



National Collaborating Centre
for Infectious Diseases

Centre de collaboration nationale
des maladies infectieuses

Purple Paper

The Settings Approach in Public Health: Thinking about Schools in Infectious Disease Prevention and Control

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1. Introduction

School is a place where children learn and develop the life skills to function and thrive. Schools are thus one of the most important settings for children's physical, emotional and intellectual growth. Given that most children spend so much time in schools, they are also an important setting for public health interventions and an opportunity for health monitoring and surveillance. Schools are also the work environment for teachers and administrators, and a setting for many adult volunteers.

The purpose of this Purple Paper is to consider the settings approach to health promotion in schools, specifically with respect to infectious disease, and to stimulate considerations for the development of a framework to further advance partnerships and collaboration between public health and the education sector in Canada. It is also intended to provide a context for considerations and reviews of more specific policy options for prevention and control of infectious diseases in schools as well as in many other settings.

2. The Settings Approach

The World Health Organization (WHO) defines a setting as “the place or social context in which people engage in daily activities in which environmental, organizational, and personal factors interact to affect health and wellbeing” (1). The settings approach to health promotion considers the multiple, interacting components that make up a whole system and adopts interventions that

integrate these components to minimize risk factors and conditions that contribute to disease (1-5). The goal of the settings approach is to create supportive environments for optimal health (4). The model's key principles include flexibility, community participation, partnership, empowerment and equity (1).

The principle of *flexibility* can also be recognizing that a setting is a complex and dynamic system interconnected with other systems and will include diverse participants with inherent tensions that will require an adaptability to what works within the setting (2, 3). *Community participation* is about engaging the community stakeholders at all levels to share in the whole process and ensures relevance, commitment, and sustainability where the work will be carried out. *Partnerships* are essential in providing resources and capacity to complete the work. The concept of *empowerment* was analyzed by Rodwell in 1996, and is defined as a process of enabling people to take control and make decisions about their lives with the defining attributes of being a helping process, a partnership which values self and others, a process with mutual decision-making, resources, opportunities, and authority, and the freedom to make choices and accept responsibility (6). *Equity* is a principle about tackling disparities and is defined by Braveman in 2003 as the absence of systemic disparities (in the social determinants of health) between groups with different positions in a social hierarchy (7). An example is that since higher academic achievement or a positive attitude about school are associated with positive health behaviours (8), an equity approach would work to have every child getting the opportunity to succeed in school with the ability to reach their potential. This means that children at greater risk of leaving school or with lower participation in school may require more resources or more innovative support to graduate.

3. Schools as Settings for Public Health

Schools have long been used as a setting to provide health services such as nursing and dental care; more recently, public health nurses have provided infectious disease prevention through education, vaccinations, and other resources such as counselling. Schools can also provide a practical

setting for health surveillance, population health assessment, and research.

The health promoting schools (HPS) concept was developed by the European Network of Health Promoting Schools (ENHPS) in 1992 as a WHO initiative to develop the school as a setting for health promotion; HPS have been implemented in the United Kingdom, Europe, and Australia (5). The WHO defines a health promoting school as “a place where all members of the school community work together to provide students with integrated and positive experiences and structures which promote and protect their health” (9, p.2). The HPS outlines three main components: 1) a formal health curriculum, 2) the school environment, and 3) the school/community relationship (5). Canada and the United States have adopted a similar Comprehensive School Health Program (CSHP) approach which is defined as “an integrated set of planned sequential, school affiliated strategies, activities, and services designed to promote optimal physical, emotional, social and educational development in students” (5). This program’s goal is to involve and support families in the context of local community needs, resources, standards, and requirements (5).

The Canadian Association for School Health (CASH) began in 1989 to advocate for comprehensive school health programs and to promote public and professional awareness of school health issues (10, 11). In 2011, the Public Health Agency of Canada, announced funding to the Pan-Canadian Joint Consortium for School Health which is a partnership of Canada's Federal, Provincial and Territorial governments, whose mission is to provide leadership and support a comprehensive approach to school health by building the capacity of the education and health sectors to collaborate (12, 13). Healthy school concepts have been integrated into provincial school systems and are increasingly focused on food and obesity, physical activity, and mental health, including bullying, drug use and suicide.

