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SIMZINE

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SIMulation magaZINE

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SUMMARY

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EDITORIAL

January, time for reflection

January marks the beginning of each new year. And it is always a time for reflection on the year gone by, to internalize the learnings and acknowledge all the good that has happened. Especially, to celebrate the progress made despite the challenges.

Our focus this year has been on expanding the healthcare simulation conversation. And we believe we have achieved that. We published 155 articles, both digital and in-print, giving voice to more than 90 authors from 22 countries spread across 5 continents (Argentina, Australia, Austria, Brazil, Chile, France, Germany, India, Italy, Morocco, Mexico, the Netherlands, Poland, Portugal, Czech Republic, Spain, South Africa, Switzerland, Turkey, United Arab Emirates, United Kingdom, United States of America). We were official media partners in 7 international scientific congresses: CEU (Florence, IT), SESSEP23 (Valencia, ES), FLASIC-RENASIM (Cancun, MX), SESAM23 (Lisbon, PT), SIMMED23 (Genoa, IT), SOCHISIM23 (Santiago de Chile, CL), ASPiH23 (Brighton, UK). Consistent with our ambition to create a larger community of enthusiast simulationists and professionals, we have published articles not only in Italian, English and Spanish, but also in French and Portuguese.

18 different companies have trusted us and chosen SIMZINE as their communication platform to reach out to the simulationists' community. And our social media followers have collectively increased 3 times in this past year.

We became the first publishing house completely dedicated to healthcare simulation, launching the SIMZINE Library and publishing our first book in the SIMpeople series, The Dolls' Engineer, about the last 30 years of simulation history told through the autobiography of a simulator inventor, Willem van Meurs.

Our thanks go to our authors and our staff. And most importantly, thanks to our readers for being part of SIMZINE.

But January is also a time for reflection on the future. And the focus for this coming year will be to continue expanding our global outreach. And this first issue of 2024 is already an example of that.

M. Sudhir, from United Arab Emirates, advises us on how to successfully establish and manage a simulated patient program; N. Sujee, simulationist from South Africa, explores 4 reasons to develop simulation as the heart of care in healthcare professional education: Bwelle and Guembou make us travel to Cameroon to find out how the Masso Pierre simulation center and the ASCOVIME association work to promote quality healthcare; and M. Isla introduces us to MSF's use of advanced simulation techniques for medical training and crisis response to improve healthcare in challenging settings around the world.

And in this issue we have 3 really special guests: David Gaba, the king of pioneering figures in healthcare simulation; Lou Oberndorf, a luminary in medical simulation industry; and Debra Nestel, the Editor-in-Chief of the International Journal of Simulation in Healthcare (IJoHS)

I'm delighted also to announce we are launching our brand new podcast in French called SIM Moove, which adds to SIMZINE's growing digital portfolio.

And we already have new ideas and new services in the pipeline. But I can't tell you everything. Keep reading us and follow us on our social channels to stay up to date!

P.L.I.

SIMZINE

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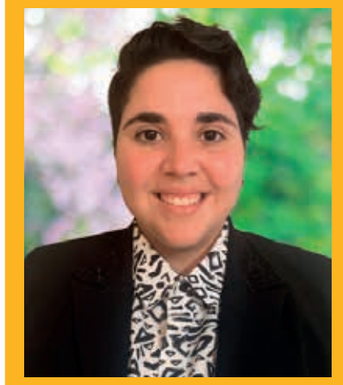
SIMTALKS

SimGHOSTS: insightful interview with Erica Hinojosa

Check out this insightful interview with Erica Hinojosa, president of SimGHOSTS, discussing her journey and future of simulation tech.



Erica Hinojosa

Erica Hinojosa is currently the Simulation Technology Manager at the University of Texas at Arlington (UTA) College of Nursing and Health Innovation (CONHI) Smart Hospital.

