

ALL-SAFE Blueprint

Instructional Objectives/Goals:

- To improve the surgeons' confidence and competence in laparoscopic management of ectopic pregnancy
- To support the development of basic cognitive and technical skills required for the safe laparoscopic management of ectopic pregnancy
- To provide surgeons with standardized educational content on the laparoscopic management of ectopic pregnancy to assist in development of relevant clinical judgment
- To provide a formative assessment framework and objective quantifiable measures to assess knowledge, judgment, and manual skills in the laparoscopic management of ectopic pregnancy
- To promote collaboration between countries of diverse resource levels to provide low cost, portable educational and assessment framework to improve quality of surgical care

To meet the targeted instructional objectives we have developed the ALL-SAFE training program with the following specific learning objectives across three domains. We will evaluate the impact of the ALL-SAFE training program using Kirkpatrick's training evaluation model.¹ The Kirkpatrick Model is an internationally recognized method of evaluating the outcomes of training programs on four distinct levels of criteria: reaction, learning, behavior, and results. In this case, each level presents an order of potential impact the educational program may have on learners' abilities and the system in which that learner performs. In our setting, the *Reaction* level (Level 1) evaluates the attitude of the learner towards the ALL-SAFE program; *Learning* level (Level 2) evaluates the knowledge and skills achieved by the learners; the *Behavior* level (Level 3) measures the adoption of learners' new knowledge and skill in the operating room; and the *Results* level (Level 4) measures the large-scale impact of the training program on patient care.

The ALL-SAFE Blueprint on the following 3 pages identifies the specific measures which will be used to evaluate the program's impact on the specific learning outcomes measured in earlier phases of this research, which correlate with Levels 1 and 2 of Kirkpatrick's Model. The ALL-SAFE Blueprint follows Miller's Pyramid of Assessment^{a-c}, which provides a framework for assessing clinical competence in medical education by matching learning outcomes (observable behaviors) with the expected level of learner skill along the continuum of their training (e.g. Low, Mid, High).

¹Kirkpatrick, D. L. (1998). *Evaluating Training Programs: the Kirkpatrick model and the Four Levels* (2nd Ed.). San Francisco, Berrett-Koehler.

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Knowledge – Cognitive Domain ^a			
Miller's Level (Relative order)	Learning Objective	Outcome	Content Source
Comprehension (Low)	Identify diagnostic ectopic pregnancy	Correct Case Scenario items 1-3	Case Scenario
Comprehension (Low)	Compare and contrast different treatment options for ectopic pregnancy	Correct Quiz items 1-3	Case Scenario, Quiz
Comprehension (Low)	Compare differences in common laparoscopic techniques used to access the abdomen	Correct Quiz item 4	Case Scenario, Quiz
Application (Mid)	Employ relevant knowledge of MIS technologies to optimize best visual field during laparoscopic management of ectopic pregnancy	Correct Quiz items 5,7	Case Scenario, Quiz
Synthesis (High)	Initiate appropriate clinical judgement when presented with a common complication during a clinical scenario	Correct Quiz items 6,8	Case Scenario, Quiz
Synthesis (High)	Initiate appropriate management of equipment and instruments on completion of laparoscopic management of ectopic pregnancy	Correct Quiz item 9	Case Scenario, Quiz
Application (Mid)	Select appropriate methods of port closure	Correct Quiz item 10	Case Scenario, Quiz
Strategic thinking (Mid) Extended thinking (High)	Using the provided ALL-SAFE assessment checklist and global ratings, accurately critique and assess other learners' technical competency at managing laparoscopic ectopic pregnancy in simulated setting	Completed checklist and global ratings for at least 3 number of peer learners	On-line assessment (checklist, Global)
Strategic thinking (Mid) Extended thinking (High)	When indicated, using the All-SAFE checklist and global ratings, provide written feedback and recommended suggestions for performance improvements to other learners regarding their technical competency at managing laparoscopic ectopic pregnancy	Clearly-written feedback that includes directives for demonstrable changes in learner action	On-line assessment (checklist, Global)

^a Bloom B. S. (1956). *Taxonomy of Educational Objectives, Handbook: The Cognitive Domain*. New York: David McKay Co Inc.

Skill – Psychomotor ^b			
Miller’s Level (Relative order)	Learning Objective	Outcome	Content Source
Imitation (Low)	Carefully examine both fallopian tube and identifies ectopic pregnancy (pathology)	“Yes” selected on checklist item 1, and minimum rating of “3” on global item 2	Skills Lesson video 1, On-line assessment (checklist, Global)
Precision (Mid) Articulation (Mid-High)	With coordinated actions, safely performs salpingostomy by making full length incision (no more) and only grasping surrounding tissue as necessary to stabilize fallopian tube and pathology	“Yes” selected on checklist items 1-4, and minimum rating of “3” on global items 1,3.	Skills Lesson video 1, On-line assessment (checklist, Global)
Precision (Mid) Articulation (Mid-High)	With coordinated actions, avoids damaging critical structures (i.e. fallopian tube, mesosalpinx), during laparoscopic management of ectopic pregnancy	“Yes” selected on checklist items 6-7, and minimum rating of “3” on global item 1	Skills Lesson videos 1-2, On-line assessment (checklist, Global)
Manipulation (Low-Mid)	Effectively and safely removes specimen (pathology) in simulated setting	“Yes” selected on checklist items 8-9, and minimum rating of “3” on global items 3-4	Skills Lesson videos 1-2, On-line assessment (checklist, Global)
Naturalization (High)	Combining skills, demonstrate basic laparoscopic suturing proficiency by carefully and efficiently throwing a single intracorporeal knot with a surgeon’s knot followed by two throws	“Yes” selected on checklist items 10-11, and minimum rating of “3” on global items 1-5	Skills Lesson videos 1-2, On-line assessment (checklist, Global)
Naturalization (High)	Combining skills, effectively and efficiently resolves laparoscopic ectopic pregnancy in simulated setting	Minimum summed score of 25 on checklist, and score 15/25 on Global	Skills Lesson videos 1-2, On-line assessment (checklist, Global)

^b Dave R.H. (1975). Developing and Writing Behavioral Objectives. (R J Armstrong, ed.) Educational Innovators Press.

Affect – Attitude ^c			
Miller's Level (Relative order)	Learning Objective	Outcome	Content Source
Responding (Mid)	Report improved confidence toward their own ability to laparoscopically manage an ectopic pregnancy presented at their own institution	Improved self-reported confidence rating (change in pre- post-intervention ratings)	On-line survey
Valuing (High)	Attaches value of peer feedback by <i>providing their own feedback</i> on other learners' performance of salpingostomy in simulated setting	Assessment ratings of other learners' procedural skills and global performance	On-line assessment
Valuing (High)	Attaches value of peer feedback by <i>accepting others' feedback</i> on their own performance of salpingostomy in simulated setting demonstrated by added practice and performance submissions	Submission of at least 2 video performances	On-line assessment

^c Krathwohl, D.R., Bloom, B.S., and Masia, B.B. (1964). *Taxonomy of educational objectives: Handbook II: Affective domain*. NY: David McKay Co.