Allensworth et al. (2011) call educators “natural partners” in health promotion, as educational achievement is associated with health status (14). The *Health Behaviour in School-aged Children Study* of 2008 demonstrated that students in Canada who

thought of school positively or who had higher academic achievement were less likely to engage in health-compromising behaviours (8). A quasi-experimental designed study in Australia found that students in schools using the HPS model had significantly better scores on resilience and protective resources that reduce the negative effects of risk exposure (15). Similarly, there is evidence that health interventions are associated with academic achievement and graduation rates (14, 16-19). These associations suggest that a collaboration that is supportive and attentive to both educational achievement and overall health could have cumulative gains toward optimal growth and development (14, 20). In addition, schools are potential settings to reduce inequalities, by identifying and supporting at-risk children and their families, using outreach methods where appropriate.

4. Settings Approach Theory

There has been much work towards the theoretical structure of the settings approach to guide intervention design and implementation and to bridge the gap between theory and practice (18). Paton et al. (2005) designed a healthy living and working model that focused on whole system thinking and change focus through a schema with five essential features, a framework that is built upon the determinants of health, and a process to stimulate and implement change (21). They identify the essential features as:

- 1) the organization being the primary unit for change,
- 2) a focus on addressing the determinants rather than just the symptoms of diminished health,
- 3) an integration of approaches to all stakeholders, 4) a preference for common actions to address multiple situations, and
- 4) a holistic view of health (21,p.84).

Dooris examined the settings approach as a sociological model, where complex systems are integrated, interrelated, inter-dependent, and interconnected with different elements and noted that each setting as an open system that is part of a greater whole (4). He discussed change as being developed and managed within that whole, value-based system, balancing organizational development with high visibility projects, top down

commitment with bottom up stakeholder engagement and the health promotion strategy with core business concerns (4,p.56). In 2009, Poland et al. proposed a comprehensive analytical framework with a series of questions to contextualize the setting, framing how to make change within that context, and the development and sharing of knowledge (3).

While conceptualizing that an ideal settings approach to health promotion has its benefits, theorists agree that there has to be flexibility about what can be achieved within the setting and an acceptance of the reality that the settings approach is often small scale and project based (2, 3, 18). The reality of what can be done on the ground is reflected within the capacity of each environment. Thus, the process of maintaining a healthy setting is continuous and should be reflected in the approach.

Aims and Objectives

The aim of this approach is to create healthy and supportive school environments for children to develop and learn. It is intended to have the capability of being applied to one community school or to a group of schools.

The objectives are:

- 1) to promote healthy and supportive environments for children, teachers, other staff, parents, and volunteers in schools,
- 2) to facilitate healthy development of children in schools from a whole child perspective,
- 3) to stimulate healthy and sustainable ID policy and action in the school environment,
- 4) to encourage the development of evidence-based knowledge in health promotion in school environments through research,
- 5) to advance collaboration and partnerships between public health and education, and
- 6) to facilitate communication between schools (including students and staff), communities, policy makers, and the health sector.

These objectives target all of the participants in the school environment with the understanding that they are interconnected with other settings, including the home and the wider community.

5. Process in Adopting a Settings Approach to Schools

Defining/Understanding the Setting

To understand a setting, there needs to be a participatory effort to define the physical, social, and organizational environment. This is important not only for contextualizing the environment, but also for determining what will be included or excluded in the setting. The physical environment includes both the natural and built environments. The natural environment includes the outdoor air, soil, climate, natural resources and other geographic characteristics. The built environment includes human-made infrastructure of buildings with their materials and contents, including indoor air quality and ventilation, and access to water for consumption and hygiene.

The social environment incorporates the activities and relationships of the people in the setting and the influences on their interactions. In the school environment, this would include the students, teachers, and others who are interconnected with the students' families and their communities.

Related to the school setting are the governance structures of the school such as the principal, the superintendent and local school board, and the provincial ministry. These levels of governance are accountable for funding, policy, and regulations. In addition, every classroom has its governance and accountability level, vested in the teacher who is responsible for the students in the classroom setting. Parent-teacher associations are another influence on the school setting, through their consulting and advocating roles.

The organizational environment includes the regulations, policies and procedures, as well as the unwritten rules or assumptions, or the sociocultural norms and values that constitute the social environment. A setting needs to be defined as it is understood by the people in it.

Analysis/Planning Within the Setting

The richness of the settings approach is in the analysis of context. Understanding a setting distinguishes the contextual layers within the physical, social, and organizational environment that could contribute to current problems and the

need for and opportunities for change. Evidence-based knowledge provides the foundation to ensure change is effective and merited. Capacity within the setting needs to be identified to ensure a plan reflects realistic capability to carry out the process. This could provide a structure necessary to strategize for policy, action, or programs that contribute to supportive environments. A plan should include how success would be determined and how the outcomes would be evaluated.

Making Change within the Setting

Changes can occur at many levels of governance and accountability. Teachers have authority to make changes in their own classrooms, as long as those changes are consistent with school policy. Similarly, a school principal has flexibility for change, subject to the policies and regulations of the school division. Other changes may be initiated in a top-down manner, at the level of the ministry.