Erica is the President of Gathering of Healthcare Simulation Technology Specialist (SimGHOSTS), and a member of Society for Simulation in Healthcare (SSH), Simulation Professionals of Texas (SPOT), and Simulation User Network (SUN)

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Erica Hinojosa, a leader in healthcare simulation, shares her insights on SimGHOSTS and its role in advancing simulation technology in education. Starting as a simulation technician, she progressed to managerial roles, combining her passion for education and technology. She discusses the evolution and impact of simulation technology in healthcare education, highlighting the growing importance of SimGHOSTS in shaping the future of healthcare simulation. She emphasizes the need for professional development and standardized training in this rapidly evolving field, showcasing SimGHOSTS' significant impact on healthcare education and practice.

Hi Erica, thanks for accepting to share some time and thoughts with us. Let us begin by asking you about your educational background and your work experience

Hi! I am very excited to partner with SIMZINE and be interviewed.

I am currently the Simulation Technology Manager at the University of Texas at Arlington (UTA) College of Nursing and Health Innovation (CONHI) Smart Hospital. Prior to becoming the Simulation Technology Manager, I worked as a Simulation Technician at UTA CONHI Smart Hospital for two and a half years. I graduated from UTA with a Bachelor of Science in Exercise Science and the University of Alabama at Birmingham with a Master of Science in Healthcare Simulation. My background allows me to understand the medical and educational aspects of healthcare simulation. In December of 2018, I became a Certified Healthcare Simulation Operations Specialist (CHSOS) and in March of 2021, I became a Certified Healthcare Simulation Operations Specialist-Advance (CHSOS-A) through the Society for Simulation in Healthcare (SSH).

So, what drew you to simulation?

I love the concept of working in higher education, teaching, fixing things, and being hands-on. I laughed at my mom in high school when she mentioned I would be great in education but here I am now loving my job every day working in higher education. What drew me to simulation is the excitement of working with learners, being a part of the process of educating future healthcare professionals, and being a member of the team that problem solves and finds solutions in healthcare simulation. My undergraduate is in Exercise Science and for a long time I wanted to coach but as I was completing my undergraduate degree, I had the privilege of working in the simulation center on campus that opened a new door to opportunities.

What exactly is the Gathering of Healthcare Simulation Technology Specialists (SimGHOSTS)? An association? A scientific society? And to whom does it address?

SimGHOSTS is a non-profit, international organization that supports individuals and institutions using healthcare simulation technology through hands-on training, online resources, and professional development. The SimGHOSTS community consists of Healthcare Simulation Technology Specialist/Simulation Technicians/ Simulation Operation Specialists. Although SimGHOSTS is a predominant technology-based organization, it is important to recognize we have eight domains of practice which includes Audio-Visual, Education, Healthcare, Information Technology, Management/Operations, Research, Simulation Technology, and Theatrics. This allows the organization to be welcoming and diverse to many aspects of the simulation community.

How did you decide to offer your services for the position of SimGHOSTS President you are currently serving?

I have always been passionate about leadership positions. I love serving on an executive team and being an influence to those around me and in the organization. Furthermore, with me being a people person, I feel a deep connection with the SimGHOSTS community. Considering the presidency was a "no brainer". I am excited to embark on my new journey as President and look forward to the advancements that are possible for the organization.

Simulation Technology Specialist is a fairly new professional figure, at least in many countries. What is it and what exactly does it do?

Healthcare Simulation Technology Specialists (HSTS) are employed in simulation programs and are responsible for the set-up, operations, and maintenance of the simulation environment. Providing a definition is the easier part of the question and, unfortunately, it is challenging to define every specific role as a HSTS. I see many variations of the positions from institution to institution. As a way to address this concern, previous to my presidency, a working group in SimGHOSTS developed the SimGHOSTS Capability Framework to support role definition, progressive pathways, and title clarity.

Is there a standard training path for those who want to enter this profession?

There is not a standardized training path for those in the HSTS position. This is a major concern and a gap in the profession. Although we have the Capability Framework to define the job description, the industry does not have a framework to train HSTS once in the role. As I embark on my presidency, I am going to create a workgroup to develop standards for training to deploy into the profession that will promote proper training across the variety of roles as HSTS to resolve this issue.

We are in a time of great simulation challenges. How do you see SimGHOSTS's role and contributions to meet these challenges?

I cannot speak to every challenge...

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You can find the SimGHOSTS Capability Framework on the SimGHOSTS website or by following this link: *https://simghosts.org/page/capability_framework*

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DID YOU KNOW...

