Comparison of Evaluation Results

Field Tests of WHO Patient Safety Curriculum Guides for Multi-Professional Schools and Medical Schools

Over the past several years, the World Health Organization (WHO) has developed and field tested two Curriculum Guides that universities can use to incorporate teaching of patient safety topics into curricula for their health-care students. One of these guides is designed for use in medical schools; the other is designed for use in other health professional schools. Each guide was field tested with participating universities/schools, including evaluations of the experiences of implementing the guides and effects of use of the guides on the schools and their students.

The purpose of this report is to compare the findings of the two evaluations, with the goal of assessing commonalities or differences in what was learned about the experiences of schools in implementing each of these two guides. The assessment begins with comparison of the research questions addressed in each evaluation and the mix of universities/schools that participated. Then the overall conclusions of the two evaluations are presented. Finally, a side-by-side comparison is presented of the detailed findings of the two evaluations for each of the evaluation questions asked.

Research questions

The research questions addressed by each of the Curriculum Guide evaluations are presented in Table 1. Two questions are addressed by both evaluations, focusing on the effectiveness of the Guides and their impacts on patient safety teaching and learning.

Table 1. The Research Questions Addressed in the Evaluations of the Multi-Professional and Medical School Curriculum Guides

Multi-Professional Curriculum Guide Evaluation	Curriculum Guide for Medical Schools Evaluation
A. Does the Curriculum Guide contain the necessary and sufficient information and topics to allow its effective use in undergraduate training of health-care professionals? B. What is the impact upon student learning of the inclusion of patient safety teaching in the curriculum?	1. Can the WHO Patient Safety Curriculum Guide for Medical Schools be used to support the implementation of explicit patient safety education across the six WHO regions? 2. What is the impact of the inclusion of patient safety teaching to the curriculum on medical student learning, and what are the student views on the implementation of this material to their curriculum?
C. In what ways can this Curriculum Guide be used to support the widespread implementation of explicit patient safety education globally? D. How could the Curriculum Guide be modified in the future to best support teaching of patient safety to students in different environments?	

The evaluation of the Multi-Professional Curriculum Guide addressed two additional research questions: how to use the Guide to support broader implementation of patient safety training, and how the Guide might be modified to improve or strengthen it. Although the Curriculum Guide for Medical Schools did not have an explicit research question about implementation and diffusion of patient safety teaching, the evaluation of this Guide generated findings relevant to this question, which are summarized in the detailed comparisons below.

Participating schools and stakeholders of interest

Similar numbers of universities/schools participated in each of the Curriculum Guide field tests and evaluations, and these schools were distributed across the six WHO regions, as shown in Table 2. They differed somewhat, however, with respect to the number of schools for which evaluation data were collected, especially for data obtained from the teaching faculty.

Not shown in this comparison, the data collection methods for the two evaluations differed somewhat, but by intent, the same questions were used on the data collection instruments. During development of the interview protocols and student surveys for the Multi-Professional Curriculum Guide evaluation, many of the questions used in the Curriculum Guide for Medical Schools evaluation were incorporated into these instruments, to enable the comparisons being made here.

Table 2. Universities/Schools that participated in the field test and evaluations of the Multi-Professional and Medical School Curriculum Guides

	Multi-Professional Curriculum Guide Evaluation	Curriculum Guide for Medical Schools Evaluation
Number of schools initially selected	14	13
Number of schools that participated	12	10
Distribution of the schools	2 schools per WHO region	Located in 9 countries
Type of students taught	Nursing, midwifery, dental, pharmacy students	Medical students
Schools completing student surveys	10 schools	8-10 schools, depending on the safety topic
Schools completing faculty data	12 schools – interviews with executives, implementation leads, teaching faculty	1 school – data on overall implementation; 4 schools – data for individual safety topics

The designs of the two evaluations were guided in part by the stakeholder groups identified as relevant to the experiences with the Guides for which information was being sought. As shown here, both evaluations identified tutors/teaching faculty and students as stakeholders, and institution executives and implementation leads were also identified for the Multi-Professional Guide evaluation.

Multi-Professional Curriculum Guide	Curriculum Guide for Medical Schools
Institution executives Implementation leads Teaching faculty Students	Tutors/teaching faculty Students

Summaries and conclusions

Although both evaluation reports presented high-level summaries and conclusions obtained in their respective evaluations, they used somewhat different approaches and differed in the amount of content included. In particular, the Multi-professional Curriculum Guide evaluation included summaries of findings from the perspectives of a formative evaluation and a summative evaluation, which were not addressed in the Curriculum Guide for Medical Schools evaluation.

