

# SIMZINE

SIMulation magaZINE

¡VIVA LA  
SIMULACIÓN!

INTERNATIONAL ISSUE

n.5 - Giugno/June/Junio 2022

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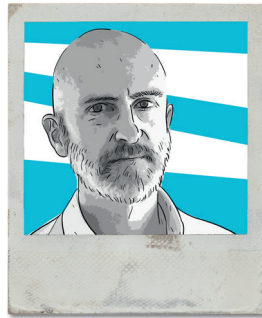
#SIMULART

Graphic elaboration from a poster on the "Feria de Sevilla"  
[Unknown author - 1960s].





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## EDITORIAL

## And let's go abroad!

This issue is a new start for SIMZINE: a new «issue 0». We want to explore a different way of telling our stories, with a distinct, direct and multi-lingual approach and outlook. From now on, all articles will be published in three languages [Italian, English and Spanish], and the translation of each will be available on SIMZINE Digital [[www.simzine.it](http://www.simzine.it)].

Sharing experiences and opportunities, getting to know people, simulation centers and companies that are part of this environment, understanding in more detail the different simulation devices and the professionals who are making them: these are just some of the objectives of our new way.

New way means adopting a different approach to discussing advantages and limitations of simulation: innovation, internationalism, active listening, and knowledge sharing are its DNA.

New way is giving voice to curious researchers, to those who ask themselves questions: our goal is not finding a solution. Kant was not looking for a solution. He wanted to reason, to offer ideas. SIMZINE wants to give space to those who want to do the same.

New way is the ambition to be a magazine made by people and for people who, passionately and professionally, contribute to patient safety through simulation. The contribu-

tion of each of us, through suggestions, ideas, articles, has always been essential to keep SIMZINE alive and make it grow, and the same will be in the future.

New way is telling stories about simulation and people, making known the individuals and the companies who build the simulators we use, discussing theory and method, but also talking about business and products to better understand the context where we work.

New way because it is an experiment, started in Italy, born from the genuine desire to create a community of open-minded professionals, determined to broaden their vision around the conscious use of simulation as a tool to improve patient care. The backbone of SIMZINE, born during a dinner with Giacomo, sipping wine in a restaurant after two months of lockdown, and perhaps as a reaction to social distancing, is encouraging relationships, reflection, and being around other people, creating a safe place for conversation.

Finally, new way because it is a *zine* and, consistent with the tradition of this particular type of magazine, it is independent and, sometimes, even irreverent. We have no scientific purpose: our goal is offering a space for discussion to a group of passionate professionals or maybe construct the memory of a social movement.

And as we said in the "true" issue 0 launched in June last year: read us, write to us and enjoy!

P.L.I.

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Printing  
Imprenta -Sevilla.es C/ Amor 1. Local 1, 41006 Sevilla, Spagna  
Cover image made by  
Pietro Cordini.

Registration at the Civil Court of Florence on 29/9/2021, nr. 6151  
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# An ordinary journal? A magazine? No, this is **SIMZINE**.

A **new editorial experiment**  
for all **simulation** enthusiasts.



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**SIMCHAT**

## A questioning technique: the illusion of alternatives

The questions with illusion of alternatives are a questioning technique to consolidate the participants' discovery

What are the questions with an illusion of alternatives?

It's a conversational technique. It represents one of the most elegant forms of injunction.

What does this really mean in practice?

Questions are structured in such a way that they hold two possible answers, among which the person replies by taking up the one that best fits his or her situation.

And why should I formulate this type of questions?

To be real vehicles of change, questions might be tailored to the logic of the interlocutor and constructed to call and reorientate the perceptions and reactions of the subject to more functional ones.

Why do this?

As the debriefing dialog proceeds, the sequence of questions could be structured as a sort of funnel that starts with general questions and gradually narrows down in a spiral fashion and builds upon answers that reveal potentially critical aspects of the particular emerging situation. When a concept has been explored, a sort of agreement has been reached, the debriefer reinforces this agreement with a series of closed-ended questions with an illusion of alternatives. This kind of questions are not simply instruments of knowledge, but instruments of intervention in the direction of change, as they provoke in the learner new ways of feeling and reacting to his reality that were previously trapped in his perceptions, sometimes dysfunctional.

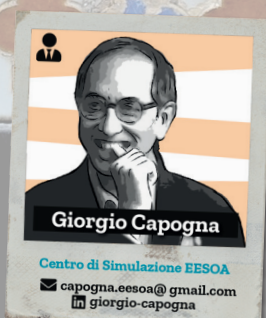
I'm not sure I understood. Can you make an example?

Let's say that a group of surgeons, anaesthesiologists and nurses just ended a scenario and are now discussing leadership with the debriefer. They agreed that a member of the team was the leader, and all others considered he behaved correctly just stepping back from clinical and hand-on procedures and coordinating the group. This showed to help the whole group to accomplish the task. Then, a typical question with an illusion of alternatives could be: "So, do you think the leader should concentrate on doing the therapy, perhaps losing sight of the big picture, or remain outside the group action, to better coordinate the group itself?". Having already recognized that it is better for the leader to remain outside the group to better coordinate, and through this further question to the illusion of alternative, the learner receives a further perceptive reinforcement of the correctness of his discovery made during the debriefing.

Thus, the illusion of alternative questions consolidates the participants' discovery?

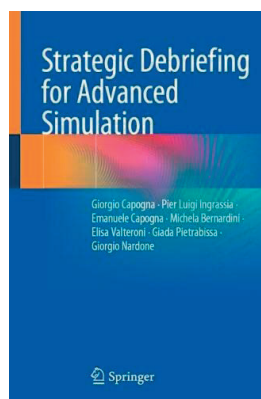
Never said better.

INTERNATIONAL ISSUE



### REGISTER, WE GIVE YOU THE BOOK

SIMZINE wants to give 3 copies of the book "Strategic Debriefing for Advanced Simulation" to its readers. To try to receive the book, register on [www.simzine.it](http://www.simzine.it) and send an email to [redazione@simzine.it](mailto:redazione@simzine.it) with the subject 'Strategic Debriefing 2022'. If you like, write us a couple of lines about who you are and why you are interested in the subject.



FROM:  
G Capogna, PL Ingrassia, E Capogna, M Bernardini, E Valteroni, G Pietrabissa, G Nardone.  
Strategic Debriefing for Advanced Simulation. 2022  
Springer International Publishing AG, Milano.  
ISBN: 9783031061035



SIMFACE



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## Esther León: simulationist and passionate

Health sciences, philosophy and psychology: the three professional facets of Esther León.

Head of i+D+i of University of Barcelona's Clinical Simulation Laboratory. Vice-president and former treasurer of the European Society of Simulation (SESAM). Former president, vice-president and secretary of the Spanish Society of Simulation and Patient Safety (SESSEP). Member of the Editorial Committee of International Journal of Healthcare Simulation. She has also been co-chair of the

Affiliation Committee and member of the Strategy Committee of Society of Simulation in Healthcare. Undoubtedly, Esther León plays a key role in the development of simulation across the globe.

We met Esther and we challenged her with 10+1 questions to get to know her more deeply. And we found out that, as a good millennial, the first thing she does when she wakes up in

the morning is to check her phone notifications, and then read the *Harvard Business Review*. In our last "zine-style" question she revealed to us something incredible.

**Read our interview with her to find out more on [www.simzine.it](http://www.simzine.it)**



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MIRA EL VIDEO



DID YOU KNOW...

## Jardín de Epicuro, la simulación entre los olivos

Un Jardín de Epicuro virtual para compartir nuevas perspectivas y conversar con expertos de simulación. Como en la Grecia antigua pero en clave moderna

En la Atenas helenística, a las afueras de la ciudad, se encontraba el Jardín de Epicuro, una escuela filosófica que pretendía la búsqueda de la felicidad mediante el disfrute controlado de los placeres y el cultivo de la amistad. Históricamente se le llamó jardín, pero realmente era un huerto.

Un lugar dónde cualquier ciudadano podía trabajar los frutos de la tierra a la vez que su mente. Epicuro fundó su Jardín allá donde la ciudad limitaba con los campos; una casa rodeada de una zona de cultivo mediterráneo formado por árboles frutales, olivos, verduras, flores y plantas aromáticas. Los textos filosóficos se escribían dentro de casa y las tertulias se realizaban paseando por el jardín.

El Jardín de Epicuro no era un mero centro de transmisión de conocimientos sino un espacio y un tiempo para el aprendizaje, un lugar de retiro donde las actividades eran desarrolladas entre amigos y colegas. Su característica más destacable era la igualdad entre sus integrantes, fuese cual fuese su condición o estatus social, tanto las mujeres como los esclavos, filosofaban igual que los hombres libres y eran tratados con idéntico respeto. Este respeto era tal, que la presiden-

cia del Jardín de Epicuro era rotativa.

Con esta misma filosofía se recreó en torno a la simulación un nuevo Jardín de Epicuro virtual, a través de encuentros periódicos con amantes de este campo, generando un espacio y tiempo compartido con el fin de divagar, tratar y debatir distintos aspectos relevantes relacionados con la simulación y la seguridad del paciente.

Estos encuentros son sesiones abiertas a la comunidad y transmitidas a través del canal SIMversando en YouTube que se enmarcan en el "Fellowship Universitario de Simulación Clínica y Seguridad del paciente" de la Universitat de Barcelona organizado por la facultad de Medicina i Ciències de la Salut, el Hospital Sant Joan de Déu y el Campus Docent Sant Joan de Déu en colaboración con la Facultad de Pedagogía.

Este programa formativo no quiso encerrarse en su propia casa y centrarse exclusivamente en sus visiones y experiencias. Quería abrir sus puertas y ventanas hacia el mundo, conocer, compartir y explorar nuevos horizontes con todos los transeúntes sin limitaciones ni fronteras.

Tras experimentar largos paseos divagando por los nuevos jardines virtuales fue tanto el placer obtenido en compartir nuevas perspectivas y miradas con la comunidad, que el canal de SIMversando expandió sus horizontes hacia nuevas propuestas con la misma filosofía. Estos nuevos rincones son conversaciones con expertos a través del "Café con el Experto" y revisiones críticas de la literatura mediante el recién estrenado "Journal Club".