Jamais la première fois sur un vrai patient: Rapport du Centre de Simulation Masso Pierre au Cameroun

Dans cet article, nous nous rendons au Cameroun pour découvrir le fonctionnement du centre de simulation Masso Pierre et de l'association ASCOVIME, dont l'objectif est de garantir des soins de santé de qualité à l'ensemble de la population.

En Afrique et plus particulièrement au Cameroun, une grande partie de la population n'a pas accès aux soins de santé de qualité. Certains se soignent par la médecine traditionnelle, d'autres nient la maladie ou tentent de l'ignorer. Ceci peut s'expliquer par le manqué d'infrastructures tels que les hôpitaux ou les routes pour s'y rendre. Parfois ce sont les médecins ou le matériel qui manquent. Tous ces facteurs entraînent une augmentation de la souffrance et de la mortalité. Nous pensons qu'une mise à jour concernant les nouvelles approches et techniques pas toujours enseignées en faculté de médecine est désirable, notamment les nouvelles techniques qui feront gagner du temps dans le suivi des patients. Par exemple, la circoncision masculine est une petite chirurgie de routine, mais si elle est mal réalisée, le patient risque de nombreux troubles, tels que des douleurs pendant les rapports sexuels, des troubles de l'érection, la rupture des canaux vésicaux, voir même l'infertilité.

La simulation médicale permet aux professionnels de santé d'acquérir et maintenir les techniques et gestes médicaux et paramédicaux sans risques pour les patients. Ceci est d'autant plus important pour des interventions à risque. Les instances sanitaires mondiales recommandent d'inclure la simulation médicale dans les formations de base ainsi que dans la formation continue du personnel. Malgré des efforts récents, l'écart entre l'offre et la demande des soins reste dans notre pays reste considérable.

Conscient des limites de nos capacités à atteindre tous les villages du Cameroun, nous avons décidé de miser sur la formation. L'association des compétences pour une vie meilleure (ASCOVIME) est une association à but non lucratif de type humanitaire qui travaille en collaboration avec le gouvernement camerounais, des entreprises, des bailleurs de fonds et personnes de bonne volonté pour la promotion de l'accès à des soins de santé et à l'éducation dans les villages du Cameroun. Dans le but d'atteindre cet objectif, l'association mise depuis environ trois années sur le renforcement de la formation des personnels de santé à travers des séminaires et des ateliers pratiques. Les cibles sont les étudiants et les professionnels dans tous les domaines de la santé. Ces ateliers sont organisées par des bénévoles de l'association et encadrés par des spécialistes de divers horizons, sous la supervision du fondateur et du directeur du centre.

Le complexe ASCOVIME est situé à Mbankomo, une banlieue de Yaoundé. Encore en construction, il abrite déjà un premier bâtiment, qui est « La maison du bénévole » et un autre Le Centre de Simulation Masso Pierre (CSMP) en hommage au Professeur Masso Misse Pierre, éminent chirurgien Camerounais qui a marqué son temps. Le CSMP regroupe une salle de travaux pratiques et une grande salle où ont lieu les séminaires. Des caméras permettent de diffuser en temps

réel les cours et les séances pratiques dans d'autres facultés de médecines partenaires, ou de les rediffuser lorsqu'un étudiant souhaiterait les retravailler. Le Dr. Fabrice Tientcheu, chirurgien viscéral et digestif, est le directeur du CSMP et le Dr. Léonie Daya, médecin anesthésiste, sa directrice adjointe. Mr. Gaby Guembou et son associé sont responsables de la logistique et des statistiques. Le centre a une secrétaire. Du personnel supplémentaire peut être mobilisé selon les activités.

Un message concernant une formation est partagé sur les réseaux

en précisant les modalités de participation. Les séances gratuites regroupent 20 à 30 participants selon la capacité des moniteurs et des considérations logistiques. Le transport des participants au centre est assuré par l'association. Nos partenaires, notamment des laboratoires pharmaceutiques, participent parfois financièrement à ces projets.

