

Simulation: A solution for evidence translation



Mazi Abdolrasulnia, PhD, MBA, MPH
mazi@m-consultingllc.com

Mazi Abdolrasulnia, PhD, MBA, MPH is Founder of M Consulting LLC and Adjunct Assistant Professor of Health Care Organization and Policy, School of Public Health, University of Alabama at Birmingham. M Consulting LLC provides training and consulting services related to quality improvement



Karen Roy, MSc, CCMEP
karen@ardgillangroup.com

Karen Roy MSc CCMEP is Principal at Ardgillan Group LLC. Ardgillan Group provides best practice consulting in healthcare education.

Challenge

Clinicians face many challenges in everyday practice. Many of these challenges are caused by the changing healthcare environment outside the sphere of influence of clinicians. They include changes in care delivery regulations, redefined payment structures, evolving technology solutions, enormous volumes of new information and guidelines, patient engagement programs, and managing practices and stakeholders, and among others. The most significant of these changes may be that payment now relies on patient outcomes, which in turns means that adhering to clinical guidelines and keeping up with the latest information is imperative for clinicians (1).

As a result of these increasing pressures, clinicians have had less time to keep up with guidelines and evidence, and to hone the decision-making skills needed to manage patients for better health outcomes. Specifically, their challenges include (2):

- Lack of awareness of new clinical guidelines,
- Ability to make most appropriate and up to date treatment decisions,
- Interpreting diagnostic findings based on the newest data, and
- Engaging patients in the decision-making process.

Exploring Solutions

Training and continuing education is a major method for how clinicians keep up with guidelines and best practices (3). Education programs have been using various tools in an attempt to integrate newly acquired knowledge into clinical practice. Traditionally, these programs have been based on passively sharing information with the intent of translating knowledge into practice (4). However, traditional educational activities such as conferences, dinner meetings, and grand rounds have not yielded much change in practice behaviors (5,6,7).

Refining the Solution

Addressing the challenges of adopting decision making practices in real life care settings requires a paradigm shift in how knowledge is translated into practice, and how it is consistently used for making clinical decisions. Adult learning theories describe how various learning methods are needed at different stages of need or learning. It is critically important to review how learned changes may be adopted into practice. A model that highlights the stages of adoption into clinical practice, from Pathman and et al, 4 and better known as the 4As. is outlined below:

- Awareness: information sharing of an evidence, guideline, or practice innovation
- Agreement: provider cognitively ‘agrees’ with the evidence, innovation or guideline
- Adoption: “trying out” the new practice
- Adherence: abiding by the new practice on all appropriate occasions