Detrás de las palabras e ideas expuestas en este papel existe un gran equipo de personas y profesionales que lo hacen posible, y que incluye a todos los visitantes del canal SIMversando, los que comparten sus visiones y miradas en directo, pero, sobre todo, mis apasionados colegas y amigos Mariona, Jose Maria, Gemma, Jaume y Esther. Con la suma del esfuerzo e ímpetu de cada uno de ellos es posible construir iniciativas como ésta, que permiten fortalecer y hacer crecer el mundo de los amantes de la simulación.

Todo aquél que desee caminar, pasear y reflexionar por el Jardín de Epicuro de la Simulación encontrará sus puertas abiertas en SIMversando, un canal sin ánimo de lucro que quiere compartir sus experiencias, aciertos y errores alrededor de la Simulación Clínica y la Seguridad del Paciente

¿Quieres pasear por el Jardín de Epicuro y recolectar nuevos frutos de la simulación?







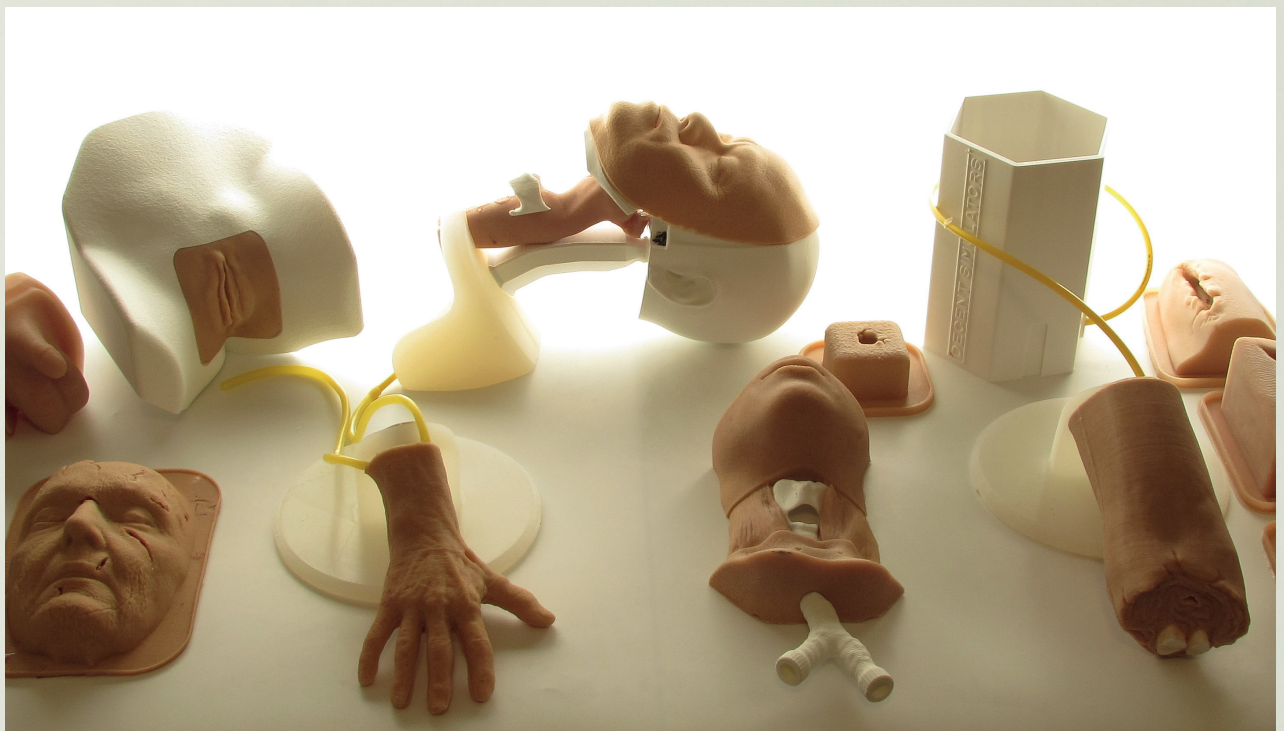
## Making task trainers in 3 steps

Max Krawczyk

How can everyone make task trainers using 3D printing and silicone casting alone? Here the guide to realize a facial suturing simulator

Task trainers are simple devices designed to help learners practise psychomotor skills. Over the years they proved to be a very important part of medical training, allowing students to familiarize themselves with various techniques in a safe environment. Even though there are many different types of task trainers, they all have one thing in common: a high price tag. Many institutions that cannot afford to buy them rely on educators' creativity in making their own learning aids. Self-made trainers are usually cheap and repairable, but also their construction is time-consuming and their quality is not comparable with the commercial ones.

A few months ago I started a project called Decent Simulators [[www.decentsimulators.com](http://www.decentsimulators.com)] where I focus on designing task trainers that everyone can make using 3D printing and silicone casting alone. They are meant to be used in low resource settings, self-directed learning and remote simulation. All the models are going to be accessible online and less complicated ones will be open-sourced and available for free.



If you have no prior experience in 3D printing and silicone casting it all might seem to be a little daunting. The truth is that both processes are simpler than most people think. I will describe the whole journey it takes to make one of my task trainers, a facial suturing simulator, in 3 simple steps. It should give you a general idea about the whole process.



Other free models  
available here

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## Is distance debriefing the new normal?

Pier Luigi Ingrassia

2020 Covid-19 changed the way we live and work indefinitely. Is distance debriefing still an alternative debriefing method or become a common and standard way to debrief learners and peers? Should educators make place increased emphasis on specific strategies to conduct enthusiastic virtual dialog? The SIMZINE's panel debates the pressing issues.

### The debate

The COVID-19 pandemic has required a quick response to the unprecedented suspension of face-to-face education worldwide. As consequence, it pushed remote simulation and online distance debriefings. We spent long days of screen time connecting with students and peers with the aim of creating meaningful learning. Now the world is apparently 'returning to normal.' Nevertheless, distance simulation will not disap-

pear. Actually, it will be our future. In a recent survey, in fact, the great majority of respondents indicated they would not abandon virtual distance simulation. They continue some form of online simulation. In this scenario, simulationists and educators should adapt their current debriefing approaches to online platforms. Or probably they have to develop new competences. What is required to create successful virtual debriefing

environments? Undoubtedly debriefing distant learners online introduces considerable challenges. Technical constraints strongly change the dynamics between learners and facilitators in virtual group settings. For example, computer interfaces interfere with non-verbal cues such as eye contact or facial expressions. Technical challenges, such as poor video transmission, may impact the quality of debriefing conversations. Technical



#### Diego Andrés

Doctor and surgeon, specialist in intensive care medicine, fellowship in simulation, and PhD in Educational Sciences. Director of a clinical simulation center, and professor of Intensive care Medicine in Colombia. He is currently the president of the Latin American Federation of Clinical Simulation (FLASIC).

#### Janice C. Palaganas

Professor of Health Professions Education and Associate Chair of the Health Professions Education Department at MGH Institute of Health Professions. Lecturer at Harvard Medical School, and Principal Faculty for the Center for Medical Simulation. Editor of 3 textbooks, authored several chapters, seminal articles and field-changing research. Currently CEO of the Institute for Interprofessional Innovations and executive coach for hospital and academic leaders. Co-podcaster on "DJ Simulationistas....'sup?" and "SimFails."

#### Juan-Manuel Fraga-Sastrías

Physician with Paramedic background involved in Health Care Education since the early 90's. Master in Educational Leadership, Master of Emergency Management and Doctorate in Health Sciences. Actually working as CEO in Cancer Center Tec 100 in México, and owns the Company Asesores en Emergencias. Main interest in education is the relation between education and clinical outcomes.

**Expertise in the role of debriefer is essential for delivery of quality simulation programs. In-person simulation and distance simulation offer some similarities but also many differences. Which are, then, the competences a distance debriefer should have?**

**Diego Andrés:** Carrying out a debriefing that allows the construction of knowledge is undoubtedly a challenge when it is carried out in person and, of course, when it is carried out remotely. The skills that those who conduct a non-face-to-face debrief-

ing (distance debriefing) must have, are similar to those required for face-to-face debriefing: active listening, situational awareness, flexibility, and assertive communication. Nevertheless, the objectives of the previous skills may differ between both modalities. I mentioned active listening

first, since we found in one of our studies on online-synchronized clinical simulation that the main limitation of this modality is precisely the poor quality of the audio, which is affected by the saturation produced when the participants speak at the same time, diminishing the clarity and quality of the information that was later used during the deconstruction of the case. Now, situational awareness is a skill that any good debriefer must develop. The dependence on the quality of the internet is a factor that plays an important role. Sometimes during the simulation or during the debriefing the video freezes, meaning part of the action is lost. It is necessary to maintain full attention, manage the information with the associated debriefer and even with the participants in order to have a complete picture of everything that happened during the session. In addition, in the case of distance simulation we found that the timing of the simulated case can be greater due to the turns that the participants take when speaking, and the requests for redundant information to be repeated due to the quality of audio and video reception. This means the debriefer must adapt to this kind of situations. Finally, assertive communication is a necessity for online debriefing; direct, honest, and respectful communication is required (just as in face-to-face debriefing). Taking into account that there are factors that limit the ideal performance, it is possible that the participants have not understood something, have lost some of the information of the case, and consequently make wrong decisions. It is essential to determine the cause(s) of the performance gap from the early stages of the debriefing.

**Juan-Manuel Fraga-Sastrías:** Apart from the basic competences of face-to-face simulation such as communication skills, building relation, questioning techniques, etc., debriefers should now consider at least two new levels of complexity:

Technical aspects: they need to be proficient in the use of teleconference software and be aware of other technical aspects to ensure a good debriefing experience for the participants. For example, building up redundancy with their internet connection and electricity. I do that by having an extra telephone plan that allows me

to share internet with my computer and have it charged in case there is a blackout where I am working. An alternative method of communication (such as a WhatsApp group) can be established in cases there are technical difficulties and need to make a secondary adaptation (e.g. closing the meeting for an intrusion and opening an alternative session).

Method: although the normal phases of each debriefing are the same when doing it online, some etiquette (netiquette) rules should be shared and agreed with the participants. The debriefing can also be enriched with the use of whiteboards, emoticons, chat, etc. It is not that hard to provide with video-debriefing strategies, but for sure the debriefer should be more knowledgeable on how to select, share and discuss video scenes when doing an online-debriefing in which video from the scenario will have to be used. Also, some strategies to build up psychological safety and enhancing the conversation should be considered. In most cases it takes longer between the simulation activity and the debriefing and it is also something to consider when beginning the debriefing.

