

Cambridge University Press  
978-1-107-62528-0 - Simwars Simulation Case Book: Emergency Medicine  
Edited by Lisa Jacobson, Yasuharu Okuda and Steven A. Godwin  
Excerpt  
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PART I

**SIMWARS 101**

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## CHAPTER 1

### Why SimWars?

Steven A. Godwin

#### BACKGROUND

Why SimWars is an interesting question that requires some background to fully understand the driving forces behind the educational program's development. As simulation training has evolved, concurrent increased utilization across specialties has also occurred. Leaders in the field of simulation developed courses centered around crisis resource management based on communication and safety principles. In parallel, in many medical schools, a changing paradigm of medical education that focuses less on large-group didactics and more on small-group interaction has also emerged. Likewise, learners have come to expect more innovative approaches to educational conferences. Unique training experiences can, therefore, be very important when engaging resident learners.

A study conducted in 2008 showed that 85% of emergency residency programs use mannequin-based simulation in the training of their residents. The Accreditation Council for Graduate Medical Education (ACGME) now requires internal medicine residency programs to "provide residents with access to training using simulation" and accepts simulation to access competency in up to 30% of required procedures for emergency medicine.

Unfortunately the same 2008 study illustrated that faculty time constraints and lack of trained faculty (66% and 54%, respectively) were the main barriers to simulation use in their programs. Unlike the traditional model of graduate medical training, using lecture format to teach large groups of learners, the challenge to simulation-based education is that it requires faculties to have expertise in simulation case development, facilitation and debriefing. It also often requires a significant amount of faculty time and resources, as sessions are often facilitated in a small 1 to 4 trainer to learner ratio, in order to create realism and maintain a safe learning environment.

#### NEEDS ASSESSMENT

Medicine in general, and particularly emergency medicine, is a team sport but for much of our history the focus on learning has been on individual performance. Certainly individual performance in a clinical environment is key to ensuring good patient care, but it alone is not enough to provide the best care possible to the patient and their families. Clearly medicine has been slower than many fields, such as the

military, aviation and industry, in recognizing the importance of team training for optimal performance. As team training and crisis resource management began to be formulated from specialties such as anesthesia, use of simulation training emerged as an innovative and effective method to train team performance. Emergency medicine also appeared as a natural area for its application. Safety projects like MedTeams emerged that increased awareness for this type of performance standards. However, the issues regarding available time and expertise of instructors beg at least two questions: “Where is there time to add team training and ultimately patient safety concepts into already packed training curricula and conference agendas?” and “How could one increase participation and expand awareness of these concepts while creating an entertaining learning environment?”.

Clinical pathology case conferences have provided educational theater for medical conferences while challenging individuals and also creating a sense of departmental accomplishment and pride. Could a similar event be created that harnessed that same competitive academic spirit in a simulated format? As this concept was being considered, a popular television program, *American Idol*, highlighted a singing competition with immediate feedback from judges to the performers. This focused and directed feedback is given not only to the participants but also to the audience. Interestingly, it was recognized that this immediate feedback had the potential to reflect what is commonly done with bedside teaching in an instructor–learner encounter. Unlike the show where feedback was neither constructive nor often professional, what if the entertaining qualities of the feedback could be adopted while still maintaining professional respect for the learner and the participants? Such feedback, in simulated encounters with limited time spans, would clearly not be able to completely follow well accepted and studied debriefing strategies; however, some tools could certainly transfer over, for example simple delta strategies for; discovery.

What would make individuals want to participate in front of their peers at risk of embarrassment and potential shame if giving a poor performance? What makes us compete in athletic events where others may observe or be aware of the outcome? The privilege and challenge of being able to care for patients’ lives far exceeds the stakes of athletic events. Having the opportunity to challenge oneself in a team-based patient encounter provides an opportunity to observe professional performance in lifelike circumstances. The desire to compete on behalf of one’s home training program and institution becomes a driving force that encourages the normally less extroverted individual to willingly perform with colleagues in front of their peers.

A main goal in the development of SimWars was to create a learning experience that in some manner addressed each of the highlighted questions. SimWars’ competitions provide the challenge of a clinical dilemma that unfolds over brief 8 minute encounters in a competitive environment. The structure allows the audience to mentally participate with the learners as they are actively performing the scenario. After completion of each scenario, the audience actually becomes the learner as the expert panel discusses key learning objectives encountered during the case. In addition to the clinical knowledge, procedural and communication skills that are highlighted, simulation training techniques and strategies are also demonstrated. This mix of training objectives allows the event to meet the mission of not only providing clinical education but also of expanding simulation training. Audiences and participants leave the competition with a broad working experience in both simple and

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complex simulation training techniques that can be taken back to their home institutions.

Ultimately, SimWars fills the need of providing small-group education to large-group audiences. Audiences are active participants as they vote for the winner of each case competition. As observers critique the competing teams, a greater sense of engagement is created, as they become active members of the educational process.

Why SimWars? The answer may vary for the purpose of the conference itself but the driving principle is to provide a unique and challenging learning experience that engages both the participants and the observers.

