



Delivering school health programmes

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Question

Is there evidence about modes of delivery for school health programmes, such as school clinics with permanent nurses vs visiting nurses, or other methods?

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1. Overview

This report is a general overview of lessons learned about delivery mechanisms from school health programmes. Results are ordered by type of educational institution (primary, secondary, tertiary i.e. representing different age groups and needs), where available. Evidence on school health programmes is stronger for developed/higher income countries than low and middle income/developing countries. Limited information for tertiary school health programmes was available. The findings are 'gender-blind', but are separated by gender, where available.

From the review of local, national and international school health programmes undertaken for this report, it is clear there is not a "one recommendation fits all" regarding delivery. Key findings are as follows:

- Successful implementation should involve both **school staff** (especially **principals/ head teachers**) and **parents** at the 'pre-delivery' preparatory stages. Both teachers and students of all age groups will take part if they are also included in the preparatory stages. They are more likely to engage if they can see the **gains** from participation - as well as enjoy the programme.
- "**On the ground support**" from senior stakeholders/community networks and **external funders** is necessary for introducing a programme within a school. **Cultural issues** should also be noted, especially when adapting an existing programme to another country.
- Some research studies suggest that **primary to early adolescent years** is the best time to introduce various health promotion activities and instil preventive behaviours. **Younger children** do not possess the same ability to learn complex concepts as older children; peer-education is currently considered as a health promotion strategy in **adolescents**.
- School-based health centres (**SBHCs**) may be supporting adolescents to play an active role in promoting their own health. **School nurses** are a valuable, but diminishing, resource. Not all programmes have to be nurse/teacher-led or classroom-based: using **volunteers** or **trainers** employed by local authorities is another option.
- **Teachers** can help with delivering factual information- especially if the content requires minimal effort; **peer-educators** can focus more on social issues, provided appropriate students are selected.
- **Barriers** to implementation include lack of support regarding 'understanding' the project, funding, and a poor workforce to deliver the message. **Targeting delivery** and appropriate **management** often lies at the heart of practical success.
- **Lessons learned** include the importance of **flexibility**, a) to allow tailoring of the programme to students at different stages of physical, psychological and social development, and b) to account for different levels of skills and experience of the programme deliverers. Distinct **hygiene provisions** must be made, especially for girls in the late primary and early secondary years.
- A **team approach** to implementing evidence-based school health promotion programmes will often enhance the success of the programmes.

2. 'Pre-delivery' preparation

Before any school health programme can be implemented, certain factors should be determined in the 'pre-delivery' or preparation stage:

Support network development and consultation

Successful school health programme implementation features taken from local, national and international (higher income/developed and low & middle income (L&MI)/developing countries) include:

Wellness champions or councils - such as school nurses, district superintendents, or community members – selected to lead the programme (CDC, 2014: 2). Once identified, they must be supported whilst they efficiently train and motivate busy school staff (Blaine et al, 2017: 5). Substantive but brief 'pre-delivery' consultation with school staff and parents is valuable (Pearson et al, 2015: 10) as health education is a vital feature of the school health programme (Pradhan et al, 2016: 288). More extensive 'pre-delivery' can be delivered where aspects of health promotion are less well developed.

According to 'constructivist perspectives', which focus on creating purposeful learning environments, the role of the stakeholder must be understood as a key aspect of providing an authentic learning environment (Frantz, 2015: 6). The council can provide leadership, accountability, and structure; as well as strengthen ownership and transparency of the programme (Monse, 2014). They can also offer the support and resources needed to face challenges as they emerge (CDC, 2014: 1) – provided they are prepared (Blaine et al, 2017: 5).

Community groups - Partnering with community organisations could provide some of the resources needed to improve children's health (Bundy, 2010: 7, 162; CDC, 2014: 2). A team approach to implementing evidence-based school health promotion programmes - taking into account the relationship among the student, family, school, community, and society - will often enhance the success of the programme (Inman et al, 2011: 215).

External funding - Grants can help many wellness activities to be accomplished by schools and/or districts (Monse, 2014; CDC, 2014: 2).

Cultural sensitivity

Cultural context plays significant role in development and implementation of any health promotion programme. Reviews show that some programmes that worked well in one part of the world proved disastrous when implemented in other regions when cultural sensitivities were not considered (Michaud 2003: 221; Prasla & Prasla, 2011: 151).