**Janice C. Palaganas:** My PhD students in the simulation track at MGH IHP ran a delphi study to finalize Healthcare Distance Sim Educator Competencies in collaboration with the Society for Simulation in Healthcare and the Healthcare Distance



“...debriefers can enhance communication by using “extra” tools such as the chat, reactions as a way to substitute partially non-verbal communication...”

Simulation Collaboration. That study has been submitted for publication. So I don't want to spoiler :) By the way, the background for that work may be found in the whitepaper title The Creation of Healthcare Distance Simulation Educator Development Guidelines: and published almost 9 months ago in September 2021. However, I would like to advise readers to adopt “lightly” the competencies published in this White Paper as they have since changed post the delphi study.

**Various techniques comprise the debriefing toolbox, such as advocacy inquiry, directive feedback, circular questions and many more. Based on your experience, are there conversational techniques which better apply to distance learning?**

**Juan-Manuel:** I believe the more the merrier. On that sense all the communication competences are needed. The facilitator will need all of them and apply depending on specific situations (e.g., cameras closed, silent participants, problems with bandwidth, etc.). Nevertheless, the debriefer can enhance communication by using “extra” tools such as the chat (encouraging participants to react also through the chat, sharing notes, coordinating questions with a co-debriefer, etc.), reactions (emoticons) as a way to substitute partially non-verbal communication, and considering aspects as illumination, camera used, etc. to enhance the feeling of “contact” amongst participants and debriefer. Being conscious about aspects such as looking at the camera to make the participants feel there is eye contact, using their names to make them feel you are looking at them are aspects of digital communication that can enhance the conversation. Silences are also different, the debriefer needs to consider that when he/she makes a question the phrase will travel through the internet to the participants, then they think and answer, then the phrase will travel back through the internet... although the transmission speed is fast, it takes a fraction of a second to a second for the phrases to travel through the internet. Longer silences are needed on that sense.

**Janice:** Also soon to be submitted for publication is a conceptual model



“...building trust based on an early explanation of the function and stages of debriefing, as well as the advantages and limitations that distance simulation and its debriefing have favors trust, and trust notably favors dialogue.

for distance debriefing that is quite robust as we conducted 5 separate studies to explore parts of the model. All conversational techniques work in webconferencing and the exploration of which has better outcomes would not be very different than in-person. This being said, there are many many other considerations in the online environment that the Healthcare Distance Simulation Collaboration has been feverishly researching. Our preliminary findings thus far are challenges and benefits that would be experienced by any conversational technique. A few of these studies also submitted for publication are: the impact of videos on/videos off, perspectives of debriefers vs debriefees, the use of emoji, nonverbals in the online environment, psychological safety and confidentiality, human factors, diversity and inclusivity, technology competencies.

**Diego:** In our case, we use the same methodology for both face-to-face and distance debriefing: we worry about allowing the expression of emotions before moving onto the cognitive stage. We have realized that most often people show their mental frameworks at this stage, which allows us to make a much simpler and much more fruitful inquiry - exploration.

Another aspect that has helped

us is allowing the case to be reconstructed from the participants point of view, and not from the debriefers. Many times, the participants perceive elements that were not necessarily in the “script” of the case during crisis care (most of our simulations revolve around critically ill patients); getting to know the “reality” from the perception of the participants encourages and improves the flow of conversation.

In sum, I think that building trust based on an early explanation of the function and stages of debriefing, as well as the advantages and limitations that distance simulation and its debriefing have favors trust, and trust notably favors dialogue.

**Psychological safety is the perception amongst learners that they feel safe enough to take interpersonal risks without repercussions. Creating and maintaining psychological safety in a distance debriefing is also a key. What should we do to create it?**

**Janice:** Psychological safety is key to engagement in distance debriefing and the threat to psychological safety may be greater during webconferencing, e.g., Are participants in a private setting or are their colleagues listening? Are participants comfortable with their background? Are participants individually screen or audio recording? If the session is recorded, will it really be protected? There’s also the cognitive load of each individual worrying about how they appear on-screen (a finding in one of our studies).



“ I believe that it will increase access (especially in situations where recording or observation is allowed), but I believe that it will be another parallel arm of simulation programs with its own human and technology needs, as well as faculty and staff development.

**Diego:** As mentioned earlier, trust is the fundamental input for an efficient and constructive debriefing. I think that something that has helped us in the simulation center is to explain the intention of the debriefing, and the power that reflective, conscious, and intentional conversations have in simulation-based education processes. Our participants know from the introduction to the activity what debriefing means, with the intention that they can have a better cognitive engagement, but also, because we believe that it is important for them to learn to do debriefing in their real clinical practices with their teams, with the aim of building safer and more reliable medical teams. I believe that assertive communication is a fundamental piece to achieve learning conversations. If we as educators expose our thoughts in a respectful yet honest manner about what we want to talk about, it is very likely that the participants will trust and feel safe with us, thus, they will act in the same way.

**Juan-Manuel:** As in face-to-face debriefings, online-debriefings need ways to increase the psychological safety. Break-the-ice exercises and introductions are needed (as in face-to-face debriefings) but can be enhanced with some digital tools. There is a huge number of digital activities that can be used to break-the-ice, get to know participants. Digital etiquette rules (netiquette) can be shared with the participants before the first connections, aspects such as: use of camera, microphones, video recording, meeting security (password, waiting room, etc.), active participation should be agreed with the participants.

Recording of the session should only be used as a quality and super-

vision measure (for the debriefer) but not shared outside the group. Some level of flexibility and support is also needed, mainly with the first sessions.

**Let's not forget the economic aspect. Has the distance simulation the advantage of being cheaper?**

**Diego:** In the economic aspect, I believe that distance simulation can be cheaper than face-to-face simulation for the participant. In the simulation center we still carry out non-face-to-face simulation, and this has allowed people from different parts of Latin America to participate in the simulations without incurring the expenses involved in traveling to our training simulation center, which is located in Colombia. What we've so far is, we do the telesimulation from the simulation center, with the entire team of people and resources usually involved in the face-to-face simulation through platforms that offer good audio and video quality. Meanwhile, our participants join the session from Argentina, Mexico, Chile, and Peru all at the same time. Non-presential simulation is an activity that allows for: learning, skill development, and even evaluating the participants, all while reducing borders and lowering costs

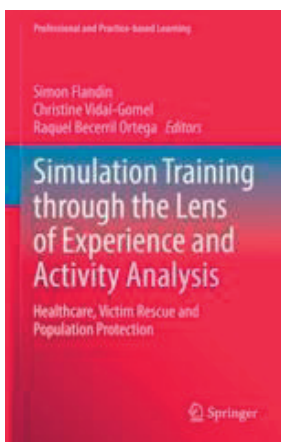
**Janice:** In our Healthcare Distance Simulation Annual Summit this year, one work group discussed justice, equity, diversity, and inclusivity, and came to consensus that distance sim is privilege. We cannot forget that. While access is better globally today, it is still not equal, especially bandwidth and speed. I do not believe that distance simulation, if done right, will necessarily be less expensive. I believe that it will increase access (especially in situations where recording or observation is allowed), but I believe that it will be another parallel arm of simulation programs with its own human and technology needs, as well as faculty and staff development. As most institutions now have a goal for inclusivity, it will be important for programs to consider the lowest common denominator of access/ability that effectively meets the objectives of the education. For example, if VR is chosen, provision of devices to those who do not have them may be costly. Training of the devices will also need to be built in. Tech support and faculty training, etc.

**Juan-Manuel:** I believe that depending on the context, the costs might be higher or lower. It is hard to calculate the real costs of online debriefing

since the internet connections, equipment and other resources' costs are shared with the participants. Aspects in which cost might be higher: devices used to connect to the debriefing, cameras, microphones, internet connections, teleconference platform. Aspects in which cost is reduced: less use of physical space, transportation times, establishing logistics. In most cases the dispersed costs (internet, devices, etc) are related to resources that most of the participants would be expected to have for other educational, recreational and professional activities so I would expect a reduction in costs, but again as I said before, it depends a lot on the context.

**Conclusion**

Carrying out an effective debriefing is undoubtedly a challenge also when it is carried out remotely. Nevertheless debriefers should now consider new levels of complexity. Digital tools need to be used wisely and profitably to prevent them from becoming a barrier. Distance simulation increases access and it will be another parallel arm of simulation programs with its own human and technology limitations, as well as faculty and staff development.



**Simulation Training through the Lens of Experience and Activity Analysis**  
Healthcare, Victim Rescue and Population Protection



**Flandin S, Vidal-Gomel C, Becerril Ortega R**

Springer, 2022 - ISBN 978-3-030-89567-9

*Este libro ofrece varias formas en las que el análisis de la experiencia y la actividad profesional en la formación con simulación permite describir las posibilidades y los procesos de aprendizaje basados en la práctica. Se han realizado investigaciones en varios programas de simulación en los dominios de la atención médica, el rescate de víctimas y la protección de la población, involucrando a trabajadores de la salud, bomberos, policías, militares y líderes de seguridad civil. El "trabajo como se ha hecho" (/ "entrenamiento como se ha hecho") en simulación se ha analizado con enfoques de ergonomía, psicología ocupacional y formación profesional. Los autores describen y discuten cuestiones teóricas, metodológicas y/o prácticas relacionadas con la experiencia y la actividad de los profesionales en el entrenamiento con simulación. El libro también proporciona evidencia sobre las condiciones bajo las cuales la experiencia vivida en la simulación puede fomentar o dificultar el aprendizaje, y deriva orientaciones apropiadas para el diseño y la implementación de la simulación.*



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SIM VOICES



## En qué está la simulación en Latinoamérica

### Facilidades y dificultades de una investigación que recogió 149 centros de simulación de 14 países. El balance de una experiencia francamente positiva

A comienzos de 2021 se publicó en "Advances in Simulation" el artículo "Characterization of simulation centers and programs in Latin America according to the ASPIRE and SSH quality criteria". En este estudio se recogió información de 149 centros de simulación de 14 países de habla hispana y portuguesa. Gracias a esta investigación, logramos aprendizajes importantes en el proceso y obtuvimos resultados interesantes para la región, que queremos compartir desde otra perspectiva.