Les spécialités médicales concernées par la simulation sont la chirurgie, la médecine d'urgence, la gynécologie-obstétrique et les soins intensifs. Des exemples de formations en **chirurgie** sont:

- ✔ gestes de base en chirurgie. Nous travaillons sur un matériel en silicone et parfois sur des pattes de bœuf avec des lésions créées
- ✔ repérage des veines pour perfusion
- ✔ anastomoses intestinales manuelles et à la pince mécanique
- ✔ chirurgie bariatrique
- ✔ les énergies en chirurgie
- ✔ la chirurgie plastique

Nous avons aussi un séminaire en urologie pour mieux effectuer la circoncision. En neurochirurgie un enseignement concerne la prise en charge des traumatismes crâniens. En gynécologie, en partenariat avec l'association Gynécologie Sans Frontières, les formations sont :

- ✔ méthodes de contraception
- ✔ prise en charge de la femme enceinte
- ✔ gestes de bases en gynécologie
- ✔ réanimation du nouveau né (besoin fréquent dans notre pays)

L'emploi de la simulation permet de sensibiliser les soignants aux possibles erreurs et leur gestion, de re-

mettre à niveau certains soignants, de compléter l'enseignement universitaire (étudiants en médecine et infirmiers) et de former le public aux gestes de premier secours. La simulation rend la formation plus engageante. La maxime du centre est « Jamais la première fois sur un vrai patient ».

En 2023, 23 séances théoriques et pratiques ont été organisées pour un total de 530 participants. Dans un futur proche nous envisageons d'acquérir de nouveaux simulateurs et de construire un bloc opératoire.

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SIM VOICES

Why simulation? From the voice of a South African simulationist

Nabeela Sujee, simulationist from South Africa, explores 4 reasons to develop simulation as the Heart of Care in healthcare professional education

Monitors beeping in the background, alarms are going off, and the team in the room is frantically trying to resuscitate the patient on the bed. The resuscitation has been active for the last fifteen minutes and the team is yet to try and organize themselves so as to have a structured, collaborative approach to the management of this patient. The vital signs do not look promising and they have missed an important feature that will assist in managing this patient. Will the patient die? Will a senior arrive and help them to manage this case?

And PAUSE.

Yes, PAUSE. Because this is a simulation. This is a safe space for learning and a space where we have the opportunity and time to pause in order to reflect and redirect. A safe space that is created for a multitude of reasons. I will explore 4 of them. One is the clinical education aspect, the ways in which we can allow healthcare workers to develop their critical thinking and decision-making skills. The main reason for ensuring the patient is effectively managed. But there are also other reasons that are relevant to the health professions education field and importantly, the South African healthcare setting. This 2nd reason is that through simulation and immersing undergraduate students in clinical scenarios we afford them the opportunity to reflect on their "why". Why is this their profession of choice, what is their value-add to the healthcare team and the healthcare system, and how can this insight and awareness of themselves and the team contribute to enhancing their professional identity, their duty to care and dismantle the hierarchies that exist in the system? Being a Clinical Associate (physician assistant/associate) by profession, a profession that is merely 11 years old in the country and still relatively unrecognized, has given me insight into the importance of students being aware of their context, and their purpose, ensuring inclusion for all.

The 3rd reason is that debriefing in simulation allows us to have conversations that engage participants on thought processes, assumptions, and emotional reactions. This is in an effort to transform the way we learn, to have the difficult conversations about power dynamics, race, gender, sexuality, cultural diversity. We are able to simulate and be critical of the healthcare system and the resource constraints that hinder delivering effective healthcare in South Africa. It also affords us the opportunity to dig deeper and discuss another "why" and to gain a sense of understanding and appreciation for where we are as a country, this "why" refers to post-colonial, post-apartheid legacies that have left a mark on the South African healthcare system and influence how we manage patients in this environment. My shift to being a Lecturer for the Clinical Associate profession gave me the privilege of understanding why this safe space for learning is integral to the curriculum. I have been ...

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SIM VOICES

Six Tips for Establishing and Operating Simulated Patient Program

Here's what you can do now to establish and operate successfully a simulated patient program

Simulated patients/participants (SPs) have been contributing to health professions education for over decades. They support teaching and learning, assessment as well as engage in scholarly activities. They are a valuable high fidelity simulation modality in simulation-based education. How do we establish and operate a simulated patient program? Here are some tried and tested tips.