Choosing appropriate programme deliverers

Health professionals: School health programmes rely on specific infrastructure and services that are additional to the normal range of health services provided in schools - such as school visits by health teams, school nurses, and in-school clinics (Pommier et al, 2009: 186; Bundy, 2010: 160). However, not all schools have these options available to them.

A European comparative study by Pommier et al (2009: 183) found that health education is mainly the responsibility of health professionals as health services are very similar in each of the

countries. Different ways in which health services can contribute to school health promotion are highlighted. Many studies reveal that school nurses and other healthcare professionals work beyond their traditional roles when involved in school health programmes (Michaud, 2003: 221; Joronen et al, 2008: 128). Therefore, nurses will need more training to deliver the programmes, as well as “make them more conscious of their own biases in assessing adolescent health and lifestyles” (Michaud, 2003: 221). In the Fit for School programme, training templates have been developed for nurses in southern Philippines (expert comment).

Teachers and teaching staff: Low-income countries typically have more teachers than nurses (Tall, 2011: 198), and more schools than clinics (Unite for Sight). Several schools have teachers delivering health education programmes (Pommier et al, 2009: 186). However, it is also noted that there is too much focus is on school screening programmes (delivered by school nurses and/or doctors) rather than health promotion activities (Pommier et al, 2009: 186; Pradhan et al, 2016: 287); and that this “deep rooted” and “traditional medical approach” should be replaced with “a more global health promoting approach.” Some school health programmes are working to shift responsibilities from nurses to teachers: “A healthy school environment (incl. WASH, MHM and hygiene habits, enforcement of school policies like [a] smoking ban, ban of SSB, etc.) is the responsibility of the school head and should not be the task of the nurse, as the nurse does not have the mandate and the power to establish a clean environment or establish hygiene routine within daily school activities, or cannot enforce school health policies. This is clearly the role of the school principal” (expert comment).

Peer-educators: The US Teen Prevention Education programme (**Teen PEP**) uses peer-to-peer-education to increase 12th grade students’ knowledge, attitudes, skills and behaviour associated with healthy decision-making. However, teachers reported difficulties recruiting peer-educators that were representative of the community (Layzer et al, 2013: S75).

The ASSIST (A Stop Smoking in Schools Trial) programme for year 8 children (aged 12-13 years) in England and Wales is not a typical school-based intervention, as it is not teacher-led or classroom-based. Teachers have a passive role; however, they are still key ‘*champions*’ (Campbell, 2011: 23), spending on average 22.3 hours (range: 16-30.5 hours) planning and attending sessions. The adolescents choose their peers as trainers, but some teachers have expressed concern over their suitability and intervened in some cases (Audrey et al, 2008: 83; Holliday et al, 2009: 58). The variation of trainee background also resulted in variations in levels of expertise, and differences in style, which did cause conflict on occasion (Holliday et al, 2009: 56).

Other professional trainers: Trainers employed by primary care trusts (PCTs)/local authorities (Campbell, 2012: 23), rather than school teaching staff, have been used to prepare peer-educators away from the school setting. These trainees are health promotion specialists and youth workers - both male and female (Campbell, 2012: 23). By having non-freelance employees as trainers, greater control was obtained. However, some teachers expressed concern about the trainers’ lack of discipline, as well as about them setting standards and enforcing discipline in the classes (Audrey et al, 2008: 87) - especially if the trainers were young and/or did not have previous teaching experience.

School engagement

Students: Research studies suggest that primary to early adolescent years is the best time to introduce various health promotion activities and teach preventive behaviours (Joronen et al,

2008: 128). The health programme must be made appealing, containing appropriate and relevant issues according to age, as well as stretching students' understanding of health issues that may lie well outside their experience or knowledge (Pearson et al, 2015: 10). Michaud (2003: 220) and Tall (2011: 195) both emphasise the need to involve young people in the decision making process for health programme development.

Staff: Engaging school staff during programme development is suggested to be particularly important in ensuring that a programme is aligned with school priorities. Staff associated “commitment of school resources” with successful programme implementation (Nathan et al, 2017: 204).

The success of school health programmes like Fit for School is mainly attributable to simplicity and low cost. By developing and applying a skills-based approach, it goes beyond the traditional instruction-based health education: “The Fit for School programme has developed a number of templates on modular structures for school communities” (expert comment). These clear and simple guidance and implementation templates allow school principals and teachers to run the programme with minimal supervision and effort.