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## CHAPTER 2

### What is SimWars

Yasuharu Okuda

The use of mannequin-based simulation to train healthcare providers has evolved significantly over the decades. Initially championed by experts such as David Gaba to develop highly effective clinical teams using crisis management principles derived from the aviation industry, simulation has now become a staple training tool for healthcare training programs.

The authors of this book created a training competition, entitled SimWars, to maximize the value of simulation across a large group of learners while maintaining the benefits seen in facilitated small group simulation encounters. SimWars also increases the ability for clinical experts and other non-simulation faculty members to increase participation in simulation-based training without having to become experts in simulation. This book defines the SimWars program, describes how to implement SimWars in a department, hospital or organization and provides over 40 emergency medicine cases previously vetted at national SimWars competitions. Each of the cases is linked to the ACGME milestones.

SimWars is a simulation-based clinical competition where teams of residents or clinical providers come together to compete against one another on simulated patient scenarios in front of a live audience. Upon completion of each case, a panel of judges, selected on their clinical background and simulation-based training expertise, provides debriefing feedback to the team members based on the team's clinical management, procedural skills, teamwork and communication. The audience votes on the team with the best performance, and the winning teams progress through the competition in a single-elimination tournament format until there is only one team left standing.

SimWars was created by Yasuharu Okuda, Andy Godwin and Scott Weingart in 2007 and first implemented during the New York City Emergency Department Critical Care Conference held at the Icahn School of Medicine at Mount Sinai. Initially started with minimal resources and staff, SimWars has now evolved into collaborative effort between individuals, academic organizations, and vendors. Since its inception, it has now been held around the world in over 30 national and international meetings including of the American College of Emergency Physicians and the Society for Academic Emergency Medicine and the International Meeting on Simulation in Healthcare. The competition has also evolved into other disciplines including

meetings in oral maxillofacial surgery, gynecology, and neurocritical care, and to countries from Canada to Australia.

For emergency medicine, Lisa Jacobson was named the first national director responsible for program management and senior editor for the SimWars cases. Funding was obtained through grants and other resources provided by the Emergency Medicine Residents Association and the Foundation for Education and Research for Neurologic Emergencies. Case development and other staff support were provided by the Society for Academic Emergency Medicine’s Simulation Academy.

THE FORMAT

The SimWars competition is held in a single-elimination format with two teams (A and B) competing against one another on the same simulation scenario (Fig. 2.1), with the order decided by a coin toss. The team performing second is asked to leave the room, to blind them to the scenario and its respective management by the first team. Upon completion of the scenario, a panel of three expert judges debriefs the first team’s members on their performance. When the first team is done being debriefed, the second team is then invited back into the room to go through the same scenario, which is again debriefed by the judges. At this point, the moderator asks the audience to vote on the winner based on what they observed and judges’ input, using an audience response system. Depending on the total number of teams, this format is repeated using new cases until there is only one SimWars champion team. The sample format (Fig. 2.1) and schedule (Table 2.1) are shown for a competition involving four teams, with team C as the winner in this example.

The teams

Teams typically have four members. For emergency medicine residency competitions, a minimum of one senior resident is required with the remaining three members composed of any combination of postgraduate levels.

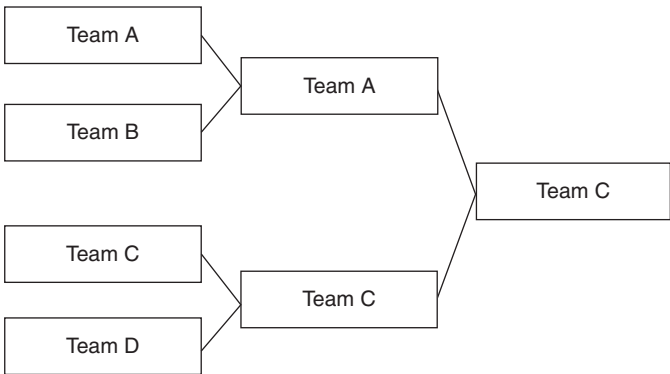


Fig. 2.1 A sample format.

TABLE 2.1 SAMPLE SCHEDULE

	Time	Case	Event
Round 1	7:00–7:10		Introduction
Team A vs. B	7:10–7:20	1	Team A
	7:20–7:30		Debrief
	7:30–7:40	1	Team B
Team C vs. D	7:40–7:50		Debrief
	7:50–8:00	2	Team C
	8:00–8:10		Debrief
	8:10–8:20	2	Team D
Finals	8:20–8:30		Debrief
	8:30–8:40	3	Team A
	8:40–8:50		Debrief
	8:50–9:00	3	Team C (winner)
	9:00–9:10		Debrief

The moderator

Moderators have an extremely important function. Besides facilitation and maintaining the schedule of the competition, their job is to set clear expectations from the beginning for the teams, judges and audience members. Below are some speaking points during the introduction.

