WHO guideline on school health services

Web Annex B. Brief exploratory review of school health services globally: methodology and select findings
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Acknowledgements

Drafting of the guideline
Mary Louisa Plummer, Child and Adolescent Health Consultant, United States of America, and David A. Ross, Department of Maternal, Newborn, Child and Adolescent Health and Ageing, WHO headquarters.

GRADE methodologist
Nandi Siegfried, Public Health Medicine Specialist, South Africa.

Steering Group (WHO staff unless otherwise noted)
Coordination
David Ross and Kid Kohl, Department of Maternal, Newborn, Child and Adolescent Health and Ageing.

Members
Jamela Al-Raiby, WHO Regional Office for the Eastern Mediterranean; Wole Ameyan, Department of Global HIV, Hepatitis and Sexually Transmitted Infections Programmes; Valentina Baltag, Department of Maternal, Newborn, Child and Adolescent Health and Ageing; Faten Ben-Abdelaziz, Department of Health Promotion; Paul Bloem, Department of Immunization, Vaccines and Biologicals; Sonja Caffe, WHO Regional Office for the Americas; Marie Clem Carlos, Department of Noncommunicable Diseases; Shelly Chadha, Department of Noncommunicable Diseases; Venkatraman Chandra-Mouli, Department of Sexual and Reproductive Health and Research; Katrin Engelhardt, Department of Nutrition and Food Safety; Kaia Engesveen, Department of Nutrition and Food Safety; Regina Guthold, Department of Maternal, Newborn, Child and Adolescent Health and Ageing; Joanna Guthold, United Nations Educational, Scientific and Cultural Organization (UNESCO); Symplice Mbola Mbassi, WHO Regional Office for Africa; Rajesh Mehta, WHO Regional Office for South-East Asia; Denise Mupfasoni, Department of Control of Neglected Tropical Diseases; Martina Penazzato, Department of Global HIV, Hepatitis and Sexually Transmitted Infections Programmes; Marina Plesons, Department of Sexual and Reproductive Health and Research; Leanne Riley, Department of Noncommunicable Diseases; Chiara Servili, Department of Mental Health and Substance Use; Stéphanie Shendale, Department of Immunization, Vaccines and Biologicals; Marcus Stahlohofer, Department of Maternal, Newborn, Child and Adolescent Health and Ageing; Howard Sobel, WHO Regional Office for the Western Pacific; Martin Weber, WHO Regional Office for Europe; and Juana Willumsen, Department of Health Promotion.

Evidence review and synthesis
Systematic overview of systematic reviews of comprehensive school health services
Julia Levinson, Kid Kohl, Valentina Baltag and David Ross.

Systematic reviews of the effectiveness and acceptability of comprehensive school health services
Paul Montgomery, University of Birmingham, United Kingdom; Jacoby Patterson, Independent Senior Research Consultant, United Kingdom; and Anders M. Bach-Mortensen, University of Oxford, United Kingdom.

Review of global WHO health service interventions for 5–19-year-olds
Mary Plummer, Kid Kohl and David Ross.

Survey of expert opinion on school health services
Mary Plummer; Ace Chan, Stigma and Resilience Among Vulnerable Youth Centre (SARAVYC), School of Nursing, University of British Columbia, Vancouver, Canada; Kid Kohl; Ashley Taylor (SARAVYC); Elizabeth Saevy (SARAVYC); and David Ross.
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Mary Plummer, Kid Kohl and Valentina Baltag.

Guideline Development Group

Rima Afifi, University of Iowa, United States of America; Habib Benzian, New York University, United States of America; Harriet Birungi, Population Council, Kenya; Rashida Ferrand, Biomedical Research and Training Institute, Zimbabwe; Jorge Gaete, Universidad de los Andes, Chile; Najat Gharbi, Ministry of Health, Morocco; Murthy Gudlavalleti Venkata Satyanarayana, Indian Institute of Public Health, India; Henrica J. M. Fransen, University of Tunis El Manar, Tunisia; Julia Levinson, Boston University, United States of America; Erin D. Maughan, National Association of School Nurses, United States of America; Ella Cecilia Naliponguit, Department of Education, Philippines; Atif Rahman, University of Liverpool, United Kingdom; Elizabeth Saewyc (Chair), University of British Columbia, Canada; Susan Sawyer, University of Melbourne, Australia; Hui-Jing Shi, Fudan University, China; and Sharlen Vigan, World Bank, Togo.

