

Supplemental Digital Appendix 1

Steps for Developing the DoCTRINE Reporting Guidelines

Stages	Detail of Steps
Stage 1: Developing the Guidelines	<ol style="list-style-type: none"> 1. Identification of the need for reporting guidelines for innovations in education 2. Review of the literature on existing guidelines for writing innovations on education as well as related existing reporting guidelines 3. Draft of preliminary set of guidelines 4. Multiple reviews of preliminary set of guidelines by the study team until consensus was reached on a first draft 5. Execution of Delphi Study Round 1 with experts 6. Review of results from Delphi Study Round 1 7. Revision of first draft with Round 1 input, followed by revision 8. Execution of Delphi Study Round 2 with experts 9. Review of results from Delphi Study Round 2, followed by revision 10. Development of instrument for testing
Stage 2: Piloting the Guidelines	<ol style="list-style-type: none"> 11. Application of instrument to a sample of 3 publications by each member of the study team 12. Discussion of results from application by the team 13. Revision of instrument based on team discussion and consensus 14. Cognitive interviews with medical educators for further testing and input 15. New revision of instrument based on cognitive interviews for testing
Stage 3: Testing the Guidelines	<ol style="list-style-type: none"> 16. Application of instrument to 6 publications by 6 medical educators 17. Review of results from application followed by revision 18. Further editing of wording based on results from the testing, finalized as a checklist
Stage 4: Implementing the Guidelines	<ol style="list-style-type: none"> 19. Implementation of the checklist with actual authors at the screening phase of journal submission.

Stages	Detail of Steps
	20. Application of the checklist to submitted manuscripts by actual authors, randomized to receive the checklist or not 21. Review of results from implementation

Supplemental Digital Appendix 2

Literature Search Strategy for Articles Related to Educational Innovations

Databases	OVID, MEDLINE, and ERIC
Inclusion	English-language articles published between 2000 and 2017
Search strategy for MEDLINE	1: (tool* or instrument* or guid*) and (publish* or shar* or adopt*) and (assess* or eval* or descri* or qualit*).ab,kf,ti; 2: curriculum development.ab,kf,ti; 3: 48 and 49
Search strategy for ERIC	(ab((tool OR instrument OR guideline) NEAR/3 (curriculum)) OR ti((tool OR instrument OR guideline) NEAR/3 (curriculum))) and (publish* or shar* or adopt* or eval*)

Supplemental Digital Appendix 3 DoCTRINE Checklist After Each Phase

Original Item	After Delphi round 1	After Delphi round 2	Revised, simplified, and checklist-like language with nouns	After pilot testing and interrater reliability testing
Introduction				
Justifies the need for a curriculum to address a problem.	Identifies a need for a curriculum to address a problem, opportunity, or need in medical education.	Identifies a need for a curriculum to address a problem, opportunity, or need in medical education.	Need for the curriculum	Need for the curriculum
Provides a rationale for the primary instruction method(s).	Provides a rationale for why primary instruction method(s) were selected to achieve curricular outcomes.	Provides a rationale for why primary methods of instruction were selected to achieve curricular outcomes.	Deleted	N/A
Describes the structured approach (e.g., educational context, conceptual framework) that the curriculum development process was based on.	Describes the structured approach (e.g., educational context, conceptual framework, educational philosophy) that the curriculum development process was based on.	Describes the structured approach (e.g., educational context, conceptual framework, educational philosophy) that the curriculum development process was based on.	Conceptual framework for the curriculum	Deleted
Describes previous approaches to the problem through a review of relevant literature and description of institutional efforts.	Describes previous approaches/curriculum and instructional methods through a review of relevant literature to justify the need for a new curriculum.	Describes relevant literature or known approaches (e.g., publications, curricula, instructional methods) to justify the need for a new curriculum.	Review of relevant literature and published curriculum	Review of relevant literature, theories, models, and published curricula

Original Item	After Delphi round 1	After Delphi round 2	Revised, simplified, and checklist-like language with nouns	After pilot testing and interrater reliability testing
Explains how the submission represents a unique contribution and/or strengthens the existing literature.	Explains how the submission represents a unique contribution and/or strengthens the existing literature.	Explains how the submission represents a unique contribution and/or strengthens the existing literature.	Unique contribution of the curriculum to the literature	Unique contribution of the curriculum to the literature
Curriculum Development				
Provides an overview of the entire curriculum with goals and objectives	Provides an overview of the entire curriculum with goals, objectives and outcomes, as well as selection of aligned learning activity/pedagogy.	Provides an overview of the entire curriculum with goals and outcome-based learning objectives	Curriculum goals	Purpose/goals of the curriculum
			Outcome-based learning objectives	Outcome-based learning objectives
Identifies the population for whom the curriculum was intended, i.e., the participants	Identifies the population for whom the curriculum was intended, i.e., the participants	Identifies the population for whom the curriculum was intended, i.e., the participants	Target population of learners	Target population of learners
Describes the resources needed to implement the curriculum (e.g., physical space, instructors, administrative support, training materials, technical infrastructure)	Deleted	N/A	N/A	N/A