To avoid losing the essence of these overall findings, the summaries from the two reports are presented here, as reference for the more detailed-level comparisons that follow below.

Multi-professional curriculum evaluation

Formative evaluation. Information from the formative evaluation provides feedback to WHO regarding capacity building, implementation issues and suggestions for improvements to the Guide. These findings also generate guidance for other schools that could be using the Curriculum Guide in the future.

- The Multi-Professional Curriculum Guide is a readily usable resource that the participating schools implemented readily, although with the need to make some modifications to best adapt its contents to their local circumstances.
- Full implementation of teaching using the Curriculum Guide requires several years of effort, as schools gradually train faculty on patient safety, add topics to their curricula, and refine their teaching skills and methods.
- The participating schools felt strongly that patient safety is an important issue, and because the Curriculum Guide is such a strong resource, its use should be expanded to all other schools teaching health-care professionals, as well as other health-care organizations.

Summative evaluation. In the summative evaluation, the impacts on stakeholders from use of the Curriculum Guide are examined, as a measure of the effectiveness of this resource for teaching patient safety.

- Many of the participating schools had not previously defined patient safety as a priority in their curricula, and introduction of the Curriculum Guide elevated the schools' commitment to address patient safety, including actions to expand this teaching more broadly.
- Before introduction of the Curriculum Guide, the teaching faculty at participating schools had limited patient safety knowledge, and the training that schools provided their faculty to prepare them for teaching these topics increased their patient safety awareness and knowledge.

- The participating schools gained additional benefits from use of the Curriculum Guide, including motivation of health-care practitioners to care about health-care safety and production of more knowledgeable graduates into delivery of quality and safe health care.
- The teaching of patient safety by the participating universities/schools substantially strengthened students' understanding of patient safety, including improved knowledge of the patient safety topics they were taught and elevation of students' perceptions and attitudes toward the importance of patient safety and their ability to influence it.
- The experiences of the Complementary Test Sites, which tested use of the Curriculum Guide in a variety of additional settings, mirrored those of the pilot sites, suggesting the potential for successful application of the Guide in a variety of disciplines and settings.

Curriculum Guide for Medical Schools evaluation

Faculty who participated in the study have confirmed that the Curriculum Guide was an important resource and helped them implement patient safety teaching in their curricula. Each school involved in this evaluation study has indicated that they plan to retain and further develop patient safety teaching as part of the core curriculum.

Students reported positive intentions and attitudes with regard to patient safety and that their knowledge of patient safety increased after the teaching. They were supportive of further integration of patient safety teaching in the medical undergraduate curriculum.

Detailed comparisons of evaluation findings

The remainder of this report presents side-by-side comparisons of the detailed findings of the two evaluations – of the Multi-Professional Guide and the Medical School Guide. This information is organized according to the research questions defined for the two evaluations.

In general, the sets of findings are closely similar. Parallel feedback was received on the effectiveness of the Guides themselves, and similar experiences were reported regarding implementation of the patient safety teaching and use of the Guides.

As stated above, although the Curriculum Guide for Medical Schools evaluation did not define a question regarding implementation experiences and potential for broader use of the Guide, it did indeed generate information on this topic. These findings are shown under the third research question, as defined by the Multi-Professional Guide evaluation. No findings from the Curriculum Guide for Medical Schools evaluation are presented under the last question – how the Curriculum Guide might be improved – because this question was not addressed in that evaluation.

A. Does the Curriculum Guide contain the necessary and sufficient information and topics to allow its effective use in undergraduate training of health-care professionals?