External Review Group

Bruce Dick, Adolescent Health Consultant, Switzerland; Chris Kjolhede, Bassett Health Care Network, United States of America; Regina Lee, Professor of Nursing, University of Newcastle, Australia; Maziko Matemvu, Her Liberty, Malawi; Antony Morgan, Glasgow Caledonian University, United Kingdom; Blanca Pianello Castillo, International Federation of Medical Students’ Associations, Spain.

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Abbreviations

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<th>Abbreviation</th>
<th>Definition</th>
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<tr>
<td>FRESH</td>
<td>Focusing Resources on Effective School Health</td>
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<td>HIC</td>
<td>high-income country/countries</td>
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<td>HPS</td>
<td>health-promoting schools</td>
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<td>LIC</td>
<td>low-income country/countries</td>
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<td>LMIC</td>
<td>lower middle-income country/countries</td>
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<tr>
<td>MIC</td>
<td>middle-income country/countries</td>
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<td>MO</td>
<td>medical officer</td>
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<td>SHS</td>
<td>school health services</td>
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<td>SRH</td>
<td>sexual and reproductive health</td>
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Glossary

A glossary of terms used throughout the guidance and its web annexes is provided in the guidance document.
Brief exploratory review of school health services globally: methodology and select findings
Web Annex B describes the methodology and select findings from the brief exploratory review of school health services (SHS) globally.

B.1 Exploratory review methodology

The Guideline Development Group requested that WHO conduct a brief global review of SHS frameworks or models, with particular attention to: structure and coordination of SHS at national and subnational levels; role and responsibilities of SHS within the health system at the local level; interrelated programmatic elements within SHS; and the organization of interventions within SHS. Given time and resources limitations, this was a pragmatic exercise and was not intended to be a representative review, although effort was made to consider framework or model examples from each WHO region and country–income level.

During three weeks in December 2019, one person conducted a small, exploratory, online search and review of SHS frameworks and models. The search for literature was limited to PubMed and Google. Gray literature and peer-reviewed journal articles were searched with objectives to: (a) identify and describe relevant frameworks from general SHS review papers; and (b) compile enough literature to identify and describe recent SHS frameworks from eight countries. This included two each of low-income countries (LIC), lower middle-income countries (LMIC), upper middle-income countries (upper MIC) and high-income countries (HIC) and also one or two each from the six WHO regions.

Initially, a range of combinations of English search terms was used to try to capture sufficient relevant content. In addition, a more limited search using the equivalent German search terms was conducted. Examples of terms used in different search combinations include:

- “school”, “school health”, “school health service”;
- “health system”, “health service”;
- [country name], [WHO region name], “national”, “government”, “international”; and
- “framework”, “model”, “structure”, “policy”, “strategy”, “plan”, “program”.

Once a country had been identified that met the regional and income–status criteria of the exploratory review, further targeted searching (including government, United Nations and nongovernmental organization websites) was conducted to find sufficient SHS framework information for that country. Recent literature (ideally 2015–2019) was prioritized, although if earlier materials were needed for background, they were also incorporated. In a few instances, Google Translate was used to translate content in languages other than English or German, such as the table of contents section of a national guideline on SHS in Turkish. A saturation approach was adopted, so that once enough information on a particular country or topic was obtained – or no more material was available through a limited search – that search was closed.

B.2 Select exploratory review findings

B.2.1 Reviews of SHS frameworks

A brief, exploratory, global review of organizational models of SHS was conducted during the development of this guideline. The exploratory review found that published reviews of relevant SHS frameworks at national level often focused on whole-school health programmes, such as the Health-promoting Schools (HPS) Framework and the Focusing Resources on Effective School Health (FRESH) initiative. These sometimes marginalized or omitted the SHS “pillar” of HPS. Organizational frameworks of how SHS work at local level mainly focused on: whether SHS are delivered at schools or in the community; what structure they take if based at schools; and whether the SHS staff are dedicated personnel. Ways of categorizing and assessing programmatic elements and interventions within SHS included: a framework of quality standards in SHS and competencies for school health professionals; indicators that can be used to express normative SHS staffing levels; and a performance assessment framework linked to organizational models of SHS (1–10).

