teachers are responsible for the psycho-educational evaluation of the students, to shape together the complete school diagnostic and to reflect its result in the cumulative file of the student. The medical, dental and teaching personnel will develop activities to promote oral health, prevention and control oral diseases that affect to students and workers. The family doctor and the nurse who are charged with the care of the center must participate actively in the School Council and other councils, with the objective of promoting the analysis of the various individual and collective health issues. They must also determine, analyze and develop, monthly, the health issues that must be addressed in general education, as well as the actions required. The medical and teaching personnel participate in massive investigations of transmissible diseases. In relation to the control of HIV/AIDS, they must coordinate the work with the Superior Pedagogical Institutes and the Provincial Commissions of Sexual Education.

The physicians and teachers become qualified in various aspects of School Health through the Superior Pedagogical Institutes, Faculties of Medical Sciences, Provincial and Municipal Institutes of Health Investigations, and

Directions of Education and Public Health. The Council guarantees the qualification and ongoing improvement of the auxiliary personnel and food handlers taking advantage of the health personnel of the center or the health area. The education authorities promote and develop the joint methodological training with the participation of the health personnel. The Council draws attention to the medical personnel located in the centers to stimulate their scientific development, their integration into the school and their stability in the educational system. The School Council and the school's basic working group are responsible for evaluating the programs progress on a monthly basis.

The Program also outlines roles that are specific to teachers and medical personnel. Among other things, teachers are to include health content in their objectives and class subjects, as well as programmed activities. They are to identify changes in relations among students and workers that could lead to violations in the norms of co-existence. Using a variety of actions, they are to contribute to the development of thinking, active learning and higher academic achievement of the students. They are responsible for training health personnel in the pedagogical aspects that would be of benefit to their work. Teachers are to encourage the participation of medical staff in the scientific educational events where results of medical-pedagogical integration are evident.

Medical personnel play a large role in the implementation and ongoing development of the program. They are to complete a review of the center as many times as are deemed necessary, including hygiene and epidemiological inspections, and search for alternative solutions to the known health problems,



keeping in mind the risk factors identified. The results of the inspection must be recorded in the Daily Incidence Register. The school physician must be in constant communication with the family physician and the dentist that deliver services to the larger community where students and workers reside. When necessary, physicians, nurses and dentists must provide services, when requested by the health area, to other educational centers close to their own that do not have medical services. Physicians are responsible for dispensing medications and vaccinating its population as well as monitoring cases with an emphasis on the physical growth and development of children and adolescents. Physicians must participate with the dietician in the preparation of the menu ensuring that nutritional requirements are being met. They must suggest ways to improve the caloric intake of students and staff and control special diets, as well as inspect and evaluate the hygienic conditions of the kitchen, cafeteria and storage areas. Physicians also participate in the joint analysis of results from the Nutritional and Alimentary surveillance system. Physicians are also responsible for identifying cases that require the review of the Commission of Medical Experts or other medical specialists. Medical personnel are to consult with teaching personnel and other school workers on all questions related to School Health. They must complete cards that declare illnesses that must be reported, which are an important link to national information systems.

Several indicators were developed to measure the Program of Integral Medical-Pedagogical Attention to Students and Workers in the Educational System outcomes over time. These indicators are included in the programs

documents and relate in part to the School Health Surveillance Systems and the Analysis of the School Health Situation.

#### **4.1.2.1.1 School Health Surveillance System**

It was postulated that in order to be able to prevent health problems, there had to be a better system of detection and elimination or a decrease in the risk factors that caused serious illness and death to the population. One action toward this goal was the expansion of the National Health Care system, especially Primary Health Care, and the role of the family physician and the nurse that provide services in the educational institutions. They took on a larger role in the prevention of communicable disease, as well as other tasks included in the Program of Integral Medical-Pedagogical Attention to Students and Workers in the Educational System (Ministerio de Salud Publica et al., 1998). The School Health system required not only capacity building in those aspects of illness and disease associated with hygiene and epidemiology, but also in the systematization of their surveillance systems and the control of risk factors, both aspects presenting in actuality great insufficiencies. It was identified that to promote and protect the health of the public a joint effort must be brought about using an interdisciplinary and multidisciplinary approach along with the active participation of the community. That is, that the health of the public must be guaranteed for all of society, through its different organizations, working together, organizing and using the resources, knowledge and initiatives of its population.

The development of public health in Cuba, in general and in particular related to primary health care, permitted the eradication of many childhood illnesses and diseases and the decrease in their incidence and the mortality related to many other illnesses and diseases. One considers that the effective use of surveillance in primary health care is the result of the integral and multi-sectoral study of the mechanisms and identification procedures, analysis and continuous and periodic interpretation, not only of the health events, but also of the conditions or related risk factors, as well as the pursuit and evolution of the impact of the intervention actions.

Some very important characteristics of health surveillance are passive or active search methods and the analysis of information for action. Beginning in the 1990s, a health surveillance system was developed in Cuba using epidemiological data as one of the methods to guarantee and to evaluate the fulfillment of national health policy. In 1994 several workshops were held to further develop the methodology used to create surveillance systems related to Environmental Health and School Health. In 1996, with the objective of identifying the main causes of morbidity and mortality in children and adolescents 20 years or less from 1980 to 1995 at a national and provincial level, the School Health Department of the INHEM began to investigate the diseases and health events that would be included in the School Health surveillance system (Valdes, Abreu, Sosa et al., 2002). Table 4.1 illustrates the morbidity rates of the most prevalent diseases among children and adolescent less than 20 years of age from 1980 to 1995 (Valdes, Abreu, Sosa et al., 2002). Acute respiratory

infections were the most prevalent among all age groups, followed by acute diarrhea. These conditions are due primarily to environmental conditions. Poverty in general, poor housing that is overcrowded due to a shortage, poor nutrition, indoor air pollution, an aged and stressed water system that creates problems with water quality, and the limited infrastructure for trash collection and disposal are all contributing to environmental health hazards.

**Table 4.1 Morbidity of the Most Common Diseases among Children and Adolescents less than 20 Years of Age from 1980 to 1995**

| Condition                                   | Groups    |           |             |             |
|---------------------------------------------|-----------|-----------|-------------|-------------|
|                                             | 1 – 4 yrs | 5 - 9 yrs | 10 - 14 yrs | 15 - 19 yrs |
| Acute Respiratory Infection                 | 16 865    | 8675      | 5582        | 3642        |
| Acute Diarrhea                              | 2566      | 958       | 786         | 729         |
| Chickenpox                                  | 151,4     | 227,0     | 167,9       | 43,5        |
| Acute Viral Encephalitis and Meningitis     | 44,9      | 33,3      | 16,8        | 3,1         |
| Viral Hepatitis A                           | 19,1      | 50,5      | 46,2        | 16,3        |
| Scarlet Fever                               | 4,4       | 3,7       | 1,1         | 1,2         |
| Other Bacterial Encephalitis and Meningitis | 3,4       | 2,5       | 2,3         | 0,7         |
| Infectious Mononucleosis                    | 2,9       | 1,9       | -           | -           |
| Shigellosis                                 | 0,6       | 0,3       | -           | -           |
| Blenorrhea                                  | -         | 0,7       | 4,7         | 80,6        |
| Syphilis                                    | -         | -         | 1,3         | 18,4        |
| Condylomata                                 | -         | -         | 0,3         | 7,19        |
| Suicide Attempt                             | -         | -         | 8,5         | 30,9        |

Number of Incidents per 10 000 children or adolescents per age group per year

(Valdes, Abreu, Sosa et al., 2002)

These morbidity rates indicated that more had to be done to improve the environments of children and adolescents. Scabies and pediculosis were also prevalent among the school age children in 1995 during the conception of the

surveillance system. Based on the results of the INHEM study, the morbidity of the all of the conditions listed in Table 4.1 along with scabies and pediculosis, were to be actively monitored using the School Health surveillance system.

As well, mortality rates among these age groups were analyzed to determine which events should be actively monitored using the School Health surveillance system. Accidents were the primary cause of death among children and adolescents between 1 and 19 years of age. Violent deaths represented between 35 % and 60 % of the cause of death in this same age group. The average annual rate of potential years of life lost for 1 to 19 year olds due to accidents was the highest followed by tumors, suicide, congenital anomalies, and conditions of the central nervous system, respiratory infections, homicide, other bacterial infections, conditions of the circulatory system, and other violence. The average annual rate of potential years of life lost attributed to violent deaths was greater than the total loss for all other top 10 causes of death combined. The death rate tendency due to accidents was ascending for adolescents, the rate for suicide descending and the rate for homicide ascending for all age groups including 1 to 19 year olds.

Many of these health conditions and causes of death are preventable using proper assessment and management of environmental conditions. School Health Programs in Cuba have a large role to play in the prevention of health conditions and in the treatment of their causes. The ability to monitor and manage the health of children and adolescents when the majority are part of the school system makes it that much more important to include environmental

health practices in school health programs. Hence, school physicians were directed to collect the morbidity and mortality data daily and report it to their health area's epidemiological unit. The data was to be collated at a municipal, provincial and finally national level. It was felt that increased monitoring through the surveillance system and the development of measures within the context of the school health programs could contribute to a decrease in the prevalence of these conditions among the school population.

Other important aspects to consider were that according to the Ministry of Education, almost 100% of children between 6 to 11 years of age attended primary school, and more than 95% of adolescents aged 12 to 19 years of age are linked to the different levels of the National Education System. Also, 20% of children between 6 months and 6 years of age attended preschools or day cares. 100% of day cares or preschools have physicians and nurses attending to the health needs of the children and staff. These health care workers are an essential part of the implementation and future development of the School Health surveillance systems. Especially, those working in the day cares or preschools who assist the population most susceptible to the transmission of communicable disease, and most outbreaks start with this age group, the children.

In the environments of educational institutions, especially preschools or daycares, there is frequent observation of health risk factors that favour the appearance of communicable diseases among students and teachers. The polytechnical and the pre-university institutes that have chemical laboratories and some university faculties and many secondary schools and pre-universities

in the rural areas that have students do agricultural work, introduce the possibility of student exposure to chemical substances that may constitute a health risk. These are just some of the examples that justified the development and implementation of a School Health surveillance system. It was proposed that this system would monitor changes in the health – disease process and its determinants in children and adolescents less than 20 years of age; identify the primary health problems of this age group and alternative solutions to these problems; as well as evaluate the impact of intervention projects and programs that are being implemented. According to Valdes, Abreu, Sosa et al (2002), the primary objectives of the School Health surveillance system are:

- 1 To monitor the behaviours and trends of the primary causes of morbidity and mortality among children and adolescents between 1 to 10 years of age.
- 2 To monitor among the population attending educational institutions the behaviours and trends of pediculosis, scabies, communicable digestive illnesses, intestinal parasites and accidents.
- 3 To analyze the nutritional contributions among children and adolescents attending educational institutions.
- 4 To monitor the environmental conditions of educational institutions.
- 5 To evaluate the impact of School Health programs
- 6 For early detection, identification of the causes, rapid action and monitoring of outbreaks or increases in the transmission of communicable diseases in educational institutions.

- 7 To prevent, detect, eliminate, control and monitor risk factors associated with communicable diseases in educational institutions.
- 8 To prevent, detect, eliminate, control and monitor risk factors associated with non-communicable diseases in children and adolescents.
- 9 To identify, control and monitor the behaviour of the health situation in educational institutions and among children and adolescents less than 20 years of age in educational institutions, health regions, municipalities, provinces and in the country.
- 10 To develop hypothesis for future research or investigations.

#### **4.1.2.1.2 School Health Diagnostic and Analysis of the School Health Situation**

Medical and teaching staff complete the School Health Diagnostic yearly. There are several elements that must be included in the Diagnostic. These are outlined in the Program of Integral Medical-Pedagogical Attention to Students and Workers in the Educational System. Information related to some of the categories is collected on a daily basis other information is compiled yearly. The information included in the School Health Diagnostic is divided into 10 main parts: 1) general description of the school; 2) population demographics of the school; 3) immediate and surrounding school environment conditions including sanitary, hygienic, structural and socio-cultural; 4) family characteristics of the students at the school such as socio-economic, socio-cultural and hygienic and the results of the psycho-pedagogical evaluation; 5) environmental risk factors of the institution and the larger community as well as personal risk factors of the



students and staff; 6) information related to the various health indicators such as absenteeism, drop-out rates, growth and development, learning results, morbidity and mortality data; 7) information related to medical attention such as number of consults, days medical staff were absent, dental consults, medical emergencies, cures per cause; etc.; 8) results must be presented in tables and are not just descriptive but should be analyzed; 9) results must be discussed in comparison to last years results to illustrate outcomes; 10) identify the fundamental problems identified by health personnel in the diagnostic and compare them to last years problems (Ojeda del Valle, 2000).

The School Health Diagnostic, more importantly the Analysis of the School Health Situation, is a fundamental method used in primary health care in Cuba that requires community participation in the identification and search for alternative solutions to the health problems of the school and the community. The analysis of the School Health Situation is the result of the action of different social actors in the identification and search for solutions to their health problems. It includes the analysis of the results of the school health diagnostic as well as the perceived problems of the school population. The participation of various social actors in the analysis, allows for negotiation and the inclusion of the elements that each individual feels are important. In addition, it provides flexibility in the agreement process. It involves relating scientific knowledge with popular knowledge and coming to lasting and respected agreements with all those involved in the process.

By ensuring community participation, considering the communities needs in the process, and seeking their assistance to solutions to the problems, it is much more likely that individuals will be more aware of their health problems and ensure that measures are taken to solve the issues. This is felt to be much more effective an approach than if the health team was identifying the problems and dictating the sanitary measures that needed to be taken. However, the health team is fundamental to orienting everyone to the process and to ensuring that all health problems are identified. The analysis of the School Health Situation is completed in a community forum in which the health team must be present, as well as the formal leaders of the school with representation of the larger community constituents.

#### ***4.1.2.2 National Education System Health Promotion and Prevention Program***

The Ministry of Education stated that they must work to integrate health problems into the pedagogical process and that part of their pedagogy should include educating all children and adolescents to be healthy citizens, so that they may have a better understanding of a greater quality of life. Therefore, in 1999, the Ministry outlined a detailed health promotion and education curriculum that was to be integrated into the various school subjects (M. A. Torres, Personal Communication, November 26, 2001). The program is presented as a guide for teachers to use in the development of healthy knowledge, attitudes and practices among students and workers in the schools. It is up to each

educational institution to implement the activities and tasks that will guarantee healthy lifestyles of the school population.

The *National Education System Health Promotion and Prevention Program* defines health education as a process based on information and actions directed to acquiring knowledge, healthy habits and practices that enable and facilitate changes in negative behaviours and strengthen behaviours that assist in the development healthier lifestyles (Torres et al., 1999). The Program provides guidelines for School Health content, including sexual education as a starting point for arranging, articulating and strengthening the actions of health promotion and education in the school system. Its organization is flexible and can be enriched through the experience of teachers and modified according to the characteristics of the context in which it is applied and further developed. It has a general format to allow for individual analysis of lesson at each grade level. This general format assists in determining the level to which the health themes should be taught within the different subjects, programmed activities and independent activities. It can also be used for extracurricular planning such as family and community education. The implementation and development of the program requires the joint collaboration of the distinct levels of Public Health Institutions and their centres that ensure ongoing development in the territories. A plan is to be developed in each territory that will ensure the systematic qualification of teaching personnel, medical and nursing personnel that work in the educational institutions.

### *The National Education System Health Promotion and Prevention*

*Program* (Torres et al., 1999) in the school environment is based on the following theoretical and methodological concepts:

- It includes formal as well as informal education
- It is part of the state objectives of the Ministry of Education.
- It has a multisectorial and multidisciplinary focus
- It is developed for curricular and extracurricular use, and for the purpose of family and community education.
- It is present in all aspects of the teaching-learning process (objectives, methods, content, methods and evaluation)
- Its content is expressed in linear and concentric form, keeping in mind the characteristics of the different subjects, disciplines and levels of education.
- It is a primary objective of the technical and administrative bodies.
- It creates a greater potential for medical-pedagogical integration

The program is intended to develop a health culture that is reflected in the healthier lifestyles of children, adolescents, and workers in the National Education System. Its primary objectives are:

- To strengthen the management of health objectives through the program content of the different lessons.
  - To contribute to the development of healthy values, knowledge, practices, habits and behaviours in children and adolescents so that they will be able to assume a responsible attitude in personal and collective health.

- To stimulate the continuous improvement of teaching personnel in the application and development of School Health materials.
- To develop scientific works and investigations which contribute to the theoretical, practical and methodological enrichment of the work of health promotion and education in the school.

The program covers several different topic areas that relate to health. They are: personal and collective hygiene; sexual education; nutritional and food hygiene education; anti-tobacco, anti-alcohol and anti-drug education; accident prevention and traffic education; and traditional and natural medicine. Each of the topic areas has several subtopics that must also be covered. For example, sexual education includes: sex and sexuality; gender roles and identities; sexual orientation; reproductive and sexual health; sexually transmitted diseases; pregnancy; family stability and violence to name a few. Each of these topics and subtopics also have various objectives that must be accomplished at the different school levels such as preschool, primary and secondary school, special school, pre-university, polytechnical and professional institutions. Additionally, objectives have also been developed for teaching personnel. Evaluation of the various objectives takes place within the context of the subjects in which they are taught. They are also part of the integral evaluation that includes the analysis of the student's conduct, development and their overall achievements that become part of the student's cumulative school file.

#### **4.1.2.3 Health Promoting Schools and Universities**

In Cuba, the development of health promotion as a strategy involving the community was consolidated in 1994 in the province of Cienfuegos with the implementation of the Cuban Network of Healthy Cities. All of the community institutions were incorporated in the network among them, the educational institutions. The incorporation of the educational institutions in this strategy led to the Healthy Schools Movement in Cuba. In 1995, Cuba joined the Health Promoting Schools Initiative of the WHO/PAHO - an initiative that offers a more integrated model of school health promotion. Nineteen-ninety seven saw the implementation of the program introducing the coordinated efforts of health and education in Cuba. The general objectives of the program are to contribute to better health and improved management of health in educational institutions through the collaborative efforts of education and health professionals and active participation of the students, families and communities and to contribute to the development of healthy behaviours and lifestyles of teachers and students.

Cuba is one of the many countries in Latin America and the Caribbean that participates in PAHO's Health Promoting Schools Network (González S.T., 1996). Comprehensive school health education, healthy and supportive environments, and adequate health services, food and nutrition programs are the main components of the health promoting school in Cuba (González S.T., 1996; Ministerio de Salud Publica, 1996). While not all schools in Cuba are part of the Health Promoting Schools initiative, the aim is to eventually make all schools Health Promoting Schools. The implementation of this framework requires a

commitment to involving not just the school, but also the community and local and municipal health services. The objective is to strengthen the capacity of everyone concerned to create an environment that would encourage better knowledge, attitudes and health promotion practices, and would help to prevent risk factors among children and adolescents.

To be part of the Healthy Schools Movement, a school must be participating in the implementation of a health promoting school. In Cuba, a health promoting school is one whose administrative council expresses its desire to work toward the better health of its school community in collaboration with the social organizations that attend to children and youth, the president of the Popular Council where the school is located and the Parent Council. The school council must politically declare its will, and demonstrate a strong voluntary desire to be part of the movement. Teachers, physicians, nurses psychologists and others that work in the school must also demonstrate a desire to be part of the movement as well as the community such as students, staff, the parent council and the larger community. The School Council, to which the physician and nurse also belong and the community, once they decide to join the movement, must develop a work plan to promote healthier knowledge, attitudes and practices in the younger generations, as well as prevent risk factors and conditions. To realize this goal, the school health diagnostic and analysis of the school community must be completed with the participation of students, teachers, physicians, nurses and other staff that work in the school. Problems must be identified and prioritized. An action plan must also be developed to deal with the

problems within a reasonable timeframe and considering the socioeconomic context. The School must involve multisectorial, interdisciplinary and community teams in the action plan. A Health Promoting School is recognized by the Ministries of Public Health and Education, and the Commission for Health, Sports and the Environment of the National Assembly with a certificate accrediting the Institution.

To further develop and implement the Movement, several strategies were outlined. These included developing joint policies with the Ministries of Public Health and Education and negotiating and coordinating with other organizations like the Youth Union, the Pioneers Organization, the University Student Federation, etc, and other organizations involved in improving the quality of life of future generations such as WHO, UNICEF and UNESCO. As well, whenever possible information about the movement needed to be shared with the public. Various social actors involved in the initiative were trained in health promotion and education with the hope that they could further facilitate the process in their regions. A Network of Health Promoting Schools was created and indicators both qualitative and quantitative were to be developed to evaluate the strategy after each term and annually. Rapid appraisal methods such as focus groups, interviews and observation, and quantitative studies that use questionnaires and indicators are to be completed. In 2000, there were 663 health promoting schools in Cuba: 152 preschools, 249 urban primary schools and 102 rural, 26 urban secondary schools and 32 rural, 33 special schools, 24 pre-universities, 25 polytechnical institutions and 20 universities.



#### **4.2 Computer Mediated Distance Education School Health Diploma (Study Objective 2)**

Promoting and protecting the health of children and adolescents is one of the most fundamental aspects of School Health. For this reason, Cuba has placed a large emphasis on improving the integration of services to this population, the environment in which they are born, live and develop and in the acquisition of healthy lifestyles. Traditionally, it has been accepted that children and adolescents are much more susceptible to unfavourable changes in environmental conditions, creating health problems in less time and with a much lower level of exposure. Developing countries have a far greater rate of mortality and morbidity among this population in comparison with the developed countries. This is due primarily to differences in the living conditions in which these children are born, grow and develop. In these countries, the quality of the environment is more often than not inadequate. Children are exposed to the environmental health risks of the local environment, the home and the educational institutions, for those children and adolescents who can attend school. These risk factors can cause health problems in the short, medium and long term, which in some instances cause chronic illness or disability, and in some cases death. Therefore, these risk factors must be avoided or identified, controlled and eliminated.

Another important aspect is that the poor habits and lifestyles that are related to the creation of non-transmissible chronic illness and disease, that constitute the main causes of death in the adult population, are acquired in childhood or adolescence. These poor habits and lifestyle are associated with a

lack of health promotion programs and services in the educational setting, the home and in the community and in the inadequate development of resilience among children and adolescence.

Presently, School Health faces very important challenges throughout the world. Social inequalities and the deterioration of the environment have very serious consequences for the health status of the youngest generations. The environment refers to the larger habitat of children and adolescents, including their homes and the educational institutions that some of them are able to attend. To assist in obtaining control of the deterioration of the environment, many countries have developed School Health programs.

As mentioned previously, in 1982, Cuba implemented the National Program *Attention to the Student* which was replaced in 1997 by *Program of Integral Medical-Pedagogical Attention to Students and Workers in the Educational System*. However, it was believed that School Health professionals did not have the knowledge and skills needed to meet the demands and challenges of this new program. Therefore, in 1995, the INHEM undertook a major investigation with the primary objective of determining the level of competence and performance, as well as the learning needs, of School Health professionals who would be working within the context of this new School Health Program (Valdes, Ojeda del Valle et al., 2002).

Part of this investigation involved the identification of the changes that had occurred in School Health, formerly known as School Hygiene, over the past decade. Prior to this period, School Health professionals were only responsible

for the health promotion and protection of the children and adolescents attending educational institutions. There was very little focus on epidemiology and little or partisan focus on the ecological process of health and illness and its determinants, which meant that only the educational institute was considered in the determination of the health status of students. The School Health specialist served primarily as a sanitary inspector of the school. There was very little participation of the community in the identification and solution of the health problems of children and adolescents (Valdes, Ojeda del Valle et al., 2002).

It was presupposed that in order to develop congruence between the work done by School Health professionals and the changes that were occurring in the National Health System of Cuba, there needed to be additional educational and training opportunities. There was a need for the increased utilization of Epidemiology, to study and to find solutions to the new challenges presenting themselves in the health sector and the modifications that were being seen in the hygienic epidemiological presentation of the country, due primarily to the new economic situation in Cuba. Furthermore, there had to be much more deliberate incorporation of individuals and the larger community in the process of identifying and finding solutions to the health problems of children and adolescents (Valdes, Ojeda del Valle et al., 2002). Therefore, the new characteristics that School Health had to acquire included:

- The realization of health promotion and protection for all children and adolescents less than 20 years of age.

- The application of an epidemiological approach in all the aspects of the School Health speciality including: practical, investigative, and managerial.
- The application of an ecological approach in the health-disease process and its determinants in the identification and search for solutions to the health problems of this population.
- Health professionals that work as health promoters
- The participation of the community in finding solutions to the health problems of children and adolescents.