Latinoamérica es una región con dos lenguas dominantes, con diferencias económicas y culturales, en la cual coexisten sistemas educativos y sanitarios con enfoques neoliberales y sociales. La implementación de la simulación ha sido asimétrica tanto en la disposición de recursos tecnológicos y físicos, como en la formación de los instructores y áreas de trabajo en los centros. Además, las influencias para el desarrollo de la simulación provienen del ámbito de la educación médica tradicional y de las agrupaciones de simulación clínica, que tienen criterios de calidad diferentes y se originan fuera de Latinoamérica. Estas circunstancias nos hicieron convencernos de que era necesario un abordaje amplio para poder comprender la situación actual de nuestra simulación.

Los resultados mostraron que la gran mayoría de los centros se creó al alero de universidades para la formación de pregrado, y que los programas formativos abordan áreas tradicionales de la simulación (procedimientos, seguridad clínica, pensamiento crítico, resolución de problemas, trabajo en equipo). El reporte de indicadores de uso mostró amplias diferencias en el volumen o carga de actividades, y la eficiencia en el uso de los recursos de simulación. Los criterios de calidad que más se ajustan a la realidad de las prácticas son los relacionados con calidad académica, no así los de investigación e integración a siste-

mas sanitarios.

Entre los factores que ayudaron al proceso de investigación destaca el sentido de pertenencia a la federación latinoamericana, y el compromiso con generar información que fuera útil para la comunidad regional. Otro elemento determinante fue que los investigadores en su mayoría pertenecían a centros universitarios donde la publicación es una de las metas individuales e institucionales, lo cual generaba un aliciente para concretar el proyecto y culminar en publicaciones. La mayor familiarización con el uso de medios de comunicación remota y de trabajo colaborativo sincrónico y asíncrono que se vivió durante la pandemia, fueron positivas para el diálogo y la generación del producto colaborativo.

Entre las dificultades, en un inicio, el grupo necesitó mucho tiempo y encuentros para establecer acuerdos sobre la elaboración del protocolo e instrumento de recogida de datos. Posteriormente fue necesario obtener aprobación de comités de ética en dos países, debido a las regulaciones para la investigación de Brasil. Lue-

go, y pese a que se contactó a más de 400 centros, sólo se obtuvo respuesta completa de 149 de ellos. La extensión del período de análisis de datos y escritura de los artículos se debió a las diferencias de experiencia y formación en investigación, y a las condiciones laborales del equipo, que se vieron modificadas por cuestiones contingentes en algunos países (estallido social chileno) y por pandemia.

En el balance de esta experiencia queda un resultado francamente positivo en cuanto a creación de lazos, reconocimiento de capacidades, enriquecimiento de perspectivas, sinergia de individuos y generación de información pública que abrió nuevas oportunidades de colaboración e indagación.

Para quien desee iniciar un proyecto de esta naturaleza recomendamos disciplina, respeto y transparencia al establecer acuerdos, comunicación, tolerancia, paciencia y persistencia.

El viaje bien merece la pena.

Soledad Armijo  
Felipe Machuca-Contreras



LEA TODO EL ARTICULO





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## Free healthcare simulation scenarios

### EM

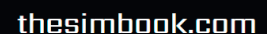
Sim Cases

### EM SIM CASES

<https://emsimcases.com>

EM Sim Cases is a blog which wants to showcase the cases that are already being used by other educators. All cases published on the blog have been reviewed by at least two members of the advisory board as part of a formal quality control process. In addition, all cases have been tried by at least one of the editors' teaching sites in order to ensure they work.

### Thesimbook.com

<https://thesimbook.com>


Thesimbook.com is an educational resource designed to provide healthcare simulation educators with peer-reviewed simulation scenarios and resources. It is the result of an international collaborative effort of passionate medical educators and content creators with the aim of creating a family-like atmosphere where professional colleagues from around the world can have access to inter-institutional networking opportunities/activities and optimize the quality of educational experience they are providing to their learners.

### thesimtech

### thesimtech

<http://www.thesimtech.org>

Based on continuing contributions from the simulation community, thesimtech is an online hub for sharing resources and information for all things related to medical simulation. It offers a set of donated medical simulation scenarios as text documents outlining the various details of a simulation, from patient simulator settings to debriefing notes. It also provides an audio / visual stimuli database where it is possible to find high quality image (i.e. ECG / EKGs, X-Rays), video (i.e. Ultrasounds) and audio files to use in the scenarios. There are also links to various A/V solutions, often used in debriefing, and moulage instructions

### TACE.S nursing cases

<http://www.nln.org/professional-development-programs/teaching-resources/ace-s/unfolding-cases>


Developed through a collaborative effort between the National League for Nursing and Community College of Philadelphia, Advancing Care Excellence for Seniors contains unfolding cases related to care of seniors. They combine storytelling and simulation, including audio clips, scenarios and tips for implementation. Each case includes: (a) a first-person monologue that introduces the family and the complex problems; (b) simulation scenarios designed to help students practice assessing function and expectations of their patient(s), with links to appropriate evidence-based assessment tools; (c) a final assignment that asks students to finish the story; (d) an instructor toolkit with suggestions on how to use the various components of the unfolding cases, incorporate them into the curriculum and suggestions to conduct the debriefing. Simulated/standardized patients are recommended for all ACES simulations.

### SKILLS COMMONS

### Nursing Simulation Scenarios

<https://www.skillscommons.org/handle/taaccct/15215>

This is a collection of high-fidelity simulations targeting pre-RN nursing students. The descriptions include patient information, technical requirements for putting on the simulation, and a scenario flowchart. The cases include resuscitation, medication administration, postpartum hemorrhage, hypoglycemia, sepsis, stroke, and hypovolemia. An overview of a video set about debriefing simulations is also provided.

### Alfred ICU's In Situ Simulation programme scenarios

<https://intensiveblog.com/resources/icu-sim/>

### INTENSIVE

It is a collection of scenarios provided as free-to-view Google documents (viewers cannot edit the documents directly). They are mainly designed for in-situ simulation activities. The scenarios are continually being revised and improved.



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READ ABOUT  
SIM UNIVERSITY 2022



## SESAM 2022

### SESAM 2022: an auspicious return to Face to Face meetings

The 27th annual meeting will be held at FIBES, Seville, Spain, between June 15th and 17th, and marks the return to F2F encounters, offering a unique opportunity to catch up with the latest innovations on simulation-based activities.

The motto for this year's program is Building Simulation for Health Challenges, underlying the role of simulation as a diagnosis tool targeting and promoting systems' efficiency and safety. The scientific program orbits around this theme, with a number of stimulating activities.

Let me walk you through what the SESAM Annual Meeting can offer you.

The core program offers 7 plenary lectures, 18 sessions for abstract discussions, and 40 interactive workshops, distributed over the 3 days.

Be prepared to be challenged and inspired by the invited speakers and their engaging and thought-provocative diverse lectures.

There are Workshops for all tastes: improve your debriefing skills, try out moulage, or learn more on research methodologies... this is just a glimpse of what you can find.

If you are into research, you cannot miss the opportunity to join the Simulation Research Network (SiReN) meeting (Thursday, June 16th) and connect with novice and expert researchers in a brainstorming around simulation projects.

On a different note, if you like competitions, SimUniversity is for you. National teams of undergraduate healthcare students will use their effective teamwork

skills to solve challenging clinical simulation scenarios.

And, take time to be amazed by the industrial exhibition (with over 30 exhibitors), where cutting-edge technology/solutions are presented and can be experimented.

SESAM 2022 promises 3 days of many interesting and innovative activities. The challenge will be to choose!

A huge thank you to the whole Scientific Committee and Program committee for their precious contribution to the success of SESAM 2022!

Hasta Sevilla!



Carla Sá-Couto



Marc Lazarovici

Human Simulation Centre, Institute for Emergency Medicine, LMU Munich

Through the desert - Presidency during the COVID-19 pandemic  
Coming up to the 2022 SESAM Annual Meeting, which will also mark the end of my presidency, I'm really glad to be able to hand over a stable society to the next president, Francisco Maio Matos. It really feels as if we just crossed the desert - we missed one conference and one AGM, which led to longer terms of all EC members, we had to adapt and organise virtual events, all while balancing the financial stability of the society. I'm most grateful for all the support we received from our members, from all the colleagues involved in various bodies of the society, but also from our management company. I feel these years led to quite some clarifications about the strategy of our society - we managed to identify areas that needed reworking and modernisation, be it in our structures or in our ways of working. Advancing these fields will ensure our society is fit for the future and I'm very happy to hand over this growth and stabilisation process to my successor.

## Keynote & State-of-the-Art Speakers

### Day 1

Lou Oberndorf Keynote Lecture  
**Cecilia Berlin**

The stakeholders of workplace design change: why they matter and how to find them

*This off-topic keynote will explore how a Macroeconomic perspective can shape a definition of which stakeholders are important in a workplace design process. Who matters, why, and how?*

Hot Topic Lecture  
**Anna Sigrun Qvindesland**

Government mandated simulation: Possibilities and responsibilities

*We will present InterRegSim - a government mandated network for collaboration in simulation in the Norwegian hospital system. How did we get here? What can we accomplish? How?*

State-of-the-Art Lecture  
**Peter Dieckmann**

How simulation can enlarge professionalism in healthcare

*Healthcare professionals need much more than "just" knowledge and skills. This lecture explores aspects of professionalism performed by human beings and how simulation can play a role with this.*





## SiRen Meeting Thursday 16 June

In healthcare, we always recognise emergency vehicles with their sirens and lights, but what is the SiReN at SESAM 2022 in Seville? Well, the story goes back a few years now, to 2018, when the executive committee of SESAM made a plan to bring together simulation researchers from all around Europe and beyond. They had seen the benefits of INSPIRE, the International Network for Simulation-based Pediatric Innovation, Research, & Education, which has, over more than a decade, helped to develop research and funding for pediatric simulation in North America. Could we do something similar for research in Europe? Could we nurture and grow simulation research, supporting individual researchers and the culture of research?

presentations, and got helpful feedback from more experienced colleagues. We also got our name - SiReN! Although there was no face-to-face meeting in 2020, SiReN was not to be forgotten: in 2021 we had a virtual SiReN event with even more participation than before. Our community was strong, and people wanted to support each other and keep the work going. Now we get to be together in person again, in Seville!