School clinic/health centre: In the US, school-based health centres (SBHCs) have been successful in addressing the health care needs of students from kindergarten to high school. They provide opportunities for preventive care, health maintenance, as well as treatment of acute illnesses and injuries for younger students; whilst supporting adolescents in their increasing ability to play an active role in promoting their own health (Keeton et al, 2012: 3).

3. Implementing a programme within a school

Engagement of deliverers and participants

Both deliverers and students are more likely to engage when they can see the likely personal, social, and/or developmental gains from participating – especially if a perceived skill or knowledge deficit is addressed (Pearson et al, 2015:15). The programme must also be flexible enough to allow tailoring to different levels of students' skills and physical, psychological, and social development - as well as experience of both of students and deliverers.

Primary school

At this age the key issue is whether the programme is fun (Pearson et al, 2015:15). Facilities should stimulate children's learning and development and be age appropriate. Younger children do not possess the same ability to learn complex concepts as older children. Acknowledging these different learning styles is not only important for the development of education materials, but also for the design of facilities. Interactive learning and playful engagement encourages children to put their new habits into practice (Mooijman/UNICEF, 2012: 12).

Developed/higher income country examples: **The Daily Mile**, started in 2015, aims to have students running a mile and getting back to their desks within 15 minutes; it can also be conducted at any time of day at the teacher's discretion (i.e. when children's concentration levels are flagging). Other engagement methods include using social marketing techniques to change eating behaviours of kindergarten to grade 4 students (age 5-10 years) in the Team Nutrition (TN) school programme; and drama activities in the Healthy Lifestyles Programme (HeLP) to prevent obesity (Wyatt et al, 2013).

In the Academy for Global Citizenship (AGC) in Chicago, Illinois, which has been running since 2008, students responded better to new menu items in school lunches when they could taste and give feedback on recipes. They also liked lessons on nutrition that included hands-on experience, such as planting and tending fruits and vegetables in school gardens.

Use of role plays, drama, theatre and other forms of performing arts as an educational tool has enormous potential to influence people's lives by providing space for self-reflection and engagement with characters (Wyatt et al, 2013: 3). However, using drama alone provides only short term results of improved knowledge and positive health behaviour (Joronen et al, 2008: 129). It therefore needs to be implemented as part of a structured and integrated health promotion programme.

Developing/L&MI country examples: Teachers supervise daily handwashing and tooth-brushing activities in the Fit for School health programme being implemented in the Philippines. However, because the students enjoy organising their group activities by themselves, this has "made programme implementation much easier and less of an extra burden than the teachers thought at the beginning" (Monse, 2014).

Secondary/Tertiary school

As health promotion addresses more contentious issues in secondary education (e.g. sexual relationships and substance abuse), fun "remains necessary but is not sufficient" (Pearson et al, 2015:15).

Developed/higher income country examples: In Teen PEP, interactive workshops for 9th graders are taught by 11th-12th grade students, and includes skits and small group learning activities (Layzer et al, 2014: 571). However, in the ASSIST programme, a 'traffic light system' omitted any 'fun' activities if there were time restraints to ensure that the core programme was delivered (Holliday et al, 2009: 47).

Developing/LMI country examples: The Rashtriya Kishor Swasthya Karyakram (RKSK) programme uses several methods to engage students, including peer educators, outreach by counsellors, as well as involvement of parents and the community (as adolescents often do not have the autonomy to make their own decisions) through a dedicated adolescent health day. Unlike other health programmes in India, it is not limited to sexual and reproductive health. It takes a more health promotion viewpoint and includes nutrition, injuries and violence (including gender based violence), non-communicable diseases, mental health and substance misuse – with special focus on marginalized and undeserved groups. Focus is on reorganizing the existing public health system in order to meet the service needs of adolescents.

Programme practicalities e.g. costings and time

Primary school

Developed/higher income country examples: The Daily Mile primary school initiative is currently running in the UK, Belgium and the Netherlands, and is free to implement. The average cost of the ASSIST training programme is £27 per secondary school student – however, no monetary value is placed on student time (Audrey et al, 2004: 278). Unlike other studies, however, programme costs and adaptability were not found to be important factors when implementing the Australian *Crunch&Sip* vegetable and fruit break school nutrition programme (Nathan et al, 2017: 203).