Multi-Professional Curriculum Guide	Curriculum Guide for Medical Schools
Overall assessment of the Guide	
• Positive, overall views regarding the effectiveness of the Curriculum Guide	• Positive attitudes about teaching patient safety and the support provided by the Curriculum Guide materials. Valued both the patient safety content in the guide and the teaching suggestions and clinical examples.
• Highlighted how the Curriculum Guide supported their patient safety teaching efforts.	• The Guide was an important support and helped the schools implement patient safety teaching in their curricula.
• Guide gives credibility and creates a focus on patient safety	• *Not reported*
• Emphasizes important patient safety topics and shows how to organize them for teaching.	• The order of the topics in the Curriculum Guide is "intuitive" and one respondent thought that the supporting materials "teach teachers how to teach".
• Topics covered are important patient safety priorities in their countries.	• *Not reported*
• The Curriculum Guide contents are culturally appropriate for their countries	• Advised that it is important to make the teaching materials context/culturally specific (e.g. with examples from their own experience), to "make them their own".
• They adjusted some of the contents to make them more applicable to their situations; could be adapted easily when needed.	• One tutor used additional slides (from the web) to supplement the materials provided in the Curriculum Guide.
Feedback on Part A (teaching guidance)	
• The Curriculum Guide was supported teaching of patient safety and integration of patient safety into their curricula and practice.	• Particularly praised Part A on teaching how to teach.
• Part A is about capacity building for teaching faculty to develop the skills and knowledge	• *Not reported*
• Understood it would take time and more information to fully develop capability to teach patient safety effectively.	• The teaching was done by either the implementation leads or a small number of tutors who were given training. When used on a wider scale and integrated throughout the curriculum, many tutors may require training in patient safety, presenting a challenge to schools' resources.
• Faculty who do not know anything about patient safety need more direct exposure to information through workshops or	• *Not reported*

Multi-Professional Curriculum Guide	Curriculum Guide for Medical Schools
teleconferences	
• Student satisfaction: 82.8% of students gave the patient safety teaching a 4 or 5 score on a 5-point scale.	• Students positive: scores ranged 3.5 to 4.2 for effectiveness, on a 5-point scale (assessed by individual topic).
Feedback on Part B (topics)	
• Part B contents were well received and participating universities/schools actively put them to work.	• Generally positive reactions regarding the teaching materials provided in Part B.
• Each school tended to highlight different aspects of the topics.	• Schools took different approaches to teaching the topics.
• Mixed reactions regarding the teaching tools provided in Part B.	• The clinical examples in the Guide were useful, not for verbatim use, but as a guide to facilitate their search for examples from their own healthcare system which better fitted the local context.
• Tools of greatest value were the teaching slides and the case studies.	• Highlighted the benefits of the guidance provided on how to teach the patient safety topics; positive reactions to the example case studies
• Dentistry schools needed more specific examples applicable to dentistry, which they had to develop themselves	• Not applicable (only medical schools)
• Students' positive outcomes: 93.3% of students gave the topics a 4 or 5 score for effectiveness on a 5-point scale.	• Students' positive outcomes: scores ranged 3.5 to 4.2 for effectiveness, on a 5-point scale (assessed by individual topic).

B. What is the impact upon student learning of the inclusion of patient safety teaching in the curriculum?

Multi-Professional Curriculum Guide	Curriculum Guide for Medical Schools
• Teaching faculty cautiously optimistic that the courses taught using the Curriculum Guide had positive effects on their students' patient safety knowledge	• *Not reported*
• Also optimistic that students would put knowledge to work in their clinical practices.	• *Not reported*
• Student perceptions and attitudes about patient safety improved	• Improved student attitudes and intentions to patient safety across all schools, as well as changed perceptions in the workplace following the teaching.
• Student knowledge of the topics taught also improved	• A significant increase in knowledge was reported by students in all schools after the teaching. Objective assessment (before/after knowledge) not performed.
• **Baseline status:**	• **Baseline status**
o Small percentages of the students had any previous courses in patient safety	o *Not reported*
o Lower self-reported estimates of their knowledge	o Students perceived that they had limited knowledge about patient safety before the teaching.
o Low to moderate perceptions of the safety of the health-care system	o Medical students had positive attitudes and intentions with respect to these patient safety topics
o Low to moderate estimate of their ability to influence safety	o Medical students had positive attitudes and intentions with respect to these patient safety topics
o Rate highly their personal attitudes about safety	o Medical students had positive attitudes and intentions with respect to these patient safety topics
o Low scores on the knowledge questions	o *Not assessed using survey questions that tested knowledge.*
• **Post teaching status**	• **Post teaching status**
o Student ratings for three of the four perception/attitudes domains increased substantially at post-teaching.	o Students reported a significant increase in their knowledge after the patient safety teaching.
o Little change in the personal attitudes domain; already high at baseline	o Changes in attitudes and perceptions varied across topics
o Students' knowledge of patient safety topics taught improved substantially	o *Not assessed using survey questions that tested knowledge.*
o Overall, students had beneficial experiences with the courses taught	o Students were generally positive about the patient safety teaching immediately after the teaching.