It was also determined that to produce these changes in School Health, it was necessary that professionals who work in this sector have sufficient competence to perform a variety of tasks (Valdes, Ojeda del Valle et al., 2002). For instance, School health professionals needed to be able to use normal growth and development of a child or adolescent less than 20 years of age to better promote and protect their health. They needed to be capable of applying an epidemiological approach in the identification of the health problems of their population. As well, the application of the principles of environmental risk assessment, including risk perception, identification, management and communication, in the identification and solution of the health problems of their population had to be incorporated. School health professionals needed to apply a methodology that would foster the development of protective environmental factors, as well as gain a better understanding of the resilience of their population. They needed to become proficient in the use of an ecological approach for analyzing the determinants of the health - disease process of their

population. The development of the school health diagnostic and the analysis of the health situation using hygienic, ecological and epidemiological approaches were thought to be necessary skills. Furthermore, the application of the techniques and procedures needed for the identification and control of conditions in the general environment in which children and adolescents live, grow and develop, including educational institutions was considered extremely desirable. School health professionals had to gain a better understanding of the educational process and its influence on the growth and development of individuals, the general health status of children and adolescents, and their learning; student learning must be considered as a health status indicator. The participation of the community and students, in the identification and the search for solutions to the health problems of children and adolescents had to be realized. Children and adolescents needed to be developed as health promoters. As well, surveillance systems needed to be used in the identification of health problems and intervention projects had to be elaborated and implemented as alternative solutions to the health problems of the students. The content of the *Program of Integral Medical-Pedagogical Attention to Students and Workers in the Educational System* as well as other National and International legislation that promulgates and protects the rights of children and assists with the implementation of the Health Regulations had to be put into practice. And finally, the evaluation of the health situation of children and adolescents nationally and internationally had to be achieved.

Another major part of the investigation included the identification of the learning needs and skills needed to effectively perform the tasks required of School Health professionals (Valdes, Ojeda del Valle et al., 2002). These were grouped into five fundamental areas, which gave rise to specific objectives that formed the capacity building process.

- 1 Learning methods to assist in identifying and analyzing the health status of children and adolescents, as well as the determinants of health.
- 2 Application of the environmental risk assessment approach in the identification of child and adolescent health risk factors, as well as risk perception, management and communication.
- 3 Elaboration of the diagnostic and analysis of the health situation of educational institutions, municipalities, provinces and the country.
- 4 Identification and application of alternative solutions to the health problems of children and adolescents with community participation, as well as measuring the impact of the solutions over time.
- 5 Elaboration of intervention projects in School Health, as alternative solutions to health problems.

This investigation served to identify the various changes that were needed in the field of School Health in order to respond to the new challenges that were present in providing the necessary attention to the health of children and adolescents in Cuba and the rest of the world. The knowledge and skills that professionals working in the field of School Health required were raised as a result of the changes in School Health programs. The learning needs of School

Health professional were also identified in relation to the knowledge and skill needed to competently perform in the School Health program, and constituted the objectives of the capacity building process.

In 1995, following a recognition of the need to build the technical and scientific capacity of school health professionals, the INHEM, based in Havana, began the development of a Face to Face (FtF) School Health Diploma (SHD) (Valdes, Abreu, Ojeda del Valle et al., 2002). And, in 1997, the INHEM offered the first face-to-face iteration of the SHD. The SHD has as its primary objective to increase the capacity of professionals working in school health; to increase the level of theoretical knowledge, as well as develop the professional ability to better deal with child and adolescent health. The School Health Diploma is offered to individuals of various professional backgrounds such as doctors, nurses, psychologists, teachers, etc from various regions of the country and abroad. It is offered face to face as a professional post-graduate certificate. The course is 240 hours and had three main modules. They include: 1) Child and adolescent health (28 units); 2) Health risks for children and adolescents (21 units); 3) Strategies and alternative solutions for the improvement of child and adolescent health (14 units).

The specific objectives of the SHD Program are to increase knowledge and develop skills in:

- 1) the evaluation of the health status and the determinants of health of children and adolescents; the identification, assessment and management

of child and adolescent environmental health risk factors as well as risk perception and communication;

- 3) the analysis of the "health diagnostic" of the school;
- 4) the identification and implementation of alternative strategies for dealing with child and adolescents health problems with an emphasis on community participation; and
- 5) the elaboration of intervention projects in the school.

The FtF SHD Program is run over an 8-week period and offered only in Havana City. This 8-week period includes 2 weeks of fieldwork. Each of the 3 Modules can be taken in their entirety or as separate courses over a period of 2 weeks. The staff at INHEM, trained in epidemiology and school health, instruct the course. During the first 6 courses, 95 professional from various backgrounds participated in the diploma; the majority being physicians. Most graduates were from Havana (n=58), and many provinces had none to few graduates. While participants came from various regions of the country, the distribution was inequitable. In most instances, participants had to leave their school health positions for the entire duration of the SHDip program. During their time away from the work setting, there was often no replacement causing tremendous disruption to service delivery and programs. It was not found to be a practical method of delivery given the significant need across the country to build capacity in School Health.

To further increase the capacity of professionals working in school health settings, INHEM developed a computer mediated distance education (CMDE)



school health diploma (SHD) as part of the AUCC-CIDA Tier II project, as previously described in Chapter 1. Student's who wish to participate in the diploma must: be working in School Health, have participated in post-secondary education, have access to a computer, have working knowledge of Windows, and have access to e-mail or the internet. The Diploma was delivered for the first time in February 2001 and completed in November 2001. The computer support staff person at INHEM disseminates two units each week to each of the sites participating in the CMDE SHDip. Students return all assignments to INHEM via e-mail where they are graded and returned to the student with comments. Various members of the INHEM School Health Dept mark the assignments, and facilitate the instruction of the course units.

There were 411 participants in the CMDE SHDip with a distribution of participants across the country – far greater than the face-to-face diploma was able to provide. Only three provinces had no participants. As computers are not readily accessible to the majority of the population, several sites have been set up across Cuba to facilitate delivery of the diploma. There are facilitators at each of the sites to assist with the dissemination of the course content and use of the computers. The delivery of the CMDESHD marked the first time a diploma of this nature was delivered to such a wide audience across Cuba. There were also 216 international participants from 8 different countries in Central and South America that completed the first iteration of the diploma.

### **4.3 Implementation of Questionnaires and Indicators (Study Objective 3)**

In total there were 125 participants of the CMDE SHDip from three provinces that were included in the study: City of Havana (n=50), Cienfuegos (n=28), and Santiago de Cuba (n=47). A control group was not recruited for two primary reasons. The School Health Department did not perceive that a control group would provide added value to the research for the additional cost, and indicated that it would be difficult to monitor the group over a year given the mobility of physicians. Therefore the methodology was modified to include only one cohort. All diploma participants in each of the three provinces were included in the study.

Table 4.2 illustrates the age and sex of the diploma participants. Seventy percent of the participants were female and the average age was 36 years with a minimum age of 24 and a maximum age of 59 years. Sixty-nine percent of study participants were between the ages of 30 and 39 years. Eight percent were between the ages of 20 and 29 years. Eighteen percent were between the ages of 40 and 49 years. And, 5.6% were between the ages of 50 and 59 years. There were significantly more female participants than male participants for all age groups with the exception of the 20-29 year olds. This is disproportionate to the general population for these same age groups; relative numbers in these age groups are fairly similar for males and females, and similarly for the workforce.

**Table 4.2 Age and Sex of CMDE SHD Participants**

| Sex    | Age groups |           |           |           | Total |
|--------|------------|-----------|-----------|-----------|-------|
|        | 20-29 yrs  | 30-39 yrs | 40-49 yrs | 50-59 yrs |       |
| Male   | 6          | 27        | 4         | 1         | 38    |
| Female | 4          | 59        | 18        | 6         | 87    |
| Total  | 10         | 86        | 22        | 7         | 125   |

Table 4.3 illustrates the various professions of the students enrolled in the CMDE SHD. Eighty-seven percent of the participants were physicians, 6.4% were nurses, 2.4% were technicians, 1.6% were teachers and there was one psychologist.

**Table 4.3 Professional Background of CMDE SHD Participants**

| Profession   | Number of participants | Percentage |
|--------------|------------------------|------------|
| Physician    | 109                    | 87.2       |
| Nurse        | 8                      | 6.4        |
| Technician   | 3                      | 2.4        |
| Teacher      | 2                      | 1.6        |
| Psychologist | 1                      | 0.8        |
| Other        | 2                      | 1.6        |
| Total        | 125                    | 100        |

Table 4.4 shows the number of years experience participants had in school health. The average number of years experience in their respective professions was on average 11 years with the minimum being 4 months and the maximum 42 years. Twenty-two percent had less than 1 year experience in school health. Twenty-nine percent had 1 to 3 years experience. Ten percent had more than 3 years and less than 5 years. Nine percent had more than 5

years and less than 7 years. Six percent had more than 7 years and less than 10 years. And, 22.4% had more than 10 years experience in school health in Cuba.

**Table 4.4 Number of Years Experience in School Health (SH)**

| Years experience in SH         | Number of participants | Percentage |
|--------------------------------|------------------------|------------|
| Less than 1 year               | 28                     | 22.4       |
| 1 to 3 years                   | 37                     | 29.6       |
| More than 3 years less than 5  | 13                     | 10.4       |
| 5 to 7 years                   | 11                     | 8.8        |
| More than 7 years less than 10 | 8                      | 6.4        |
| More than 10 years             | 28                     | 22.4       |
| Total                          | 125                    | 100        |

**Table 4.5 Workplace of CMDE SHD Participants**

| Workplace         | Number of participants | Percentage |
|-------------------|------------------------|------------|
| Preschool/nursery | 29                     | 23.2       |
| Special school    | 15                     | 12         |
| Primary school    | 9                      | 7.2        |
| Secondary school  | 7                      | 5.6        |
| Pre-university    | 8                      | 6.4        |
| Technical college | 13                     | 10.4       |
| University        | 1                      | 0.8        |
| Polyclinic        | 13                     | 10.4       |
| Community clinic  | 4                      | 3.2        |
| Municipal centre  | 12                     | 9.6        |
| Provincial centre | 1                      | 0.8        |
| National centre   | 1                      | 0.8        |
| Other             | 12                     | 9.6        |
| Total             | 125                    | 100        |

Table 4.5 demonstrates the various workplaces of participants in the CMDE SHD. The majority of study participants worked in preschools (23.2%). Twelve percent worked in special schools, 10.4 % worked in technical colleges,

and another 10.4% worked in polyclinics. Others (9.6%) worked in municipal health centers. The remainder ranged from primary (9%) and secondary schools (7%), to pre-universities (6.4%) and university (0.8%). There were also a few participants from community clinics (3.2%), provincial (0.8%) and national health centers (0.8%).

Table 4.6 shows the number of years experience that participants had been in their current workplace. Many (29.6%) had only been in their workplace for less than 1 year. Several (32.8%) had been there for 1 to 3 years. Ten percent had been in their workplace for more than 3 years and less than 5 years. Few had been there 5 to 7 years (5.6%) and more than 7 years and less than 10 years (6.4%). Fifteen percent had been in their workplace for more than 10 years. The majority of participants (73.6%) were from rural areas of the country with a smaller proportion from urban centres (17.6%). A small percentage (6.4%) indicated that they were from semi-urban areas. These terms were not defined for the study population; they self-selected their region. Forty-three percent of the population identified that they worked in a Health Promoting School. None of the participants had ever participated in a computer mediated distance education course. The majority (98%) indicated that they were participating in the diploma to be able to better perform the tasks associated with their work.

**Table 4.6 Number of Years Worked in the Current Workplace**

| Years worked                    | Number of participants | Percentage |
|---------------------------------|------------------------|------------|
| Less than 1 yr                  | 37                     | 29.6       |
| 1 to 3 yrs                      | 41                     | 32.8       |
| More than 3 yrs less than 5 yrs | 13                     | 10.4       |
| 5 to 7 yrs                      | 7                      | 5.6        |
| More than 7yrs less than 10 yrs | 8                      | 6.4        |
| More than 10 yrs                | 19                     | 15.2       |
| Total                           | 125                    | 100        |

The results of the pre-test scores for the self-report questionnaire related to practices in school health are illustrated in Table 4.7. Participants were also asked to provide a brief definition of the various concepts explored in the CMDE SHD. The concepts that were included in the questionnaire pertained primarily to environmental health practices. Table 4.8 illustrates participant's scores on the concept definitions.

**Table 4.7 Pre-test Scores of CMDE SHD Participant Self-report Questionnaire**

| Self-report Questions                                                                                        | Participants Responses |               |           |              |             |         |     |
|--------------------------------------------------------------------------------------------------------------|------------------------|---------------|-----------|--------------|-------------|---------|-----|
|                                                                                                              | Always                 | Almost always | Sometimes | Almost Never | Never       | Missing | N/A |
| When completing the school health diagnostic, do you consider the living conditions of students and staff?   | 47<br>(50%)            | 18<br>(19%)   | 7<br>(7%) | 3<br>(3%)    | 19<br>(20%) | 4       | 27  |
| When completing the school health diagnostic, do you consider the environmental conditions of the community? | 55<br>(57%)            | 16<br>(16%)   | 7<br>(7%) | 2<br>(2%)    | 17<br>(18%) | 2       | 26  |

| Self-report Questions                                                                                                | Participants Responses |               |             |              |             |         |     |
|----------------------------------------------------------------------------------------------------------------------|------------------------|---------------|-------------|--------------|-------------|---------|-----|
|                                                                                                                      | Always                 | Almost always | Sometimes   | Almost Never | Never       | Missing | N/A |
| When completing the school health diagnostic, do you incorporate information on the lifestyles of students?          | 59<br>(60%)            | 16<br>(16%)   | 10<br>(10%) | 2<br>(2%)    | 12<br>(12%) | 1       | 25  |
| When doing health education, do you consider the risk perception of the students?                                    | 76<br>(72%)            | 17<br>(16%)   | 8<br>(8%)   | 1<br>(1%)    | 3<br>(3%)   | 1       | 19  |
| Do you perform a risk assessment of your school?                                                                     | 83<br>(79%)            | 14<br>(13%)   | 4<br>(4%)   | 2<br>(2%)    | 2<br>(2%)   | 1       | 19  |
| When there are several environmental health risks identified in your school, do you use risk managements strategies? | 56<br>(56%)            | 26<br>(26%)   | 8<br>(8%)   | 2<br>(2%)    | 7<br>(7%)   | 5       | 21  |
| Do you use risk communication strategies in your school?                                                             | 57<br>(55%)            | 25<br>(24%)   | 10<br>(10%) | 5<br>(5%)    | 7<br>(7%)   | 1       | 20  |
| Do you form students and teachers in your school as health promoters?                                                | 67<br>(63%)            | 25<br>(24%)   | 12<br>(11%) | 1<br>(1%)    | 1<br>(1%)   | 0       | 19  |
| Do you analyze the school's health diagnostic?                                                                       | 88<br>(90%)            | 6<br>(6%)     | 3<br>(3%)   | 1<br>(1%)    | 0<br>(0%)   | 4       | 23  |
| Do you include the community in the development of solutions to the school health problems?                          | 44<br>(43%)            | 20<br>(20%)   | 17<br>(17%) | 10<br>(10%)  | 11<br>(11%) | 3       | 20  |

| Self-report Questions                                                                                  | Participants Responses |               |             |              |             |         |     |
|--------------------------------------------------------------------------------------------------------|------------------------|---------------|-------------|--------------|-------------|---------|-----|
|                                                                                                        | Always                 | Almost always | Sometimes   | Almost Never | Never       | Missing | N/A |
| Do you use the problem tree in the identification and search for solutions to problems in your school? | 45<br>(45%)            | 21<br>(21%)   | 9<br>(9%)   | 3<br>(3%)    | 23<br>(23%) | 5       | 19  |
| Do you evaluate your action plan?                                                                      | 69<br>(68%)            | 20<br>(20%)   | 7<br>(7%)   | 1<br>(1%)    | 5<br>(5%)   | 3       | 20  |
| Do you develop intervention projects to deal with your school's health problems?                       | 28<br>(29%)            | 23<br>(24%)   | 16<br>(17%) | 9<br>(9%)    | 20<br>(21%) | 8       | 21  |
| Do you complete environmental surveillance in your school?                                             | 84<br>(82%)            | 15<br>(15%)   | 4<br>(39%)  | 0<br>(0%)    | 0<br>(0%)   | 2       | 20  |

**Table 4.8 Pre-test Results of Participants Scores on the Definitions Related to the CMDE SHD Content**

| Definitions          | Scores |     |     |              |
|----------------------|--------|-----|-----|--------------|
|                      | Mean   | Min | Max | Total points |
| Resilience           | 0.29   | 0   | 3   | 5            |
| Risk Assessment      | 0.55   | 0   | 3   | 5            |
| Risk Management      | 0.57   | 0   | 3   | 5            |
| Risk Communication   | 0.45   | 0   | 2   | 5            |
| Risk Perception      | 0.34   | 0   | 3   | 5            |
| Problem Tree         | 0.46   | 0   | 3   | 5            |
| Action Plan          | 1.22   | 0   | 3   | 5            |
| Intervention Project | 0.54   | 0   | 3   | 5            |

As can be seen by the results of the self-report questionnaire, participants had a range of knowledge and skills associated with school health practices. According to participant's responses, some practices were more commonplace than others, specifically the analysis of the school's health diagnostic (90%), as



well as the completion of environmental surveillance (82%) and risk assessment of the school (79%). Some of the participants reported never completing certain practices, such as the use of a problem tree in the identification and search for solutions to problems in their school (23%), the development of intervention projects to deal with the school's health problems (21%) as well as the consideration of the living conditions of students and staff when completing the school health diagnostic (20%). Results on the definitions relation to school health practices contradict some of the self-reported practices of participants. For example, 72% of participants reported considering risk perception of students when doing health education, however the average score for this definition was 0.34 out of 5 points. Findings were similar for risk assessment and to a slightly lesser extent for risk management and risk communication.

Table 4.9 outlines the pre-test results of the problem-based questionnaire. Participants scored highest on situation three with an overall percentage for this section of 38%. The lowest overall percentage for a section was 9.35%, and was obtained on situation 4 of the questionnaire. The mean pre-test score on the problem-based questionnaire was 24.7% with a median score of 30%, a minimum score of 1% and a maximum score of 63%.

**Table 4.9 Participants Pre-test Results on Problem-based Questionnaire**

| Situation (total points)    | Average score | Overall percentage |
|-----------------------------|---------------|--------------------|
| Situation 1 (35 points)     | 4.11          | 11.74              |
| Situation 2 (15 points)     | 3.33          | 22.20              |
| Situation 3 (60 points)     | 22.83         | 38.05              |
| Situation 4 (20 points)     | 1.87          | 9.35               |
| All situations (130 points) | 32.14         | 24.7               |

Results of the problem-based questionnaire would indicate that participants had limited knowledge related to most of the school health practices previously identified as requiring additional education. The lowest score was obtained on Situation 4, which asked participants to apply the steps involved in risk assessment (0.11 out of 5 points) and management of the school environment (0.31 out of 5 points). This is an interesting finding given that on the self-report, risk assessment was one of the most frequently reported practices, and risk management was reported to be used by most participants. Situation 3 had the highest average score of all the situations. For this situation, participants were required to apply the principles of field epidemiology in determining the cause of a gastrointestinal outbreak. Situation 1 included a question related to the development of a problem tree (0.30 out of 5 points) and another related to the elaboration of an intervention project (0.08 out of 5 points); these received the lowest average scores of all questions for this situation. This finding is consistent with findings on the self-report in which many participants indicated never developing interventions projects or using problem trees in the identification and search for solutions to health problems. While participants also had difficulty with Situation 2, the question that required them to explain development differences among genders scored the lowest (0.5 out of 5 points).

Unfortunately, the diffusion theories of Innovation Decision Process; Individual Innovativeness; Rate of Adoption; and Perceived Attributes could not be fully illustrated over the course of the study as no post-tests were completed with the participants. Some of the reasons for not having completed the post-

test will be outlined in the next section of this chapter. However, the questionnaires used in the pre-test and the performance indicators were developed with the intent of measuring the diffusion theories.

According to the Innovation Decision Process theory, potential adopters of an innovation must learn about the innovation, be persuaded as to the merits of the innovation, decide to adopt, implement the innovation, and confirm (reaffirm or reflect) the decision to adopt the innovation. The intent from the outset of the study was to examine the adoption of innovation in relation to the adoption and implementation of school health practices taught in the CMDE SHD. This was to be measured using the questionnaires and the performance indicators.

Participation in the CMDE SHD was the stage in the process that provided knowledge and persuaded the participants of the merits of the innovation. Based on this information the individual would either decide to adopt and implement the school health practices taught in the CMDE SHD or not. The pre-test provided some indication of the knowledge and skills of the participants. The majority of participants (90%) reported that they completed an analysis of the school's health diagnostic. Eighty-two percent reported completing environmental health surveillance of their school. Seventy-nine percent reported performing a risk assessment of their school, while 72% reported providing health education that considered the risk perception of their students. Based on the pre-test results, one might conclude that participants who were already including these practices had the knowledge needed to adopt and implement them and were persuaded of their merits. Post-testing was to determine the change in knowledge and

practices using the questionnaires and the performance indicators. The performance indicators were to be used to determine if the participants were adopting and implementing school health practices more often and of better quality following completion of the CMDE SHD. Additional follow-up a year after the completion of the CMDE SHD was to confirm the participant's decision to continue adopting and implementing the school health practices of the CMDE SHD. But, this was not possible given that there was no post-test, and the performance indicators were not implemented.

The individual innovativeness theory states that individuals who are predisposed to being innovative will adopt an innovation earlier than those who are less pre-disposed. Again, the student researcher wished to demonstrate this theory using the questionnaires and performance indicators to determine if there were in fact participants who were predisposed to adopting the school health practices of the CMDE SHD earlier than others, or if all participants adopted the practices at the same time. The pre-test results illustrated that from the outset participants had varying levels of knowledge and skill related to school health. For example, 23% of participants did not use the problem tree in the identification and search for solutions to the health problems of the school. Twenty percent never considered the living conditions of the students and staff when completing the school health diagnostic. Twenty percent did not develop intervention projects to deal with the schools health problems. Eighteen percent never considered the environmental conditions of the community. Twenty-one percent almost never or never included the community in the development of solutions to

school health problems. Perhaps, participants in the diploma who scored quite low on all pre-test results would continue to score low on post-test results given that they were not pre-disposed to adopting innovative practices. Or, perhaps, even participating in the CMDE SHD could infer that these participants are predisposed to being innovative and adopting an innovation earlier than non-participants of the CMDE SHD. However, given that there were no post-test results and no control group, this could not be further illustrated or explored in the context of this study.

The third widely-used diffusion theory discussed by Rogers (1995) is the theory of Rate of Adoption. Rate of Adoption theorizes that an innovation goes through a period of slow, gradual growth before experiencing a period of relatively dramatic and rapid growth. The change that occurred in how the SHD was delivered could be one illustration of this theory. Initially, it was taught face-to-face, but the need for a larger rate of adoption required that it be delivered using computer mediated distance education. As well, the post-testing of participants for up to a year following completion of the CMDE SHD might have provided some information related to the rate of adoption of various school health practices included in the diploma. Perhaps some would be adopted at a more rapid rate than others. Again, the opportunity to further explore this theory in relation to school health practices was not possible given the lack of post-testing.

The Theory of Perceived Attributes (Rogers, 1995) states that potential adopters judge an innovation based on their perceptions of its: trialability; observability; relative advantage; complexity; and compatibility (Rogers, 1995).

It was not possible to get a true sense of the theory of perceived attributes. The post-test questionnaire was to include questions to target these specific attributes. Several contextual and managerial factors within Cuba affected the rate of diffusion of school health practices taught in the CMDE SHD. While the Cuban government supported individuals participating in the diploma allowing them to take the time needed during work hours and paying for the course, some were unable to complete the diploma given work rotations. The technological infrastructure also presented some barriers to the rate of diffusion. These factors and others that relate to the rate of diffusion will be further discussed in the next section of this chapter. As well the fidelity of implementation could not be measured with the absence of a post-test and the performance indicators were not applied in the field. The fidelity of implementation in relation to the CMDE SHD referred to the degree to which participants implemented the School Health Program as intended.

#### **4.4 Conducting Research in a Developing Country (Study Objective 4)**

Several factors impacted on the success of the research project in Cuba. While some of the factors that are examined in this section may appear very basic, they are of the utmost importance when engaging in such studies, and cannot be disregarded in this discussion. Some barriers to completing the research are also presented and discussed in greater detail. The successful diffusion of the CMDE SHD encountered many difficulties. As previously discussed at length in Chapter 3, contextual and managerial factors within an

organization or social system that encourage and support or discourage and impede, influence the rate of diffusion of innovations (Rogers, 1995). These will be discussed in the following section.

#### **4.4.1 *Communication and Negotiation***

Effective communication between partners, coming from different cultures and using different languages, is absolutely essential for success in any type of international collaboration. Language translations and cultural differences can create major misunderstandings or misinterpretation unless exhaustive discussion takes place. There was quite a bit of time for the student researcher to get to know the various members of the school health department at INHEM prior to commencing the study. Learning about the roles and functions of the school health department, the various projects that they were undertaking, and had been involved in more recently were all important aspects of the communication process. Spending time with various members of the department outside of work hours, and getting to know them on a personal level was also possible prior to engaging more fully in the research process. Great efforts were taken to ensure that the meaning of all directions, instruments and any other terminology used was clearly understood by all team members.

Various methods were used to communicate between international collaborators such as e-mail, telephone, face-to-face contact, working groups and conferences. Face to face communication was used most often and was the most effective when the student researcher was in Havana. However, this was not always possible. E-mail was used whenever the student was not in Cuba.

This method proved to be fairly effective, however often there would be long periods of time when there was no communication with Cuban colleagues. And, there were often miscommunications and misinterpretation using e-mail as Spanish is not the student researcher's first language, and there were times when additional correspondence was required to clarify what was intended in the initial message.