B.2.2 Case studies of SHS in eight countries

The exploratory review included eight country case studies with at least one country from each of the six WHO regions and two from each of the four income levels – LIC, LMIC, upper MIC and HIC. The eight case study countries were Australia (11–17), Bangladesh (18–21), Egypt (22–31), Lao People’s Democratic Republic (32–36), Rwanda (37–40), South Africa (41–44), Turkey (45–49) and the United States of America (50–60). Table B.1 summarizes the SHS framework findings for each case study country by WHO region, income status, lead SHS ministry and the main characteristics of the framework.
Table B.1. The main characteristics of SHS frameworks in eight countries by income status, WHO region and SHS lead sector

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<thead>
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<th>Country</th>
<th>Main characteristics of SHS framework</th>
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<td><strong>Rwanda:</strong></td>
<td>The Ministry of Education national school health policy specifies that the Ministry of Health is responsible for providing SHS, and requests that a nurse based at a local primary care facility visit schools to provide SHS each term (every three months), possibly accompanied by a community health worker. However, this does not seem to be in practice. The Ministry of Education’s School Health Minimum Package mentions a few SHS that can be carried out by a trained Ministry of Education staff person or community member (such as micronutrient supplementation and deworming), but only identifies two minimum package “health and support services” – gender-based violence referral and use of a first-aid kit.</td>
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<td><strong>Bangladesh:</strong></td>
<td>Each Ministry of Health primary care school health clinic is supposed to have two medical officers (MOs), one pharmacist, and one support staff. MOs visit schools on motorbike. The policy outlines possible MO primary care duties, but in practice SHS mainly consist of intermittent screening and referral services. Twenty-three school health clinics support 1,573 schools; in 2014, 63,129 students received care. This is an average of one MO per 34 schools; or 2,749 students/clinic/year. In addition, Ministry of Health health education officers at the local level are supposed to train and support teachers to provide first aid and health education.</td>
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<td><strong>Lao People’s Democratic Republic:</strong></td>
<td>The Ministry of Education and Sport and Ministry of Health national school health policy includes components for disease control and prevention and health-care services. However, the Ministry of Education and Sport leads and implements the policy. In practice, limited coverage of SHS seems to have be achieved through nongovernmental organization collaboration. SHS largely consist of district education officers training school principals to orient a school health focal-point teacher to provide children with pills for iron supplementation and deworming.</td>
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<td><strong>Egypt:</strong></td>
<td>For decades, school children in Egypt have been required to have school health insurance. The flow of funds to the Ministry of Health and Population comes through the Ministry of Education and the Ministry of Finance. Each school health unit (school-based or general clinic) is supposed to be staffed by a general practitioner and nurse. These units are expected to provide all students with primary care services as well as preventive services, such as health education, mass deworming and universal screening. The exception is sexual and reproductive health (SRH) care, which is limited under the population policy, and SRH education, which is the responsibility of families. The Ministry of Health and Population has over 7,000 school health units which are primary health-care units with a formal secondary and tertiary referral system. SHS have unusually high coverage for a country at this income level. SHS may be the main source of primary health care for many school-aged children.</td>
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<td><strong>South Africa:</strong></td>
<td>The departments of health and basic education have collaborated to produce national guiding documents outlining comprehensive SHS by grade level. The minimum school health package includes: health assessment and screening; provision of on-site health services; and health education and promotion components by grade level. Screening, assessment and on-site services are to be provided by a professional nurse (one per 2,000 learners). Policy identifies school-based health services as optimal, including services above and beyond the minimum package. If services are not possible in schools then the next best option is mobile clinics (primary or specialized), followed by fixed facilities. A school health team (school nurse and health promoter) should be based at a primary health-care facility and report to the facility manager. In practice, SHS coverage and implementation seems quite variable and limited.</td>
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Turkey:
Upper MIC
WHO European Region
Health sector
Prior to 2005, the Ministry of Education was responsible for SHS; since then, the Ministry of Health has been responsible and has provided detailed clinical guidance on SHS interventions, including health counselling, monitoring, screening, vaccinations, outbreak management, and care and referral for communicable diseases and noncommunicable conditions. National policy calls for schools to have a nurse, but coverage of nurses in public schools is very low; instead, select teachers receive basic first-aid training. Even when schools have a nurse, their range of SHS interventions are generally much more limited than specified in the national clinical guidance.

Australia:
HIC
WHO Western Pacific Region
Health sector
The Australian Department of Health produced a national HPS framework that focuses on health promotion, education, counselling, screening, immunization and referral. States have adapted this in their own HPS frameworks. The general emphasis is on health promotion, health education and health counselling, although clinical services such as screening, immunization and referral may also take place. Typically, SHS are provided by a school nurse based in the school or the community.