Developing/L&MI country examples: In most cases, the aim is to expand the geographical coverage of an existing programme so that it reaches poor and marginalised children (Bundy, 2010: 5). Targeting delivery using pre-existing schools often lies at the heart of practical success as it reduces costs, facilitates management, and may optimise outcomes (Bundy, 2010: 6). For example, school-based deworming costs less than \$0.50 per child per year, inclusive of all programme costs, including drugs, training, logistics, monitoring and evaluation, and advocacy materials (Bundy, 2010: 76). Education sector–led, school-based deworming programmes have resulted in the deworming of millions of children in many countries, including Cambodia, The Gambia, Ghana, India, Kenya, Malawi, Mali, Nigeria, Tanzania, and Uganda (Bundy, 2010: 77).

Secondary/Tertiary school

Developed/higher income country examples: Time spent on training is an important issue. However, length of training depends on the student’s ability and concentration levels. For ASSIST, optimal training sessions were 10 hours over two consecutive days (Holliday et al, 2009: 53). Training venues can vary due to other curriculum and timetable pressures (Holliday et al, 2009: 52).

Developing/low and middle income country examples: Length of training sessions also differ according to available means. In the Western Cape, South Africa, a one-day training workshop on risk factors for chronic diseases delivered by researchers proved fruitful for peer-educators in the Life Orientation Programme, used to promote healthy behaviours among first year high school students (Frantz 2015: 3).

Management and organisational issues

Primary: The most significant recommendation for increasing stakeholder acceptance is to encourage teamwork. With time constraints being a general concern, sharing responsibilities is a key strategy (Levine et al, 2002: 114). Local coordinators support and create a bridge between teachers and staff, as well as forge links between external partners.

Developed/higher income country examples: Having a USDA coordinator helped manage the TN programme implementation (Levine et al, 2002: 114). In Australia, the *Crunch&Sip* vegetable and fruit break programme is included in the school curriculum (Nathan et al, 2017: 203). This is because the programme is of a simple design (Nathan et al, 2017: 203). In previous versions of this trial, integration into school management plans, and memorandums of understanding, were used to prove commitment to implementation of the programme (Nathan et al, 2017: 204).

Teaching various health issues in isolation may not yield desirable outcomes. Therefore, integration with curricular subjects including science and languages could be beneficial - the message of health promotion can be conveyed through multiple channels (Prasla & Prasla, 2011: 151). Building on existing curricula combined with funded incentives is also effective (Blaine et al, 2017: 5).

Developing/L&MI country examples: In the Fit for School programmes, management in each of the south-east Asian countries is kept as lean as possible and is integrated in existing structures of the education sector with the support of health and related sectors. The programme follows a modular structure and uses uniform templates to facilitate implementation and scale-up. The activities are part of the daily school routine, thereby supporting children in acquiring healthy habits and promoting sustained behaviour change: “We have worked a lot to support the

Ministries of Education to strengthen the school principals and teachers to gain confidence and clarity [on] how [to] establish and maintain a health school environment” (expert comment).

Secondary/Tertiary:

Developed/higher income country examples: Teen PEP has been successfully implemented as part of the curriculum across urban schools, and has also been adapted and replicated in rural schools (Layzer et al, 2014: 577).

Developing/L&MI country examples: While the Health Promoting Schools (HPS) framework is a global initiative, reviews have discovered a paucity of research on school-based health care using this method for adolescents in low-income (Langford et al, 2016: 6) and middle-income (Mason-Jones et al, 2014: 2) countries.

4. Barriers and facilitators to implementation

Barriers

In a recent Dutch survey (Rozema et al, 2016: 6) directors and parents identified outcome expectations as a barrier to implementation of health promotion programmes; while non-teaching and teaching staff and students also mentioned lack of support as a barrier.

Nathan et al (2017: 199) concluded that several schools reported a “crowded curriculum” as a barrier, as well as inadequate resources. Although peer education may be seen as novel or fun, especially to young teenagers, schools may not have the time to put peer-leaders and students together (e.g. due to peer-leaders’ exams and extra-curricular activities; or due to the fact that they may not attend the same school as the students) which may affect level of commitment to the programme (Mellanby et al, 2000: 533; Frantz, 2015: 4). The content and style of peer-led sessions may lead the peer-leader to act in a semi-expert role, which they may not be comfortable with. Using personal reflection can be challenging, as this may not part of the preparation process (Frantz, 2015: 4). Therefore, adult teachers may still need to be used.