Communication also occurred via other members of the larger CIDA project. For example, information was sent through the Canadian project director and manager, and information was returned using the same individuals. Or, e-mail had to be sent to the Cuban project director for approval prior to being sent to the School Health Department research team. This resulted in several layers of communication. And, meant that the researcher was not present for some of the communication and decision-making.

Negotiation was a skill that was required for many aspects of the research project. Merriam-Webster (2003) defines negotiating as "to deal with (some matter or affair that requires ability for its successful handling); to arrange for or bring about through conference, discussion, and compromise [on-line]." There always seemed to be an issue or situation that required some negotiating among the various participants. These are illustrated throughout this section. Some other examples include travel to the various regions of the country. Visits to the various sites in Cuba had to be negotiated with the site and the staff at INHEM. The use of various facilities at INHEM while the student was living and working in Cuba had to be negotiated with the Director of INHEM. Obtaining permission



from the Director of INHEM to seek out additional funding and implementing aspects of the research study also had to be negotiated with the Director of INHEM. Without negotiation the study could not have been completed. In the end, perhaps not enough negotiation occurred to allow for the successful completion of the research study.

#### **4.4.2 Cultural Differences**

Cultural differences can influence the process and outcomes of many research studies. The researcher not only had to about the Cuban culture and context as well as learn the language during the study, but remain sensitive to the differences that exist and not impose judgement. As a result, several research methods had to be explored and discussed with the collaborating institution until methods could be agreed upon. For example, the use of a control group was not seen to add value to the study, as it was believed that it would increase the cost of the study without adding to the overall results. This was debated on many occasions with the members of the team, and in the end, the INHEM School Health Department decided that a control group would not be allowed. It is always tricky as to whether the decisions regarding methodology in a graduate student's thesis should rest in the end with the student (versus supervisors), but in the case of working with developing countries, the "ownership" of the project is often even more sensitive. One wants the work to be useful to the local authorities, but researchers have to maintain their sense of scientific integrity. This was a significant struggle for the researcher throughout

the process. As well, the type of questionnaire that should be used to evaluate change in knowledge, attitudes and practices was debated for some time. Even once the team had reached consensus on the type of method that should be used for the questionnaire, problem-based as opposed to multiple choice, there were several changes that occurred prior to its implementation. One observation would be that the wider the language and cultural gap between countries participating in an international collaboration, the more complexities one might encounter in executing the study. While, Canada and Cuba share many similarities - our belief in public health and education systems - there are also many differences, the most evident being the different economic situations and standard of living between Canada and Cuba. Another observation was that working together with multiple cultures and disciplines within a single study is a very stimulating way to approach any question. It was observed that the way in which different cultures viewed the same question was very stimulating and forced them to consider issues that they otherwise would never question. This international collaboration was a very cultural enriching experience for the student researcher.

#### **4.4.3 Funding**

As mentioned previously, the funding of international studies is particularly difficult, especially for graduate students. Most countries tend to be quite parochial in their financial support of research endeavours. This makes it particularly difficult to fund studies between different countries. While there was a large AUCC-CIDA grant conferred to the project, the funds available to the

school health diploma and Canadian graduate students involved in the project were limited. The focus of the grant related primarily to building capacity in environmental health in Cuba at the Master's and Doctoral levels. The graduate student had to obtain other grants to assist with travel to and in Cuba to complete the research. Matching grants such as the one obtained through the International Development Research Centre, and University grants such as the International Development Grant offered through the Department of Community Health Sciences at the University of Manitoba, as well a studentship from the Manitoba Research Council were vital sources of funding for the study. INHEM was able to provide in kind contributions for some of the activities. For example, the tuition fee to participate in the School Health Diploma for the student researcher was waived. The delays that occurred in the dissemination of the CMDE SHD meant that there was no additional funding to complete further travel to Cuba to complete the post-tests and implementation of the performance indicators.

There was very little money available for purchasing additional supplies associated with the project. For example, there was no budget attached to the project for the purchase of office supplies, such as paper, pens, envelopes, etc to assist in the implementation of the questionnaires. The lack of a budget was associated with some of the restrictions imposed by AUCC-CIDA on the use of funds for the purchase of supplies as there was very little funding available for Canadian graduate students in the Cuba project. The small grants obtained stipulated that the funds were not to be used for supplies. Therefore, if supplies

were needed, either the student would purchase them for the project or it had to go through an approval process, which involved the CIDA project committee. This committee only met quarterly, which meant that often decisions could not be taken quickly. Despite the many issues associated with funding of international research initiatives and the lack of a project budget, the student researcher was very fortunate to be able to travel to Cuba on several occasions to complete the research.

#### ***4.4.4 Limited Technological and Physical Infrastructure***

While Cuba has undertaken other distance education initiatives over the past few years, the technological infrastructure available to support the endeavours in some cases is less than optimal. On various occasions during the transmission of the diploma there were significant delays. The server in Santiago de Cuba would often crash, and information could not be sent using the Internet. Given the geographical distance from the capital, this created significant delays for the students. In some cases, if the on-site coordinator in Santiago visited Havana for work purposes, she would return with several diploma units on a diskette to share with diploma participants. Furthermore, the many problems that Cuba continues to experience with electricity meant that often computers could not be used. Blackouts are still common practice in many regions, especially the capital, which is a huge consumer of energy. For a period of time, restrictions were imposed on the use of electrical equipment given the lack of power supply.

In Abreus, Cienfuegos, there were delays in obtaining a computer for the participants in the region. This related to project funding. While there was one computer at the health center, it was used for gathering epidemiological statistics for the surveillance system, and could not be used for the diploma. When a computer was finally made available to the region through the AUCC-CIDA project, they also experienced problems with the server. They also had to have units sent to them on diskette from the City of Cienfuegos who also periodically experienced problems with their server. The coordinator for this province would send copies of the diploma on diskettes to the coordinator in the Abreus who would then distribute the units to the various participants. While there is a lack of computers on the frontlines of the health services system, all of the schools in Cuba have a computer and many now have laboratories with several computers. Some of the participants indicated that they were able to use the computers at the school, however most of these computers do not have Internet access.

The lack of computers at some of the sites, particularly in Santiago, where there was only one computer at the Provincial Centre of Hygiene, Epidemiology and Microbiology for approximately 20 students, created many problems. They were forced to print hardcopies of the diploma units for the participants. With a shortage of paper, this was a problem as the entire diploma was more than one thousand pages. If each participant were to receive the diploma on paper this would partially defeat the purpose of offering the course via computer. Furthermore, there had been very little money in the budget to allow for additional purchases related to the School Health Diploma. There were no

additional supplies provided to the various sites that were participating in the evaluation. In some instances, diskettes, pens and paper were not available. The researcher had not anticipated that participants would require some additional office supplies during the course of the diploma. These would have proved to be useful given the limited technical and physical infrastructures. It was only half way through the transmission that a small budget was approved to purchase and distribute supplies to the sites. Delays were attributable to internal project management issues within Cuba.

#### ***4.4.5 Reliance on Cuban Team Members***

The student researcher could not be in Cuba at all times during the course of the research study. Many trips were completed over a period of two years. At times, the researcher was absent for several months prior to being able to return to Cuba. And, given the various delays that occurred, which are discussed later in this section, often the student researcher would travel to Cuba with the intent of being able to implement a particular part of the study, and this was not possible. It had to be postponed to a later date, and the student researcher could not prolong her time in Cuba. This meant that, in the student researcher's absence, INHEM School Health Department staff was responsible for the implementation of the project protocols. The Department of School Health at INHEM has many other research projects and matters of national urgency to tend to, and this project could not always be given priority. Without being present to know what was happening, it was difficult to determine what had been done.

This is where communication among the various team members was essential.

As well, given the level of expertise of the INHEM School Health Department related to school health in Cuba, their assistance was invaluable in making all the necessary connections with school health professionals, programs and services across the country. The student researcher could not have accessed the individuals or visited the various school health sites without their assistance. Furthermore, their knowledge of the CMDE SHD content and processes meant that they were the most appropriate group to score the questionnaires used as part of the evaluation process. The student researcher had to rely on them to accurately score and enter data into the database.

#### ***4.4.6 Sharing of Data***

There were some issues associated with the sharing of the data collected using the questionnaires. Initially, using project funding to obtain the paper needed to make photocopies of the completed questionnaires for the student researcher to transport back to Canada for analysis was difficult. The student researcher agreed to pay for paper using personal funds as there was no other timely option. However, once the paper was obtained it still was not possible to make photocopies. The discussion related to data ownership was not addressed as part of the planning process, and should have been discussed from the outset. While the School Health Department should without question own the data, the inability of the student researcher to make photocopies of the information meant that all the data had to be scored and entered by members of

the School Health Department. The student researcher was not able to assist as she would have liked in this process given the time constraints in Cuba, and the various delays that occurred in transmitting the CMDE SHDip.

There was no opportunity to review the initial questionnaires while in Cuba and compare the data to the database. The student researcher did return to Cuba after the data had been entered into the database on a personal trip with the intention of doing some work on the project. This was not possible in the end as she had a tourist visa; she was not permitted to review the questionnaires or to be on the premises of INHEM as she did not have the required work visa. Unknowingly, the student attempted to borrow the questionnaires from INHEM during this time, and it was brought to her attention that this would not be possible. Any clarifications needed related to the data were obtained through e-mail discussions with the team members.

#### ***4.4.7 Parallel Projects***

A very interesting development took place during the course of the research study, which was a little disheartening for the student researcher. The School Health Department decided to implement a departmental project, which had as its primary objectives evaluating change in competence and performance of school health professionals participating in the CMDE SHD. The objectives of this project were almost identical to the student researcher's project, but it was being done solely by the School Health Department and employed slightly different methods, which were not shared with the student researcher. The



student researcher became aware of this development during a subsequent trip to Cuba to further develop the study.

The addition of this research project to the School Health Department created a very interesting dynamic for the student researcher, which was not easy to address with the team. This issue was never resolved, and there continued to be a primary investigator in the INHEM School Health Department focusing on the same research topic who collaborated with the student researcher on this study. In the end, she served as the primary contact for the student to the school health department at INHEM. Often graduate students are part of a larger research project and complete portions of the work of the larger study. However, this was not at issue. The issue was the process taken and the lack of acknowledgement of the student researcher's work in the School Health Department project. The tremendous human resource, knowledge and expertise of the INHEM School Health Department may have contributed to this dilemma. In essence, the student researcher was working with the staff in the School Health Department to build her capacity in international research and school health. She learned a great deal from her Cuban colleagues, and benefited substantially from their expertise.

#### ***4.4.8 Working within the Larger Political Structure of Cuba***

As a foreigner to Cuba, the student was to be accompanied when completing most site visits. These visits had to be authorized through the Ministry of Public Health and Education, and had to be requested by the

collaborating institute (INHEM). Work visas had to be obtained when traveling to Cuba to complete research and special arrangements had to be made with the Cuban Consulate in Canada. This created some difficulties for the student. On one occasion, the student's work visa did not arrive on time to allow for travel from Canada to Cuba. Flights had to be re-scheduled, as did interviews that were to take place in Cuba. There were various restrictions associated with work visas. For example, the Cuban Consulate in Canada could only issue short-term visas, which then had to be extended once the student arrived in Cuba through the authorizing Ministry, which in this case was the Ministry of Public Health. As a foreigner working in Cuba, the student researcher was obligated to pay for most things using American dollars, all accommodation, transportation, food, etc. The Cuban government has established that students staying in Cuba longer than 3 months are able to obtain most services in Cuban pesos, however there are restrictions. Information related to school health could not be easily accessed, and obtaining copies of written materials was also difficult. However, this may not have been so much due to political reasons as much as factors associated with the economic infrastructure.

During the course of the research, there were also several changes to the initial sample. As a result of the rotations that physicians must complete, several CMDE SHD participants in the province of Cienfuegos were relieved of their positions in school health and transferred to other positions. This meant that 10 participants from Abreus who had participated in the pre-test were replaced by a new cohort of 22 participants prior to being able to complete the diploma. A

similar situation occurred in Cumanayagua. This cohort was replaced with a group of 12 participants, which in May of 2003 had not yet started the diploma. The Diploma was suspended in Santiago de Cuba for a period of 2 months due to another investigation that was taking place there requiring the full attention of school health professionals. And in Havana, it was suspended for 4 months due to a series of specialty courses that the Ministry of Public Health was offering.

#### **4.4.9 Hurricane Michelle**

On November 4, 2001, Hurricane Michelle hit Cuba. It was the most destructive hurricane the island had ever seen. With winds gusting up to 135 miles per hour, the hurricane affected eight provinces, from the eastern portion of Pinar del Rio to Ciego de Avila. This represents forty-five percent of national territory, which houses 5.899 million people, fifty-three percent of the country's population (de Jesus, 2001). As the hurricane advanced towards Cuba, following directions from Cuba's Civil Defense organization, local and provincial governments evacuated more than 712,000 persons from dangerous areas, along with some 600,000 livestock with not one single incident registered. Two hundred and seventy thousand evacuees were housed in Government-provided shelters, where they received full board and constant medical attention. In all of Cuba, 5 people died -four of them killed by falling buildings, while a fifth drowned. Falling buildings injured 12 persons. Given the intensity of the hurricane, the destruction of coastal villages by the fury of the sea and the extensive flooding of

low-lying areas, the evacuation conducted by Civil Defense and Government authorities was decisive in the prevention of major loss of life.

The Hurricane had an enormous impact on the Cuban economy, destroying crops (primarily citrus and sugarcane), houses, schools, health facilities, production and service centres, agricultural installations, electrical infrastructure, telephone networks, water supplies, and gas lines. The food security of the province was at risk in the immediate months, taking into account that the storm destroyed the crops that were about to be harvested and those that were in the process of early growth.

In Havana, which really only caught the fringe of the storm, nearly 200 houses collapsed, more than 1,200 trees and hundreds of electricity and telephone poles came down. Over 35 schools were badly damaged. A few days after Michelle's destructive journey Cuba's food production and distribution, transportation and distribution systems for gas in the capital were totally re-established. This meant that the City of Havana was non-operational in some areas for approximately one week. The recuperation time varied for different facilities, and many restrictions were in place given the lack of some essential services such as electricity, water, gas and food. This made work in most parts of Havana quite difficult for a few weeks. However, in other parts of the country the devastation was much greater and the recovery longer.

The National electricity system was severely affected, having split into two parts, east and west, when the high-voltage towers joining the two electricity towers collapsed. The lines were cut and sea flooding damaged the pump area

of the thermoelectric plant in this region. Five days after the hurricane, Havana had only 50% of its normal electrical service, Cienfuegos only 46% and Matanzas only 27%. Other provinces that were affected such as Pinar del Rio and Villa Clara had 65% of the normal electrical service, while Ciego de Avila and the Isle of Youth had been totally restored. Many of the provinces did not have their electricity fully restored for up to 30 days (de Jesus, 2001). Blackouts were common practices throughout the country during this time, and the use of many "less essential" electrical units such as air conditioning and computers, were prohibited until such time as the electrical infrastructure was fully repaired. Water service was disrupted in many regions as well. Five days following the hurricane the City of Havana had 90% of its water service, the province of Havana 86%, Matanzas 30%, Cienfuegos 70%, Villa Clara 80% and the Isle of Youth 98% and Sancti Spiritus and Ciego de Avila 100% (de Jesus, 2001). This was restored to all regions at the end of November. Communications, but not international radio, television and communications networks, were also affected. The entire country's radio and telephone communication channels were restored on November 22, 2001. The television service was provisionally restored to all regions by December 20, 2001.

A trip to complete field observations and interviews with school health professionals had been scheduled to the province of Cienfuegos for the end of November. The student researcher and a member of the Department of School Health from INHEM had planned on visiting the region to complete preliminary interviews with members of the school health programs and services in this

province, specifically the city of Cienfuegos, Abreus, Horquita and Cumanayagua. Cienfuegos province was to participate in the CMDE SHDip for the first time in January 2002. It was selected as the province that would be visited to gain a better understanding of school health in Cuba. In Cienfuegos province, many houses, buildings, industrial and agricultural installations and other services, including schools and health service facilities, were seriously affected or totally destroyed by the hurricane. More than 60,000 people had to be evacuated to safe places, and more than 500 remained in shelters for almost a year until their destroyed homes could be rebuilt. It was only on November 7<sup>th</sup> that the city of Cienfuegos began to receive electricity, although many of its settlements were still without electricity, communications, piped water and other services linked to the electrical system. Cienfuegos was one of the last provinces to fully resume school services following the hurricane. The provincial authorities expressed their serious concern about the food situation in the province - with more than 396,000 inhabitants - given that Michelle destroyed the two agricultural enterprises that provide food and produce to the capital of the province. There was enormous devastation of the crops, the installations - industrial as well as agricultural, educational, housing, public service buildings, irrigation installations, and electrical and communications posts in Horquita.

The Horquita Enterprise produces annually more than 3 million quintiles (137,000 TM) of vegetables, and is responsible for the supply of some 45 % of the food production for the city of Cienfuegos, the capital of the province with some 150,000 inhabitants, and is also a minor supplier to the city of Havana.

There was damage to 22 of the 39 irrigation systems, which meant that the months from November to February would prove difficult in terms of food availability, since the destruction of the storm would not allow the harvest of products during these months.

Given the destruction that occurred in this province the trip was cancelled and travel to the province of Santiago de Cuba, one of the few provinces unaffected by the hurricane, was scheduled instead. Overall, the hurricane created some delays in the research. The lack of electricity and the constant blackouts along with other affects of the hurricane meant that in January many school health professionals in various regions of the country were still very busy recovering from the effects of the hurricane. This was one of the reasons that contributed to the decision not to begin transmission of the CMDE in January 2002.

#### **4.4.10 Dengue Outbreak**

In January of 2002, Cuba was dealing with a dengue outbreak in the City of Havana Province, Cuba. Dengue is carried by the *Aedes aegypti* mosquito that breeds in unsanitary accumulations of water in towns and cities. In an effort to control the outbreak, the government mobilized some 11,000 people including students, the military, health professionals and hundreds of other voluntary organizations over a period of a couple of months (Spiegel, Yassi, & Tate, 2002).

Brigades of community members were organized in the Popular Councils to implement the centrally run campaign. Thousands of volunteers who had

been given leave from their regular day jobs would go house to house inspecting water tanks and other places where the mosquito might breed. Another team would come later to check the results of their work. And a third team completed the fumigation. Every house was visited at least once a week by each of the three teams. Part of the brigades work was also educational. They explained the need to live in a way that's conducive to eliminating dengue: keeping homes clean, disposing of rubbish in the correct manner, putting a lid on water tanks. The Ministry of Health issued literature as part of this education effort and they organized meetings where local residents could talk about what was needed to eradicate the disease. Campaign leaders would meet daily to discuss progress.

Health professionals were also mobilized to undertake active screening, visit households, and ask about relevant symptoms. In suspected cases, blood samples were taken, and quarantine at home under a mosquito net was imposed pending the results (Spiegel et al., 2002). By the end of March, dengue was eradicated in Cuba, and many of the volunteers returned to their regular work.

The second iteration of the CMDE SHD, which was included in the evaluation process, was scheduled to begin in January of 2002. As a result of the massive dengue campaign that was organized in Havana, the transmission of the diploma was delayed for a few months until the public health community was able to control the outbreak and return to their regular employment. The first transmission of the diploma began in June of 2002.



## CHAPTER FIVE

### SUMMARY AND CONCLUSIONS

#### 5.1 What Can we Learn from School Health in Cuba?

School health is not a new concept. It has a long history internationally.

In 1932 Hiscock stated,

School health supervision has become recognized as an important part of the school and public health program. There are fundamental reasons why a city or state should accept the responsibility for the conservation of the health of children in its public schools. ... When a community makes education compulsory, it must assume the responsibility for providing a healthful environment for the children. It is important to educate the child in the principles of healthful living so that he may himself have sound health and thus safeguard the community in the future.... From the standpoint of economy, education, and hygiene, it is believed that every effort should be made to create health conditions which give each child a fair chance and enable him to get the most out of the years he must spend at school. (p. 121) ... The carrying out of these purposes is without doubt a responsibility and joint function of the departments of education and health. (p. 122) ... In school health service, the nurse works with the teacher, school physician, and parents for the health of the child and is a connecting link between community health resources and the home. (p. 128)

Many of the principles and practices discussed by Hiscock (1932) in his chapter on *School Hygiene* are still relevant today, and are seen applied in Cuba's School Health System. Given that these principles and practices have been around so long, what can we possibly learn from Cuba?

A lack of political will can be one of the most substantial barriers to implementing school health programs for many countries (Booth et al., 1997; Butler, 1993; Cerquiera, 1996; Cohen, 1996; Haynes, 1998; Leger et al., 2000; Lynagh et al., 2002; Northfield et al., 1997; Nutbeam & St Leger, 1997; O'Byrne et al., 1996; Pan American Health Organization, 2000; Stewart, 1997; Stewart, Parker, & Gillespie, 1998; World Health Organization, 1997; World Health Organization, 1998). Furthermore, it has been identified that an intersectoral approach is an important factor in the successful implementation of Comprehensive School Health (Bingler, 2000; Canadian Association for School Health, 2003; Cerquiera, 1996; Denman, 1999; Farrior et al., 2000; Jones & Furner, 1998; Larter, Chernick, Maire, & DuBois, 1999; Lear, 2003; Lear, 2002; Stokes & Mukherjee, 2000). It is no longer up to the doctor and the nurse to do all the work. A review of the literature suggested that one way to support a stronger connection between the disciplines of education, public health, and health care is through interdisciplinary planning (Bingler, 2000; Booth et al., 1997; Canadian Association for School Health, 2003; Canadian Association for School Health and Health Canada., 1993; Cerquiera, 1996; Denman, 1999; Farrior et al., 2000; Haynes, 1998; Jones & Furner, 1998; Kolbe et al., 1997; Larter et al., 1999; Lear, 2003; Lear, 2002; National Health and Medical

Research Council Health Advancement Standing Committee, 1996; Stokes et al., 2000). The author would suggest that interdisciplinary planning needs to go beyond these disciplines. Agencies should seek stronger relationships and common cause with other professional and citizen groups pursuing interests with health implications.

The School Health programs and policies developed and implemented at the National, Provincial and Municipal levels in Cuba, exemplify the incredible political will of the Cuban government to provide comprehensive school health services for children and adolescents across Cuba. The intersectoral approach used to implement school health programs in Cuba, which was discussed in the various policy papers and during interviews with various school health professionals, was seen implemented in schools across the country. In Cuba, it was determined that to promote and protect the health of the public, a joint effort of the government ministries and various disciplines and community organizations must be implemented along with the active participation of the community. The strong collaboration between the Cuban Ministries of Education and Public Health in developing and implementing School Health policies and programs facilitated a highly organized system of school health that promoted the participation of others. Measures to create either closely linked school and community health systems or fully integrated school/community child health systems that may have widespread benefit for children and their families must be further explored. In this regard, much can be learned from the approach taken in Cuba.

The will and participation of the community are an essential aspect of successful comprehensive school health programs (Bingler, 2000; Canadian Association for School Health, 2003; Cerquiera, 1996; Cohen, 1996; Health Canada, 2003; Jones & Furner, 1998; Lee et al., 2003; Leger et al., 2000; Lister-Sharp et al., 1999; Naidoo & Wills J., 1999; O'Byrne et al., 1996; Pan American Health Organization, 2000; St Leger, 2001; World Bank et al., 1993; World Health Organization, 1997; World Health Organization, 1998). There is a strong and rich history of social and political participation and voluntarism in Cuba. The many examples of community development demonstrated in Cuba can serve as an example to other nations. When the economic crisis hit in the early 90s, community organizations proved to be a crucial element in the organization of social support particularly in urban areas (Uriarte, 2002). The great needs that arose during the Special Period led to the emergence of a "neighbourhood movement ." These movements focused attention on the development of horizontal networks at the community level in order to effect change in their community. They ushered in the participation of many actors: local governments, the mass organizations, Cuban non-governmental organizations, international development organizations, institutions of higher education, and most important, the neighbours themselves. Community development efforts have tended to seek a comprehensive, integrated vision of the needs of the area and of the solutions that best fit those needs. This requires a focus on the neighbourhood and prioritizes the building of relationships among the different neighbourhood stakeholders, who are then forced to take a horizontal perspective.

The wide spectrum of health and human resource assets required to maintain a healthy community infrastructure are also needed for school health planning. The continued evolution of an ethic that embodies more inclusive and integrative principles in the restructuring of educational systems opens up significant opportunities for the community as a whole. Schools, public health agencies, citizens, civic organizations, and local government can form the teams addressing health issues of the school community. Bingler (2000) states that decisions made on behalf of the school community at large must include various members of the school's community in the development, consideration and implementation of school programs and services. The visions, dreams and desires of communities must be incorporated into the decision-making process. The assets of the community, the individual and collective talents and skills of its members should be used to contribute to the design of programs and services. The opportunity to consolidate and integrate community resources, and create community-learning environments that can better promote physical as well as intellectual well-being is made possible through this collaboration (Bingler, 2000; Farrior et al., 2000). The health of children and adolescents must be guaranteed for all, through its different organizations, working together, organizing and using the resources, knowledge and initiatives of its population. The Health Promoting school's framework provides one such model that could be used by schools internationally to foster these relationships and build these assets. In Cuba, these principles have been applied to the School Health Diagnostic and Analysis of the School Health Situation. Cuban students, teachers, health professionals,

organizations and the community at large are involved in the development and implementation of the programs and services, a proven best practice for the effective development and implementation of comprehensive school health programs (Allensworth, 1997; Bingler, 2000; Cohen, 1996; Crosswaite, Currie, & Young, 1996; Denman, 1999; Haynes, 1998; Hickman & Healy, 1996; Jones & Furner, 1998; Lee et al., 2003; Leger et al., 2000; Lister-Sharp et al., 1999; Lynagh et al., 2002; Markham & Aveyard, 2003; Marshall et al., 2000; National Health and Medical Research Council Health Advancement Standing Committee, 1996; Stewart, 1997).