Knowledge Development and Sharing

The stepping-stone toward continual growth is evaluation that leads to knowledge development that should be documented and shared. This re-develops the understanding of the setting, and builds the knowledge of what works to provide the foundational base and capacity for ongoing work. The goal is to capture what works, but also the mechanisms of how it works and in what circumstances (18).

Evaluation planning would be used to determine effectiveness of the interventions and the plan would be implemented and the outcomes evaluated with a flexibility to make changes where necessary. The process would be documented and shared to contribute to the knowledge base using the settings approach and could be participatory at all levels.

This contributes to the continual development of questions for future analysis, but also to building evidence-based knowledge that can contribute to other settings.

6. Applying the Settings Approach – an Example of Influenza and School Absenteeism

The example of school absenteeism due to influenza can be used to illustrate the approach. Illness from influenza often begins and is first detected in school-aged children. Thus, schools are often used as sentinel settings to identify the beginning of an influenza season. When significant absenteeism is noted (e.g. more than 10% of any class), swabs taken from a sample of symptomatic children are often the first lab-confirmed cases of the season. A policy requiring testing could be set at the regional health authority or provincial level.

The settings approach can provide a framework to understand causal factors for influenza outbreaks in a school and to assess opportunities for intervention to minimize the burden of illness from influenza including interruption of learning and hardship for working parents who must provide care at home for ill children or children who cannot attend a school that has been closed.

Although not modifiable, the natural environment (season, weather, circulating viruses) is associated with risk and burden of illness and needs to be accounted for in plans and implementation.

The built environment considerations could include the cleanliness of surfaces, indoor air quality, access to clean water and soap – and other hand sanitation devices – for hand washing. Adequate space for the number of students (to avoid crowding) may be another factor to consider.

The social environment would include behaviours that are promoted in the school such as hand-washing, cough etiquette, and avoidance of touching mouth and nose. The reinforcement of these behaviour norms could be linked to the health and/or biology curriculum so that students, at their appropriate level, learn the science and ethics of public health practice, including the shared responsibilities and opportunities for disease prevention and health promotion. The specific activity of influenza vaccination could also be offered at the school if a province or regional health established a school-based program. Under some extreme circumstances, closing schools could be

used as a method of slowing the spread of influenza in a community to buy time for vaccination of more people.

7. Opportunities

There are a number of opportunities that arise from the partnership and collaboration between the education and public health sector that could be mutually beneficial in decreasing the burden of influenza and other infectious disease while contributing to academic achievement and healthy school environments.

The public health sector could benefit by having opportunities for collaborating for surveillance to identify, measure, and prevent infectious diseases, but also to build the knowledge about the environmental factors that contribute to and prevent infectious disease transmission within the school environment and throughout the lifespan.

The public health sector could have the opportunity to provide the evidence-based knowledge for effective action and healthy policy development within schools. The health sector could also benefit from learning from educators regarding what works from educational approaches that build the life skills necessary to live a healthy and productive life. Partnership and collaboration could also benefit educators by improving school attendance and participation and increasing graduation rates, while providing health resources to create healthy supportive school environments that are conducive to learning. It could provide a broader health knowledge base for programs and curriculum development, which could extend beyond the health or physical education curriculum to other school subjects including math, science, and language arts, and physical education. It could provide the opportunity for educators and the health sector to look at the whole child, whole school, and whole community and to develop the understanding of comprehensive methods of research and evaluation. This could imply sharing resources, mutually providing training and education, collaboration in curriculum and policy development, research partnerships, and ensuring the ongoing capacity for sustainable development.

The public and participative process along with creating a healthy and supportive school could contribute to building life skills to create healthy systems that include healthy lives, healthy relationships, healthy families, and healthy communities.

8. Conclusion

The purpose of this paper was to introduce and consider the settings approach to health promotion and disease prevention in schools, with respect to infectious disease prevention and control.

The idea of healthy schools has already taken shape in Canada, and the participation, partnership, and collaboration between policy makers, the health sector, educators, and communities has established a good basis to advance efforts in infectious disease prevention and control.

Further advances of this participatory approach could offer significant results as school environments build their capacity and knowledge to create a healthy and supportive school setting that yields healthy and productive individuals and communities.

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Production of this document has been made possible through a financial contribution from the Public Health Agency of Canada through funding for the National Collaborating Centre for Infectious Diseases (NCCID). The views expressed herein do not necessarily represent the views of the Public Health Agency of Canada.

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NCCID Project No. 173