1. Engage community into Health Professions Education:
Aim for a team of SPs who are the real representation of the population the healthcare professionals serve. This is by engaging the community and making them understand and feel that they contribute to a higher cause and their participation is valuable. Try SPs from all walks of life, different age groups, various cultural backgrounds and nationalities if applicable.

2. Recruitment of SPs:
Reach out to the community through various channels. For example: social media, organization website, open house, existing SPs, friends and family contacts, family & friends of the employees at your organization, community volunteering organizations, etc.

3. Training:
SPs play a variety of roles. To portray the role as per the objective of the session, they need to be trained. The faculty who works with the SPs also need to be trained.

- **Teaching and Learning:**
  SPs who contribute to communication skills need to be trained to play the role as per the scenario. If it is required to play consistently the same role in a standardized manner that must be emphasized. SPs who are only for physical examination skills teaching, train them with the objectives of the session. Make them aware of the level of exposure they will be going through as well as any area of discomfort expected. If any moulage is required, that also inform them. Hybrid simulation scenarios require a different type of training.
- **Assessment:**
  When the SPs are part of an assessment, such as in Objective Structured Clinical Examination (OSCE), invest more time in training than regular teaching sessions. They should be trained in such a way that they will portray the same emotions and information from the first candidate to the last candidate in the station. If they are expected to score the candidate, make sure they are trained with the rubrics.
- **Providing Feedback:**
  SPs provide firsthand feedback to the learners. They should be trained to provide feedback. It should be made clear that they are providing feedback as a patient on how his/ her concerns were addressed, were they treated with respect and dignity, will he/she go back to the learner, etc. They should not take the role of the faculty.
- **Scenario development for faculty**
  Orient the faculty with the scenario template. Offer them workshops on how to write scenarios for SP based simulation sessions. This needs to be in simple words which they expect the SP to use when communicating with the learner. Include a brief learner instruction, objective of the session and an opening statement before the scenario content.

4. Being Human:
Most of the simulationists regularly work with manikins. But when it comes to SPs, it is all about people management. Emotions, culture, age, gender, experience, discipline, personality, etc., play a significant role. It is quite a tricky area to manage the varied pool of SPs. Safety of SPs and safety of learners should be considered. There will be situations where an SP refuses to play a certain role. Understand that they are human beings with emotions, tackle it wisely. Regularly gather feedback from SPs and make the necessary improvement with the SP program. This can be around areas of teaching and learning, interaction with the learners and faculty, participation in various assessments, peer interactions etc.

5. De-Roling:
As SPs play a lot of roles which can be emotionally and physically challenging, de-roling strategies should be included in the SP program. They should be able to 'let go'' the emotions and attributes of the role they played before they leave the simulation center. The simulation center staff in charge of SPs need to ensure that this is done.

6. Remuneration:
Usually, SPs are not full-time staff. There should be a structured payment plan for the SPs. This should be communicated with the SPs. Ensure that it is on par with the industry standards. See that the payment goes through a transparent channel. For example, the finance department takes care of it rather than the simulation center staff.

SIM FACE

Saint of Circumstance: David Gaba on simulation in healthcare

Read in your language

David Gaba is one of the 2024 SIM Faces: delve into his pioneering work in simulation and discover his love for the Grateful Dead

We could not fail to invite David Gaba to be part of the SIM Face, given his key role in the development of healthcare simulation. He talked with Willem van Meurs, our assistant editor. Engineer first, then anesthesiologist, he has significantly influenced anesthesia and critical care through his invention of a modern full-body patient simulator. David imaginatively adapted Crew Resource Management from aviation to healthcare and has been instrumental in developing cognitive aids and Emergency Manuals. An acclaimed author and educator, he has received numerous awards for his contributions to medical education and patient safety. Outside work, he enjoys reading, physics, outdoor activities, and various sports, reflecting his diverse interests.