The community's educational resources such as schools, community colleges, and universities, plus all of the community's civil service training and skills development programs have long been recognized as a major vehicle of health promotion for all ages and therefore, must assure that health is incorporated into their curricula (Bingler, 2000; Booth et al., 1997; Brindis et al., 1998; Canadian Association for School Health, 2003; Health Canada, 2003; Jones & Furner, 1998; Kolbe et al., 1997; National Health and Medical Research Council Health Advancement Standing Committee, 1996; Northfield et al., 1997; O'Byrne et al., 1996; Rowling, 1997; Rowling & Rissel, 2000; Veselak, 2001).

The Cuban Ministry of Education has implemented a program that outlines health curricula for all levels of education. The program is flexible to allow for the unique contexts and environments of all individuals and communities. The curricula is not solely for the classroom, but is meant to be used for

extracurricular activities such as the education of family and communities, an important aspect of the health promotion process.

## **5.2 How Can the CMDE SHD Assist in Building Capacity in School Health in Cuba?**

The ability of teachers and health professionals to support each other in their roles is a vital part of the capacity building process for School Health. (Allensworth, 1997; Bingler, 2000; Brindis et al., 1998; Butler, 1993; Canadian Association for School Health, 2003; Haynes, 1998; Health Canada, 2003; Jamison, 1993; Lear, 2003; Lister-Sharp et al., 1999; Lynagh et al., 2002; Rissel & Rowling, 2000; St Leger et al., 2000; St Leger, 2001; Swart & Reedy, 1999; Symons et al., 1997; Williams & James, 1996). It has been well documented and examined in some detail in Chapter 2 that the current levels of education and training for teachers and physicians to adopt comprehensively the health promoting schools concept are inadequate in most countries (Booth et al., 1997; Farrior et al., 2000; Haynes, 1998; Lear, 2002; Leger et al., 2000; Rissel et al., 2000; Roberts-Gray, Solomon, Gottlieb, & Kelsey, 1998; Santelli et al., 1996; Thyer, 1996). For students to achieve critical health literacy requires that education and health professionals work together. Most teachers are primarily engaged in educating their students in the classroom. And, most health professionals that work with children and adolescents do not know what occurs in the school. The commitment of school authorities and teachers to ongoing professional development to enable teachers to learn skills to enable them to educate their students beyond the classroom is essential. The commitment of

health authorities and health professionals to work with the schools and their communities to facilitate better health of children and adolescents must also occur. This requires that health professionals also engage in continuing education related to comprehensive school health practices. The CMDE SHD is just one such option for school health professionals in Latin America. It is open to all school health professionals and encourages interdisciplinary collaboration. One caution about the CMDE SHD, while many of the practices included in the diploma are relevant to school health internationally, it is important to develop programs and methods that are consistent with individual contexts and needs that are fundamental to the capacity building process for that population.

In Cuba, it was postulated that in order to be able to prevent health problems, there had to be a better system of detection and elimination or a decrease in the risk factors that caused serious illness and death to the population in Cuba. One action toward this goal was the expansion of the National Health Care system, especially Primary Health Care, and the role of the family physician and the nurse that provide services in the educational institutions. The School Health system in Cuba required not only capacity building in those aspects of illness and disease associated with hygiene and epidemiology, but also in the systematization of their surveillance systems and the control of risk factors as these aspects presented great insufficiencies. Cuba has made every attempt to create a system that is able to support the capacity building of education and health professionals to meet the needs of their comprehensive school health programs, and to be able to collaborate in this



process. Cuba is also in a very unique position compared to other countries in that it has a tremendous human resource of physicians. This allows them to participate actively in school health programs and services and still be able to provide services in the larger community. While other countries do not have the human resource needed to apply a similar approach that uses physicians in the school, and while this approach perhaps is not the most cost-effective for other countries the development of formal methods to assist in the detection of health risks in the school would be beneficial to all.

A very unique aspect of School Health Programs in Cuba that was not encountered in the School Health literature is the development of the School Health Diagnostic. The principles of the diagnostic are similar to the community health needs assessments that are used in various regional health authorities in Canada. The information collected for the School Health Diagnostic is divided into 10 main parts, which provide a comprehensive description and overview of the school and the fundamental problems identified by health personnel, teachers, students, other school staff and members of the community. The School Health Diagnostic, more importantly the Analysis of the School's Health Situation, is a fundamental method used in Primary Health Care in Cuba that requires community participation in the identification and search for alternative solutions to the health problems of the school and the community. By ensuring community participation, considering the communities needs in the process, and seeking their assistance to solutions to the problems, it is much more likely that individuals will be more aware of their health problems and ensure that measures

are taken to solve the issues. This is felt to be much more effective an approach than if the health team was identifying the problems and dictating the measures that needed to be taken. However, the health team is fundamental to orienting everyone to the process and to ensuring that all health problems are identified. The planning and design of a more integrated and ubiquitous community provides an opportunity to engage students, parents, educators and a wide variety of community stakeholders in decisions that benefit all aspects of the community's health and well-being. The CMDE SHD provides participants with the knowledge and skills needed to develop and implement the school health diagnostic and analysis of the school's health situation. Another area that the CMDE SHD emphasizes is the development of methods to involve the community in decision-making related to school health programs and services. While the effectiveness of the diploma in developing these practices among School Health professionals was not demonstrated in this study, an attempt to further build their capacity in an effort to improve the health of their population must be recognized.

### **5.3 What Lessons Have Been Learned Conducting Research in an International Context?**

In terms of international cooperation in health, Cuba is in a unique position. It is a country that accords health national priority and uses it as a basis for its foreign policy toward other developing countries. Due to the political decision to develop a sophisticated domestic health system and promote "internationalism" and solidarity toward developing countries, Cuba is probably

one of the most revolutionary countries when it comes to international health activities. Thousands of Cuban health workers provide voluntary services in over 30 countries worldwide. Although some foreign expertise has been used in Cuba in recent years, much medical and public health expertise has flowed in the other direction. However, this wealth of human resource in Cuba creates an ideal environment for international collaboration. Canadian researchers can benefit from the knowledge and expertise available in Cuba, and contribute in different ways to further development in Cuba.

While additional opportunities in global health research are being made available to young researchers, the training needed to efficiently and effectively participate in international studies is often wanting. Knowledge of the international context and the required support needed to complete projects must be explored prior to commencing the investigations as this can have a significant impact on the overall success of the work. Relationships are tenuous, and in an international context more so. Global health researchers need the skills to know how to best foster and promote international collaboration. Through the provision of international "mentorships" such as the one this student was able to complete during this study, young researchers can develop some of these skills. As a graduate student never having participated in a major research study, the challenge of completing any study can be immense. When you combine this inexperience with the complexities and intricacies of international health research, the challenges can be that much greater.

Many lessons were learned while doing research in Cuba. As with any study, communication and negotiation with team members are key components. However, this takes on an added dimension, when cultural and language differences exist among researchers. Collaboration is the key to scientific work anywhere, and particularly in developing countries. Local and institutional supports can have a significant impact on the outcome of the study, and must be included in every stage of the process. However, when working in a developing country, project "ownership" can become a very sensitive issue. Decisions regarding the study methodology, data analysis, and interpretation can have a significant impact on the process and outcomes.

Up until recently, there was a lack of funding for global health research. However, new initiatives developed over the past year, have provided additional opportunities to Canadian researchers wishing to pursue investigations in a larger international context (Spiegel et al, 2003) . Nonetheless, restrictions placed on how the funds can be used to support the research endeavours and limited technical and physical infrastructures that exist in many developing countries can still create barriers around implementation. In Cuba there were several problems associated with the political, technological and physical infrastructure that caused significant delays or disruptions to the project. There are so many aspects of this study that were unpredictable. A hurricane and a dengue outbreak, two significant events that occurred over the course of the study, were not events that could have been easily anticipated by the researcher. These had all kinds of implications for the study over time, delaying the

commencement of the CMDE SHD on two occasions. Depending on the length of the research study and the importance placed by the researcher on needing to be involved in every step of the process, the reliance on international colleagues to follow through on aspects of the protocol may be necessary. Time is limited when you are not living in the country of study. Trips are planned with relatively tight timelines. This means that the slightest delay can create all kinds of complications and have future repercussions on the outcomes. Working within the larger political structure of another country that is foreign to the researcher can create many difficulties. Not only does the researcher have to familiarize themselves with the ins and outs of the system, they have to learn to work within it. Flexibility, while always a valued approach, is definitely a requirement in an international context. The difficulty lies in striking the right balance of flexibility without sacrificing scientific integrity.

#### **5.4 Significance of the Study and Conclusions**

There are many reasons for conducting investigations among populations in developing countries. Haddad et al (2002) indicated that the development and implementation of primary health care experiences, especially in strengthening community based health systems, community participation and empowerment of women, youth and other community members would be of great benefit to Canada's health systems. They believed it would enhance policy development and the translation of policy into practice. It would assist in determining better priorities, especially in public and community health, preventative care and health promotion. And, in the area of globalization, it would assist in gaining a better

understanding of how it affects Canada and Canadian health policy in the world order. This study is a concrete example of these benefits.

School health in Cuba is based on the fundamental principles of a primary health care-centred strategy: health as a basic human right, community self-reliance and self-determination, social control over health services, and the need for locally and nationally sustainable basic health interventions. The primary health care strategy also reveals the critical role of community participation which has been considered essential for the implementation of a successful primary health care strategy. Community participation as discussed previously is understood to yield numerous benefits, including more adequate and sustainable health services; improved use of financial, human, and material resources; positive changes in health behaviours, a more equitable relationship between health care users and providers; individual empowerment; greater diffusion of health knowledge; and increased use of indigenous expertise (Macintyre et al., 2002). With primary health care reforms occurring across Canada, we could stand to learn a lot from Cuba. More research needs to be done examining health initiatives in other countries and their application to domestic issues. Furthermore, additional research investigating the application of the health promoting school's model in Canada and its effectiveness in preventing disease and illness and promoting healthy behaviours is needed.

Evaluating school health capacity building in Cuba provided some important insights into implementing capacity building projects. First, partnership and leadership elements are important in the implementation. Strong leadership

at all levels of government: national, provincial and municipal were obvious elements of the project, as well as the partnerships that were fostered and promoted among the various actors. Commitment is important to the achievement of organizational change and increased capacity for school health. By highlighting commitment as a separate element, it may provide insight into why other elements such as policy development or new organizational structures may be effective in some circumstances but not others. The element of commitment may be especially important in sustaining such change over the many years that projects are required to produce. Commitment is clearly linked to partnership and leadership. All three elements work together to develop, enhance or support workforce development. The role of commitment within organizational change and capacity building frameworks warrants further investigation. Practitioners need to be cognizant of the importance of such elements in all health promotion initiatives, not only in school health, and must strive to achieve an effective combination of such organizational factors when implementing school health initiatives.

This study provided the investigator with training in an important area of health that has application to the Canadian context and has built her capacity as an effective researcher in Canada and abroad.

## Reference List

al Shehri, A., Stanley, I., & Thomas, P. (1993). Continuing education for general practice. 2. Systematic learning from experience. *Br J Gen.Pract.*, 43, 249-253.

Allensworth, D. (1997). Improving the health of youth through a coordinated school health programme. *Promotion et Education*, 4, 42-47.

Allery, L. A., Owen, P. A., & Robling, M. R. (1997). Why general practitioners and consultants change their clinical practice: A critical incident study. *BMJ*, 314, 870-874.

Bartolic-Zlomislic, S. & Bates, T. (1999). Investing in online learning: Potential benefits and limitations. *Canadian Journal of Communication*, 24.

Bates, T. (1999). The impact of new media on academic knowledge. Key Note Speaker. University of British Columbia. Retrieved December 4, 2001, from <http://bates.cstudies.ubc.ca/papers/envisionknowledge.html>

Bell, D. S., Fonarow, G. C., Hays, R. D., & Mangione, C. M. (2000). Self-study from web-based and printed guideline materials. *Annals of Internal Medicine*, 132, 938-942.

Berman, P. & McLaughlin, M. W. (1976). Implementation of educational innovation. *The Educational Forum*, 40, 345-370.



Berwick, D. M. (2003). Disseminating innovations in health care. *Journal of the American Medical Association*, 289, 1969-1975.

Betancourt, A. N. (2000, August 14). Heraldos de la salud y la vida. *Granma*, pp. 1-4.

Bingler, S. (2000). The school as the center of a healthy community. *Public Health Reports*, 115, 228-233.

Blakely, C. H., Mayer, J. P., Gottschalk, R. G., Schmitt, N., Davidson, W., Roitman, D. B. et al. (1987). The fidelity-adaptation debate: Implications for the implementation of public sector social programs. *American Journal of Community Psychology*, 15, 253-268.

Bloch, F. D. & Torres, C. (1997). *Doing business with Cuba*. Havana: Faculty of History, Havana University.

Booth, M. L. & Samdal, O. (1997). Health-promoting schools in Australia: Models and measurement. *Australian and New Zealand Journal of Public Health*, 21, 365-370.

Bowling, A. (1997). *Research methods in health care*. Philadelphia: Open University Press.

Brekke, J. S. & Wolkon, G. H. (1988). Monitoring program implementation in community mental health settings. *Evaluation and the Health Professions*, 11, 425-440.

Brindis, C. D., Sanghvi, R., Melinkovich, P., Kaplan, D. W., Ahlstrand, K. R., & Phibbs, S. L. (1998). Redesigning a school health workforce for a new health care environment: Training school nurses as nurse practitioners. *J.Sch Health, 68*, 179-183.

Britten, N. (1996). Qualitative interviews in medical research. In N.Mays & C. Pope (Eds.), *Qualitative Research in Health Care*. London: BMJ Publishing Group.

Bureau of International Information Programs (2003). President Bush pledges to assist cause of freedom in Cuba. Bureau of International Information Programs. Retrieved November 27, 2003, from <http://usinfo.state.gov/xarchives/display.html?p=washfile-english&y=2003&m=October&x=20031010163145rellims0.5779993&t=usinfo/wf-latest.html>

Butler, S. C. (1993). Chief state school officers rank barriers to implementing comprehensive school health education. *Journal of School Health, 130*-132.

Canadian Association for School Health (2003). Consensus statement on comprehensive school health. Canadian Association for School Health. Retrieved November 6 2003, from <http://www.schoolfile.com/cash/consensus.htm>

- Canadian Association for School Health and Health Canada. (1993). *Making the connections: Comprehensive school health*. Surrey: BC: Canadian Association for School Health.
- Candy, P. C. (1991). *Self-direction for lifelong learning: A comprehensive guide to theory and practice*. San Francisco: Josey-Bass Publishers.
- Cantillon, P. & Jones, R. (1999). Does continuing medical education in general practice make a difference? *BMJ*, 318, 1276-1279.
- Cerquiera, M. T. (1996). Health-promoting schools in the Americas. *World Health*, 12-13.
- Cervero, R. M. (1985). Continuing professional education and behavioral change: A model for research and evaluation. *J Contin Educ Nurs*, 16, 85-88.
- Chavasse, M., North, D., & McAvoy, B. (1995). Adolescent health--a descriptive study of a school doctor clinic. *New Zealand Medical Journal*, 108, 271-273.
- Cohen, S. (1996). Promoting health through schools: The World Health Organization's Global School Health Initiative. Geneva, World Health Organization.
- Commission on Health Research for Development. (1990). *Health research: Essential link to equity in development*. New York (NY): Oxford University Press.

Cook, T. D. & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis issues for field settings*. Chicago: Rand McNally.

Costello, A. & Zumla, A. (2000). Moving to research partnerships in developing countries. *BMJ*, 321, 827-829.

Crosswaite, C., Currie, C., & Young, I. (1996). The European Network of Health Promoting Schools: Development and evaluation in Scotland. *Health Education Journal*, 55, 45-46.

Dane, A. V. & Schneider, B. H. (1998). Program integrity in primary and early secondary prevention: Are implementation effects out of control? *Clinical Psychology Review*, 18, 23-24.

Danzon, A., Quelier, C., Maitrot, C., & Carvalho, J. (1998). [Elementary school health and the national education physician-teacher partnership: apropos of 2 surveys conducted by national education physicians in training]. *Sante Publique*, 10, 289-302.

Davis, D. (1998). Does CME work? An analysis of the effect of educational activities on physician performance or health care outcomes. *Int J Psychiatry Med*, 28, 21-39.

Davis, D., O'Brien, M. A., Freemantle, N., Wolf, F. M., Mazmanian, P., & Taylor-Vaisey, A. (1999). Impact of formal continuing medical education: Do conferences, workshops, rounds, and other traditional continuing education

activities change physician behavior or health care outcomes? *JAMA*, 282, 867-874.

Davis, D. A., Thomson, M. A., Oxman, A. D., & Haynes, R. B. (1992). Evidence for the effectiveness of CME. A review of 50 randomized controlled trials. *JAMA*, 268, 1111-1117.

Davis, D. A., Thomson, M. A., Oxman, A. D., & Haynes, R. B. (1995). Changing physician performance. A systematic review of the effect of continuing medical education strategies. *JAMA*, 274, 700-705.

de Jesus, V. (2001). Fighting spirit in the face of disaster. *Granma Internacional*. Retrieved November 25, 2001, from <http://www.granma.cu/>

Denman, S. (1999). Health promoting schools in England--a way forward in development. *Journal of Public Health Medicine*, 21, 215-220.

Denzin, N. K. (1978). *Sociological methods a sourcebook*. (2d ed.) New York: McGraw-Hill.

Digital Divide Network (2003). Kofi Annan: IT industry must help bridge global digital divide. Digital Divide Network. Retrieved November 29, 2003, from <http://www.digitaldividenetwork.org/content/stories/index.cfm?key=272>

Digital Divide Network Staff & Benton Foundation (2001). The Digital Divide basics fact sheet. Digital Divide Network. Retrieved November 29, 2003, from <http://www.digitaldividenetwork.org/content/stories/index.cfm?key=168>

Dobson, L. D. & Cook, T. J. (1980). Avoiding Type III error in program evaluation: results from a field experiment. *Evaluation and Program Planning*, 269-276.

Drummond, J. (1998). Some challenges to be faced when building capacity [editorial]. *Clin.Nurs Res.*, 7, 331-334.

Dusenbury, L., Brannigan, R., Falco, M., & Hansen, W. B. (2003). A review of research on fidelity of implementation: Implications for drug abuse prevention in school settings. *Health Education Research*, 18, 237-256.

Elster, A. B. & Levenberg, P. (1997). Integrating comprehensive adolescent preventive services into routine medicine care: Rationale and approaches. *Pediatric Clinics of North America*, 44, 1365-1377.

Farrior, K. C., Engelke, M. K., Collins, C. S., & Cox, C. G. (2000). A community pediatric prevention partnership: Linking schools, providers, and tertiary care services. *Journal of School Health*, 70, 79-83.

Federal Provincial and Territorial Advisory Committee on Population Health (1994). *Strategies for population health: Investing in the health of Canadians*. Ottawa: Health Canada, Communications Directorate.

Flick, U. (2002). *An introduction to qualitative research*. (2nd ed.) London: Sage Publications.

Foulk, D. & Dorman, S. (1998). Internet-based post secondary health education instruction. *International Electronic Journal of Health Education*, 3, 146-150. Retrieved December 5, 2001 from <http://www.aahperd.org/iejhe/archive/foulk.pdf>

Fox, R. D. & Bennett, N. L. (1998). Learning and change: Implications for continuing medical education. *BMJ*, 316, 466-468.

Global Forum for Health Research (2000). *The 10/90 report on health research 2000*. Geneva, Switzerland: World Health Organization.

Gonzales, S. T. (1996). La promocion de la salud en el ambito escolar: Marco teorico. Havana, Cuba, Ministry of Public Health, National Center of Promotion and Health Education.

Gonzales, S. T. (1997). Indicaciones metodologicas para la implementacion de la modalidad escuela y/o universidad por la salud. Havana, Cuba, Ministry of Public Health, National Center of Promotion and Health Education.

Government Statement (1995). *Canada in the World*. Ottawa: Canada.

Haddad, S., Zakus, D., Mohindra, K., & Wei, X. (2002). *Promoting Canadian involvement and capacity building in global health policy And systems research: Perspectives and recommendations*. Ottawa, Canada: Canadian Institutes for Health Research.

Haverstock, N. A. (2002). Special report: The Cold War's last front: The United States and Cuba. The World Book Online Reference Center. Chicago: World Book, Inc. Retrieved November 5, 2003, from <http://www.worldbookonline.com/>

Hawe, P., Noort, M., King, L., & Jordens, C. (1997). Multiplying health gains: The critical role of capacity-building within health promotion programs. *Health Policy*, 39, 29-42.

Haynes, N. M. (1998). Promoting holistic child development: A collaborative school health approach. *Journal of School Health*, 68, 381-383.

Health Canada (2003). The comprehensive school health model. Government of Canada. Retrieved November 6, 2003, from <http://www.hc-sc.gc.ca/main/hc/web/datahpsb/children/english/sec1-1.htm>

Hickman, M. & Healy, C. (1996). The European Network of Health Promoting Schools: Development and evaluation in England. *Health Education Journal*, 465-470.

Hiscock, I. V. (1932). School hygiene. In I.V.Hiscock (Ed.), *Community Health Organization* (pp. 121-137). New York: Geroge Grady Press.

Horder, J., Bosanquet, N., & Stocking, B. (1986). Ways of Influencing the behaviour of general practitioners. *Br J Gen.Pract.*, 36, 517-521.

Ippolito-Shepherd, J. (2002). Las Escuelas Promotoras de la Salud: Una iniciativa internacional. In (pp. 855-862). Havana, Cuba.



Jafari, A. (1997). Issues in Distance Education. *T.H.E. Journal [Online]*.  
Retrieved December 6, 2001, from <http://www.aahperd.org/iejhe/archive/foulk.pdf>

Jamison, J. (1993). Health education in schools: A survey of policy and implementation. *Health Education International*, 59-62.

Jones, J., & Furner, M. (1998). WHO's Global School Health Initiative: Health Promoting Schools. Geneva: World Health Organization, Division of Health Promotion, Education and Communication Health Education and Health Promotion Unit.

Kanouse, D. E. & Jacoby, I. (1988). When does information change practitioners' behavior? *Int J Technol Assess Health Care*, 4, 27-33.

Kerwick, S. & Jones, R. H. (1996). Educational interventions in primary care psychiatry: a review. *Primary Care Psychiatry*, 107-117.

Kiener, M. D. & Hentschel, D. (1992). What happens to learning when the workshop is over? *The Journal of Continuing Educaiton in Nursing*, 23, 169-173.

Kinyanjui, P. (1994). Recent developments in African distance education. Proceedings of Conference on Internationalism in Distance Education. , The American Center for the Study of Distance Education, 76-81. In (pp. 76-81). University Park: The Pennsylvania State University, The American Center for the Study of Distance Education.

Knowles, M. S. (1970). *The modern practice of adult education: andragogy versus pedagogy*. New York: New York Association Press.

Kolbe, L. J., Collins, J., & Cortese, P. (1997). Building the capacity of schools to improve the health of the nation. A call for assistance from psychologists. *American Psychologist*, 52, 256-265.

Koop, C. E., Pearson, C. E., & Schwartz, M. R. (2001). *Critical issues in global health*. San Francisco: Jossey-Bass.

Lacey, L. (1999). Using web-based distance education tools to promote health care research in developing countries. *ALN Magazine*, 1-9.

Larson, D. (1997). Practical issues in health research in developing countries. In J.L.Pickering (Ed.), *Health Resarch for Development: A manual* (pp. 163-190). Montreal: Canadian University Consortium for Health in Development: McGill Printing Services.

Larter, N., Chernick, L., Maire, J. A., & DuBois, E. (1999). The health consultation program: A model school nurse education program. *Journal-of-School-Nursing (J-SCH-NURS)* 1999 Aug; 15(3): 20-4 (10 ref).

Lear, J. G. (2002). Schools and adolescent health: Strengthening services and improving outcomes. *J Adolesc.Health*, 31, 310-320.

Lear, J. G. (2003). School-based health centers: A long road to travel. *Arch.Pediatr.Adolesc.Med*, 157, 118-119.

Lee, A., Tsang, C., Lee, S. H., & To, C. Y. (2003). A comprehensive "Healthy Schools Programme" to promote school health: The Hong Kong

experience in joining the efforts of health and education sectors. *J Epidemiol. Community Health*, 57, 174-177.

Leger, L. S. & Nutbeam, D. (2000). Research into health promoting schools. *Journal of School Health*, 70, 257-259.