So join us simulation researchers wherever you see the SiReN logo in the SESAM programme. We will be happy to see you and to talk to you about research. On Thursday afternoon, join us for the main SiReN event, where we will come together to support each other and to develop the community of simulation research!



**Francisco Maio Matos**

Centro Hospitalar e Universitário de Coimbra Simulation Center

SESAM is part of my family

I feel honored to have the trust and support of SESAM members to be the next president of the Society. SESAM is part of my family and this is the challenge of a lifetime.

The last few years have been a long and winding road, struggling with many, and different, adversities. Uncertainty hasn't passed but I'm blessed to receive the presidency of a strong and stable society from Marc Lazarovici. My deepest gratitude for his leadership and hard work. Gratefully he will still be part of the team.

SESAM should have a major role in promoting and coordinating the scientific, educational, and professional activities related to simulation in all European countries and worldwide. All members are connected by a strong bond, and we are excited, determined and committed to promoting the growth of the society in alignment with this vision.

With input and help from colleagues from INSPIRE, the first simulation research network meeting happened in Glasgow in 2019. It brought together some of the leading simulation researchers in Europe, along with those at the earlier stages of their simulation careers, as well as anyone with an interest in simulation research. Over 70 people joined the first meeting, to plan and imagine what the network could do and how it might work. They also supported a handful of early career researchers who presented their ideas as ALERT



**Gabriel Reedy**

## WHO-SESAM Round Table

The WHO Emergency Medical Teams (EMT) Initiative supports national medical teams to better respond to emergencies and outbreaks. WHO and SESAM are collaborating to develop a guidebook for EMTs in how to plan, implement and evaluate healthcare simulation, based on existing WHO-guidelines and available best-practices. The focus will be on clinical simulations, with standardized simulated patients or manikins, to train clinical skills and teams specifically adapted to the EMT-setting.

On June 16th, 2022, experts from the fields of simulation and EMT will gather together to evaluate the results of a literature review exploring the currently published use of simulation to train EMT relevant contexts and to provide insight to the development of the guidebook.

### Day 2

Keynote Lecture  
**Hege Ersdal**

**Data-driven quality improvement – adjusting simulations to address gaps in clinical care. Safer Births at scale**  
*How can a daily semi-automatic clinical and training data collection be used by healthcare providers and simulation facilitators to adjust ongoing training and improve clinical care and patient outcomes? I share the ongoing results of the Safer Births project in Tanzania involving 30 labour wards.*

State-of-the-Art Lecture  
**Demian Syzld**

**Implementing Debriefing Programs for Simulation-based Medical Education and for Clinical**  
*Linking theory, evidence and practice, this presentation is a practical look at what is needed to effect change in healthcare and education through debriefing. The presentation will explore methods and strategies from debriefing models and tools to faculty development and evaluation programs for the practice of debriefing in the simulation center and in the hospital.*

### Day 3

Keynote Lecture  
**Eve Purdy**

**The leaky container – managing risks and maximizing rewards of simulation for high performing teams**  
*How Can we ask more from our simulation? We've seen that sim can lead to learning and better teamwork but maybe it can impact culture too! I explore how simulation shapes values, beliefs, and practices with big consequences for teams and organizations!*

State-of-the-Art Lecture  
**David Grant**

**Structured Approach to Deliberate Systems Optimisation**  
*Current approaches to safety are failing. Healthcare organisations must embrace an approach that acknowledges complex adaptive systems and creates opportunities for teams to learn by design rather than chance. Empowering them to create reliably safe healthcare systems.*





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MAGGIORI INFO



SIM GEEK

## Kids Save Lives: imparare come salvare una vita

La realtà virtuale per insegnare la RCP ai bambini. Nato in Italia e disponibile in inglese, Kids Save Lives è un progetto per formare la popolazione scolastica

### Il problema

L'arresto cardiaco è un importante problema sanitario in Europa e in tutto il mondo. Ogni anno oltre 400.000 persone in Europa e 60.000 in Italia sono colpite da arresto cardiaco. Nel 70% dei casi l'arresto cardiaco è testimoniato da non sanitari che possono iniziare le manovre di rianimazione cardiopolmonare (RCP). Se i testimoni di un arresto cardiaco iniziano la RCP prima dell'arrivo dell'ambulanza, le possibilità di sopravvivenza della vittima aumentano di due/tre volte rispetto ai casi in cui la RCP non viene iniziata.

### Una potenziale soluzione per rendere sostenibile la formazione

Le linee guida European Resuscitation Council pubblicate nel 2021

raccomandano un addestramento annuale alla rianimazione cardiopolmonare (RCP) per tutti i bambini in età scolare. I bambini addestrati alla RCP dovrebbero essere incoraggiati ad addestrare a loro volta i membri della loro famiglia ed i loro amici. L'addestramento alla RCP dovrebbe essere offerta anche negli istituti di istruzione superiore, specialmente agli studenti di scienze della formazione e delle professioni sanitarie. L'addestramento dei bambini alla RCP dovrebbe essere obbligatorio per legge ovunque, dentro e fuori dall'Europa.

### Il progetto

Il progetto "Kids Save Lives: imparare come salvare una vita" promosso da Azienda USL di Bologna con il supporto di Fondazione del Monte di

Bologna e Ravenna ha come obiettivo principale quello di sensibilizzare e formare la popolazione scolastica, di promuovere comportamenti adeguati nella gestione delle emergenze cardiorespiratorie e promuovere attività di primo soccorso attraverso la realizzazione di incontri di formazione.

L'obiettivo principale del progetto è creare una cultura della solidarietà negli studenti in modo da stimolare la capacità di intervenire in caso di arresto cardiaco e non aver timore nel farlo, la capacità di utilizzare un defibrillatore semi-automatico e non essere spaventati nel farlo.

L'obiettivo ulteriore del progetto prevede inoltre l'utilizzo di app innovative sviluppate per la formazio-





ne in realtà virtuale, in sinergia con l'app "DAE Responder", per il reclutamento di soccorritori occasionali testimoni di un arresto cardiaco. L'app DAE Responder è stata sviluppata dal 118 di Bologna per conto della

Regione Emilia-Romagna ed è attiva dal 2017. Il progetto "Kids Save Lives" utilizzerà per la prima volta in Italia l'app "Un Picnic Mozzafiato VR" per le scuole primarie e l'app "School of CPR VR" per le scuole secondarie, le quali sono state realizzate

specificatamente per il progetto e sono disponibili in italiano e inglese.

**Approccio blended**

La formazione degli studenti utilizzerà strumenti tradizionali di formazione alla RCP combinata con strumenti innovativi (applicazioni per smartphone, video interattivi ed esperienze di realtà virtuale). Il progetto prevede l'implementazione e la validazione di una innovativa modalità di sensibilizzazione, informazione e formazione attraverso l'utilizzo di serious games, app interattiva (Un Picnic Mozzafiato VR) e tecnologie di realtà virtuale (School of CPR VR). La stazione di auto-

apprendimento utilizzerà nella scuola primaria brevi sessioni di gioco con l'app "Un Picnic Mozzafiato" e la sua versione VR, sviluppata nell'ambito del progetto. La stazione di autoapprendimento nella scuola secondaria utilizzerà brevi sessioni di gioco con l'app "School of CPR VR" in realtà virtuale per sensibilizzare, informare e formare la popolazione scolastica sulle manovre da eseguire in caso di emergenze cardiorespiratorie nell'adulto e nel bambino.

**Nuova legge sulla gestione dell'arresto in Italia**

Il 4 agosto 2021 dopo un lungo iter parlamentare è stata pubblicata sulla Gazzetta Ufficiale la nuova legge di "sistema" per la gestione dell'arresto cardiaco in Italia (<https://bit.ly/3r1QtXF>). Un focus importante è stato dedicato alla formazione nelle scuole di ogni ordine e grado con iniziative dedicate agli studenti e al personale docente, amministrativo, tecnico e ausiliario.

Il progetto "Kids save lives: imparare come salvare una vita" risponde pienamente agli obiettivi raccomandati dalla nuova legge con un approccio innovativo e inclusivo.

**Le risorse disponibili**

Il progetto "Kids Save Lives: imparare come salvare una vita" ha unificato tutte le risorse disponibili e utili per la formazione nella scuola in un'unica pagina web informativa delle scuole in sinergia con attività social su Facebook, Twitter e Instagram.



**KIDS SAVE LIVES IMPARARE come SALVARE una VITA**

Logos for: Azienda Unità Sanitaria Locale Bologna, Italian Resuscitation Council, and Fondazione del Monte di Bologna e Ravenna.



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Choose your language



**SIM VOICES**

## 3 puntos clave en el diseño de un escenario de simulación

Objetivos, zona de simulación y experiencia de los alumnos son puntos clave a la hora de realizar un diseño de un escenario de simulación.

Cuando empezamos en el mundo de la simulación clínica, pensamos que lo que necesitamos es tener un simulador de alta fidelidad o tecnología extremadamente cara y un laboratorio de simulación lleno de electromedicina, para poder realizar mejores simulaciones y que nuestros alumnos terminen contentos y preparados, pero en muchas ocasiones no es así, con lo cual todo dependerá de los objetivos que busquemos con nuestros alumnos.

Muchas veces se tiene la creencia que hacer simulación es poner a los alumnos ante un maniquí, presentarles un caso e ir improvisando, pero la simulación es muchísimo más. Yo comparo los escenarios de simulación clínica con una obra de teatro, en la que tienes que analizar y contemplar el mínimo detalle en el escenario y para ello, requiere muchas horas previas de planificación, diseño y pilotaje. Por mi experiencia, un caso de simulación de 10-20 minutos con 20 minutos de pre-briefing y unos 60 de análisis o debriefing, requiere un trabajo previo de unas 24 horas.

En este pequeño artículo me gustaría reflejar que no siempre "más es mejor" y centrarme en los objetivos de la simulación, ya que son un punto clave en el diseño de esta. Lo primero que tenemos que preguntarnos es ¿qué objetivos buscamos con el escenario de simulación y cuales son los resultados esperados? Una forma de plantearlo es seguir la metodología SMART:

- **Específico (Specific en inglés):** ¿Qué vamos a hacer exactamente y para qué?
- **Medible:** ¿Es cuantificable y podemos medirlo?
- **Alcanzable:** ¿Podemos hacerlo en el tiempo propuesto con los recursos y el apoyo que tenemos disponible?
- **Realistas:** ¿Tendrá un efecto en el objetivo o resultado deseado?
- **Temporizados:** ¿Cuándo se logrará este objetivo?