C. In what ways can this Curriculum Guide be used to support the widespread implementation of explicit patient safety education globally?

Multi-Professional Curriculum Guide	Curriculum Guide for Medical Schools
Value of the Curriculum Guide for schools	
• Schools using experiences with field test to improve their future teaching of patient safety	• *Not reported*
• The leadership of schools placed a high priority on implementing the Curriculum Guide.	• Expressed commitment to both implement patient safety teaching and to participate in the evaluation study.
• Some faculties were more cautious initially, priority grew as understanding increased.	• Highlighted the importance of sufficient time for gaining local support.
• Majority of sites reported that the Guide was a positive educational investment.	• *Not reported*
○ Expansion of patient safety knowledge for students and educators	
○ Production of more knowledgeable graduates entering health-care delivery	
• Expect that benefits will expand as they increase the number of topics they teach.	• *Not reported*
• low costs for teaching the topics; time of teaching faculty, students' time, and supplies.	• Reported high costs for faculty time, to train faculty and for them then to teach the topics.
Decision processes to use the Guide	
• Different approaches used for deciding about use of the Guide and topic choice	• Different approaches used to initiate teaching, reflecting the unique circumstances of each school; shown in examples.
• All processes involved agreements among deans, implementation leads, and teaching faculty	• Need to develop champions/create role models in each specialty so patient safety teaching could flourish across the medical curriculum.
• Important for the Dean to trust and approve use of the Guide	• Highlighted the need for the school to be positive and support inclusion of the new patient safety teaching.
• Choice of topics to teach based on relevancy to students' needs and capabilities of the schools.	• For those schools where patient safety was new, the critical step was determining who was going to lead and deliver the teaching.
• Considered appropriateness of patient safety topics for each level of training	• *Not reported*
• Most faculty modified the curricula for the topics by including local examples, case studies, or other local experiences.	• The tutors used a wide range of teaching techniques in the delivery of the patient safety topics.
Implementation experiences	
• One great success was the strongly positive reception by students	• *Not reported*

Multi-Professional Curriculum Guide	Curriculum Guide for Medical Schools
and substantial benefits to the students.	
• Key challenges were difficulty of changing culture, lack of patient safety knowledge by faculty members, designing the courses, student reactions, and achieving sustainability.	• The tutors highlighted the importance of sufficient time for overcoming the challenges of gaining local support, identifying and training suitable tutors and developing teaching materials for the local context.
• Goal for many sites: to eventually teach all eleven topics and integrate them appropriately with the larger curricula, which will require broader training of faculty involved.	• When the Guide is used on a wider scale and integrated throughout the curriculum, many tutors may require training themselves in patient safety, presenting a challenge to schools' resources.
Views on expanding use of the Guide	
• Saw a strong need to expand use of the Curriculum Guide to improve the safety of health-care practices.	• There was overall agreement that patient safety teaching should be integrated across the curriculum. Plan to retain and further develop patient safety teaching as part of the core curriculum.
• Several schools had begun outreach to share their experiences and encourage others to use the Guide to teach patient safety.	• *Not reported*
• Supported use of the WHO Curriculum Guide to develop and implement trainings in other organizations.	• *Not reported*

D. How could the Curriculum Guide be modified in the future to best support teaching of patient safety to students in different environments?

Multi-Professional Curriculum Guide	Curriculum Guide for Medical Schools
• In general, the sites had a positive response to the Curriculum Guide	
• Greatest strengths: comprehensiveness, effective organization, and patient safety topics addressed.	No information was collected for suggestions to modify the Guide
• Weaknesses: need to adapt the contents to local situations and specialties.	
• Some suggestions for improvements	
○ In Part A strengthen guidance to educators.	
○ In Part B, several new topics suggested, but do not delete or downgrade existing topics.	
• Could readily adapt the Guide contents to their local needs	
• Most used the tools in the Guide, making modifications.	
• The Curriculum Guide is user-friendly with an easy-to-follow and adaptable format.	
• Use of English in the Guide was easy for most to understand,	
• Requests for translation of the Curriculum Guide into Spanish.	
• Language level was simple enough to be readily understood by both faculty and students.	
• Sites varied on which the tools used by faculty, depending on their local needs, preferences, and available time	
• Several reported challenges in accessing references listed in the Curriculum Guide.	