Lewis, J. & Romiszowski, A. (1996). Networking and the Learning Organization: Networking issues and scenarios for the 21<sup>st</sup> century. *Journal of Instructional Science and Technology*, 1-19.

Lister-Sharp, D., Chapman, S., Stewart-Brown, S., & Sowden, A. (1999). Health Promoting Schools and health promotion in schools: Two systematic reviews. *Health Technology Assessment*, 1-6.

Lynagh, M., Perkins, J., & Schofield, M. (2002). An evidence-based approach to health promoting schools. *J Sch Health*, 72, 300-302.

Macintyre, K. C. & Hadad, J. H. (2002). Cuba. In B.J.Fried & L. M. Gaydos (Eds.), *World Health Systems: Challenges and Perspectives* (pp. 445-461). Chicago: Health Administration Press.

Mackie, J. W. & Oickle, P. (1997). School-based health promotion: The physician as advocate. *CMAJ*, 156, 1301-1305.

Markham, W. A. & Aveyard, P. (2003). A new theory of health promoting schools based on human functioning, school organisation and pedagogic practice. *Soc.Sci.Med*, 56, 1209-1220.

Marshall, B. J., Sheehan, M. M., Northfield, J. R., Maher, S., Carlisle, R., & Leger, L. H. S. (2000). School-based health promotion across Australia. *Journal of School Health, 70*, 251-252.

Mays, N. & Pope, C. (1996). *Qualitative research in health care*. London: BMJ Publishing Group.

McCurdy, D. (1981). Doing Field Work. In D.McCurdy (Ed.), *The Cultural Experience: Ethnography in Complex Society* (pp. 3-20). Toronto: Sciences Research Associates.

McGinnis, J. M. & DeGraw, C. (1991). Healthy schools 2000: Creating partnerships for the decade. *Journal of School Health, 292-316*.

Meresman, S. & Bundy, D. (1998). School health and nutrition programming in Latin America and the Caribbean: The ten who go to school. World Bank/ PAHO.

Ministerio de Salud Publica (1996). *Analisis del sector salud en Cuba: Resumen Ejecutivo*. Habana: Republica de Cuba.

Ministerio de Salud Publica & Ministerio de Educacion (1998). *Programa Integral de Atencion Medico Pedagogica a Educandos y Trabajadores del Sistema Educacional* Havana: Republica de Cuba.

Ministry of Foreign Affairs (1999). Cuban refugees: Adjustment of status. Ministry of Foreign Affairs, Republic of Cuba. Retrieved November 26, 2003,

from [http://www.cubaminrex.cu/English/Focus\\_On/AdjustLaw\\_Cuban%20refugees%20adjustment%20of%20status.htm](http://www.cubaminrex.cu/English/Focus_On/AdjustLaw_Cuban%20refugees%20adjustment%20of%20status.htm)

Mitchell, J., Palmer, S., Booth, M., & Davies, G. P. (2000). A randomised trial of an intervention to develop health promoting schools in Australia: The south western Sydney study. *Australian and New Zealand Journal of Public Health*, 24, 242-246.

Mitchell, J., Robinson, P., Seiboth, C., & Koszegi, B. (2000). An evaluation of a network for professional development in child and adolescent mental health in rural and remote communities. *J. Telemed. Telecare.*, 6, 158-162.

Morse, J. M., Field, P. A., & Field, P. A. (1995). *Qualitative research methods for health professionals*. (2nd ed ed.) Thousand Oaks: Sage Publications.

Naidoo, J. & Wills J. (1999). Health promotion in schools. In *Health Promotion: Foundations for Practice (2<sup>nd</sup> Ed.)* ( London: Bailliere Tindall.

National Center for Chronic Disease Prevention and Health Promotion. (1998). *School health policies and programs study*. Atlanta: Centers for Disease Control and Prevention.

National Health and Medical Research Council Health Advancement Standing Committee. (1996). *Effective school health promotion: Towards Health Promoting Schools*. Canberra: Australian Government Publishing Service.

Neufeld, V., MacLeod, S., Tugwell, P., Zakus, D., & Zarowsky, C. (2001). The rich-poor gap in global health research: challenges for Canada. *CMAJ.*, 164, 1158-1159.

Neufeld, V., Johnson, N. A., Council on Health Research for Development, & International Development Research Centre (2001). *Forging links for health research perspectives from the Council on Health Research for Development*. Ottawa: International Development Research Centre.

Newman, J. M. (2000). Action research: A brief overview [14 paragraphs]. Forum: Qualitative Social Research [On-line Journal]. Retrieved November 6, 2003, from <http://qualitative-research.net/fgs>

Northfield, J. R., St Leger, L., Marshall, B., Sheehan, M., Maher, S., & Carlisle, R. (1997). *School Based Health Promotion Across Australia*. Sydney: University of Sydney, Australian Health Promoting Schools Association.

Nutbeam, D. & St Leger, L. (1997). *Priorities for research into Health Promoting Schools in Australia*. Sydney: Australian Health Promoting Schools Association.

O'Byrne, D., Jones, J., Sen-Hai, Y., & Macdonald, H. (1996). WHO's Global School Health Initiative. *World Health*, 5-6.

Ojeda del Valle, M. (2000). Análisis de la situación de salud. In J.A.Valdes, C. C. Abreu, M. Ojeda del Valle, M. H. Sanchez, A. C. Alfaro, & E. M. Diaz (Eds.), *Diplomado de Salud Escolar*. Havana, Cuba: INHEM.

Pan American Health Organization (1995). *Educacion para la salud en el ambito escolar: Una perspectiva integral*. Washington: PAHO. [HSS/SILOS-37].

Pan American Health Organization. (1996). *Escuelas promotoras de salud: Modela y guia para la accion*. Washington: PAHO.

Pan American Health Organization (2000). About health promoting schools. Pan American Health Organization. from [www.paho.org/English/HPP/HPM/HEC/hs\\_about.htm#Regional](http://www.paho.org/English/HPP/HPM/HEC/hs_about.htm#Regional)

Parcel, G. S., Kelder, S. H., & Basen-Engquist, K. (2000). The school as a setting for health promotion. In B.D.Polland, L. W. Green, & I. Rootman (Eds.), *Settings For Health Promotion: Linking Theory and Practice*. ( London: Sage Publications.

Patton, M. Q. & Patton, M. Q. (2002). *Qualitative research and evaluation methods*. (3 ed.) Thousand Oaks, California: Sage Publications.

Peden, A. R., Rose, H., & Smith, M. (1992). Transfer of continuing education to practice: Testing an evaluation model. *The Journal of Continuing Education in Nursing*, 23, 155.

Perez, L. A. (2003). Cuba. *World Book Online Reference Center*. Retrieved November 4, 2003, from [www.worldbookonline.com](http://www.worldbookonline.com)

Phipps, R., Merisotis, J., & O'Brien, C. (1999). *What's the difference? A review of contemporary research on the effectiveness of distance learning in higher education prepared for the National Education Association and the*

*American Federation of Teachers*; Washington: The Institute for Higher Education Policy.

Rannenberg, M. (1998). Rannenberg on Cuba and the impact of Helms-Burton: Pressure through economic sanctions remains "essential". Subcommittee on International Economic Policy and Trade. Retrieved November 26, 2003, from <http://usinfo.state.gov/regional/ar/us-cuba/ran12.htm>

Raphael, D. (1998). Emerging concepts of health and health promotion. *J Sch Health*, 68, 297-300.

Reif, J. C. & Elster, A. B. (1998). Adolescent preventative services. *Primary Care; Clinics in Office Practice*, 25, 1-20.

Report of the ADM Sub-Committee (1997). *Canada 2005: Global challenges and opportunities: Draft interim report*. Ottawa: Canada.

Rickert, V. I., Davis, S. O., Riley, A. W., & Ryan, S. (1997). Rural school-based clinics: Are adolescents willing to use them and what services do they want? *J.Sch Health*, 67, 144-148.

Ripley, C. P. (1999). *Conversations with Cuba*. Athens: University of Georgia Press.

Rissel, C. & Rowling, L. (2000). Intersectoral collaboration for the development of a national framework for Health Promoting Schools in Australia. *Journal of School Health*, 70, 248-250.



Robbins, A. (1999). Havana revisited. *Public Health Reports*, 2, 183-184.

Roberts-Gray, C., Solomon, T., Gottlieb, N., & Kelsey, E. (1998). Heart partners: A strategy for promoting effective diffusion of school health promotion programs.

Rogers, E. M. (1995). *Diffusion of innovation*. (4th ed.) New York: NY: Free Press.

Ronald, A. (2001). *Enhancing the opportunities: Renewing the vision: A concept paper*. Ottawa: Canada. Canadian consultation on global health research.

Rosser, W. W., Culpepper, L., Lam, C. L. K., Parkerson, G., Poon, V., & Van Weel, C. (1997). Guidelines for international collaborative research. *Family Practice*, 14, 330-334.

Rowling, L. (1997). [Partnerships for health: Health Promoting Schools.] *Promotion et Education*, 4, 15-16.

Rowling, L. & Rissel, C. (2000). Impact of the national Health Promoting School initiative. *Journal of School Health*, 70, 260-261.

Russell, T. L. (1999). *The no significant difference phenomenon*. Chapel Hill, NC: Office of Instructional Telecommunications, North Carolina State University.

Ryan, M., Campbell, N., & Brigham, C. (1999). Continuing professional education and interacting variables affecting behavioural change in practice: Instrument development and administration. *The Journal of Continuing Education in Nursing*, 30, 168-175.

Santelli, J., Kouzis, A., & Newcomer, S. (1996). School-based health centers and adolescent use of primary care and hospital care. *Journal of Adolescent Health*, 19, 267-275.

Selwyn, N. (2000). Resisting the technological imperative: Issues in researching the effectiveness of technology in education. *Compute-Ed: An electronic journal of learning and teaching with and about technology*, 5. Retrieved November 26, 2001, from <http://computed.coe.wayne.edu/>

Silverman, D. (2001). *Interpreting qualitative data methods for analysing talk, text and interaction*. (2nd ed.) London: Sage Publications.

Singleton, A. & Tylee, A. (1996). Continuing medical education in mental illness: A paradox for general practitioners. *Br J Gen.Pract.*, 46, 339-341.

Skidmore, T. E. & Smith, P. H. (1997). Cuba: late colony, first socialist state. In *Modern Latin America* (4th ed., pp. 263-293). New York: Oxford University Press.

Spevacek, A. M. (2001). *USAID's experience with multisectoral partnerships and strategic alliances: An analysis of best practices and lessons learned*. Washington: DC: USAID Development Information Services.

Spiegel, J., Labonte, R., Hatcher-Roberts, J., Girard, J., & Neufeld, V. (2003). Tackling the "10-90 gap": a Canadian report. *Lancet*, 362, 917-918.

Spiegel, J., Yassi, A., & Tate, R. (2002). Dengue in Cuba: Mobilisation against *Aedes Aegypti*. *Lancet Infect.Dis.*, 2, 207-208.

St Leger, L. (2001). Schools, health literacy and public health: Possibilities and challenges. *Health Promot.Internation.*, 16, 197-205.

St Leger, L. & Nutbeam, D. (2000). A model for mapping linkages between health and education agencies to improve school health. *Journal of School Health*, 70, 45-50.

Stanley, I., al Shehri, A., & Thomas, P. (1993). Continuing education for general practice. 1. Experience, competence and the media of self-directed learning for established general practitioners. *Br J Gen.Pract.*, 43, 210-214.

Stewart, D. (1997). [Healthy schools: What have we learned?] *Promotion et Education*, 4, 7-10.

Stewart, D., Parker, E., & Gillespie, A. (1998). *An analysis of policy, planning and support documents related to Health Promoting Schools*. Sydney: Australian Health Promoting Schools Association.

Stokes, H. & Mukherjee, D. (2000). The nature of health service/school links in Australia. *Journal of School Health*, 70, 255-256.

Strong, M. (1995). *Connecting with the world: Priorities for Canadian internationalism in the 21st Century: A Report by the International Development Research and Policy Task Force*. Ottawa: Canada.

Surry, D. W. & Farquhar, J. D. (1996). Diffusion theory and instructional technology. *Journal of Instructional Science and Technology*, 1-14.

Swart, D. & Reedy, P. (1999). Establishing networks for health promoting schools in South Africa. *Journal of School Health*, 69, 47-50.

Symons, C., Cinelli, B., James, T., & Groff, P. (1997). Bridging student health risks and academic achievement through comprehensive school health programs. *Journal of School Health*., 220-228.

Tam, S. W. (1999). Developing countries and the future of distance and open learning in the twenty first century. *Electronic Journal of Instructional Science and Technology*, 3, 22-28.

Thyer, S. (1996). The 'Health Promoting Schools' strategy: Implications for nursing and allied health professionals. *Collegian*., 3, 13-23.

Torres, M. A., Rodriguez, C. C., Machado de Armas, A., Rodriguez, M. S., Figueredo, A. G., Delgado, Y. G. et al. (1999). *Programa director de promocion y educacion para la salud en el sistema nacional de educacion* Havana, Cuba: Ministerio de Educacion.

UNICEF (2003). *Children's report. The state of the world's children: 2003.*

United Nations Publications.

United Nations Development Program (2003). *Human development report 2003.* Author.

Uriarte, M. (2002). *CUBA: Social policy at the crossroads: Maintaining priorities, transforming practice.* Boston: MA: Oxfam America.

Valdes, J. A., Abreu, C. C., Ojeda del Valle, M., Sanchez, M. H., Fernandez, B. T., Alfaro, A. C. et al. (2002, May). La educacion a distancia en la salud escolar. Paper presented at the International Public Health Conference School Health Workshop, Havana, Cuba.

Valdes, J. A., Abreu, C. C., Sosa, D. P., Placeres, R. M., Ojeda del Valle, M., & Valdivia, A. (2002, May). El sistema de vigilancia en salud escolar en Cuba. Generalides, situacion actual y proyecciones. Paper presented at the International Public Health Conference School Health Workshop, Havana, Cuba.

Valdes, J. A., Ojeda del Valle, M., Abreu, C. C., Placeres, R. M., Sosa, D. P., & Fernandez, B. T. (2002, May). Competencia, desempeno y necesidades de aprendizaje de los professionals que laboran en Salud Escolar. Paper presented at the International Public Health Conference at School Health Workshop, Havana, Cuba.

Veselak, K. E. (2001). Historical steps in the development of the modern school health program. *J Sch Health*, 71, 369-372.

Waddell, D. L. (1992). The effects of continuing education on nursing practice: A meta-analysis. *The Journal of Continuing Education in Nursing*, 23, 168.

Waltz, J., Addis, M. E., Koerner, K., & Jacobson, N. S. (1993). Testing the integrity of a psychotherapy protocol: Assessment of adherence and competence. *Journal of Consulting and Clinical Psychology*, 61, 620-630.

Wensing, M. & Grol, R. (1994). Single and combined strategies for implementing changes in primary care: A literature review. *Int J Qual Health Care*, 6, 115-132.

Wensing, M., van der, W. T., & Grol, R. (1998). Implementing guidelines and innovations in general practice: Which interventions are effective? *Br J Gen.Pract.*, 48, 991-997.

Whyte, W. F. & Whyte, K. K. (1984). *Learning from the field a guide from experience*. Beverly Hills: Sage Publications.

Williams, P. M. D. c. B. T. C. H. J. a. P. J. & James, E. (1996). Health Promoting Schools: Lessons from working intersectorally with primary schools in Australia. *Health Education Journal*, 300-310.

World Bank & Division of Adolescent and School Health (1993). *A cost-benefit analysis of exemplary health education*. Atlanta: World Bank.

World Health Organization (1997). Promoting health through schools. Report of a WHO Expert Committee on Comprehensive School Health Education and Promotion. *World Health Organization Technical Report Series.*, 870, i-93.

World Health Organization. (1998). WHO's Global School Health Initiative: Helping schools to become "Health-Promoting Schools". Fact Sheet No. 92. Retrieved December 12, 2001, from [www.who.int/inf-fs/en/fact092.html](http://www.who.int/inf-fs/en/fact092.html).

World Health Organization. (1992). *Comprehensive school health suggested guidelines for action*. Geneva: The Organization.

Xu, L. S., Pan, B. J., Lin, J. X., Chen, L. P., Yu, S. H., & Jones, J. (2000). Creating Health Promoting Schools in rural China: A project started from deworming. *Health Promotion International*, 15, 197-206.

Yaffe, M. J. (1998). Developing and supporting school health programs. Role for family physicians. *Canadian Family Physician*, 44, 821-829.

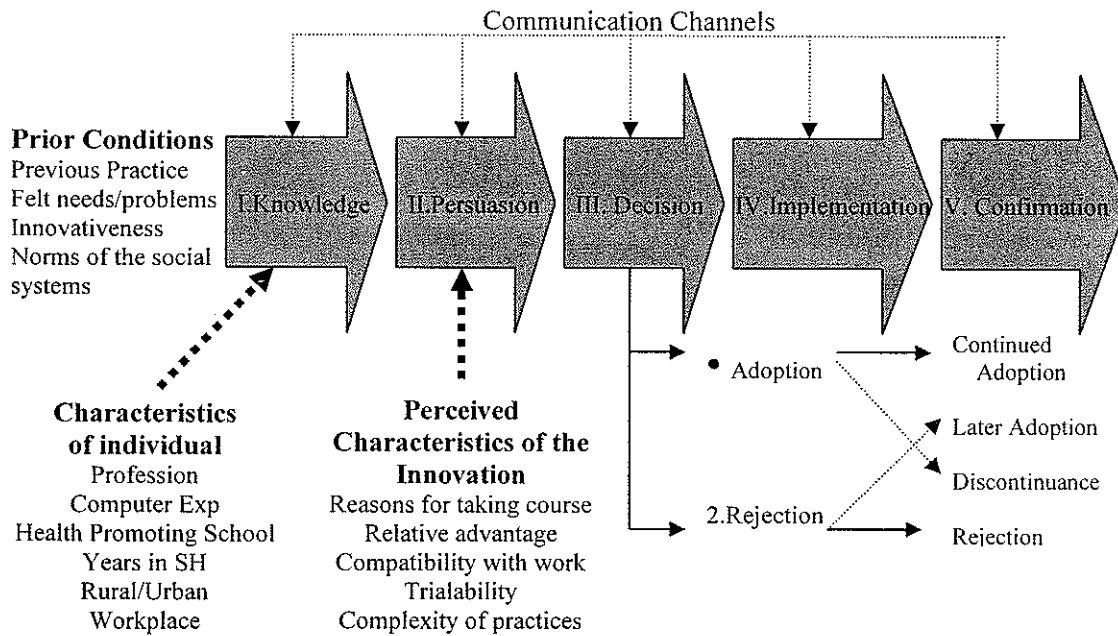
Yassi, A., Fernandez, N., Fernandez, A., Bonet, M., Tate, R. B., & Spiegel, J. (2003). Community participation in a multisectoral intervention to address health determinants in an inner-city community in central Havana. *J Urban.Health*, 80, 61-80.

Yeaton, W. H. & Sechrest, L. (1981). Critical dimensions in the choice and maintenance of successful treatments: strength, integrity and effectiveness. *Journal of Consulting and Clinical Psychology*, 49, 156-167.

## Appendix A

### Theoretical Framework

A Model of Stages in the Innovation-Decision Process



Adapted from Rogers (1995) Diffusion of Innovations



## Appendix B

### Interview Guide Related to School Health in Cuba

#### Demographics

Position:

Workplace:

Sex \_\_\_\_\_

Number of years working in SH - Rural \_\_\_\_\_ Urban \_\_\_\_\_

Presently - Rural \_\_\_\_\_ Urban \_\_\_\_\_

Previous educational experience / Credentials:

Additional continuing education in:

School Health

Other

SH Programs you are currently involved with:

International

National

Provincial

Municipal

- 1) What is your role/involvement in SH in your country? Have you been involved in SH programs in other countries or worked collaboratively with other countries? If so, please describe.
- 2) How would you define comprehensive SH? How is it defined within your programs?
- 3) Is there a national plan for SH in your country? What does this plan entail? How long has it existed? Has it evolved/changed over time?
- 4) Who is responsible for developing policies related to SH in your country? Do you have a list of these policies?
- 5) What sorts of structures/supports/capacities are in place to promote/ coordinate the development of SH programs? the implementation of SH programs? the evaluation of SH programs? Who is involved in these undertakings? (National? Provincial? Municipal?)

- 6) Are you familiar with the Health Promoting Schools initiative of the World Health Organization? (Explain what it entails if they are not familiar) **This initiative seeks to mobilize and strengthen health promotion and education activities at the local, national, regional and global levels. It is designed to improve the health of students, school personnel, families and other members of the community through schools. The HPS Initiative in the Americas consists of the following three main components 1) Comprehensive school health education; 2) Healthy and supportive environments and surroundings; 3) Adequate health services and food and nutrition programs.** Are you aware of a similar initiative in Cuba – Schools for Health Movement? If so, has it been successful? What are its limitations? How does a school become involved in this movement?
- 7) What other sorts of initiatives are currently underway in your country related to SH? Are there other initiatives you would like to see implemented?
- 8) What sorts of professional development is available to personnel working in SH? Are there other incentives to work in SH? Why did you choose to work in SH?
- 9) What do you think is essential to the success of SH programs/activities?
- 10) What are some of the current barriers to this success?
- 11) What role does/could the community play in SH programs/activities? (parents, organizations, agencies, etc.)
- 12) What are some of the indicators used to measure the success of a SH program/professional?

## Appendix C

### Self-report Questionnaire on Knowledge, Attitudes and Practices related to School Health



Faculty of Medicine  
Department of Community Health Sciences  
S111- 750 Bannatyne Avenue  
Winnipeg, Manitoba, Canada  
R3E 0W3  
Telephone: (204) 789 3655  
Fax: (204) 789 3905  
<http://www.umanitoba.ca/medicine/chs>



Instituto Nacional de Higiene,  
Epidemiología y Microbiología  
INFANTA No. 1158  
Codigo Postal: 10300  
Ciudad de la Habana, CUBA  
Telefonos: (537) 78 1479, 70 5531  
FAX: (537) 662404  
<http://www.informedsld.cu/webs/epidem/>

El cuestionario siguiente incluye preguntas relacionadas a los conocimientos, las actitudes y las habilidades que forman parte de la práctica de salud escolar. Como participante en el diplomado de salud escolar a distancia, usted fue seleccionado para participar en una investigación sobre el impacto que tiene el diplomado sobre las competencias y el desempeño de sus egresados. Por favor refiera a sus propias experiencias de trabajo en salud escolar para contestar a las siguientes preguntas.

Muchas gracias por su ayuda con esta investigación.

#### SECTION 1: Demográficos

1) ¿Cuál es su sexo?

Varón ..... 1  
Hembra ..... 2

2) ¿Cuál es su edad?

Nombre de años..... \_\_\_\_\_  
\_\_\_\_\_

3) ¿Cuál es su profesión?

Médico ..... 1  
Técnico ..... 2  
Psicólogo ..... 3  
Enfermera ..... 4  
Sociólogo ..... 5  
Maestro ..... 6  
Otro (describe) ..... 9

4) ¿Cuántos años de experiencia  
usted tiene en esta profesión?

Nombre de años..... \_\_\_\_\_

5) ¿Cuántos años usted está trabajando en salud escolar?