Además de la metodología SMART, tenemos que definir si los objetivos que vamos a realizar serán **objetivos técnico-asistenciales**, es decir, técnicas, procedimientos, habilidades, etc u **objetivos no técnicos** como la comunicación, liderazgo, análisis, etc.

Otro de los puntos clave a la hora de realizar un diseño de un escenario de simulación es saber en qué **zona de simulación** vamos a trabajar. Seguramente hayáis oído hablar de las SimZones que propone Roussin en su artículo Simzones: an organizational innovation for simulation programs and centers (2017). Para los que no os

suene, os hago un resumen muy rápido con ejemplos:

- **Zona 0:** Realidad virtual. Feedback automático en la práctica de destrezas y habilidades.
- **Zona 1:** Orientación clínica. Desarrollo de destrezas clínicas.
- **Zona 2:** Escenario en el que el paciente se va deteriorando.
- **Zona 3:** Desarrollo de equipo. Factores humanos y desarrollo de sistemas.

¿Por qué es importante saber en que SimZone vamos a trabajar? Porque en función de la zona, los requerimientos técnicos, humanos y ma-





teriales van a variar y por lo tanto, necesitare simuladores con mayor o menor fiabilidad o tecnología. Por ejemplo, si quiero enseñar la destreza de las compresiones torácicas durante una reanimación cardiopulmonar, entrenare en zona 1 con un torso de RCP con sistema de retroalimentación, en el que el instructor sólo se encargará de dar feedback al alumno, pero si quiero entrenar puntos del

CRM (Crisis Resource Management), necesitare desarrollar un escenario de simulación inmersivo, es decir, que el alumno no tenga que imaginar que realiza una acción, sino que tiene que hacerla con el material apropiado. Recordad que a los adultos nos cuesta mucho imaginar, por lo que tener que imaginar mucho posiblemente sea una barrera para los participantes y les cueste entrar en la simulación.

Es imprescindible que tengamos siempre en mente el concepto de **fidelidad** durante el diseño de un escenario de simulación. La fidelidad es el eje de la simulación clínica: esta puede ser **técnica** (simulador, entorno, montaje), **emocional** (interacción) y **conceptual** (escenario). En función de la zona de simulación en la que estemos trabajando, tendrá más importancia un eje u otro. Si trabajamos en zona 0 o 1, el eje técnico tendrá una gran importancia, si trabajamos en zona 2, el eje conceptual y si trabajamos en zona 3, el eje emocional.

En conclusión, si se puede realizar simulación low cost de calidad, todo irá en función de tus objetivos, la zona de simulación en la que vas a trabajar y la experiencia de los alumnos.



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Condividi e commenta



CONOSCI GLI AUTORI



SIM RESEARCH

## La simulazione come laboratorio di ricerca

La simulazione è anche un strumento di indagine con ricadute assistenziali, nella pratica clinica e nel funzionamento dei sistemi. Uno studio multicentrico italiano indaga l'efficacia di un ausilio cognitivo, il tascabile PALS 2015

Negli ultimi decenni la simulazione si è consolidata non solo in ambito formativo, ma anche come utile strumento di ricerca. Gli studi basati sulla simulazione si dividono in due principali tipologie: <sup>(1)</sup> studi che indagano l'efficacia della simulazione come metodica formativa (per valutare, ad esempio, se determinate metodiche di simulazione siano più efficaci nel migliorare l'apprendimento di specifiche abilità tecniche/non tecniche), e <sup>(2)</sup> studi che utilizzano la simulazione come strumento di indagine con ricadute assistenziali, sia nella pratica clinica individuale che nel funzionamento dei sistemi (per analizzare, ad esempio, la gestione di emergenze mediche a bassa incidenza e alta complessità di cura dove studi clinici su eventi reali possono risultare difficilmente fattibili e rischiosi). In

questo caso, il vantaggio degli studi basati sulla simulazione è che può essere ricreato uno scenario clinico complesso, ad alto rischio ed impatto emotivo, in un ambiente sicuro e controllato. Tuttavia, per far sì che i risultati siano applicabili nella pratica clinica, è necessario che venga formulata una domanda di ricerca accurata e sia seguita una rigorosa metodologia di ricerca [1]. Per questo sono state formulate dalla comunità scientifica delle linee guida specifiche per la progettazione e la conduzione di studi basati sulla simulazione <sup>(2)</sup>.

In questa "puntata" della rubrica presenteremo uno studio osservazionale prospettico multicentrico italiano, recentemente pubblicato <sup>(3)</sup>.

L'idea di questo studio è nata dal riscontro di una frequente gestione

non ottimale di scenari di arresto cardiaco pediatrico da parte di medici in formazione specialistica in pediatria, pur con certificazione PALS (Pediatric Advanced Life Support). Solo pochi studi in letteratura, di natura monocentrica, avevano esplorato questo ambito, esclusivamente in paesi anglosassoni, e conducendo scenari in cui il medico in formazione fosse l'unico protagonista ad interagire con membri della squadra appartenenti al team di ricerca.

La **popolazione** dello studio è stata costituita da medici in formazione specialistica in pediatria in possesso della certificazione PALS, suddivisi in squadre di tre per scenario. Tutte le squadre, dopo un briefing standardizzato e l'acquisizione del consenso informato, hanno svolto lo stesso sce-



nario di arresto cardiaco pediatrico (**esposizione**). Gli scenari sono stati videoregistrati e successivamente valutati indipendentemente da due revisori, precedentemente addestrati. Come outcome primario è stato valutato il numero di deviazioni dalle linee guida in termini di errori (es. dose errata di adrenalina), ritardi (es. tardivo posizionamento di accesso vascolare) e omissioni (es. mancata identificazione delle cause reversibili). Tale valutazione è stata effettuata tramite un'accurata revisione delle videoregistrazioni degli scenari.

Non essendo presente in letteratura uno score validato che potesse racchiudere tutte le possibili deviazioni rispetto alle linee guida, il numero di deviazioni è stato misurato mediante uno score creato ad hoc per lo studio, denominato c-DEV15plus score. Come **outcome** secondari sono stati valutati la performance del team di rianimazione, utilizzando lo strumento validato Clinical Performance Tool (CPT), il tempo di esecuzione di azioni critiche per la rianimazione e la qualità delle compressioni toraciche, misurate mediante il software interno del simulatore. Il CPT è uno strumento validato per la valutazione della performance dei partecipanti nella gestione di scenari di simulazione di rianimazione pediatrica <sup>(4)</sup>. Gli outco-

me sono stati confrontati, in maniera esplorativa, tra le squadre che durante la gestione, spontaneamente, non avevano utilizzato supporti cognitivi, con quelle che invece avevano usato il tascabile PALS 2015.

Lo studio ha incluso 81 specializzandi (27 squadre) in tre centri. Le deviazioni dalle linee guida sono risultate in numero elevato (mediana di 7 deviazioni su un massimo di 15 per ogni scenario) e hanno riguardato principalmente il posizionamento della tavola rigida, la somministrazione dell'adrenalina e la chiamata di aiuto. L'utilizzo del tascabile PALS non è stato associato ad una riduzione del numero di deviazioni dalle linee guida, ma ad una, seppur limitata, migliore performance di squadra (CPT score).

Sulla base di questi risultati il team di ricerca ha deciso di sviluppare un nuovo strumento cognitivo, un'app interattiva per tablet, che potesse supportare il team di rianimazione durante eventi di arresto cardiaco pediatrico, per migliorarne la gestione riducendo le deviazioni dalle linee guida. Nelle prossime "puntate" della rubrica vedremo insieme quali passi sono stati condotti per testare l'efficacia di questo strumento.

1. Cheng A, et al. Designing and conducting simulation-based research. *Pediatrics*. 2014 Jun;133(6):1091-101.
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3. Corazza F, et al. Adherence to guideline recommendations in the management of pediatric cardiac arrest: a multicentre observational simulation-based study. *Eur J Emerg Med*. 2022 Mar 29;MEJ.0000000000000923. Epub ahead of print. .
4. Levy A, et al. External validation of scoring instruments for evaluating pediatric resuscitation. *Simul Healthc* 2014;9(6):360-9





Choose your language



VISITA EL CENTRO



SIM SPACE

## SIMMER, centro de simulación pionero en Argentina

Desde 2012, el centro de simulación SIMMER ofrece formación continua en múltiples especialidades, con el fin último de mejorar la seguridad del paciente. Nos lo presenta su Director Ejecutivo

En Argentina la simulación en medicina tiene una corta historia. Finalizando la primera década del siglo XXI los centros de simulación eran casi inexistentes. Sólo algunas Universidades como la Universidad Nacional del Nordeste o la Universidad Maimónides (pública y privada respectivamente) eran quienes hacían vanguardia en esta nueva herramienta educativa, la simulación clínica como hoy la conocemos. Paralelamente, una gran cantidad de Facultades de Ciencias Médicas venían utilizando los OSCEs (del inglés "Objective Structured Clinical Examination") para las evaluaciones de los últimos años de la carrera. Por eso no resultó extraño que los primeros espacios de simulación se desarrollaran dentro de las mismas.



Fue para esa época que tomé contacto, casi de forma fortuita, con el Hospital Virtual de Valdecillas (Santander, España) que me abrió los ojos a una nueva estrategia. Así, inspirado en "Nacho" Del Moral y "Jose" Maestre comencé a desarrollar un proyecto de un centro de simulación que se convertiría en uno de los centros pioneros de mi país.

En octubre de 2012 abre sus puertas, el Centro de Simulación Médica



Roemmers SIMMER que, como diferencial a los centros que lo precedieron, fue el primero de capitales privados y destinado fundamentalmente a la capacitación médica continua (graduados). Otra diferencia fue la diversidad de oferta de capacitación para múltiples especialidades, no sólo para simulación clínica en obstetricia, neonatología, pediatría, clínica médica, cardiología, emergentología y tera-



pia intensiva, sino también en cirugía laparoscópica, endoscopia digestiva y respiratoria, artroscopia, procedimientos endovasculares, y ultrasonido entre otras.