Original Item	After Delphi round 1	After Delphi round 2	Revised, simplified, and checklist-like language with nouns	After pilot testing and interrater reliability testing
Includes a statement about human subjects protection (e.g., institutional review board).	Deleted	N/A	N/A	N/A
Curriculum implementation				
Describes the number and type of learners/participants experiencing the curriculum	Describes the number and type of learners/participants experiencing the curriculum	Describes the number and type of learners/participants experiencing the curriculum	Intended number and type of participants	Deleted
Describes the educational setting for implementing the curriculum (e.g., classroom, simulation center, clinic, community)	Describes the educational setting for implementing the curriculum (e.g., classroom, simulation center, clinic, community)	Describes the educational setting for implementing the curriculum (e.g., classroom, simulation center, clinic, community)	Educational setting for curriculum delivery	Instructional setting for curriculum delivery
Describes how the curriculum was implemented	Describes the resources used to implement the curriculum (e.g., physical space, instructors, administrative support, training materials, technical infrastructure)	Describes the resources used to implement the curriculum (e.g., physical space, instructors, administrative support, training materials, technical infrastructure)	Resources for implementing the curriculum	Resources for implementing the curriculum
Describes the overall teaching strategies used	Describes the teaching methods of the curriculum	Describes the instructional methods of the curriculum	Description of instructional methods	Description of instructional methods
Describes the evaluation strategies used and their primary outcome(s)	Describes methods used to evaluate learner/participant achievement of the curriculum objectives	Describes methods used to evaluate learner/participant achievement of the learning objectives	Methods to evaluate achievement of outcome-based	Methods to evaluate achievement of outcome-based

Original Item	After Delphi round 1	After Delphi round 2	Revised, simplified, and checklist-like language with nouns	After pilot testing and interrater reliability testing
			learning objectives	learning objectives
Describes the source of the data collection instrument(s) used for evaluation, or its development, if newly created	Describes the source of the data collection instrument(s) used for evaluation, or its development, if newly created	Describes the source of the data collection instrument(s) used for evaluation, or its development, if newly created	Source of data collection instrument	Origin of evaluation instrument(s)
Results				
Reports the number of participants in the curriculum	Reports the number of participants in the curriculum	Reports the number of participants in the curriculum	Number of learners participating in the curriculum	Number of learners participating in the curriculum
Reports the number of participants included in the evaluation	Reports the number of participants included in the evaluation	Reports the number of participants included in the evaluation	Number of participants included in the evaluation	Number of participants included in the evaluation
Reports data for the primary evaluation outcome	Reports evidence through evaluation that the learning outcomes were achieved	Reports evidence that the learning outcomes were achieved.	Evidence of achievement of outcome-based learning objectives	Evidence of achievement of outcome-based learning objectives
Discussion				
Reflects on the extent to which the curriculum successfully addressed the problem or opportunity described in the introduction	Reflects on the extent to which the curriculum successfully addressed the problem or opportunity described in the introduction	Reflects on the extent to which the curriculum successfully addressed the problem or opportunity described in the introduction	Summary of findings	Summary of findings

Original Item	After Delphi round 1	After Delphi round 2	Revised, simplified, and checklist-like language with nouns	After pilot testing and interrater reliability testing
Describes any interval or planned revisions of the curriculum based on the evaluation data	Deleted	N/A	N/A	N/A
Describes how the work contributes to the existing literature	Describes how the work contributes to the existing literature	Describes how the work contributes to the existing literature	Relationship to the existing literature	Interpretation of findings in relation to the existing literature
Describes lessons learned (e.g., including whether anticipated barriers were overcome, sustainability)	Describes lessons learned (e.g., including whether objectives were met, whether anticipated barriers were overcome, what might be altered in the next iteration).	Describes lessons learned (e.g., whether anticipated barriers were overcome, what might be revised in the next iteration)	Lessons learned during implementation of the curriculum	Lessons learned from the implementation of the curriculum
Identifies limitations, including challenges to generalizability and evaluation approach	Identifies limitations, including challenges to generalizability and potential pitfalls in the evaluation approach	Identifies limitations, including challenges to transferability to other settings and shortcomings in the evaluation approach	Limitations of the evaluation of the curriculum	Limitations of the evaluation of the curriculum
Describes future implications of the work	Describes future implications of the work	Describes future implications of the work	Suggestions for future curricula	Description of future implications of the curriculum