Menos de un año.....1  
1 a 3 años..... 2  
Mas de 3 años y menos de 5 años ....3

5 a 7 años..... 4  
Mas de 7 años y menos de 10 años .....5  
Mas de 10 años..... 6

6) ¿Donde usted trabaja? [Circunde tanto como se aplican.]

|                            |   |                          |    |                       |    |
|----------------------------|---|--------------------------|----|-----------------------|----|
| Circulo infantil .....     | 1 | Escuela secundaria ..... | 6  | Centro municipal...   | 11 |
| Escuela espécial .....     | 2 | Politécnico .....        | 7  | Centro provincial ... | 12 |
| Escuela primaria .....     | 3 | Universidad .....        | 8  | Centro nacional ..... | 13 |
| Escuela media .....        | 4 | Policlínico .....        | 9  | Otro (describe) ..... | 99 |
| Escuela pre-secundaria ... | 5 | Consultorio .....        | 10 |                       |    |

7) ¿Desde cuando usted trabaja en este lugar?

|                                        |   |
|----------------------------------------|---|
| Menos de un año .....                  | 1 |
| 1 a 3 años .....                       | 2 |
| Mas de 3 años y menos de 5 años .....  | 3 |
| 5 a 7 años .....                       | 4 |
| Mas de 7 años y menos de 10 años ..... | 5 |
| Mas de 10 años .....                   | 6 |

8) ¿Trabaja en una región rural y / o urbana?

|                      |   |
|----------------------|---|
| Rural .....          | 1 |
| Urbana .....         | 2 |
| Rural y urbana ..... | 3 |

9) ¿Si trabaja en una institución educacional, esta una institución interna, externa o semi-interna?

|                   |   |
|-------------------|---|
| Interna.....      | 1 |
| Externa.....      | 2 |
| Semi-interna..... | 3 |

10) ¿Si trabaja en una institución educacional, forma parte del movimiento de escuelas por la salud?

|         |   |
|---------|---|
| Si..... | 1 |
| No..... | 2 |

## SECTION 2: PRACTICAS EN SALUD ESCOLAR

1) ¿Cuando usted hace el diagnostico de salud de su institución educacional, tiene en cuenta las condiciones ambientales del hogar de sus educandos y educadores? (Circunde uno de los números.)

|                |                     |                |                   |              |                     |
|----------------|---------------------|----------------|-------------------|--------------|---------------------|
| <b>Siempre</b> | <b>Casi siempre</b> | <b>A veces</b> | <b>Casi nunca</b> | <b>Nunca</b> | <b>No aplicable</b> |
| 5              | 4                   | 3              | 2                 | 1            | 0                   |

¿Por qué? (Circunde uno de los números por cada una de las letras a), b), c) y d) que corresponde a su respuesta arriba.)

|    |                             |                          |                              |                         |                       |
|----|-----------------------------|--------------------------|------------------------------|-------------------------|-----------------------|
| a) | <b>Lo sé hacer muy bien</b> | <b>Lo sé hacer bien</b>  | <b>Lo sé hacer regular</b>   | <b>Lo sé hacer malo</b> | <b>No lo sé hacer</b> |
|    | 5                           | 4                        | 3                            | 2                       | 1                     |
| b) | <b>Me gusta hacerlo</b>     | <b>Estoy Indiferente</b> | <b>No me gusta hacerlo</b>   |                         |                       |
|    | 3                           | 2                        | 1                            |                         |                       |
| c) | <b>Lo creo importante</b>   | <b>Estoy Indiferente</b> | <b>No lo creo importante</b> |                         |                       |
|    | 3                           | 2                        | 1                            |                         |                       |

- Otra razón:

| <b>Siempre</b><br>5 | <b>Casi siempre</b><br>4 | <b>A veces</b><br>3 | <b>Casi nunca</b><br>2 | <b>Nunca</b><br>1 | <b>No aplicable</b><br>0 |
|---------------------|--------------------------|---------------------|------------------------|-------------------|--------------------------|
|---------------------|--------------------------|---------------------|------------------------|-------------------|--------------------------|

| a) | Lo sé hacer muy bien | Lo sé hacer bien | Lo sé hacer regular | Lo sé hacer malo | No lo sé hacer |
|----|----------------------|------------------|---------------------|------------------|----------------|
|    | 5                    | 4                | 3                   | 2                | 1              |

| b) | Me gusta<br>hacerlo | Estoy Indiferente | No me gusta<br>hacerlo |
|----|---------------------|-------------------|------------------------|
|    | 3                   | 2                 | 1                      |

| c) | Lo creo importante | Estoy Indiferente | No lo creo importante |
|----|--------------------|-------------------|-----------------------|
|    | 3                  | 2                 | 1                     |

| d) | Me exigen hacerlo | No me exigen hacerlo |
|----|-------------------|----------------------|
|    | 2                 | 1                    |

**Otra Razón:**

| <b>Siempre</b><br>5 | <b>Casi siempre</b><br>4 | <b>A veces</b><br>3 | <b>Casi nunca</b><br>2 | <b>Nunca</b><br>1 | <b>No aplicable</b><br>0 |
|---------------------|--------------------------|---------------------|------------------------|-------------------|--------------------------|
|---------------------|--------------------------|---------------------|------------------------|-------------------|--------------------------|

| a) | Lo sé hacer muy bien | Lo sé hacer bien | Lo sé hacer regular | Lo sé hacer malo | No lo sé hacer |
|----|----------------------|------------------|---------------------|------------------|----------------|
|    | 5                    | 4                | 3                   | 2                | 1              |

- |    |                    |                      |                       |
|----|--------------------|----------------------|-----------------------|
| b) | Me gusta hacerlo   | Estoy Indiferente    | No me gusta hacerlo   |
|    | 3                  | 2                    | 1                     |
| c) | Lo creo importante | Estoy Indiferente    | No lo creo importante |
|    | 3                  | 2                    | 1                     |
| d) | Me exigen hacerlo  | No me exigen hacerlo |                       |
|    | 2                  | 1                    |                       |

Otra razón: \_\_\_\_\_

- 4) ¿Usted aplica el enfoque de riesgo en la solución de los problemas de salud en su institución educacional?

|         |              |         |            |       |              |
|---------|--------------|---------|------------|-------|--------------|
| Siempre | Casi siempre | A veces | Casi nunca | Nunca | No aplicable |
| 5       | 4            | 3       | 2          | 1     | 0            |

¿Por qué? (Circunde uno de los números por cada una de las letras a), b), c) y d) que corresponde a su respuesta arriba.)

- |    |                      |                      |                       |                  |                |
|----|----------------------|----------------------|-----------------------|------------------|----------------|
| a) | Lo sé hacer muy bien | Lo sé hacer bien     | Lo sé hacer regular   | Lo sé hacer malo | No lo sé hacer |
|    | 5                    | 4                    | 3                     | 2                | 1              |
| b) | Me gusta hacerlo     | Estoy Indiferente    | No me gusta hacerlo   |                  |                |
|    | 3                    | 2                    | 1                     |                  |                |
| c) | Lo creo importante   | Estoy Indiferente    | No lo creo importante |                  |                |
|    | 3                    | 2                    | 1                     |                  |                |
| d) | Me exigen hacerlo    | No me exigen hacerlo |                       |                  |                |
|    | 2                    | 1                    |                       |                  |                |

Otra razón: \_\_\_\_\_

- 5) ¿Cuando usted hace la educación para la salud tiene en cuenta la percepción del riesgo de sus educandos?

|         |              |         |            |       |              |
|---------|--------------|---------|------------|-------|--------------|
| Siempre | Casi siempre | A veces | Casi nunca | Nunca | No aplicable |
| 5       | 4            | 3       | 2          | 1     | 0            |

¿Por qué? (Circunde uno de los números por cada una de las letras a), b), c) y d) que corresponde a su respuesta arriba.)

- |    |                                  |                                  |                                   |                              |                            |
|----|----------------------------------|----------------------------------|-----------------------------------|------------------------------|----------------------------|
| a) | <b>Lo sé hacer muy bien</b><br>5 | <b>Lo sé hacer bien</b><br>4     | <b>Lo sé hacer regular</b><br>3   | <b>Lo sé hacer malo</b><br>2 | <b>No lo sé hacer</b><br>1 |
| b) | <b>Me gusta hacerlo</b><br>3     | <b>Estoy Indiferente</b><br>2    | <b>No me gusta hacerlo</b><br>1   |                              |                            |
| c) | <b>Lo creo importante</b><br>3   | <b>Estoy Indiferente</b><br>2    | <b>No lo creo importante</b><br>1 |                              |                            |
| d) | <b>Me exigen hacerlo</b><br>2    | <b>No me exigen hacerlo</b><br>1 |                                   |                              |                            |

Otra razón: \_\_\_\_\_

6) ¿Usted hace la evaluación de riesgos es su institución educacional?

|                     |                          |                     |                        |                   |                          |
|---------------------|--------------------------|---------------------|------------------------|-------------------|--------------------------|
| <b>Siempre</b><br>5 | <b>Casi siempre</b><br>4 | <b>A veces</b><br>3 | <b>Casi nunca</b><br>2 | <b>Nunca</b><br>1 | <b>No aplicable</b><br>0 |
|---------------------|--------------------------|---------------------|------------------------|-------------------|--------------------------|

¿Por qué? (Circunde uno de los números por cada una de las letras a), b), c) y d) que corresponde a su respuesta arriba.)

- |    |                                  |                                  |                                   |                              |                            |
|----|----------------------------------|----------------------------------|-----------------------------------|------------------------------|----------------------------|
| a) | <b>Lo sé hacer muy bien</b><br>5 | <b>Lo sé hacer bien</b><br>4     | <b>Lo sé hacer regular</b><br>3   | <b>Lo sé hacer malo</b><br>2 | <b>No lo sé hacer</b><br>1 |
| b) | <b>Me gusta hacerlo</b><br>3     | <b>Estoy Indiferente</b><br>2    | <b>No me gusta hacerlo</b><br>1   |                              |                            |
| c) | <b>Lo creo importante</b><br>3   | <b>Estoy Indiferente</b><br>2    | <b>No lo creo importante</b><br>1 |                              |                            |
| d) | <b>Me exigen hacerlo</b><br>2    | <b>No me exigen hacerlo</b><br>1 |                                   |                              |                            |

Otra razón: \_\_\_\_\_

7) ¿Cuando usted tiene varios problemas de salud ambientales en su institución educacional usted utiliza el manejo de riesgo?

|                     |                          |                     |                        |                   |                          |
|---------------------|--------------------------|---------------------|------------------------|-------------------|--------------------------|
| <b>Siempre</b><br>5 | <b>Casi siempre</b><br>4 | <b>A veces</b><br>3 | <b>Casi nunca</b><br>2 | <b>Nunca</b><br>1 | <b>No aplicable</b><br>0 |
|---------------------|--------------------------|---------------------|------------------------|-------------------|--------------------------|

¿Por qué? (Circunde uno de los números por cada una de las letras a), b), c) y d) que corresponde a su respuesta arriba.)

- |    |                             |                             |                              |                         |                       |
|----|-----------------------------|-----------------------------|------------------------------|-------------------------|-----------------------|
| a) | <b>Lo sé hacer muy bien</b> | <b>Lo sé hacer bien</b>     | <b>Lo sé hacer regular</b>   | <b>Lo sé hacer malo</b> | <b>No lo sé hacer</b> |
|    | 5                           | 4                           | 3                            | 2                       | 1                     |
| b) | <b>Me gusta hacerlo</b>     | <b>Estoy Indiferente</b>    | <b>No me gusta hacerlo</b>   |                         |                       |
|    | 3                           | 2                           | 1                            |                         |                       |
| c) | <b>Lo creo importante</b>   | <b>Estoy Indiferente</b>    | <b>No lo creo importante</b> |                         |                       |
|    | 3                           | 2                           | 1                            |                         |                       |
| d) | <b>Me exigen hacerlo</b>    | <b>No me exigen hacerlo</b> |                              |                         |                       |
|    | 2                           | 1                           |                              |                         |                       |

Otra razón: \_\_\_\_\_

8) ¿Usted utiliza alguna estrategia de comunicación de riesgo en su institución educacional?

|                |                     |                |                   |              |                     |
|----------------|---------------------|----------------|-------------------|--------------|---------------------|
| <b>Siempre</b> | <b>Casi siempre</b> | <b>A veces</b> | <b>Casi nunca</b> | <b>Nunca</b> | <b>No aplicable</b> |
| 5              | 4                   | 3              | 2                 | 1            | 0                   |

¿Por qué? (Circunde uno de los números por cada una de las letras a), b), c) y d) que corresponde a su respuesta arriba.)

- |    |                             |                             |                              |                         |                       |
|----|-----------------------------|-----------------------------|------------------------------|-------------------------|-----------------------|
| a) | <b>Lo sé hacer muy bien</b> | <b>Lo sé hacer bien</b>     | <b>Lo sé hacer regular</b>   | <b>Lo sé hacer malo</b> | <b>No lo sé hacer</b> |
|    | 5                           | 4                           | 3                            | 2                       | 1                     |
| b) | <b>Me gusta hacerlo</b>     | <b>Estoy Indiferente</b>    | <b>No me gusta hacerlo</b>   |                         |                       |
|    | 3                           | 2                           | 1                            |                         |                       |
| c) | <b>Lo creo importante</b>   | <b>Estoy Indiferente</b>    | <b>No lo creo importante</b> |                         |                       |
|    | 3                           | 2                           | 1                            |                         |                       |
| d) | <b>Me exigen hacerlo</b>    | <b>No me exigen hacerlo</b> |                              |                         |                       |
|    | 2                           | 1                           |                              |                         |                       |

Otra razón: \_\_\_\_\_

9) ¿Usted forma los educandos y los educadores como promotores de salud en su institución educacional?

|                |                     |                |                   |              |                     |
|----------------|---------------------|----------------|-------------------|--------------|---------------------|
| <b>Siempre</b> | <b>Casi siempre</b> | <b>A veces</b> | <b>Casi nunca</b> | <b>Nunca</b> | <b>No aplicable</b> |
| 5              | 4                   | 3              | 2                 | 1            | 0                   |



**¿Por qué?** (Circunde uno de los números por cada una de las letras a), b), c) y d) que corresponde a su repuesta arriba.)

- |    |                                  |                                  |                                   |                              |                            |
|----|----------------------------------|----------------------------------|-----------------------------------|------------------------------|----------------------------|
| a) | <b>Lo sé hacer muy bien</b><br>5 | <b>Lo sé hacer bien</b><br>4     | <b>Lo sé hacer regular</b><br>3   | <b>Lo sé hacer malo</b><br>2 | <b>No lo sé hacer</b><br>1 |
| b) | <b>Me gusta hacerlo</b><br>3     | <b>Estoy Indiferente</b><br>2    | <b>No me gusta hacerlo</b><br>1   |                              |                            |
| c) | <b>Lo creo importante</b><br>3   | <b>Estoy Indiferente</b><br>2    | <b>No lo creo importante</b><br>1 |                              |                            |
| d) | <b>Me exigen hacerlo</b><br>2    | <b>No me exigen hacerlo</b><br>1 |                                   |                              |                            |

Otra razón: \_\_\_\_\_

10) ¿Cuándo va a darle la solución a los problemas de salud de los educandos de su institución educacional incorpora a la comunidad?

- |                     |                          |                     |                        |                   |                          |
|---------------------|--------------------------|---------------------|------------------------|-------------------|--------------------------|
| <b>Siempre</b><br>5 | <b>Casi siempre</b><br>4 | <b>A veces</b><br>3 | <b>Casi nunca</b><br>2 | <b>Nunca</b><br>1 | <b>No aplicable</b><br>0 |
|---------------------|--------------------------|---------------------|------------------------|-------------------|--------------------------|

**¿Por qué?** (Circunde uno de los números por cada una de las letras a), b), c) y d) que corresponde a su repuesta arriba.)

- |    |                                  |                                  |                                   |                              |                            |
|----|----------------------------------|----------------------------------|-----------------------------------|------------------------------|----------------------------|
| a) | <b>Lo sé hacer muy bien</b><br>5 | <b>Lo sé hacer bien</b><br>4     | <b>Lo sé hacer regular</b><br>3   | <b>Lo sé hacer malo</b><br>2 | <b>No lo sé hacer</b><br>1 |
| b) | <b>Me gusta hacerlo</b><br>3     | <b>Estoy Indiferente</b><br>2    | <b>No me gusta hacerlo</b><br>1   |                              |                            |
| c) | <b>Lo creo importante</b><br>3   | <b>Estoy Indiferente</b><br>2    | <b>No lo creo importante</b><br>1 |                              |                            |
| d) | <b>Me exigen hacerlo</b><br>2    | <b>No me exigen hacerlo</b><br>1 |                                   |                              |                            |

Otra razón: \_\_\_\_\_

11) ¿Usted utiliza el árbol de problema en la identificación y la búsqueda de alternativas de solución de los problemas en su institución educacional?

|                |                     |                |                   |              |                     |
|----------------|---------------------|----------------|-------------------|--------------|---------------------|
| <b>Siempre</b> | <b>Casi siempre</b> | <b>A veces</b> | <b>Casi nunca</b> | <b>Nunca</b> | <b>No aplicable</b> |
| 5              | 4                   | 3              | 2                 | 1            | 0                   |

¿Por qué? (Circunde uno de los números por cada una de las letras a), b), c) y d) que corresponde a su respuesta arriba.)

- |    |                                  |                                  |                                   |                              |                            |
|----|----------------------------------|----------------------------------|-----------------------------------|------------------------------|----------------------------|
| a) | <b>Lo sé hacer muy bien</b><br>5 | <b>Lo sé hacer bien</b><br>4     | <b>Lo sé hacer regular</b><br>3   | <b>Lo sé hacer malo</b><br>2 | <b>No lo sé hacer</b><br>1 |
| b) | <b>Me gusta hacerlo</b><br>3     | <b>Estoy Indiferente</b><br>2    | <b>No me gusta hacerlo</b><br>1   |                              |                            |
| c) | <b>Lo creo importante</b><br>3   | <b>Estoy Indiferente</b><br>2    | <b>No lo creo importante</b><br>1 |                              |                            |
| d) | <b>Me exigen hacerlo</b><br>2    | <b>No me exigen hacerlo</b><br>1 |                                   |                              |                            |

Otra razón: \_\_\_\_\_

12) ¿Usted hace la evaluación del plan de acción de su institución educacional?

|                |                     |                |                   |              |                     |
|----------------|---------------------|----------------|-------------------|--------------|---------------------|
| <b>Siempre</b> | <b>Casi siempre</b> | <b>A veces</b> | <b>Casi nunca</b> | <b>Nunca</b> | <b>No aplicable</b> |
| 5              | 4                   | 3              | 2                 | 1            | 0                   |

¿Por qué? (Circunde uno de los números por cada una de las letras a), b), c) y d) que corresponde a su respuesta arriba.)

- |    |                                  |                                  |                                   |                              |                            |
|----|----------------------------------|----------------------------------|-----------------------------------|------------------------------|----------------------------|
| a) | <b>Lo sé hacer muy bien</b><br>5 | <b>Lo sé hacer bien</b><br>4     | <b>Lo sé hacer regular</b><br>3   | <b>Lo sé hacer malo</b><br>2 | <b>No lo sé hacer</b><br>1 |
| b) | <b>Me gusta hacerlo</b><br>3     | <b>Estoy Indiferente</b><br>2    | <b>No me gusta hacerlo</b><br>1   |                              |                            |
| c) | <b>Lo creo importante</b><br>3   | <b>Estoy Indiferente</b><br>2    | <b>No lo creo importante</b><br>1 |                              |                            |
| d) | <b>Me exigen hacerlo</b><br>2    | <b>No me exigen hacerlo</b><br>1 |                                   |                              |                            |

Otra razón: \_\_\_\_\_

13) ¿Usted hace la elaboración de proyectos de intervención en su institución educativa?

|                |                     |                |                   |              |                     |
|----------------|---------------------|----------------|-------------------|--------------|---------------------|
| <b>Siempre</b> | <b>Casi siempre</b> | <b>A veces</b> | <b>Casi nunca</b> | <b>Nunca</b> | <b>No aplicable</b> |
| 5              | 4                   | 3              | 2                 | 1            | 0                   |

¿Por qué? (Circunde uno de los números por cada una de las letras a), b), c) y d) que corresponde a su respuesta arriba.)

- |    |                             |                             |                              |                         |                       |
|----|-----------------------------|-----------------------------|------------------------------|-------------------------|-----------------------|
| a) | <b>Lo sé hacer muy bien</b> | <b>Lo sé hacer bien</b>     | <b>Lo sé hacer regular</b>   | <b>Lo sé hacer malo</b> | <b>No lo sé hacer</b> |
|    | 5                           | 4                           | 3                            | 2                       | 1                     |
| b) | <b>Me gusta hacerlo</b>     | <b>Estoy Indiferente</b>    | <b>No me gusta hacerlo</b>   |                         |                       |
|    | 3                           | 2                           | 1                            |                         |                       |
| c) | <b>Lo creo importante</b>   | <b>Estoy Indiferente</b>    | <b>No lo creo importante</b> |                         |                       |
|    | 3                           | 2                           | 1                            |                         |                       |
| d) | <b>Me exigen hacerlo</b>    | <b>No me exigen hacerlo</b> |                              |                         |                       |
|    | 2                           | 1                           |                              |                         |                       |

Otra razón: \_\_\_\_\_

14) ¿Usted realiza la Vigilancia Ambiental en su institución educativa?

|                |                     |                |                   |              |                     |
|----------------|---------------------|----------------|-------------------|--------------|---------------------|
| <b>Siempre</b> | <b>Casi siempre</b> | <b>A veces</b> | <b>Casi nunca</b> | <b>Nunca</b> | <b>No aplicable</b> |
| 5              | 4                   | 3              | 2                 | 1            | 0                   |

¿Por qué? (Circunde uno de los números por cada una de las letras a), b), c) y d) que corresponde a su respuesta arriba.)

- |    |                             |                             |                              |                         |                       |
|----|-----------------------------|-----------------------------|------------------------------|-------------------------|-----------------------|
| a) | <b>Lo sé hacer muy bien</b> | <b>Lo sé hacer bien</b>     | <b>Lo sé hacer regular</b>   | <b>Lo sé hacer malo</b> | <b>No lo sé hacer</b> |
|    | 5                           | 4                           | 3                            | 2                       | 1                     |
| b) | <b>Me gusta hacerlo</b>     | <b>Estoy Indiferente</b>    | <b>No me gusta hacerlo</b>   |                         |                       |
|    | 3                           | 2                           | 1                            |                         |                       |
| c) | <b>Lo creo importante</b>   | <b>Estoy Indiferente</b>    | <b>No lo creo importante</b> |                         |                       |
|    | 3                           | 2                           | 1                            |                         |                       |
| d) | <b>Me exigen hacerlo</b>    | <b>No me exigen hacerlo</b> |                              |                         |                       |
|    | 2                           | 1                           |                              |                         |                       |

Otra razón: \_\_\_\_\_

15) ¿Usted hace Análisis de la Situación de Salud en su institución educativa?

|                |                     |                |                   |              |                     |
|----------------|---------------------|----------------|-------------------|--------------|---------------------|
| <b>Siempre</b> | <b>Casi siempre</b> | <b>A veces</b> | <b>Casi nunca</b> | <b>Nunca</b> | <b>No aplicable</b> |
| 5              | 4                   | 3              | 2                 | 1            | 0                   |

¿Por qué? (Circunde uno de los números por cada una de las letras a), b), c) y d) que corresponde a su repuesta arriba.)

- |    |                             |                             |                              |                         |                       |
|----|-----------------------------|-----------------------------|------------------------------|-------------------------|-----------------------|
| a) | <b>Lo sé hacer muy bien</b> | <b>Lo sé hacer bien</b>     | <b>Lo sé hacer regular</b>   | <b>Lo sé hacer malo</b> | <b>No lo sé hacer</b> |
|    | 5                           | 4                           | 3                            | 2                       | 1                     |
| b) | <b>Me gusta hacerlo</b>     | <b>Estoy Indiferente</b>    | <b>No me gusta hacerlo</b>   |                         |                       |
|    | 3                           | 2                           | 1                            |                         |                       |
| c) | <b>Lo creo importante</b>   | <b>Estoy Indiferente</b>    | <b>No lo creo importante</b> |                         |                       |
|    | 3                           | 2                           | 1                            |                         |                       |
| d) | <b>Me exigen hacerlo</b>    | <b>No me exigen hacerlo</b> |                              |                         |                       |
|    | 2                           | 1                           |                              |                         |                       |

Otra razón: \_\_\_\_\_

16) ¿Usted realiza Promoción de Salud en su institución educacional?

|                |                     |                |                   |              |                     |
|----------------|---------------------|----------------|-------------------|--------------|---------------------|
| <b>Siempre</b> | <b>Casi siempre</b> | <b>A veces</b> | <b>Casi nunca</b> | <b>Nunca</b> | <b>No aplicable</b> |
| 5              | 4                   | 3              | 2                 | 1            | 0                   |

¿Por qué? (Circunde uno de los números por cada una de las letras a), b), c) y d) que corresponde a su repuesta arriba.)

- |    |                             |                             |                              |                         |                       |
|----|-----------------------------|-----------------------------|------------------------------|-------------------------|-----------------------|
| a) | <b>Lo sé hacer muy bien</b> | <b>Lo sé hacer bien</b>     | <b>Lo sé hacer regular</b>   | <b>Lo sé hacer malo</b> | <b>No lo sé hacer</b> |
|    | 5                           | 4                           | 3                            | 2                       | 1                     |
| b) | <b>Me gusta hacerlo</b>     | <b>Estoy Indiferente</b>    | <b>No me gusta hacerlo</b>   |                         |                       |
|    | 3                           | 2                           | 1                            |                         |                       |
| c) | <b>Lo creo importante</b>   | <b>Estoy Indiferente</b>    | <b>No lo creo importante</b> |                         |                       |
|    | 3                           | 2                           | 1                            |                         |                       |
| d) | <b>Me exigen hacerlo</b>    | <b>No me exigen hacerlo</b> |                              |                         |                       |
|    | 2                           | 1                           |                              |                         |                       |

Otra razón: \_\_\_\_\_

Da una definición corta por los termos siguientes:

Enfoque de riesgo: \_\_\_\_\_

---

---

---

Evaluación de riesgo: \_\_\_\_\_

---

---

---

Manejo de riesgo: \_\_\_\_\_

---

---

---

Comunicación de riesgo: \_\_\_\_\_

---

---

---

Percepción de riesgo: \_\_\_\_\_

---

---

---

Árbol de problema: \_\_\_\_\_

---

---

---

Plan de acción: \_\_\_\_\_

---

---

---

Proyectos de intervención: \_\_\_\_\_

---

---

---

Gracias por su ayuda con esta investigación.

## Appendix D

### Problem-based Questionnaire related to School Health Practices



Faculty of Medicine  
Department of Community Health Sciences  
S111- 750 Bannatyne Avenue  
Winnipeg, Manitoba, Canada  
R3E 0W3  
Telephone: (204) 789 3655  
Fax: (204) 789 3905  
<http://www.umanitoba.ca/medicine/chs>



Instituto Nacional de Higiene,  
Epidemiología y Microbiología  
INFANTA No. 1158  
Codigo Postal: 10300  
Ciudad de la Habana, CUBA  
Telefonos: (537) 78 1479, 70 5531  
FAX: (537) 662404  
<http://www.infomed.sld.cu/webs/epidem/>

Como participante en el diplomado de salud escolar a distancia, usted fue seleccionado para participar en una investigación sobre el impacto que tiene el diplomado de salud escolar sobre las competencias y el desempeño de sus egresados. Las cuatro situaciones siguientes sirven para evaluar un cambio en los conocimientos aplicados en el campo de salud escolar y refieren a los objetivos del diplomado de salud escolar. Necesita aproximadamente 2 horas para terminarlo. Por favor, escribe legible.