- For the teams
  - ▶ the purpose of the SimWars Competition is to have a friendly inter-residency competition, focused on learning
  - ▶ we will try to maintain as safe a learning environment as possible but realize that SimWars is still a competition. There is a clear winner at the end
  - ▶ you will be judged equally on teamwork, communication and clinical management
  - ▶ use of any reference or mobile device is allowed if these are typically used during your clinical shift
  - ▶ if you are unclear about a finding, ask the confederate (actor) nurse.
- For the judges
  - ▶ we expect the judges to be professional but be honest with feedback, both positive and negative
  - ▶ disagreement is healthy and is encouraged amongst the judges
  - ▶ judges will be responsible for selecting a winner on the final round only
  - ▶ judges will have 10 minutes total to give feedback to each team.
- For the audience
  - ▶ will be voting on the winner of each round, except the final round, based on the judges’ input and your observation of the team’s performance
  - ▶ we expect you to vote based on merit and not popularity
  - ▶ only one vote per audience member is allowed.

At this point, the teams are introduced and the schedule is announced. Each team has 10 minutes per case.



The other role of the moderator is to maintain a fun atmosphere, to keep the competition light hearted. If a particular judge appears to be too harsh or if the moderator notices a team member is upset, it is up to the moderator to step in to smooth things out. Typically this can be accomplished by refocusing the group on the main purpose of SimWars, which is to learn about clinical management and team-work skills in a fun competitive environment. Other techniques include recognizing the participant’s willingness to compete in front of a live audience for the sake of learning and their residency program.

The judges

Proper judge selection is critical to the success of the SimWars competition. The key is to have a balanced panel of three judges with a mix of clinical subject matter, simulation learning background and debriefing, and teamwork and communication expertise. In addition, the judges should have strong personalities, which makes the discussion fun, entertaining and safe. For further information on judging, please refer to Chapters 4 and 5.

THE CASES

SimWars competitions at previously held emergency medicine meetings have been based on clinical themes such as “altered mental status,” “toxicology” and “environmental emergencies.” The purpose of choosing a theme is to focus the learning on a topic, increase the ease of recruiting the appropriate judge(s) and reduce case repetition over time.

Once the theme is selected, case ideas are brainstormed with a small group of simulation and clinical content experts. Given the short 8–10 minute time frame, proper case selection is key to a successful SimWars event. If the case is too simple, the team will be done too quickly. If the case is too complicated, with an excessive number of goals and objectives, the team will either stray off track or complete only a part of the scenario before time is over. The ideal case has two to three main clinical decision points, overlaid with a couple of distractors, and one or two communication or teamwork challenges. Some examples are given.

Too simple

A 64-year-old woman with chest pain radiating to the left arm, associated with nausea and diaphoresis. States pain feels like an elephant is sitting on her chest. No associate symptoms. No allergies. No medications. Family history of MI. EKG shows anterior wall ST elevations with reciprocal changes. The patient is in the ED during the daytime, and the cardiac catheterization lab is available.

- Diagnosis and management of anterior STEMI (clinical)
- Communication with cardiologist (communication)
- (no distractor).

*Too complicated*

A 64-year-old Chinese-speaking (minimal English) woman with chest pain radiating to the left arm and back, associated with shortness of breath, nausea and diaphoresis. Unable to describe character of chest pain. Unable to elicit other symptoms. Accompanied by husband who is drunk and combative. Patient is allergic to aspirin and takes multiple herbal medications. Physical exam shows multiple bruises over body of varying ages and patient tearful. EKG shows anterior wall ST elevations with reciprocal changes. D-dimer elevated. The patient is in the ED at night, in a small community hospital with no night-time cardiology availability. Unable to get interpreter.

- Differential diagnosis of chest pain (clinical)
  - ▶ cardiac (clinical)
  - ▶ dissection (clinical)
  - ▶ pulmonary embolism (clinical)
- Aspirin allergy in possible acute coronary syndrome (ACS) (clinical)
- Alternative medicine/herbal remedies associated with chest pain (clinical)
- Transfer issues (clinical)
- Consent issues (communication)
- Communication with patient, obtaining an interpreter (communication)
- Spousal abuse (clinical/social)
- Disruptive behaviors (distractor).

*Just right*

A 64-year-old Chinese-speaking (minimal English) woman with chest pain radiating to the left arm, associated with shortness of breath, nausea and diaphoresis. States pain feels like an elephant is sitting on her chest. No associate symptoms. Accompanied by husband who is bilingual and can translate. Patient has no known drug allergies and takes multiple herbal medications. EKG shows anterior wall ST elevations with reciprocal changes. The patient is in the ED at night, in a small community hospital with no night-time cardiology availability. Unable to get an official interpreter. Wife and husband do not believe in Western medicine and do not want any IV medications but want pain to stop.

- Diagnosis and management of anterior STEMI (clinical)
- Transfer patient for cardiac catheterization vs. thrombolysis (clinical)
- Alternative medicine/herbal remedies associated with chest pain (clinical)
- Obtaining consent vs. refusal to be treated (communication/distractor)
- Issues with using family as the interpreter (communication)
- Wants pain to stop (distractor).

**The winner**

The audience votes for the winner of each round, based on observation and judges' feedback, until the final round. The winner of the final round is decided by the judges to ensure merit-based selection over popularity. Each member of the winning team and residency program receives a plaque and is automatically invited back the following year as returning champions to defend their title as SimWars champions.