Read our interview with him to find out more on simzine.news

ADVERTORIAL

Build Your Own Patient Encounter With the SimX Virtual Manikin Series

The SimX Virtual Manikin Series is transforming medical simulation education globally by offering customizable virtual patient encounters. Unlike traditional patient manikins, these virtual manikins provide a more realistic and flexible learning experience. Instructors can customize patient avatars, environments, and scenarios in real-time, adjusting patient appearance, vital signs, animations, and more. This innovative approach allows for diverse, immersive, and customizable training, making it faster, easier, and more effective than traditional methods in healthcare education. Read the article to learn more

The SimX Virtual Manikin Series custom case creation technology is revolutionizing medical simulation education worldwide.

For decades, patient manikins have evolved to incorporate varying degrees of sophistication paired with back-end technology to enhance the simulation experience. While effective, they require a significant initial investment, as well as comprehensive staff training and maintenance costs. Over the past 10 years, **SimX** has successfully enhanced traditional training with virtual patient encounters. The **SimX Virtual Manikin Series** marks the next evolution in virtual reality healthcare training.

Simulation Training That is Faster, Easier, and More Realistic

While high-fidelity and realistic manikins have come a long way, they are still severely limited. For example, it is impossible for a manikin to emulate neurological deficits such as unilateral weakness or dynamic facial droop. A manikin cannot break out in hives or a desquamating rash. The inflexible nature of manikins means **they'll never reach the level of realism required to truly recreate a clinical patient encounter**. In VR, learners have immense freedom to assess patients, find the right tools, and experience dynamic virtual environments.

What is the SimX Virtual Manikin Series?

In contrast with traditional simulation methods with manikins and dedicated sim centers, the SimX Virtual Manikin Series is a **customizable collection of simulated patient encounters that allows educators to customize patient avatars, environments, and scenario outcomes to create unique simulations.** The Virtual Manikin can respond to and interact with learners in an effort to gain true-to-life clinical experience. Unlike physical manikins, the Virtual Manikin can be set up in less than 5 minutes.

How it Works

1. Choose The Encounter Type, Patient, and Environment

The SimX Virtual Manikin Series currently offers two encounters: one focused on pediatric pathologies and the other on adults with chest pain-related complaints. Before the scenario begins, **instructors choose the patient type and virtual environment** that will best meet their needs:

- Pediatric Respiratory: Select from two different pediatric avatars: male or female. Then, select either a hospital or ambulance setting.
- Adult Chest Pain: Select from four different patient avatars with varying demographics and age groups. Then, select either a hospital or ambulance setting.

More Virtual Manikin subtypes are in development and will be made available as they are finalized and integrated into the series.

2. Build Custom Patient Encounters in Real Time

With no rigid learning objectives, critical actions, or predetermined outcomes, instructors can **adjust scenarios in real-time** to meet learner needs. Instructors can customize and control:

- Patient appearance (demographic, age, and sex)
- Encounter setting (hospital/ambulance)
- Patient vitals
- Patient animations
- Lab and imaging results
- Physical exam findings
- Patient and non-player character (NPC) dialogue
- Final Diagnosis

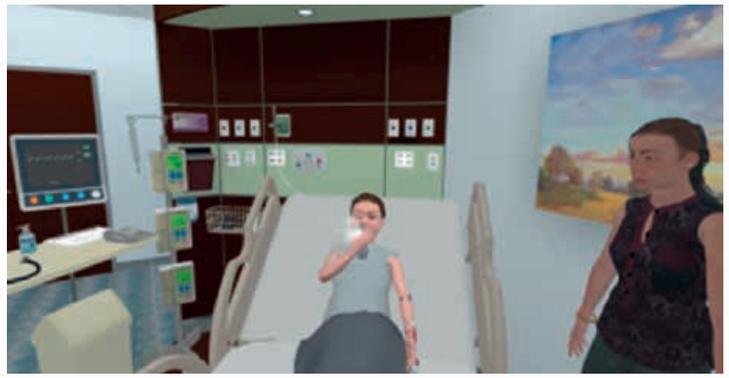
For example, a SimX Virtual Manikin can be made to feel sudden chest pain. A facilitator can then change cardiac rhythms on the monitor, change EKGs in a virtual EMR, and modify the tactile pulse. They can also move between giving the manikin chest x-rays and live ultrasound, which they can change to reflect a pneumothorax or pneumonia. **The SimX Virtual Manikin series allows you to author countless scenarios, diagnoses, and treatment options.**