Muchas gracias por su ayuda con esta investigación.

#### Situación 1

Se analizó la morbilidad y la mortalidad de 3568 niños entre 6-12 años de las escuelas primarias en un municipio de la ciudad.

Se obtuvieron los siguientes resultados:

#### Morbilidad de niños de 6-12 años

| Enfermedad      | Provincia | Municipio |
|-----------------|-----------|-----------|
| ERA             | 5523.43   | 11714     |
| EDA             | 846.24    | 3093.6    |
| Varicela        | 241.22    | 270.2     |
| MEV             | 16.8      | 20.0      |
| Hepatitis       | 67.4      | 120.2     |
| Escarlatina     | 5.81      | 10.7      |
| Sífilis         | 2.4       | 4.6       |
| Blenorragia     | 2.6       | 4.3       |
| Intento Suicida | 1.2       | 2.5       |
| Leptospirosis   | 1.4       | 1,2       |

Tasas promedio anual x 100000 niños del grupo de edad estimado.

## Mortalidad por causas en niños de 6-12 años

| Causas                                        | Provincia | municipio |
|-----------------------------------------------|-----------|-----------|
| <b>Accidentes</b>                             | 13.12     | 29.6      |
| <b>Enfermedades infecciosas del S.N.C.</b>    | 3.9       | 5,66      |
| <b>Tumores</b>                                | 3.39      | 4,36      |
| <b>Anomalías congénitas</b>                   | 3.16      | 4,57      |
| <b>Homicidio</b>                              | 2.76      | 3,66      |
| <b>Enfermedades del aparato respiratorio.</b> | 2.11      | 5,23      |
| <b>Otras violencias</b>                       | 1.34      | 2,3       |
| <b>Otras enfermedades bacterianas</b>         | 1.05      | 3.66      |
| <b>Enfermedades víricas</b>                   | 1.0       | 1.33      |
| <b>Suicidio</b>                               | 0.55      | 3.66      |

Tasas promedio anual x 100000 niños del grupo de edad estimado.

1. Haga un análisis de los resultados de ambas tablas.

En este municipio el desempleo es muy alto, la mayoría de los niños viven en viviendas inadecuadas, muchos de ellos en cuartos en solares, con poca ventilación, con un elevado índice de hacinamiento, las cocinas en casi todos los casos están dentro del único cuarto de la vivienda y se cocina con kerosene. Las relaciones interpersonales entre los convivientes son muy malas, incluyendo la violencia. En cuanto a la educación de los hijos, en el hogar se emplean además métodos violentos, tales como amenazas y castigo corporal, también se fumaba dentro de las viviendas en presencia de los niños y en muchas ocasiones éstos compran los cigarrillos en los establecimientos cercanos por orden de sus padres, incluso un buen número de niños de alrededor de 10 años ya han comenzado a fumar de vez en cuando. La situación económica de la mayoría de las familias es mala, por lo que los niños son mal alimentados, con poca variedad en la dieta, presentándose muchos casos con bajo peso y baja talla para su edad.

El abastecimiento de agua a la población del municipio es de acueducto, la frecuencia es de cada tres días en horario nocturno desde las 6:00 p.m. a 6:00 a.m. El estado técnico de la red de distribución es deficiente, presentándose múltiples salideros en las calles. El volumen de agua que recibe la población es poca teniendo que almacenarla en todo tipo de depósitos, la mayoría de los habitantes lo hacen en condiciones higiénicas inadecuadas. Las conductoras permanecen gran parte del tiempo vacías favoreciendo la aparición de presiones negativas dentro de la red.

El alcantarillado es de tipo separativo con muchos años de explotación. La población servida ha sobrepasado la capacidad de diseño a lo que se une un mantenimiento deficiente. Existen con frecuencia desbordamientos de albañales de importancia significativa. La recogida de los desechos sólidos se caracteriza por la inestabilidad y la

falta de sistematicidad en la recolección, que junto al inadecuado almacenamiento domiciliario favorecen la proliferación de microvertebrados y vectores en todos los consejos populares del municipio. Otro de los problemas sanitarios es la tenencia de animales domésticos (perros y gatos) y de otros destinados a la alimentación por parte de la población, fundamentalmente aves de corral y cerdos, cuyos desechos se vierten al alcantarillado.

El incremento del nivel sonoro por el tránsito urbano transgrede los valores aceptados en las normas sanitarias, provocando molestias a los residentes del lugar. Este municipio está sometido a la acción de contaminantes por centros laborales y refinerías ubicados a barlovento del territorio además de tener numerosas fuentes emisoras de pequeña magnitud, ubicadas sin el perímetro sanitario normado.

2. ¿Qué relación encuentra Ud. entre la situación ambiental descrita y las dos tablas anteriores?

Ud. es un médico de la familia ubicado en una escuela primaria de este municipio:

3. ¿De qué le serviría esta información al realizar el diagnóstico de la situación de salud de su institución?
4. ¿Qué indicadores y determinantes de salud utilizaría para realizar este diagnóstico?
5. ¿Qué haría después de realizar el diagnóstico de la situación de salud para llegar a darle solución a lo identificado y cómo lo haría?
6. Seleccione uno de los problemas identificados y realice un árbol de problemas.

Como médico de esta escuela, usted debe realizar un perfil de proyecto de intervención para solucionar el problema de salud que seleccionó para el árbol de problemas.

7. ¿Cómo Ud. realizaría este perfil de proyecto? ¿Qué aspectos incluiría y de qué le serviría cada aspecto del árbol de problemas?

## **Situación 2**

Ud. es el médico que atiende una escuela interna de oficios donde estudian 1000 adolescentes de ambos sexos con edades entre 14 y 18 años de edad. Los alumnos viven durante una semana en albergues estudiantiles donde conviven 70 estudiantes por dormitorio. A Ud. le consultan para que de criterios sobre las características físicas y psicosociales que deben tener los baños y los cuartos de esos estudiantes.

1. Diga que Ud. recomendaría y ¿Por qué?



El director de esa misma escuela le consulta porque los maestros están muy preocupados ya que en las actividades teóricas las adolescentes del sexo femenino tienen mejor rendimiento que sus condiscípulos varones, pero sin embargo y sobre todo en los oficios como tornería, fresado y construcción, los varones rinden más y pueden realizar las actividades prácticas con mayor facilidad y durante mayor tiempo que las muchachas. Por otra parte ellos plantean que no se explican esto ya que tanto en las clases teóricas como en las prácticas laborales, los profesores son muy equitativos dándoles las mismas tareas y normas a unos y a otras. Además ocurre una gran cantidad de accidentes en las actividades.

2. ¿Cómo Ud. explicaría estas situaciones planteadas?

Dentro de esta misma escuela hay una tasa de fracaso escolar de 30% y el rendimiento promedio es inferior al promedio provincial.

3. Identifica diez factores que puedan influir en el no aprendizaje de estos alumnos y cinco causas del abandono de los estudios por las niñas, los niños, las y los adolescentes.

### **Situación 3**

En un centro preuniversitario con una matrícula de 1,021 estudiantes, de ellos 265 son externos. En dicha institución se produjo un brote de gastroenteritis. Cincuenta y nueve alumnos solicitaron atención médica en la enfermería del centro entre las 18:30 del 21 de mayo y las 17:00 horas del 22 de mayo.

1. Calcula la tasa de ataque de gastroenteritis.

Todos los estudiantes enfermos que fueron atendidos en la enfermería vivían en los albergues del preuniversitario. El total de estudiantes albergados ascendía a 756.

2. Calcula la tasa de ataque (por cada 100)

En el Cuadro siguiente se indican los albergues en los que se alojaban los 59 casos conocidos y el número y sexo de los ocupantes de cada uno.

3. Calcula la tasa de ataque de los dos albergues más afectados en forma conjunta.

| Albergue | Sexo | Matrícula | Casos |
|----------|------|-----------|-------|
| A        | F    | 80        | 4     |
| B        | F    | 62        | 2     |
| C        | F    | 89        | 2     |
| D        | F    | 61        | 3     |

|              |   |     |    |
|--------------|---|-----|----|
| E            | F | 53  | 5  |
| F            | M | 35  | 1  |
| G            | M | 63  | 1  |
| H            | F | 103 | 4  |
| I            | M | 35  | 15 |
| J            | M | 37  | 0  |
| K            | F | 34  | 2  |
| L            | M | 62  | 18 |
| M            | M | 32  | 2  |
| N            | M | 10  | 0  |
| <b>Total</b> |   | 756 | 59 |

Se advirtió sin tardanza que el brote afectaba a un número considerablemente mayor de estudiantes que el atendido en la enfermería. Se prepararon cuestionarios a fin de obtener datos adicionales respecto de la naturaleza y el alcance del brote. Estos formularios se distribuyeron a una muestra representativa y aleatoria de la población estudiantil. Se repartieron 511 cuestionarios entre los estudiantes. Al analizar los 384 cuestionarios devueltos, se puso de manifiesto que habían ocurrido 127 casos de gastroenteritis.

4. De los estudiantes que devolvieron los cuestionarios, ¿qué porcentaje enfermó de gastroenteritis?
5. ¿Cuál fue la verdadera tasa de ataque de gastroenteritis por cada 100 estudiantes en los albergues?

Con base en los datos del cuestionario correspondiente a los 127 casos identificados, se preparó la siguiente lista de frecuencia de síntomas:

| Síntoma          | Número de estudiantes. |
|------------------|------------------------|
| Diarrea          | 113                    |
| Cólicos          | 93                     |
| Dolor de cabeza  | 54                     |
| Náusea           | 45                     |
| Fiebre           | 9                      |
| Heces con sangre | 8                      |
| Vómitos          | 7                      |

6. Determine el porcentaje de casos con diarrea.

7. Determine el porcentaje de casos con vómitos.

El análisis de las historias de la exposición a comidas específicas de los encuestados puso de manifiesto que la tasa de ataque del desayuno el 21 de Mayo fue la más alta, entonces se supone que esto fue la fuente probable de infección. Luego de haber identificado la comida durante la cual los estudiantes probablemente estuvieron expuestos a la infección y sabiendo en qué momento comenzaron a manifestar los síntomas, se pudieron calcular los períodos de incubación de los 127 estudiantes enfermos. Con base en una lista de períodos de incubación con intervalos de una hora se preparó el siguiente resumen:

| <b>Período de incubación en horas.</b> | <b>Número de estudiantes</b> | <b>Número acumulativo de estudiantes.</b> |
|----------------------------------------|------------------------------|-------------------------------------------|
| 8                                      | 29                           | 29                                        |
| 9                                      | 14                           | 43                                        |
| 10                                     | 19                           | 62                                        |
| 11                                     | 19                           | 81                                        |
| 12                                     | 46                           | 127                                       |
| Total                                  | 127                          |                                           |

El momento de máxima intensidad del brote se produjo entre las 18 y 19 horas del 21 de Mayo,

8. ¿Cómo identificaría usted el período probable de exposición?

9. Con la información que tiene hasta el momento ¿Qué proceso morboso considera Ud. que ocurrió?

Con base en la información derivada de los cuestionarios se determinó que 251 estudiantes ingirieron alimentos variados a la hora del desayuno el día viernes 21 de mayo. A fin de individualizar el alimento causante del brote se preparó el cuadro siguiente:

| <b>Alimento o bebida</b>     | <b>Personas que ingirieron el alimento o bebida específica</b> |              |              |  | <b>Personas que no ingirieron el alimento o bebida específica</b> |              |              |  |
|------------------------------|----------------------------------------------------------------|--------------|--------------|--|-------------------------------------------------------------------|--------------|--------------|--|
|                              | <b>Enfermos</b>                                                | <b>Sanos</b> | <b>Total</b> |  | <b>Enfermos</b>                                                   | <b>Sanos</b> | <b>Total</b> |  |
| <b>Tortilla</b>              | 16                                                             | 36           | 52           |  | 87                                                                | 103          | 190          |  |
| <b>Pastel de estofado de</b> | 12                                                             | 57           | 69           |  | 92                                                                | 80           | 172          |  |

|                        |    |     |     |  |    |     |     |  |
|------------------------|----|-----|-----|--|----|-----|-----|--|
| <b>cordero</b>         |    |     |     |  |    |     |     |  |
| <b>Jamón</b>           | 98 | 78  | 176 |  | 7  | 82  | 89  |  |
| <b>Mantequilla</b>     | 58 | 54  | 112 |  | 39 | 69  | 108 |  |
| <b>Torta de frutas</b> | 32 |     | 71  |  | 63 | 82  | 145 |  |
| <b>Pan</b>             | 4  | 5   | 9   |  | 95 | 126 | 221 |  |
| <b>Jugo de Naranja</b> | 19 | 29  | 48  |  | 80 | 102 | 182 |  |
| <b>Yogurt</b>          | 62 | 77  | 139 |  | 39 | 56  | 95  |  |
| <b>Leche</b>           | 91 | 127 | 218 |  | 12 | 13  | 25  |  |
| <b>Café</b>            | 23 | 19  | 42  |  | 78 | 114 | 192 |  |

10. Complete el cuadro efectuando los cálculos necesarios.
11. ¿Cuál de los alimentos o bebidas fue la fuente más probable de infección de este brote?
12. ¿Cuáles son las medidas que ud. tomaría para prevenir un brote de enfermedad transmitidas por alimentos en un centro educacional?

#### **Situación 4**

Ud. es el médico de una escuela de enseñanza secundaria semi-interna con una matrícula de 600 alumnos. En los análisis del agua por la prueba de ortotolidina de esta escuela se ha encontrado un cloro residual de 0.5 ppm, el número de coliformes totales es de 12 UFC/100ml. El suministro de agua es por pipas y los residuales líquidos van al sistema de alcantarillado. La escuela se sitúa al lado de una fábrica de contenedores plásticos que recientemente se cerró por varias violaciones industriales. Los padres son muy inquietos por la salud de sus niños y niñas. Algunos han reportado que sus niños no se sienten bien por causa de la fábrica.

La ventilación es unilateral. Las aulas están divididas por tabiques que no llegan hasta el techo. En la medición del nivel sonoro de las aulas se encontró que algunas tenían un nivel de 60 dba, otras de 70 dba y dos llegaron a 80 dba. En la medición de la iluminación 3 aulas tuvieron 250 lux, dos tuvieron 280 lux y el resto 300 lux. El taller de práctica laboral tuvo una iluminación de 500 lux. Las aulas están pintadas de color azul claro y verde claro. Las aulas tienen las dimensiones siguientes: 7 metros de largo, 6 metros de ancho y 2.5 metros de altura. Hay 3 grupos en la escuela que tienen más de 40 alumnos.

Hubo un brote de gastroenteritis la semana pasada que se determinó fue causado por un plato de pollo. En el último mes se detectaron 7 casos de agresiones físicas entre los estudiantes y 4 casos de violencia verbal de los profesores con los alumnos. Se constató que había 370 estudiantes que habían ingerido bebidas alcohólicas en el último año, 40 de los cuales ingerían todas las semanas, de ellos 15 habían tenido episodios de embriaguez,

4 de los que se habían embriagado son casos de desventaja social por ser hijos de alcohólicos, la dinámica familiar estaba alterada en estos casos. También 55 de los estudiantes fumaban y 20 de los profesores. Hubo 15 casos de Blenorragia y 6 de Sífilis este mes. También, hubo 6 embarazadas durante este año.

1. Exponga los factores de riesgo a la salud que encontró en esta institución y clasifíquelos. Diga por qué son factores de riesgo y que pueden producir.
2. ¿Como usted realizaría una evaluación de riesgos en esta escuela? Explique las etapas de la evaluación de riesgo. ¿Considera que tiene toda la información para realizarla ¿Por qué?
3. ¿Cuál sería su estrategia a seguir para establecer un programa de comunicación de riesgos?
4. ¿Qué Ud. haría con esta información para darle solución?

## Appendix E

### Questionnaire related to School Health Diploma



Faculty of Medicine  
Department of Community Health Sciences  
S111- 750 Bannatyne Avenue  
Winnipeg, Manitoba, Canada  
R3E 0W3  
Telephone: (204) 789 3655  
Fax: (204) 789 3905  
<http://www.umanitoba.ca/medicine/chs>



Instituto Nacional de Higiene,  
Epidemiología y Microbiología  
INFANTA No. 1158  
Codigo Postal: 10300  
Ciudad de la Habana, CUBA  
Telefonos: (537) 78 1479, 70 5531  
FAX: (537) 662404  
<http://www.infomed.sld.cu/webs/epidem/>

Pronto comenzarás el Diplomado de Salud Escolar a Distancia, te solicitamos que nos respondas algunas preguntas, que pueden ayudar a perfeccionar el Diplomado y a mejorar nuestra comunicación.

Gracias por tu cooperación.

Nombre: \_\_\_\_\_

Especialidad: \_\_\_\_\_ Cargo: \_\_\_\_\_

Provincia: \_\_\_\_\_ Municipio: \_\_\_\_\_

Años de experiencia en Salud Escolar: \_\_\_\_\_

1. Por qué motivo te has matriculado en el Diplomado de Salud Escolar a Distancia?

2. Has pasado algún curso de Salud Escolar antes?

Si                      Cuál o cuáles?

No

3. Has participado en algún otro curso o distancia?

Si                      Cuál?

No

4. Qué expectativa, tienes en relación al Diplomado de Salud Escolar a Distancia?

5. Qué aspectos positivos, te gustaría que tuviera el Diplomado

6. Qué aspectos negativos te gustaría que no tuviera el Diplomado?

## Appendix F

### School Health Performance Indicators

| 1) Utilizar las regularidades del crecimiento y el desarrollo de los menores de 20 años para la promoción y la protección de su salud |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| ¿Qué evaluar?                                                                                                                         | Indicadores                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Cualidad                                                                                                      |
| Revisar <b>X</b> porcentaje de las historias clínicas / exámenes físicos de la población estudiantil.                                 | <p>Nombre de exámenes físicos que incluye los indicadores de crecimiento:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <i>peso / talla</i></li> <li><input type="checkbox"/> <i>peso por edad</i></li> <li><input type="checkbox"/> <i>talla por edad</i></li> <li><input type="checkbox"/> <i>valoración del estado nutricional / alimentación</i></li> </ul> <p>De esos exámenes, nombre que tiene identificado irregularidades del crecimiento.</p> <p>Nombre que tiene un análisis detallado de las irregularidades del crecimiento.</p> <p>Nombre que tiene un plan de intervención para solucionar los problemas.</p> <p>Nombre de exámenes físicos que incluye un:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <i>examen detallado del desarrollo psicomotor</i></li> <li><input type="checkbox"/> <i>examen detallado de la capacidad de trabajo físico</i></li> </ul> <p>De esos exámenes, nombre que tiene identificado irregularidades del desarrollo psicomotor.</p> <p>De esos, nombre de niños que tiene irregularidades de la capacidad de trabajo físico.</p> <p>Nombre que tiene un análisis detallado de las irregularidades del desarrollo psicomotor.</p> <p>Nombre que tiene un análisis detallado de las irregularidades de la capacidad de trabajo físico.</p> <p>Nombre que tiene plan de intervención para solucionar los problemas relacionado al desarrollo psicomotor.</p> <p>Nombre que tiene un plan de intervención para solucionar los</p> | <p>Todos los problemas son identificados, Todas las causas son determinadas, Todas las soluciones son as.</p> |



|                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                             |
|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
|                                                                                                             | problemas relacionado a la capacidad de trabajo físico.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                             |
| 2) <b>Aplicar el enfoque epidemiológico en la identificación de los problemas de salud de su población.</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                             |
| <b>¿Qué evaluar?</b>                                                                                        | <b>Indicadores</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Cualidad</b>                                                                             |
| Diagnostico de salud / Análisis del diagnostico de salud                                                    | <p><b>El diagnostico de salud incluye los indicadores del estado de salud poblacional siguiente:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Índice de absentismo promedio y causas médicas de absentismo de educando y trabajadores.</li> <li><input type="checkbox"/> Índice de deserción escolar y causas.</li> <li><input type="checkbox"/> Resultados del aprendizaje.</li> <li><input type="checkbox"/> Proceso de Crecimiento y Desarrollo (%) de la población <ul style="list-style-type: none"> <li>• Peso (porcentaje de individuos en los canales percentiles de peso/edad/sexo).</li> <li>• Talla (porcentaje de individuos en los canales percentiles de talla/edad/sexo).</li> <li>• Relación peso/talla (evaluación nutricional).</li> <li>• Desarrollo físico funcional (según el estudio fisiométrico que se realiza por los profesores de educación física al comienzo de los cursos escolares).</li> </ul> </li> </ul> | Si un problema esta identificado tiene que identificar la causa y dar solución al problema. |
| Diagnostico de salud / Análisis del diagnostico de salud                                                    | <p><b>El diagnostico de salud incluye los datos de morbilidad de su población siguiente:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Dispensarización</li> <li><input type="checkbox"/> Prevalencia de enfermedades no transmisibles y complicaciones según grupo de edad, sexo y factores de riesgo</li> <li><input type="checkbox"/> Incidencia de enfermedades transmisibles según grupo de edad, sexo y factores de riesgo.</li> <li><input type="checkbox"/> Prevalencia e incidencia de discapacidades (tipo, cantidad de individuos y porcentaje por grupo</li> </ul>                                                                                                                                                                                                                                                                                                                                                              | Si un problema esta identificado tiene que identificar la causa y dar solución al problema. |

|                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                    |
|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
|                                                                          | <p>de edad, sexo y factores de riesgo).</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Prevalencia de niños o adolescentes con atención especializada por causa, edad y sexo.</li> <li><input type="checkbox"/> Incidencia de accidentes y otras violencias</li> <li><input type="checkbox"/> Debe incluirse las afecciones diagnosticadas a través del estudio del absentismo.</li> <li><input type="checkbox"/> Situación estomatológica de alumnos y profesores.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                    |
| <p>Diagnostico de salud<br/>Análisis de la<br/>situación de salud</p>    | <p><b>El diagnostico de salud incluye los datos de mortalidad de su población siguiente:</b><br/>Análisis detallado de cada fallecido:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> edad.</li> <li><input type="checkbox"/> sexo.</li> <li><input type="checkbox"/> causas de la muerte.</li> <li><input type="checkbox"/> factores que concurrieron en el proceso que condujo al fallecimiento.</li> <li><input type="checkbox"/> lugar del fallecimiento.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                    |
| <p>Diagnostico de salud<br/>/ Análisis de la<br/>situación de salud.</p> | <p>El diagnostico de salud incluye un análisis detallado de <b>los datos sobre la atención médica.</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Atenciones en consultas</li> <li><input type="checkbox"/> Días de consultas perdidos</li> <li><input type="checkbox"/> Cantidad de días e índice de absentismo del personal de salud</li> <li><input type="checkbox"/> Curaciones por causas</li> <li><input type="checkbox"/> Recorridos realizados a las áreas (cantidad de días y porcentaje de cumplimiento según programación por tipo de local y diferenciado por tipo de personal de salud)</li> <li><input type="checkbox"/> Visitas de los interconsultantes del grupo básico al centro diferenciado por tipo de interconsultante (cantidad y porcentaje de cumplimiento de acuerdo a la programación, cantidad de casos interconsultados, recorridos realizados a las instalaciones del centro, cantidad de deficiencias detectadas por locales de la institución y porcentaje de cumplimiento).</li> <li><input type="checkbox"/> Evaluaciones realizadas a niños y</li> </ul> | <p>Si un problema esta identificado tiene que identificar la causa y dar solución al problema.</p> |

|                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                           | <p>adolescentes con problemas de aprendizaje o necesitados de atención especializada.</p> <p><input type="checkbox"/> Casos remitidos a especialidades (cantidad y tipo de especialidad)</p> <p><input type="checkbox"/> Atención estomatológica recibida.</p> <p><input type="checkbox"/> Casos atendidos en Servicios de urgencia y causas</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                           |
|                                                                                                                                                                                                           | <p><input type="checkbox"/> Pacientes ingresados de los remitidos (cantidad, porcentaje y causas). Identificar si el ingreso es en el hogar, hospital institución del tercer nivel, otros.</p> <p><input type="checkbox"/> Visitas al hogar realizadas a los enfermos o ausentistas. (cantidad y porcentaje).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                           |
| <b>3) Utilizar el enfoque ecológico y manejar esos determinantes del estado de salud (uso de determinantes de la institución, hogar y comunidad) para identificar problemas de salud de su población.</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                           |
| <b>¿Qué evaluar?</b>                                                                                                                                                                                      | <b>Indicadores</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b><u>Cualidad</u></b>                                                                                                                                                                                                                                                    |
| <p>Diagnostico de salud / Análisis de la situación de salud.</p>                                                                                                                                          | <p><b>El diagnostico de salud incluye las condiciones higiénicas - sanitarias de la institución.</b></p> <p><input type="checkbox"/> Suministro de agua (tipo y frecuencia de recepción)</p> <p><input type="checkbox"/> Calidad del agua de consumo</p> <p><input type="checkbox"/> Estado de las instalaciones sanitarias y cantidad por alumnos</p> <p><input type="checkbox"/> Situación de la disposición de residuales líquidos y sólidos</p> <p><input type="checkbox"/> Índice de hacinamiento</p> <p><input type="checkbox"/> Ventilación (relación área de ventana / área de piso) de los diferentes locales</p> <p><input type="checkbox"/> Iluminación de los locales</p> <p><input type="checkbox"/> Nivel de ruido de las aulas</p> <p><input type="checkbox"/> Cumplimiento de las normas de comedores, cocina y almacenes de alimentos.</p> <p><input type="checkbox"/> Fuentes de contaminación</p> <p><input type="checkbox"/> Existencia de vectores y criaderos</p> <p><input type="checkbox"/> Presencia de animales</p> <p><input type="checkbox"/> Condiciones del entorno</p> <p><input type="checkbox"/> Características de las vías que rodean</p> | <p>Identificar como esas condiciones y características pueden influir a la salud de su población.</p> <p>Manejar esas condiciones y características para influir la salud de su población.</p> <p>Establecer un plan de acción.</p> <p>Implementar el plan de acción.</p> |