A menos de un año y medio de su inauguración y debido a la alta demanda de cursos comenzaron las tareas de ampliación del edificio que hoy cuenta con dos plantas. En la planta baja nuestro centro de simulación cuenta con cuatro salas de simulación, con sus respectivas salas técnicas y cámaras gesell, áreas de destrezas, un auto colisionador y una ambulancia totalmente equipada para trabajar en capacitación en escenarios prehospitalarios. En la planta alta cuenta con auditorio para 200 personas y un salón de usos múltiples, conformando una planta total del edificio de 1500 me-







tros cuadrados.

Múltiples alianzas con Universidades Públicas y privadas, Sociedades Médicas e Instituciones de Salud hicieron que previo a la pandemia el centro de simulación alcanzara un promedio anual de **3800 personas que asistieron a los diferentes programas de capacitación.**

La pandemia afectó en sus primeros días el funcionamiento del cen-

tro de simulación, pero a la vez sirvió como un catalizador para nuevas metodologías en simulación, como por ejemplo la Telesimulación. A través de esta metodología que le lleva los recursos de un centro de simulación a participantes que están a muchos kilómetros de distancia a través de una plataforma digital, pudimos dar capacitación en ventilación mecánica para pacientes con Covid o uso del ultrasonido en pacientes críticos a profesionales de nuestro país y de países

vecinos.

El centro de simulación SIMMER es desde 2019 Centro de Entrenamiento Internacional de la American Heart Association, en sus casi 10 años de vida ha sido sede de múltiples cursos de formación de instructores en simulación que actualmente se desempeñan en otros centros de nuestro país y del exterior, ha inspirado a nuevos espacios de simulación de Argentina, ha generado diversos artículos de publicación internacional y ha recibido para su capacitación al Equipo Médico Presidencial y personal de servicios públicos y privados de emergencias.

**Nuestra ilusión está puesta en el desarrollo de la simulación como herramienta de formación continua, con el fin último de mejorar la seguridad del paciente.**





Choose your language



## SIM CORNER

# HackableHospital: an Interactive Healthcare Cybersecurity Simulation

An interactive online group simulation to train healthcare professionals to follow good cybersecurity practices



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### What is cybersecurity?

Cybersecurity is concerned with the safety of computer hardware, software, and data. This includes protection from various threats: data theft, service disruption, identity theft, or even damage to network connected devices. It's a big field that encompasses a wide variety of threats to information technology (IT) systems. Many of the threats are technical, and hard to understand. In many cases, however, the threats are simple tactics.

### Why do hospitals and healthcare organizations need to take cybersecurity more seriously?

All of us are seeing in the media that cybersecurity risk is increasing. Healthcare is one of the most commonly targeted industries. Healthcare data is extremely valuable to criminals — far more valuable than credit card information. In addition, information technology systems are far more interconnected than they were even

10 years ago. Being able to exploit a hospital's IT security can allow perpetrators to access many other hardware and software systems: power, infection control, medications, or heating.

There are also the personal threats to cybersecurity that all of us face each day. Social engineering attacks. Phishing emails. Protecting ourselves from identity theft and personal data theft is not something we can leave to others to do for us. Each of us needs to take our own cybersecurity very seriously.

### How did you come up with the idea of a simulation software for the cybersecurity of hospitals?

At Stat59 we do a lot of customer discovery, where we talk to researchers about how they manage their research data. We noticed early on that many researchers do not follow good cybersecurity practices, or even adopt poor practices such as shared passwords, data stored on unencrypted hard-drives, and even sensitive documents being sent back and forth by email.

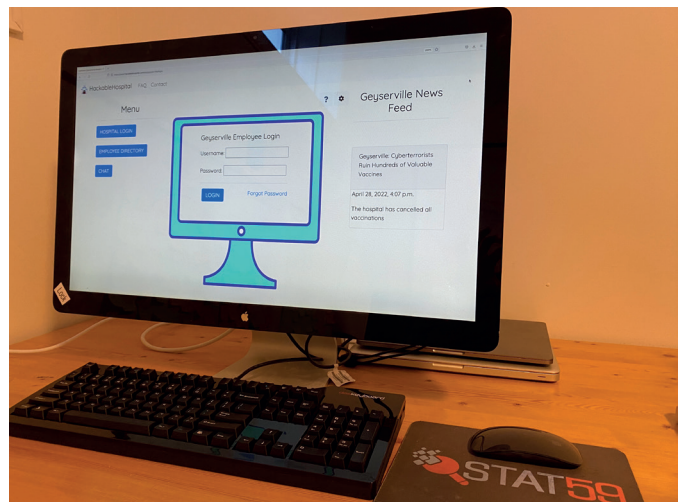
We were noticing at the same time that the number of published cases of cybersecurity attacks in healthcare was rising. Reading through the descriptions of the

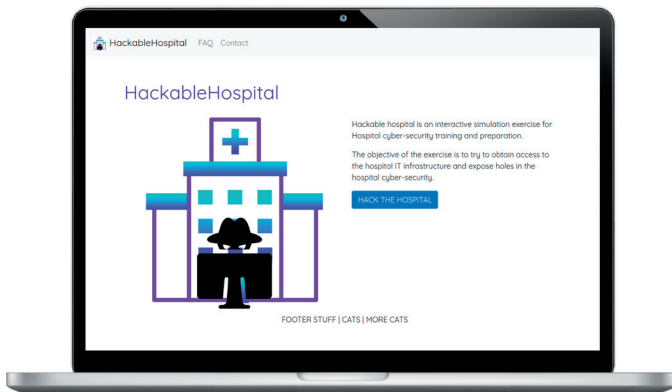
attacks we found that in many cases perpetrators were using simple techniques to bypass security. Often as simple as password guessing and social engineering.

The huge gap between the growing threats and the lack of cybersecurity protection in healthcare was very concerning to us. In 2019, I was invited to speak at the European Society of Emergency Medicine conference in Prague about cybersecurity. The session was very well-received and there was excellent conversation afterward. I have written a number of simulation software packages in the past. And, on the way back home from Prague I started thinking about how to work the teachings of the lecture I had given into an interactive simulation. From there, the HackableHospital was born.

### How does the simulation work?

HackableHospital is an interactive online group simulation. The participants do not need to be in the same





room, and can be anywhere that has internet access. This has been a huge advantage of our software during the COVID pandemic where in-person teaching is being curtailed. We prefer to work on the inverted classroom model: the participants are asked to watch a short YouTube video on cybersecurity prior to the simulation.

The scenario of the simulation can vary with the background of the participants. For instance, we have used the simulation software to teach the students of the European Master in Disaster Medicine about cybersecurity and cyberterrorism. In this setting, the students are divided into groups and play the role of IT experts who work in Disaster Medicine tasked with finding weaknesses in the hospital infrastructure and developing mitigation and recovery plans for the weaknesses.

Regardless of the scenario, the main task of the HackableHospital is to bypass the hospital IT security and cause chaos in the system. The simulation is vulnerable to many types of attacks including spoofing, tampering, social engineering and password guessing. When the participants are able to find and

use an exploit, there is a news release giving instant feedback that the exploit has been found. We find that the simulation works best when the participants work in small teams of 5-10 people. We often have several teams working on different (but identical) hospitals, and it creates a type of fun / competitive atmosphere as the teams can see the results of the attacks on the other hospital in the news release, but not how it was done. Each simulation session ends with a debriefing. Usually, each team is asked to describe one exploit, provide the name of the exploit, and then give 1 or 2 mitigation strategies. We also like to leave time for the group to discuss other issues of cybersecurity.

### Conclude by telling us what, in your opinion, is the uniqueness of HackableHospital?

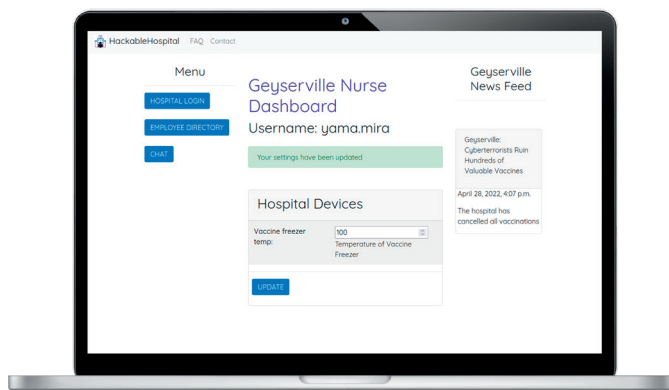
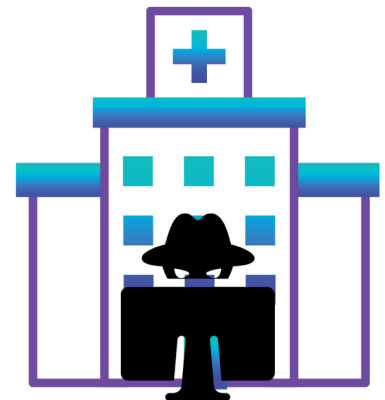
Cybersecurity is not always the most interesting topic. Keeping participants engaged during a lecture is not easy. Before attending our simulation, many healthcare workers tend to perceive cybersecurity as "things that IT does to keep the network safe" rather than "things I need to do to keep myself safe." The HackableHospital is unique in that the architecture of

the software and the flow of the teaching sessions are optimized to ensure that participants learn tips that are helpful both in their careers in healthcare and for protection of their own personal data and identity. There is often an element of surprise when participants see how easy it can be to penetrate a poorly protected system, and how simple it can be to protect from these attacks. The HackableHospital gives an interactive (and fun) experience where participants exit with a useful toolkit to protect both their workplace and their personal lives from cyberattacks.

VISIT THE WEBSITE



## HackableHospital





Choose your language



**SIMREVIEW**



## iSimulate: compact and uncompromising simulation

From an Australian idea, a smart modular solution that incorporates various features to simulate the patient monitor. Today we talk about iSimulate.