3. Save States for the Future

All encounters in the Virtual Manikin Series can be customized in real-time to meet the needs of educators and learners. To improve efficiency, an instructor's favorite patient settings and states can be **selected and saved as a preset grouping for future simulations.** This preset feature eliminates the need to rebuild encounters and allows sim educators to easily train facilitators to administer training sessions and evaluations. To get you started, each Virtual Manikin scenario comes with SimX-authored configured presets. **True high-fidelity simulation has never been this fast, easy, or uncomplicated.**

4. Run It Again and Again

The SimX Virtual Manikin Series is a repeatable and customizable experience that allows learners to experience hundreds of unique and immersive patient encounters in one training platform. **Learners can run through patient encounters again and again**, each time with different presets or real-time vitals adjustments, to test their skills and prepare for real-life patient encounters. Unlike manikins, patients in Virtual Reality can be made to reflect realistic demographics with varying symptoms, physical exam findings, and psychosocial stressors. The easy-to-use design of the SimX Virtual Manikin Series allows you to invest your time where it really belongs: in **learning, practicing, and improving essential life-saving skills.**



Read in your language

DID YOU KNOW...

Simulation In And For Medical Humanitarian Action

Since 2019, Médecins Sans Frontières (MSF) is increasing the use of advanced Simulation Techniques in its medical humanitarian actions and medical training programs. Find out how simulation is implemented and used to prepare teams for complex healthcare crises and improve patient care in challenging environments, such as humanitarian settings. And learn about MSF's commitment to quality and safety through simulation in healthcare

Marta Iscla Aragones
Médecins sans Frontières (MSF)
Marta graduated in Nursing and has been working in Médecins sans Frontières (MSF) since 1996. She obtained a Master's degree in Public Health and Tropical Medicine in developing countries and a Master's degree in simulation for healthcare and Education on Systems-focused care simulation and advanced debriefing for health care. She is currently MSF Field Simulation Program Manager. She is member of the European Society for Simulation in Medicine (SESAM).

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Médecins Sans Frontières: brief introduction and its challenges

Médecins Sans Frontières (MSF) is an independent international medical humanitarian organization that provides medical assistance to people affected by conflict, epidemics, disasters or excluded from health care.

The humanitarian contexts in which MSF works are fragile, challenging, and complex, and can even be contexts of high insecurity due to geopolitical situations. All of this requires great flexibility of action, adaptability and responsiveness to the population needs affected by different emergencies or crises.

Recent Implementation and Advancement of Simulation Techniques by MSF

Since 2019, MSF is increasing the use of simulation, as a methodology to support medical-humanitarian action and its objectives, as simulation is an effective way to increase preparedness, and at the same time it is used to reflect, analyze, and define ways to provide adapted, safe, and quality care to the population. To achieve this, the **MSF Field Simulation program** was established. It works on 3 main pillars:

- **development of simulation** skills in the organization;
- integrating **simulation into MSF's medical humanitarian action**;
- continuing **to innovate in simulation** in and for MSF.

Developing simulation skills in the organization is key. We provide simulation training and coaching to frontline workers, to mobile teams that travel to the field to support projects, and to people who coordinate, define protocols and strategies. This allows us to take advantage of the benefits of this methodology by using it in different teams and for different purposes in our day-to-day activities. We have also succeeded in training local facilitators and simulationists through the mobile simulation implementers, so that simulation activities can be part of the activities supporting the implementation of project objectives.

Simulation in Action: Innovation and Diverse Applications

Given the contexts and crises to which MSF responds, the MSF Field Simulation program is in a continuous process of innovation in the use and application of simulation, and alignment of simulation best practices with the reality of the context. Through the recreation of a real environment or situations that have happened or may happen in these contexts, individuals, teams, and the organization itself can practice, learn, reflect, design, test, gain understanding of systems and/or human actions, and help define innovative and adapted solutions to the reality of the contexts.