United States of America:
HIC
WHO Region of the Americas
Health sector
The Department of Health and Human Services provides SHS guidance to the 50 states, but states pass their own laws and policies related to student health. The federal government recommends four methods within SHS: acute and emergency care; care coordination; chronic disease management; and family engagement. It further recommends that school-based health centres be led by a school nurse. In most states, the percentage of schools with either a full-time or part-time registered nurse approaches 100%. Some federal funds support SHS; previously these were channelled through state departments of education, but since 2013 this has been through state departments of health. School-based health centres generally emphasize prevention, early intervention and risk reduction.

Among the four LIC in this review, Egypt (lower MIC) deserves special attention because of its exceptionally strong SHS framework, which depends on mandatory school health insurance and school-based health units being integrated within the health sector’s primary care system. Indeed, Egypt’s SHS framework, while limited in implementation quality, might nonetheless achieve equal or greater quality and coverage than the two upper MIC, South Africa and Turkey. While Egypt’s model shows great promise, it was beyond the scope of this review to examine other key factors that might contribute to its extraordinary success (such as the history of international donor funding); these warrant more examination.

The two HIC case studies in this review, Australia and the United States of America, are both large countries with federal governments. In both examples, the national government provides SHS guidance, but SHS have variable structures at local level based on state laws, regulations and funding.
Nonetheless, in both countries the quality and coverage of part-time or full-time provision of SHS by a school nurse is very high. These services exist in addition to national health insurance and primary care services that often provide comprehensive government and private health care to children, unlike in Egypt, where the school-based primary care services may be the only form of health care for most students.

**B.3 Exploratory review discussion**

For each of the eight country SHS frameworks, national governments advocated for intersectoral collaboration and leadership, particularly between the education and health sectors. In practice, however, SHS development and implementation often fell to one lead agency, particularly in LIC and lower MIC, where resources and capacity were very limited. In settings where SHS essentially were only led and implemented by the education sector, SHS interventions were extremely limited and were carried out by lay people without clinical training (such as use of a first aid kit or provision of deworming pills). In contrast, for the LIC and lower MIC in this study in which the health sector leads the SHS, a larger range of clinical interventions were outlined in policy and also achieved with relatively good coverage.

The eight country case studies in this review had diverse SHS frameworks at local level. Within individual LMIC, the SHS framework outlined in national policy sometimes differed greatly from the one actually implemented at local level. In practice, SHS ranged from being essentially teacher-delivered, to occasional visits by a MO or nurse, to high coverage by nurses based either full- or part-time in schools or by a team of health workers in school-based health centres. In countries where the health sector leads SHS but medical capacity is extremely limited, the case studies suggest it may be useful for countries to outline a first, second and third choice of SHS delivery, including an option for mobile SHS serving many schools, as otherwise the default may be to have essentially no clinical SHS.

The two HIC case studies in the small, exploratory review were both large countries with federal governments that provide SHS guidance to states that have their own laws, regulations and funding. Nonetheless, in both countries the quality and coverage of part-time or full-time provision of SHS by a school nurse was very high.

This highlights several critical factors in determining the success of an SHS framework – sufficient funding, resources and capacity.

**B.4 Exploratory review limitations**

This brief exploratory review had several limitations. The search for general SHS framework documents and country-specific examples was limited to English and German documents found through PubMed and Google, so was unlikely to produce content from countries that do not publish government documents in those languages or with school health programmes that are unlikely to be reviewed in those languages. In addition, while effort was made to select case study countries from each of the four country-income categories and six WHO regions, the number of countries was so low that the findings cannot be assumed to be representative of those country-income categories or regions. Further, it is not possible to draw conclusions about the potential replicability of different country SHS frameworks based on this small review, because it did not examine the cultural, political and economic contexts of those frameworks.

**B.5 Exploratory review conclusions**

In the small, exploratory review, findings from review papers and from specific national school health programmes suggest that the fundamentally intersectoral nature of SHS poses challenges that differ from those that might be found for other pillars of HPS (such as health education and a safe physical environment). Collaboration between education and health sectors (and other sectors and stakeholders) is a widely held ideal and desirable for all HPS pillars, but such collaboration and interdisciplinary work is indispensable for SHS. At a minimum, the other pillars of a school health programme can be designed and implemented by education sector staff who are already involved in school settings, but SHS also require medical expertise at all levels of the system. General findings in this review suggest that, possibly due to such challenges, SHS sometimes are marginalized or omitted from broader school health programmes and their evaluation. The role of SHS needs much more clarity and special attention within broader school health programmes.
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