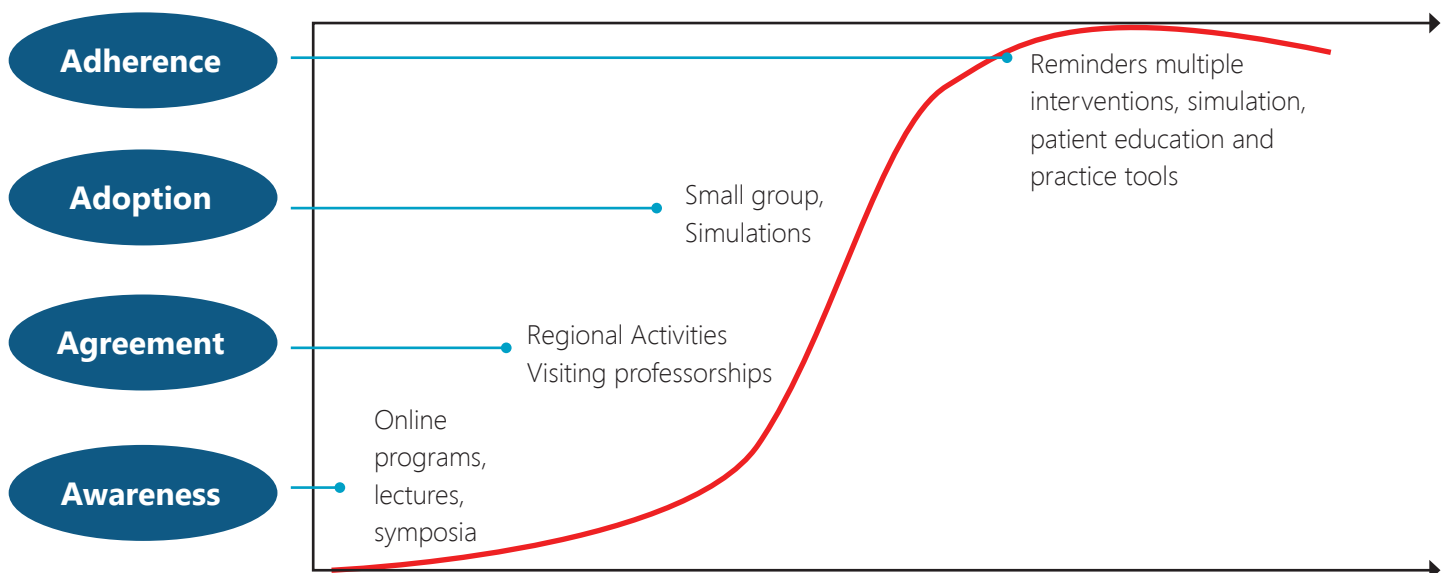
Planning for Success

Practice-based education activities require strategic planning and design. Pathman’s 4As. model may be used to design education while addressing:

1. The outcome in mind
2. Stage(s) of change desired, and
3. Audience needs and learning styles.

Previously, in our White Paper entitled “Simulation: A Proven but Underutilized Education Method” we described the purpose and evidence behind the impact of simulation-based learning. In the context of Pathman’s model, we map out in Figure 1 and Table 1 the value of simulation as a solution with the 4 stages.

Figure 1. Alignment of Learning Methods and Stages of Evidence Translation



Conclusion

If the desired goal of education is to make clinicians aware of a problem, then the solution may be in conducting online education programs and lectures. However, if the goal of training is to modify or implement decision-making practices, then use a solution such as simulation to affect real and measurable.

Table 1: Linking Pathman’s Model to Simulation as a Sustainable Tool (6,7,8)

AWARENESS

Potential Activity Type	Value of Simulation	Applying Simulation
Online didactic activities, lectures and symposia	LOWER- Simulation design may increase interactivity but may not significantly impact changes over and above other formats	Surveying and probing learners within activity yields valuable needs assessment information. Segmenting team roles via branching logic provides insights to different needs

AGREEMENT

Potential Activity Type	Value of Simulation	Applying Simulation
Regional education and visiting professorships	MEDIUM - provides a format to test agreement and alignment with current behaviors, data yield may be more robust than other formats, good rationale for needs assessment or baseline	Analysis of decision-making criteria tests for factors influencing agreement/consensus.

ADOPTION

Potential Activity Type	Value of Simulation	Applying Simulation
Group learning and simulation	HIGH - provides best in class format to try out new practice	Opportunity for experiential learning without risk, learning from mistakes, and exploring patient consequences. Efficient approach to new practice/guideline dissemination

ADHERENCE

Potential Activity Type	Value of Simulation	Applying Simulation
Reminders, practice tools, and simulation	HIGH - provides best in class format to assess adherence, consistent application of decision making and achievement of mastery	May vary task complexity, and patient scenarios or team roles. Positive reinforcement ensures skill retention. Repetition supports continued improvement.

References

1. The Future of medical adherence: McKesson Patient Relationship Solutions, March 2012.
2. Mazmanian PE, Davis DA. Continuing medical education and the physician as a learner. *JAMA*. 2002; 9: 1057–60.
3. Armstrong, E, & Parsa-Parsi, R. How Can Physicians' Learning Styles Drive Educational Planning? *Academic Medicine*, July 2005, 80 (7): 680-684.
4. Pathman, DE, Konrad, KR, Freed, GL, Freeman VA, & Koch, GG. The Awareness-to-Adherence Model of the Steps to Clinical Guideline Compliance: The Case of Pediatric Vaccine. *Medical Care*, 34, No. 9 (Sep., 1996): 873-889.
5. Aebersold, M, & Tilter, MG. A Simulation Model for Improving Learner and Health Outcomes
6. Zendejas, B. & et al. (2013). Patient outcomes in simulation-based medical education: a systematic review. *Journal of general internal medicine*. 28(8): 1078-89.
7. Tschannen, D & et al (2013). Improving nurses' perceptions of competency in diabetes self-management education through the use of simulation and problem-based learning. *Journal of Continuing Education Nursing*. Jun; 44(6):257-63.
8. Hattie, J, & Timperley, H. The Power of Feedback. *Review of Educational Research*, March 2007, 77 (1): 81–112.