The use of electromedical devices in simulation is not always a winning choice, especially in the case of a simulated patient since it is not possible to simulate a symptomatology that can only be detected through real patient monitoring.

others, generally smaller, which are used to operate the different modes:

- Simulation
- Monitoring
- Medical records
- Video camera



**Pros**

- Ease of use and configuration
- All iSimulate kits are very complete, it is not necessary to add any accessories
- Basically plug-n-play also thanks to the Apple system
- Suitable for any American Heart Association and ERC certified scenario



**Cons**

- Not very cheap, there are other much less expensive alternatives such as SimMon and Trucorp trumonitor, if only the monitor management feature is needed on the simulation and instructor side, without accessories and iPad included.
- The 9.7" iPad feels a bit tight for the control interface
- Only available on iOS



iSimulate proposes a smart solution called REALT1360, a real modular ecosystem that incorporates several features:

- patient simulator
- CPR feedback
- parameter monitoring
- video transmission

The REALT1360 bag faithfully replicates (in a somewhat simplified way) that of a real defibrillator monitor. As for the cables for patient monitoring, inside we find the complete set which includes electrodes (3 and 7 Dev), adhesive plates, pressure cuff, SpO2 and EtCO2 sensors, Powerbank, Router and 2 iPads. The equipment varies slightly between REALT1 Go, Plus and Pro; the latter also includes various accessories for video shooting.

REALT1360 consists of an Access Point, used for the Apple TV and 4 iPads, a 12.9" one which will be the actual defibrillator display and three



**KEEP READING AND DISCOVER THE FINAL VERDICT**





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SIMZINE



PUB SIM



## Un concurso para técnicos de simulación

Un concurso para técnicos de simulación con el objetivo de compartir de forma colaborativa soluciones tecnológicas y operativas

Bienvenido de nuevo a nuestro Pub, pero hoy también tenemos nuevos mecenas a los que damos la bienvenida. Así que permítanme unas pocas palabras para explicar el menú de este pub en particular. Tomen asiento también. Aquí tendrán la oportunidad de degustar solo una o dos cervezas, producidas en las mejores cervecerías del mundo y siempre las encontrarás diferentes según las elecciones de nuestro maestro cervecero. Esta columna nació con la intención de tener una charla, distendida y despreocupada, sobre artículos publicados y seleccionados referentes al mundo de la simulación. ¡Nunca habrá más de uno o dos artículos porque no te queremos borracho!

Nuestro maestro cervecero propone hoy la degustación de una cerveza de ultramar. La cerveza en cuestión es una blanche fresca y ligeramente afrutada que sirve para refrescarse en estos primeros días de verano. Se produce en una cervecería de Las Vegas: SimGHOSTS, un nombre inusual para una cervecería, pero ciertamente los cerveceros que la produjeron saben lo que significa tener que ver con el calor...

La cervecería SimGHOSTS nació de la idea de Lance Baily de crear una organización sin fines de lucro dedicada a apoyar a todas aquellas organizaciones en el mundo que utilizan la simulación para mejorar los resultados de aprendizaje y atención al paciente. En 2019 elaboran esta blanca llamándola "Bug Buster", de nuevo un nombre inusual para una cerveza, pero la idea detrás de su creación es muy convincente: para lograr que el campo de la simulación continúe expandiéndose, es necesario ofrecer oportunidades de capacitación, para todos los involucrados en la simulación. Esta cerveza fue creada para entrenar y animar a los principiantes, mostrando los enfoques de los tecnólogos más experimentados a los problemas tecnológicos de la simulación.

Imagine Bug Busters como un equivalente de los SimWars de la Academia de Simulación SAEM, de la SIM

University de SESAM o de la SIMCUP © italiana, pero para especialistas en tecnología, es decir, técnicos de simulación. La competición comienza con grupos de principiantes a los que se les asigna el papel de técnicos de simulación. A estos últimos se les asignan tareas que deben completar en 10 minutos, antes de un escenario de simulación. Además, la sala de simulación está diseñada de tal forma que genera problemas técnicos, equipos defectuosos y montajes inadecuados durante la ejecución de los escenarios. Hay diferentes rondas de competición dependiendo del nivel de los distintos grupos. El número de tareas correctas completadas por los técnicos de simulación se utiliza como factor principal para determinar la puntuación. Durante cada ronda, se introducen distractores para obtener bonificaciones de tiempo o puntos de bonificación al responder preguntas técnicas.

Actualmente muchos programas de simulación trabajan con un número limitado de personal, principalmente técnicos de simulación, y por lo tanto se han desarrollado mediante el uso de roles híbridos. Por ejemplo, los profesores clínicos pueden desempeñar tanto la función de educadores como la de técnicos de simulación, lo que requiere una formación transversal en todas las especialidades.

El modelo Bug Busters se ajusta al nivel de esta carencia al permitir la evaluación, formación y desarrollo de nuevos técnicos expertos en el campo de la simulación sanitaria.

Espero que les haya gustado esta cata, les espero en el próximo encuentro para degustar nuevas cer-

vezas que seguro les sorprenderán.

Hasta pronto,

vuestro maestro cervecero

*Crawford S, Monks S, Bailey R, Fernandez A. Bug Busters: Who you gonna call? Professional development for healthcare simulation technology specialists. Adv Simul (Lond). 2019 Jun 13;4:12.*





Choose your language



PARA MÁS INFORMACIÓN



DID YOU KNOW...



## Cómo medir realismo en simulaciones escénicas

Un grupo de investigadores desarrollan una herramienta validada para medir los niveles de realismo en simulación aplicable a cualquier escenario de cualquier disciplina médica

La simulación es uno de los pilares fundamentales del modelo académico de la Universidad Europea de Madrid. La metodología se apoya en la recreación de entornos con gran nivel de verosimilitud con la realidad.

En base a un estudio de tres años de carácter mixto (método Delphi y validación estadística mediante índices Alpha de Cronbach, Lambda 6 de Guttman y correlaciones) los investigadores del grupo SIMLAB: Observatorio de Efectos Didácticos, Psicológicos y Bioéticos del Aprendizaje en Simulaciones de Alto Realismo, de la Facultad de Ciencias de la Salud han desarrollado una herramienta llamada **ProRealSim v1.0** para obtener índices globales - y por dimensiones - del realismo en simulación.

Se trata de una herramienta teórica y matemática validada, online, bilingüe (inglés/castellano), gratuita, disponible en ordenador y móvil que será muy útil en los programas de estudio de la salud que apliquen la metodología, dada la versatilidad de poder ser aplicada a cualquier escenario simulado de cualquier disciplina médica.

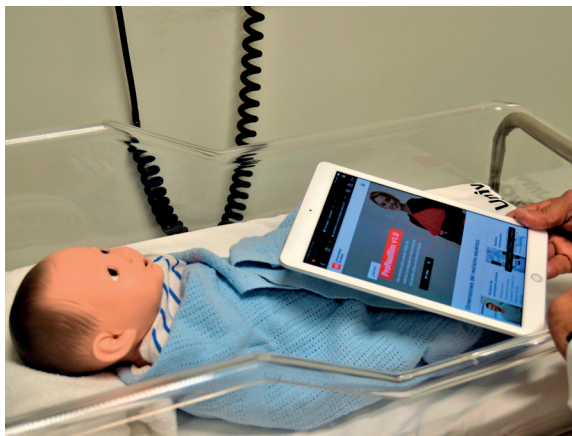
Sus desarrolladores han consultado a expertos de los principales centros de simulación de España y América Latina. Han determinado, matemáticamente, el peso de las unidades y las dimensiones más significativas que expresan la *precisión* - realismo conceptual o estructural- y la *naturalidad* -realismo funcional - del participante simulado, el simulador y la escenografía.

Contar con una cifra objetiva - el índice medio de realismo en simulación evaluado por dos o más tasadores expertos- aportará una evaluación más justa y contrastable de un término hasta hoy bastante inaprensible, complejo y difuso.

El constructo se apoya en aportes

de Dieckmann, Gaba, Rall (2007), Rudolph, Reamer, Simon, Hamstra y colaboradores (2014), Tun, Alinier, Tang y Kneebone (2015). Centra la perspectiva observacional en el tasador más objetivo - el docente diseñador experto - para obtener consenso y comparar las relaciones e influencias entre los indicadores y las calificaciones.

Con el objetivo de superar el disenso del término fidelidad - dada su complejidad y falta de herramientas de este tipo -, el equipo investigador



ofrece la herramienta para el uso de grandes muestras. Esto será posible gracias a su amplia accesibilidad digital y al empleo de indicadores objetivables, medibles, fáciles de interpretar, reconocibles, frecuentes y familiares en la mayoría de los escenarios.

Una de las dificultades de todo sistema de medición complejo es la disparidad intra e interobservador sobre los objetos, actos y reacciones simuladas. Por ello, hacemos énfasis en la importancia de una nueva figura de gran valor científico, clave en la interpretación de estos términos: el tasador de realismo.

Vinculando descriptores cualitativos con una escala Likert de 1 a 10 -donde 1 es muy bajo y 10 es muy alto-, el tasador podrá calificar el realismo en simulación. Antes, recibirá formación y entrenamiento con la herra-

mienta y se le acreditará mediante código.

La iniciativa tiene el propósito de formar una comunidad consolidada de expertos en realismo en simulación para profundizar en conocimiento, discriminar las sutiles diferencias y complejidades de la verosimilitud con estrategias que permitan disminuir las discrepancias entre los evaluadores, la fatiga del observador y la falta de análisis de contextos diferentes en base a la evidencia.

Paralelamente, la herramienta persigue impulsar una cultura de interpretación del realismo en simulación que permita conocer el impacto de las variables en estudio, verificar la utilidad de las dimensiones, unidades, categorías e indicadores creados y comparar las mediciones de realismo conseguido con las de realismo percibido por el alumno.

Esto ayudará a conocer el costo/beneficio de las inversiones, contando con la ventaja de que los elementos, activos y productos de la simulación sean validados por expertos clínicos, lo que permitirá analizar cómo impactan estas métricas en el diseño y construcción de entornos simulados y en el aprendizaje y transferencia de lo aprendido.

Los investigadores, docentes, personal técnico, etc. interesados en este campo de estudio pueden ponerse en contacto con el equipo SIMLAB a través de la pestaña de feedback de la herramienta y/o el email:

[gleyvis.coro@universidadeuropea.es](mailto:gleyvis.coro@universidadeuropea.es)

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Graphic elaboration from "Gioconda"  
[Leonardo da Vinci - 1503-1506 - Louvre Museum, Paris.]



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