Facilitators

Directors and students listed collaboration as a facilitator; non-teaching and teaching staff valued communications; and parents mentioned legislation as a main facilitator (Rozema et al, 2016: 6). One vegetable and fruit intervention implemented in Danish secondary schools found that schools that had a food policy, with teachers and students who valued the programme, had higher rates of implementation than those without any such characteristics (Aarestrup et al, 2015: 12). Smaller schools, with fewer families of lower socio-economic background were more likely to consistently deliver the intervention at a high level (Nathan et al, 2011: 199; Aarestrup et al, 2015: 13). Programmes with distinct privacy and hygiene provisions, especially for girls entering menstruation in the late primary/early secondary years, were also beneficial (Mooijman/UNICEF, 2012: 13).

5. Delivery: lessons learned

There is no single model of an effective school health programme ready for application in every context (CDC, 2014: 1; Khambalia et al, 2012: 13; Prasla & Prasla, 2015: 151). An effective

programme can include a number of factors, such as clarity of goals and focusing on certain types of behaviours (Prasla & Prasla, 2011: 151).

Combining health programmes may be beneficial in terms of programme delivery. In a study of school-based health promotion in the US, Botvin et al (1995: 179) focussed on two subjects: substance abuse (cigarette smoking, alcohol abuse, and illicit drug abuse) and sexual behaviour (AIDS, sexually transmitted diseases, and unwanted pregnancy). They found that school-based health promotion approaches to these problems evolved in “a largely separate yet parallel manner” (Botvin et al, 1995: 179). As these both have “strikingly similar etiologies” similar intervention strategies were used for their prevention.

Interventions targeting social and psychological factors have been shown to be the most promising. Information dissemination approaches and fear-arousal tactics have consistently been found to be of limited effectiveness; therefore, focusing on positive behaviours is important. Programmes concentrating on health promotion knowledge for the sake of knowledge dissemination only are less likely to bring about desirable changes in behaviour (Prasla & Prasla, 2011: 151).

Comparable research by Mellanby et al (2000: 543) suggests that factual information should be delivered by adults (teachers/health professionals), with peer-leaders concentrating on social factors related to health. Teaching self-management and social resistance skills to adolescents will make them confident in their actions and help them stay away from bad influences (Botvin et al, 1995: 172). Peer-led students were found to gain as much knowledge or more than adult-led groups: no studies reported that adults were more effective in altering attitudes, but three showed peers to be more effective (Mellanby et al, 2000: 533). This may be because some adult-led education relies too heavily on didactic teaching methods previously shown to have poor effects.

Although it is suggested that peer-educators are easier to train than adult teachers due to their “fewer pre-conceived notions” (Mellanby et al, 2000: 542), they must still be well equipped, and supported throughout the implementation process (Frantz, 2015: 3). One-day training workshops can allow peer-educators to develop their skills by interacting with an expert, and also test their “social negotiation of knowledge” with other trainee peer-educators. Once properly trained in the programme context, they can become empowered to provide health-related information to their peers - resulting in sustainability of the programme beyond the classroom, especially in poor socio-economic areas where available budgets are low.

In some cases the number of peer-educators needed for health programmes was underestimated. In the ASSIST programme, this was deemed “an avoidable and unacceptable deviation” from their intervention model (Holliday et al, 2009: 59). Guidelines have now been put in place to avoid this deviation in future programme implantation. This model also categorises other variations in intervention delivery, and “can contribute to good practice” in school-based health promotion programmes (Holliday et al, 2009: 58).

School health programmes are characterised by effective partnerships and networks at the international, regional, and national levels (Bundy, 2010: 7, 162). Johnson (2008: 55) suggests pairing-up clinical students with healthcare professionals serving in schools. This will provide a constant flow of healthcare professionals in resource deprived schools. Although universities may want to be supportive, their bureaucratic structures are not always helpful (Campbell, 2012: 32). However, the possible partnership between universities training health professional

students, and school and communities is highlighted as an important one to consider in delivering school health programmes (Frantz, 2015: 5-6).

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Key websites

- Fit for School Resources: <http://www.fitforschool.international/fit-resources/page/3/>
- Unite for Sight School-Based Health Interventions Online Course: <http://www.uniteforsight.org/school-health/>
- NIHR: How to successfully implement a school-based health promotion programme: <https://discover.dc.nihr.ac.uk/portal/article/4000285/how-to-successfully-implement-a-school-based-health-promotion-programme>
- SHN: The Basic Framework for an Effective School Health and Nutrition Programme: <http://www.schoolsandhealth.org/Pages/The-Basic-Framework-for-an-Effective-School-Health-and-Nutrition-Programme.aspx>

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