|                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                            |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                | <p>el centro.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Características de su flora y fauna.</li> <li><input type="checkbox"/> Presencia de salideros (de acueducto, de albañal).</li> <li><input type="checkbox"/> Campos de labor agrícola.</li> <li><input type="checkbox"/> Situación social.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                            |
| <p>Diagnostico de salud / Historia clínica</p> | <p><b>El diagnostico de salud incluye las características socio - culturales</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Régimen de vida.</li> <li><input type="checkbox"/> Carga docente.</li> <li><input type="checkbox"/> Relaciones profesor - alumno y alumno - alumno de los grupos.</li> <li><input type="checkbox"/> Actividades recreativas (Tipo, cantidad y porcentaje de participación).</li> <li><input type="checkbox"/> Actividades culturales (Tipo, cantidad y porcentaje de participación).</li> <li><input type="checkbox"/> Actividades deportivas (Tipo, cantidad y porcentaje de participación).</li> <li><input type="checkbox"/> Actividades de Educación para la Salud (Tipo, cantidad y porcentaje de participación).</li> <li><input type="checkbox"/> Actividades laborales de los alumnos (Tipo, frecuencia, porcentaje de participación).</li> <li><input type="checkbox"/> Funcionamiento de cada grupo (Clima emocional, relaciones, comunicación, participación, convivencia social).</li> </ul> | <p>Identificar como esas características y actividades pueden influir a la salud de su población. Manejar esas condiciones y características para influir la salud de su población. Establecer un plan de acción.</p>      |
| <p>Historia clínica</p>                        | <p><b>La historia clínica incluye las características socioculturales y económicas de las familias de los alumnos</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Condiciones de vida.</li> <li><input type="checkbox"/> Nivel educacional de los padres.</li> <li><input type="checkbox"/> Modos y estilos de vida de la familia.</li> <li><input type="checkbox"/> Hábitos tóxicos de los padres.</li> <li><input type="checkbox"/> Violencia</li> <li><input type="checkbox"/> Enfermedades</li> <li><input type="checkbox"/> Alimentación adecuada</li> <li><input type="checkbox"/> Relaciones interpersonales.</li> <li><input type="checkbox"/> Trabajo de los padres.</li> <li><input type="checkbox"/> Nivel económico de la familia.</li> <li><input type="checkbox"/> Cohesión de la familia</li> </ul>                                                                                                                                                                                                                    | <p>Identificar como esas condiciones y características pueden influir a la salud de su población. Manejar esas condiciones y características, cuando sea posible, para influir la salud de su población. Establecer un</p> |

|                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                       | <ul style="list-style-type: none"> <li><input type="checkbox"/> Satisfacción de las necesidades físicas y de afecto.</li> <li><input type="checkbox"/> Situación social.</li> </ul> <p><b>La historia clínica incluye las características higiénicas - sanitarias de las familias de los alumnos</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Suministro de agua (tipo y frecuencia de recepción)</li> <li><input type="checkbox"/> Calidad del agua de consumo</li> <li><input type="checkbox"/> Estado de las instalaciones sanitarias</li> <li><input type="checkbox"/> Situación de la disposición de residuales líquidos y sólidos</li> <li><input type="checkbox"/> Índice de hacinamiento</li> <li><input type="checkbox"/> Condiciones de la vivienda</li> <li><input type="checkbox"/> Ventilación</li> <li><input type="checkbox"/> Nivel de ruido</li> <li><input type="checkbox"/> Fuentes de contaminación</li> <li><input type="checkbox"/> Existencia de vectores y criaderos</li> <li><input type="checkbox"/> Presencia de animales</li> <li><input type="checkbox"/> Condiciones del entorno</li> <li><input type="checkbox"/> Presencia de salideros (de acueducto, de albañal).</li> </ul> | plan de acción.                                                                                                                                                                                  |
| <b>4) Aplicar el enfoque de riesgo, incluyendo la percepción, la identificación, manejo y comunicación en la identificación y solución de los problemas de salud de su población.</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                  |
| <b>¿Qué evaluar?</b>                                                                                                                                                                  | <b>Indicadores</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Cualidad</b>                                                                                                                                                                                  |
| Diagnostico de salud                                                                                                                                                                  | <p><b>El diagnostico de salud incluye los factores de riesgos del ambiente de las instituciones y su entorno</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Peligros potenciales de accidentes.</li> <li><input type="checkbox"/> Nivel de iluminación.</li> <li><input type="checkbox"/> Nivel de ruido.</li> <li><input type="checkbox"/> Nombre de mobiliario escolar por aula.</li> <li><input type="checkbox"/> Hacinamiento por aula y hebergues.</li> <li><input type="checkbox"/> Proceso de alimentación.</li> <li><input type="checkbox"/> Suministro y calidad del agua.</li> <li><input type="checkbox"/> Disposición de residuales sólidos y líquidos.</li> <li><input type="checkbox"/> Presencia de vectores y criaderos.</li> <li><input type="checkbox"/> Presencia de animales y plantas dañinas.</li> <li><input type="checkbox"/> Nivel de contaminación atmosférica.</li> </ul>                                                                                                                                                                                                                                                                                                             | <p>Identificar cómo esos factores poden influir a la salud de su población.</p> <p>Dar solucione a los problemas.</p> <p>Establecer un plan de acción.</p> <p>Implementar un plan de acción.</p> |

|                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                | <b>El diagnostico de salud incluye los factores de riesgo del ambiente de práctica y laboral</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Transporte.</li> <li><input type="checkbox"/> Talleres.</li> <li><input type="checkbox"/> Huertos escolares.</li> <li><input type="checkbox"/> Campos de cultivo.</li> <li><input type="checkbox"/> Labores agrícolas.</li> <li><input type="checkbox"/> Equipos e instrumentos de trabajo.</li> <li><input type="checkbox"/> Sustancias químicas.</li> <li><input type="checkbox"/> Otros.</li> </ul>                                                                                         | Identificar cómo esos factores pueden influir a la salud de su población. Establecer un plan de acción. Implementar un plan de acción. |
|                                                                                                                | <b>El diagnostico de salud incluye los factores de riesgo del proceso docente educativo y de las características socioculturales de:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> La institución y el hogar (incluye violencia intra familiar). (ver arriba)</li> <li><input type="checkbox"/> Características socioeconómicas de las familias de los alumnos. (ver arriba)</li> <li><input type="checkbox"/> Caracterización psicopedagógica de los alumnos.</li> </ul>                                                                                                                                                                 |                                                                                                                                        |
| Historia clínica                                                                                               | La historia clínica incluye un análisis detallado de <b>los factores de riesgo personales de cada alumno:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Hábitos tóxicos.</li> <li><input type="checkbox"/> Condiciones de higiene personal.</li> <li><input type="checkbox"/> Inadaptación al ambiente de la institución.</li> <li><input type="checkbox"/> Relaciones sexuales precoces e inestables.</li> <li><input type="checkbox"/> Antecedentes de embarazos precoces.</li> <li><input type="checkbox"/> Antecedentes de enfermedades de transmisión sexual.</li> <li><input type="checkbox"/> Comportamientos violento.</li> </ul> | Identificar cómo esos factores pueden influir a la salud de su población.                                                              |
| Plan de acción / Registro diario/ Otro documentos / Entrevista con medico, enfermera o director de la escuela. | <ul style="list-style-type: none"> <li><input type="checkbox"/> Tiene una estrategia para identificar la percepción de riesgo con su población.</li> <li><input type="checkbox"/> Tiene un método / estrategia para identificar los riesgos de su población.</li> <li><input type="checkbox"/> Ha identificado todos los riesgos de su población.             <ul style="list-style-type: none"> <li>• Nombre de riesgos identificado</li> </ul> </li> <li><input type="checkbox"/> Ha evaluado todos los riesgos.             <ul style="list-style-type: none"> <li>• Nombre de riesgos evaluado.</li> </ul> </li> </ul>                                      |                                                                                                                                        |

|                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                | <input type="checkbox"/> Tiene un programa / estrategia para comunicar los riesgos.<br><input type="checkbox"/> Maneja todos los riesgos identificados. <ul style="list-style-type: none"> <li>• Nombre de riesgos manejado</li> </ul> <input type="checkbox"/> Tiene un plan de acción identificado para solucionar los problemas.<br><input type="checkbox"/> Ha implementado el plan de acción para solucionar los problemas.                                                           |                 |
| <b>5) Aplicar metodología para desarrollar los factores protectores del medio ambiente, así como la resiliencia en su población.</b>                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |
| <b>Que evaluar?</b>                                                                                                                                                                                                                                                                                                                                                                            | <b>Indicadores</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Cualidad</b> |
| Diagnostico de salud / análisis de la situación de salud / plan de acción                                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/> Han identificado en el diagnostico de salud los factores protectores de su medio ambiente.<br><input type="checkbox"/> Nombre de factores protectores identificado.<br><input type="checkbox"/> Nombre de actividades que desarrolla / promovía los factores protectores.<br><input type="checkbox"/> Ha identificado la resiliencia en su población.<br><input type="checkbox"/> Nombre de actividades que desarrolla / promovía la resiliencia de su población. |                 |
| <b>6) Aplicar el enfoque ecológico al analizar las determinantes del proceso salud-enfermedad de su población.</b>                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |
| <b>Que evaluar?</b>                                                                                                                                                                                                                                                                                                                                                                            | <b>Indicadores</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Cualidad</b> |
|                                                                                                                                                                                                                                                                                                                                                                                                | Relacionado con el 2, 3 y 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |
| <b>7) Confeccionar el diagnóstico de la situación de salud con adecuado enfoque higiénico, epidemiológico y ecológico.</b>                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |
| <b>Que evaluar?</b>                                                                                                                                                                                                                                                                                                                                                                            | <b>Indicadores</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Cualidad</b> |
|                                                                                                                                                                                                                                                                                                                                                                                                | Relacionado con el 2, 3 y 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |
| <b>8) Aplicar las técnicas y los procedimientos necesarios para identificar y controlar las condiciones del medio ambiente general y en particular el de las instituciones educativas, incluyendo el proceso docente educativo y su influencia en el crecimiento y desarrollo en particular y en general sobre el estado de salud de los niños y adolescentes, así como en su aprendizaje.</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |
| <b>Que evaluar?</b>                                                                                                                                                                                                                                                                                                                                                                            | <b>Indicadores</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Cualidad</b> |
|                                                                                                                                                                                                                                                                                                                                                                                                | Relacionado con el 2, 3, 4 y 5<br><input type="checkbox"/> Identifica un método de priorización (i.e. Hanlon) en el análisis de la situación de salud<br><input type="checkbox"/> Elabora un arbol de problemas<br><input type="checkbox"/> Elabora un arbol de objetivos                                                                                                                                                                                                                  |                 |

|                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                         | <input type="checkbox"/> Elabora un perfil de proyecto                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                 |
| <b>9) Utilizar el aprendizaje de los educandos como indicador de su estado de salud.</b>                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                 |
| <b>Que evaluar?</b>                                                                                                                                                                                     | <b>Indicadores</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Cualidad</b>                                                                                                                 |
|                                                                                                                                                                                                         | Relacionado con el 2, 3, 4 y 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                 |
| <b>10) Propiciar la participación de la comunidad y de los propios educandos, en la identificación y búsqueda de solución de los problemas de salud de las niñas, los niños, las y los adolescentes</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                 |
| <b>Que evaluar?</b>                                                                                                                                                                                     | <b>Indicadores</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Cualidad</b>                                                                                                                 |
| Análisis de la Situación de Salud. Documentos de la reunión que se hizo para hacer el análisis de la situación de salud y plan de acción                                                                | <input type="checkbox"/> Ha buscado la participación de la comunidad para hacer el análisis de la situación de salud y plan de acción.<br><input type="checkbox"/> Nombre de:<br>a. estudiantes,<br>b. educandos,<br>c. padres, organizaciones comunitarias, otro<br><input type="checkbox"/> Nombre de reuniones que se hizo durante el año con la comunidad.<br><input type="checkbox"/> Otras actividades que han organizado durante el año con la comunidad para identificar y buscar soluciones a los problemas de salud. | Cualidad del análisis que se hizo con la comunidad<br>Cualidad del plan de acción y el seguimiento del plan de acción elaborado |
| <b>11) Propiciar la participación de las niñas, los niños, las y los adolescentes como promotores de salud.</b>                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                 |
| <b>Que evaluar?</b>                                                                                                                                                                                     | <b>Indicadores</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Cualidad</b>                                                                                                                 |
| Entrevista con médico, enfermera y estudiantes promotores.                                                                                                                                              | <input type="checkbox"/> Tiene un programa de promotores de salud en su escuela<br><input type="checkbox"/> Nombre de promotores de salud en la escuela<br><input type="checkbox"/> Nombre de sesiones educativas hecho para desarrollar los promotores de salud.<br><input type="checkbox"/> Nombre de actividades planificado para los promotores.<br><input type="checkbox"/> Porcentaje de participación de la población estudiantil en las actividades planificado para los promotores.                                   |                                                                                                                                 |
| <b>12) Elaborar proyectos de intervención como parte de las alternativas de solución de los problemas de salud de las niñas, los niños y las y los adolescentes.</b>                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                 |
| <b>Que evaluar?</b>                                                                                                                                                                                     | <b>Indicadores</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Cualidad</b>                                                                                                                 |
| Análisis de la                                                                                                                                                                                          | <input type="checkbox"/> Nombre de proyectos de                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Incluye todos                                                                                                                   |



|                                                                                                                            |                                                                                                                                                                       |                                          |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| situación de salud /<br>Plan de acción /<br>Perfil de proyecto                                                             | intervención terminado en el ultimo<br>año con éxito.<br><input type="checkbox"/> Nombre de propuestas / perfiles de<br>proyectos elaborado en el ultimo<br>año.      | los etapas del<br>perfil de<br>proyecto. |
| <b>13) Utilizar los sistemas de vigilancia como alternativas de solución a los problemas de salud y sus determinantes.</b> |                                                                                                                                                                       |                                          |
| <b>Que evaluar?</b>                                                                                                        | <b>Indicadores</b>                                                                                                                                                    | <b>Cualidad</b>                          |
|                                                                                                                            | <input type="checkbox"/> Tiene sistema de vigilancia en su<br>area de salud.<br><input type="checkbox"/> Participan en la elaboración de un<br>sistema de vigilancia. |                                          |

## Appendix G

### Letter of Support from INHEM



Instituto Nacional de Higiene, Epidemiología y Microbiología  
INFANTA No. 1158 e/ LLINAS Y CLAVEL. Código Postal: 10 300  
Ciudad de la Habana, CUBA



Centro Colaborador de la OMS en el área de Salud de la vivienda

Teléfonos: (537) 78 1479, 70 5531 al 34 FAX: (537) 66 2404 E-Mail: [Director@heinst.sld.cu](mailto:Director@heinst.sld.cu)  
WEB: <http://infonew.sld.cu/instituciones/inhem2/inhem.htm>

June 7, 2001

Ms. Jeanne Gallagher  
Program Officer  
Scholarships and Exchanges Programs Division  
Association of Universities and Colleges of Canada  
600-350 Albert Street  
Ottawa, Canada  
K1R 1B1

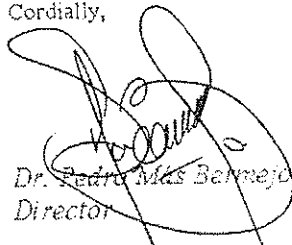
Dear Madam,

I am writing this letter in support of the research activity of Ms. Leanne Leclair, a graduate student from the University of Manitoba who has recently begun working with various members of our School Health Department here at the Instituto Nacional de Higiene, Epidemiología, y Microbiología (INHEM). Following various discussions with staff at INHEM, it was decided collectively that it would be very beneficial for Leanne to conduct research evaluating the computer mediated distance education school health diploma that has recently been developed by various members of our School Health Department.

While INHEM's partnership with the University of Manitoba is not a new one, partnerships in the area of School Health are quite new. Hence, we look forward to developing this new partnership and hope to continue to expand this network into other areas of research in the years to come.

We are strongly committed to the success of this research project and will continue to work collaboratively with Leanne to ensure a successful outcome. I hope that you will consider her application for funding through the Canada-Latin America and the Caribbean Research Exchange Grants.

Cordially,

  
Dr. Pedro Mas Barneja  
Director

## Appendix H

### Letter of Application to Health Research Ethics Board

October 9, 2001

Dr. Alan Katz  
Chair, Health Research Ethics Board  
University of Manitoba  
Bannatyne Campus  
P126 Pathology Building  
770 Bannatyne Avenue  
R3E 0W3

Dear Dr. Katz,

I am a graduate student enrolled in the Masters programme in the Department of Community Health Sciences at the University of Manitoba. As a partial fulfillment of my degree I am interested in conducting research related to School Health in Cuba.

The following is my formal submission to the Health Research Ethics Board. The proposed research study will be completed in Cuba under the supervision of members from the Department of Community Health Sciences – Dr. Annalee Yassi and Dr. Bob Tate - at the University of Manitoba and the Department of School Health at the Instituto Nacional de Higiene, Epidemiologia y Microbiologia (INHEM). I will be the principal investigator of this study entitled – “Development of a questionnaire and indicators to measure change in knowledge, attitudes and practices in school health following a computer mediated distance education school health diploma in Cuba.”

You will find enclosed:

- ◆ a completed submission form (15 copies)
- ◆ a protocol synopsis (15 copies)
  - ◆ 2 appendices (6 copies of each)
    - ◆ 1 semi-structured interview guide for individuals working in governmental school health programs/ departments in Cuba.
    - ◆ 1 semi-structured interview guide for past and future participants of a computer mediated distance education school health diploma
- ◆ 2 research participant information and consent forms (15 copies of each)
  - ◆ 1 for participation in qualitative semi-structured interviews
  - ◆ 1 for participation in completion of a questionnaire
- ◆ a letter of support from the director of INHEM (6 copies)
- ◆ the principal investigator's Curriculum Vitae (1 copy)

As well, there are a few matters that I would like to draw to the Board's attention. As I am collaborating with INHEM to complete the proposed research study, I was uncertain of whose letterhead I should use on the consent forms, so I have created my own combining the University of Manitoba and INHEM's letterheads. As the research is a collaborative study being completed in Cuba with a one of the National Institute's of research, I felt this was the most appropriate choice for a letterhead. However, I would like the board's direction on this matter. As well, the consent forms will be translated into Spanish and back translated into English following the Board's approval of the consent forms submitted for their review.

I have chosen not to include the phone number of the University of Manitoba Faculty of Medicine Research Ethics Board in the consent form as I feel it would be inappropriate given that most Cubans do not have access to long distance dialling, they would incur a cost, and many would require Spanish speaking persons to answer their questions. Therefore, a contact number for head of the ethics committee of the host institute, the Instituto Nacional de Higiene Epidemiologia y Microbiologia has been provided to ensure objective input to questions that the participants may have about their rights when participating in research, unless the Research Ethics Board has another suggestion. As well, a letter of approval from this committee is forthcoming. In the meantime, I have attached a letter of support from the Director of INHEM addressed to Ms. Jeanne Gallagher of the AUCC which was included in a recent grant obtained from AUCC-IDRC to complete the proposed research study.

As part of the proposed research, a questionnaire is to be developed and distributed to the participants for their responses. The questionnaire will only be finalized upon completion of the qualitative interviews as these will inform the development of the questionnaire. Hence, the questionnaire has not been enclosed with this submission.

I am hoping to begin the qualitative research as soon as possible, once the University of Manitoba Research Ethics Board has granted me their approval. I will be in Cuba as of October 21, and will be available via e-mail at \_\_\_\_\_ for correspondence with the board. I eagerly await your comments/ feedback.

Cordially,

Leanne Leclair B.A., B.H.Sc.(O.T.)  
Graduate Student  
Department of Community Health Sciences  
University of Manitoba

## Appendix I

### Letter of Approval from the Health Research Ethics Board



UNIVERSITY  
OF MANITOBA

BANNATYNE CAMPUS  
Research Ethics Boards

P126-770 Bannatyne Avenue  
Winnipeg, Manitoba  
Canada R3E 0W3  
Tel: (204) 789-3255  
Fax: (204) 789-3414

#### APPROVAL FORM

Principal Investigator: Leanne Leclair  
Supervisor: Dr. Annalee Yassie

Protocol Reference Number: H2001:180  
Date: December 7, 2001

Protocol Title: Development of Indicators to Measure Quality of Practice in School Health and a Questionnaire to Measure Changes in Knowledge, Attitudes and Practices in Health and Education Professionals Working in School Health in Cuba

The following are approved for use:

- Protocol
- Research Participant Information and Consent Form for Participation in the Interviews (Version 1.0 dated 10/9/2001)
- Research Participant Information and Consent Form for Participation in the Testing of the Questionnaire (Version 1.0 dated 10/9/2001)
- Interview Guide Related to School Health in Cuba

The above was approved by Dr. A. Katz, Chair, Health Research Ethics Board, Bannatyne Campus, University of Manitoba on behalf of the committee per your letter dated November 30, 2001. The Research Ethics Board is organized and operates according to Health Canada/ICH Good Clinical Practices, Tri-Council Policy Statement, and the applicable laws and regulations of Manitoba. The membership of this Research Ethics Board complies with the membership requirements for Research Ethics Boards defined in Division 5 of the *Food and Drug Regulations*.

This approval is valid for one year only. A study status report must be submitted annually and must accompany your request for reapproval. Any significant changes of the protocol and informed consent form should be reported to the Chair for consideration in advance of implementation of such changes. The REB must be notified regarding discontinuation or study closure.

This approval is for the ethics of human use only. For the logistics of performing the study, approval should be sought from the relevant institution, if required.

Sincerely yours,

Alan Katz, MB., Ch.B., MSc., CCFP, FCFP.  
Chair,  
Health Research Ethics Board  
Bannatyne Campus

Please quote the above protocol reference number on all correspondence.  
Inquiries should be directed to the REB Secretary.  
Telephone: 789-3255 Fax: 789-3414

## Appendix I

### Letter of Approval from the Health Research Ethics Board



UNIVERSITY  
OF MANITOBA

BANNATYNE CAMPUS  
Research Ethics Boards

P126-770 Bannatyne Avenue  
Winnipeg, Manitoba  
Canada R3E 0W3  
Tel: (204) 789-3255  
Fax: (204) 789-3414

#### APPROVAL FORM

Principal Investigator: Leanne Leclair  
Supervisor: Dr. Annalee Yassie

Protocol Reference Number: H2001:180  
Date: December 7, 2001

Protocol Title: Development of Indicators to Measure Quality of Practice in School Health and a Questionnaire to Measure Changes in Knowledge, Attitudes and Practices in Health and Education Professionals Working in School Health in Cuba

The following are approved for use:

- Protocol
- Research Participant Information and Consent Form for Participation in the Interviews (Version 1.0 dated 10/9/2001)
- Research Participant Information and Consent Form for Participation in the Testing of the Questionnaire (Version 1.0 dated 10/9/2001)
- Interview Guide Related to School Health in Cuba

The above was approved by Dr. A. Katz, Chair, Health Research Ethics Board, Bannatyne Campus, University of Manitoba on behalf of the committee per your letter dated November 30, 2001. The Research Ethics Board is organized and operates according to Health Canada/ICH Good Clinical Practices, Tri-Council Policy Statement, and the applicable laws and regulations of Manitoba. The membership of this Research Ethics Board complies with the membership requirements for Research Ethics Boards defined in Division 5 of the *Food and Drug Regulations*.

This approval is valid for one year only. A study status report must be submitted annually and must accompany your request for reapproval. Any significant changes of the protocol and informed consent form should be reported to the Chair for consideration in advance of implementation of such changes. The REB must be notified regarding discontinuation or study closure.

This approval is for the ethics of human use only. For the logistics of performing the study, approval should be sought from the relevant institution, if required.

Sincerely yours,

Alan Katz, MB., Ch.B., MSc., CCFP, FCFP.  
Chair,  
Health Research Ethics Board  
Bannatyne Campus

Please quote the above protocol reference number on all correspondence.  
Inquiries should be directed to the REB Secretary.  
Telephone:                      / Fax: