7 REASONS WHY SIMULATION FIRST AID TRAINING SAVES MORE LIVES
INTRODUCTION

The concept of ‘learning by doing’ has been around for millennia. Almost 3000 years ago the Chinese philosopher Confucius said, “Tell me and I forget, show me and I remember, let me do and I understand”.

Today, the military, airlines and other high-risk industries rely heavily on simulation training, as these industries are directly responsible for the preservation of life\(^1\).

So what does **Simulation First Aid Training** mean? It is a methodology that aims to promote deep learning and awareness by involving participants in realistic, critical incidents during which they are forced to consider a wide range of factors, make decisions and reflect on the outcomes\(^2\).

Medical educators employs simulation training as it has been proven to produce better student outcomes when compared to traditional methods\(^6,7\). By creating a simulated environment, it is possible to experience how one’s body and mind may respond to a critical incident. Simulation training is an ideal platform for developing teamwork and leadership skills, and aids in the identification of previously unnoted safety hazards\(^10\).

This document draws on evidence-based research to illustrate how simulation training is more effective than traditional methods in creating a safer environment and saving more lives\(^15\).
Benjamin Krynski, Head of Training with Real First Aid, conducted an anaphylaxis management course in a Melbourne childcare centre, during which he described the benefits of simulation training.

**CASE STUDY 1:**

“During my introduction to the pediatric anaphylaxis course, a participant, Judy*, expressed her frustration at having to sit through yet another First Aid course. This was her fifth course, as childcare workers have to update their anaphylaxis qualifications annually under State regulations. Rather than addressing Judy’s frustration directly, I decided to begin the class with a scenario. I chose her and two other students to act as First Aiders, and sent all three out of the room.

I briefed the rest of the class and delegated roles to the other participants before bringing the three ‘First Aiders’ back into the room. They were presented with another participant acting the role of a frightened 3-year-old girl experiencing difficulty breathing, swelling on her face, and blue lips and fingertips (simulated with make-up). The child’s ‘mother’ was standing over her, screaming at the centre’s workers to help her baby.

Judy ran up to the ‘child’ in a panic, pulled an EPIPEN® Trainer from her kit, ripped the cap off and violently jabbed the pen into the child’s leg. Unfortunately for Judy, she was holding the pen upside down, and had this been a real situation, she would have injected the device into her own...
thumb. I told her to sit down as she was now injured and needed care for her bleeding thumb. One of the other First Aiders, Natalie*, had to leave the child and take care of the Judy, leaving the third First Aider, Jodie*, alone with the girl and her mother.

Jodie then had to leave the child alone to collect the centre’s spare EPIPEN®. She returned to find the girl collapsed on the ground and not breathing. She quickly initiated CPR, (now using a mannequin), and directed the mother to call 000. After Judy had calmed down, Natalie was able to return and assist Jodie with CPR until the ambulance arrived.

On debriefing the scenario with the class, we discussed past events in which children had actually died due to the inability of childcare workers or teachers to correctly administer an EPIPEN®. Upon learning that the scenario was typical of fatal tragedies that have occurred in Australia(3-5) Judy apologised for her earlier attitude and admitted that she was incredibly grateful for the training. She explained that her frustration had been due to past courses that had never adequately taught the correct management of an anaphylactic attack. This was the first time she had experienced realistic simulation training. Now, after making such a serious mistake, she is confident that if she were ever faced with such an emergency, she wouldn’t make the same mistake again.”

Scenarios provide Real First Aid’s students with a simulated reality in which to test their knowledge, skills and abilities. It’s imperative that students make mistakes in the course, rather than during a real incident.

First Aid emergencies are complex events involving a range of variables that are unlikely to be addressed in a traditional course. Simulations allow students to be more aware of the complexities of emergency situations, and help them to recall essential information that can save a life(6).

*Names have been changed for privacy reasons.
Medical schools have successfully been using simulation training for many years as it allows new doctors to train for high risk, low frequency events without endangering real patients\(^{(7)}\). Simulation training has been shown to be more effective than traditional training in improving medical interns’ airway management skills\(^{(7)}\). Interns who have undertaken simulation training demonstrate a significantly higher level of ability. Patient scenarios are seen as a valuable teaching method to complement the traditional approach\(^{(7)}\).

Students who have undertaken simulation training for neonatal resuscitation are 2.5 times more likely to deliver optimum care during CPR than those who don’t. There is a 60% observed reduction in the frequency of harmful actions taken by those who have received CPR training with simulation compared to traditional training\(^{(8)}\). This indicates that there is a direct relationship between simulation training and improved patient outcomes in a clinical setting\(^{(8)}\).
CASE STUDY 2:
At a summer camp, an 11-year-old boy was hit by lightning. Within 30 seconds, the camp nurse recognised that he was in cardiac arrest and quickly started CPR. Other staff began assisting with CPR, and brought a defibrillator to deliver the first shock in less than three minutes.

Two more shocks were delivered by the camp staff over the next few minutes. The first ambulance on the scene had no defibrillator and only after 10 minutes did an ambulance arrive with a defibrillator on board. Fortunately, by this time the child had a pulse and was breathing. After four days the child was discharged from hospital with near normal neurological output\(^8,9\).
In this case, a team of non-professionals performed near perfect CPR with the use of a defibrillator and oxygen equipment and saved the child’s life\(^8\). On debriefing, it was discovered that the camp staff had participated in two hours of simulated emergency drills during their orientation week. This included a simulated cardiac arrest in which the staff had to perform CPR with a defibrillator. These skills were revised in a highly contextualised manner on a weekly basis, with the staff receiving feedback on their performance\(^8\).

When the staff members found the child unconscious and not breathing, they had already experienced this as a scenario multiple times and knew exactly what to do. They knew who to call, what to do while waiting for the defibrillator, and how to work as a team. This is what makes simulation training unique; it takes the surprise out of the situation, allowing participants to practice their skills, ask questions, make mistakes and learn by doing. In this case the staff knew exactly what to do, which was fundamental to the boy’s survival\(^8\).
When faced with a critical incident, someone must take leadership and ensure effective teamwork. Good communication will improve patient outcomes and reduce loss of life\(^{(10)}\). The effective management of First Aid emergencies invariably requires a team of people, as is clearly seen in Intensive Care Units (ICU)\(^{(11)}\).

Teamwork is essential for the quick delivery of a defibrillator, one of the most important factors determining a successful outcome for a patient in sudden cardiac arrest\(^{(12-14)}\). However, even within an ICU, 66\% of qualified doctors and nurses failed to deliver effective shock treatment within the required time frame due to an absence of leadership and teamwork\(^{(11)}\). Simulation training has been identified as the most effective means of helping to rectify this shortcoming\(^{(15)}\).

Simulation training allows a team to work together to improve the effectiveness of each individual and of the team\(^{(16)}\). Better-trained staff ensures that when an emergency occurs, the patient will receive a significantly higher standard of treatment.
Simulation training tests the current procedures and systems within an environment, and often reveals hidden safety hazards\(^{(10)}\).

**CASE STUDY 3:**
Simulation training was undertaken in a factory in the northern suburbs of Melbourne, Australia. During the scenario, a participant tried to open a secondary gate to allow for the quickest ambulance access. However, he found that no-one knew where the key was. If this had been a real situation, the ambulance would have been delayed for critical minutes without direct access. The day after the course, the key was located, and several copies were cut and distributed to ensure that the gate could always be opened in an emergency.

While investigating the effectiveness of simulation training in over 21 medical clinics and urgent care facilities in the US, many unanticipated benefits were observed. In addition, 40 safety hazards were identified and mitigated\(^{(15)}\).

**They included the following:**
- Ambulance officers were unable to locate a patient in a large clinic
- Staff were unable to locate a patient
- Staff injected EPIPE\(\text{N}\)\(\text{s}\) into their own fingers
- Incorrect medications were administered due to look-alike medications
- Staff were unfamiliar with emergency documentation
- Unclear roles led to staff standing back until they received direction.\(^{(15)}\)
It is unlikely that a traditional training program would have revealed these hazards\textsuperscript{(15)}. This ‘dry run’ training is an ideal way to identify and rectify safety hazards within a First Aid context, and help staff to develop team and leadership skills.

Training is an ideal way to identify and rectify safety hazards within a First Aid context, and help staff to develop team and leadership skills.
Simulation training not only helps to increase First Aid competency, it also brings co-workers together as a team. The training simulates highly stressful, realistic scenarios, in which participants must work together under pressure in order to achieve the mutually beneficial goal of a positive patient outcome\(^{(15)}\).

**CASE STUDY 4:**

During simulation training at a yoga studio in South Melbourne, 12 participants were faced with a serious “incident” outside the studio. They heard a large bang and a car horn blaring. Someone ran into the studio crying for help simulating a car accident. Shocked, the students made their way outside to discover a car on the sidewalk and a motorcyclist lying on the ground semi-conscious. The motorcyclist had a simulated open tibia fracture and suspected head/spinal injuries.

Some of the participants froze, while others took action. One participant took a leadership role and began directing the others to start assisting with various tasks. After identifying a second patient requiring CPR, all the students became involved. Several participants took command and the team all communicated effectively.

Responding to a motorcycle accident with two severely injured patients, one requiring CPR, is nearly impossible to achieve alone. The group needed to work together and communicate clearly in order to treat the two casualties.

During the post-training debrief, the students described how difficult it was to make the right decisions. However, they felt a strong sense of teamwork and realised that
by working together, they had managed the situation effectively. Having experienced a ‘dry run’ they are now better prepared for a real event.

Simulation training fulfils the role of both First Aid training and team building by placing participants in dynamic, exciting and stressful situations, in which they have to work together in order to deliver a successful outcome.
It is unrealistic to expect students to learn, understand and retain First Aid knowledge from a traditional course. The current system of training is not achieving its goals\(^{(16)}\). CPR education has a poor record of retention and is usually not performed by bystanders\(^{(17-19)}\).

Simulation training uses a wide range of props in order to replicate real life events in an interactive, dynamic and stressful but safe environment\(^{(1)}\).

**These props include:**
- Fake blood and wounds
- Smoke machines
- Loud noises and dramatic music
- Screams and traffic noises
- Sirens
- Strobe lights
- Emergency lighting

During simulation training students are bombarded with multiple sensations. They must take control and decide on the best course of action.

During scenarios, students are not faced with theoretical situations on a whiteboard, they are confronted with a living person who may be ‘bleeding, screaming, losing consciousness or dying’. ‘Bystanders’ may yell misinformation to confuse the students.
and ‘police’ and ‘family members’ may distract them. By incorporating these into realistic scenarios, students leave our classes with a high level of confidence and skill.

Experiencing a scenario is stressful and may even be emotional, with many students describing the training as confronting. This is advantageous as the human mind embeds stressful and emotional experiences firmly into our memory(8).
Delivering First Aid training to a group of adults with a real-life experience can be challenging for any instructor. Traditional lecture-style First Aid classes seldom involve active learning and so, do not fully engage students. Most adults learn better when participating in interactive environments\(^{(15)}\).

Simulation training allows for self-direction and initiative while being supported by an instructor who critiques them and provides real-time feedback. The instructor accurately assess the students’ competency, and discover where they lack knowledge\(^{(8, 20)}\).

Simulation training is a powerful tool allowing instructors to cover multiple objectives within a single course. It better motivates students, promotes detailed learning and communication skills and directly links theoretical knowledge to practical application\(^{(21)}\).

Simulation training is a technique, not a technology. It simulates real experiences from real world events and evokes the students’ natural responses in a fully interactive and safe manner\(^{(16)}\).

Our instructors, students and evidence-based research all show that simulation training is the most effective method of First Aid training for long-term retention of skills. This training saves money and more importantly, saves lives.
Graduates of our simulation courses leave with knowledge, leadership, improved teamwork skills, and the confidence to handle a real medical emergency. We want our students to ask questions, make mistakes and try again, because in real life there are no second chances.

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The following testimonials illustrate the direct benefits of simulation training.

“The scenarios where realistic and relevant, exposing us to most of the situations discussed in the course. Having the pressure placed on us by such an experienced trainer meant we were able to learn much more than in other courses. I only wish we had completed the two days, not the one”.

Jo-Anne Ebbage, RubberTek, 08/08/2013.

“I really enjoyed the simulated scenarios that were woven into the training, which gave me some experience of what might happen in real life”.

Bureau of Meteorology, 11/04/2013.

The realistic scenarios were fantastic, and allowed us to practice the skills we had learnt in an environment and scenario far better than you would in any other first aid course. Most of our group members were confronted, and even shocked, by the realistic nature of the situations.

James, Mount Scopus College, 17/12/2014.

The real life situations made it more interesting than learning from a book , I found it gave me more confidence that I could step in and help in a real life situation.

Libby, Brenniston, 27/10/2014

“Ben has a lot of knowledge and delivers it in a very clear and easy to understand manner. He is extremely approachable and makes you feel at ease even when you may find something difficult to grasp. This is my third First Aid course and the first to include simulation training, which was both confronting but very beneficial at the same time. Without doubt this has been the best course I have completed. My colleagues also agree with me on this also”.

Laura Genobile, MTC, 14/04/2013.
FREE SIMULATION TRAINING CONSULTATION

For a free simulation training consultation to increase safety while saving money and lives, contact Real First Aid today.
Call: 1300 744 980 or
email: training@realfirstaid.com.au

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