> *MSF Field Simulation program is in a continuous process of innovation*

Different types of interventions are carried out to support the MSF medical humanitarian action. Let us discover some of them:

- **Simulation to develop and maintain key competencies:** MSF teams must do things or manage, safely for themselves and patients, situations they have never done or managed before.
- **System-focused on-site simulations:** in contexts where structures and resources are limited, there is a clear need to analyze real latent safety threats, and how the available systems and processes can provide safe and quality care for both patients and staff.
- **Simulation to define and test emergency and crisis preparedness and response:** as an emergency humanitarian organization, it is important to use it to help teams respond quickly and effectively to crises.
- **Simulation to help overcome specific operational challenges:** how can we maintain quality and safety on an ongoing basis if we move from direct to remote interventions management? Let us reflect on this through a simulation activity!
- **Post-event debriefing is key:** during an emergency intervention or even in our normal challenging activities sometimes there is no time for training, but there is always time to learn.
- **Simulation for team development:** there are teams that have never worked together or even worked in such complex situations that good communication and coordination are essential to ensure safe and quality care.
- **Simulation for security:** MSF teams must be prepared to react to and manage security related incidents arising from geopolitical contexts.
- **Low-cost virtual simulation:** to support the MSF teams working around the world.
- **Simulation to design and testing processes, spaces, and circuits.**
- **Simulation to improve and reflect on our people-centered approach** at any point in our actions.

Conclusion: Simulation as a Key Component in MSF Operations

Médecins Sans Frontières (MSF) strives to provide high-quality medical care and integrating simulation into our operations is one of the approaches employed to achieve this goal. MSF is expanding simulation activities through various projects to address different operational challenges and quality gaps in the complex and difficult environments in which MSF operates.

This leads to the fact that the use of simulation in these situations can be considered a seal of quality and safety in medical humanitarian action.

If you would like to collaborate in the MSF Field Simulation program to contribute with your simulation expertise, please contact:
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ADVERTORIAL

3B Scientific: Advancing Medical Education with Cutting-Edge Solutions

Explore 3B Scientific's latest medical simulation solutions, including Atlas Junior, SAM4 Auscultation manikin, SimConnect for REALITi 360, Kelsey, and e Sono. These innovations redefine medical education, offering realism, flexibility, and enhanced engagement for both in-person and remote learning. Read the article to learn more

At this year's IMSH conference, we are thrilled to introduce you to 3B Scientific's latest advancements in medical simulation solutions. Their commitment to redefining the future of medical education is exemplified through groundbreaking products, including Atlas Junior, SAM4 Auscultation manikin, SimConnect for REALITi 360, and Kelsey. These cutting-edge innovations are brought to you by a family of 3B Scientific Companies, including iSimulate, Cardionics, iNNOGING, Wallcur, and Lifecast Body Simulation, all united with a shared mission to revolutionize medical training.

Atlas Junior: A Game-Changer in Pediatric ALS Training

Meet Atlas Junior, the newest member of the Atlas manikin family. Building upon the same design principles as Atlas, Atlas Junior is designed for pediatric ALS training and is not just another manikin; it's a game-changer. This fully mobile and wireless solution supports in-situ training, elevating the realism of medical simulation. Seamlessly integrated with REALITi 360, Atlas Junior is an indispensable asset for modern medical training.

Introducing SAM4 and SAM4 Online: Immersive Auscultation Learning

In today's dynamic educational landscape, effective tools are essential for enhancing classroom management and engagement. SAM4 Auscultation manikin, now equipped with Bluetooth connectivity, redefines immersive auscultation education, offering a portable and lightweight solution for students. Complementing this, SAM4 Online, the innovative app- and web-based e-learning simulation software, empowers educators to take auscultation classes to the next level, whether in traditional classrooms or remote settings.

SimConnect for REALITi 360: Advanced Realism

Realism is paramount in medical simulation, and SimConnect for REALITi 360 takes it to new heights. It's not just a simulation; it's an experience. SimConnect introduces exceptional oxygenation simulation and lifelike capnography, providing true-to-life physiological responses. The real-time, accurate tidal volume data it offers is a groundbreaking feature in an integrated mobile simulation platform, enhancing critical care training for both pediatric and adult manikins.

Kelsey: The Ultimate Chest Compression Trainer

Kelsey redefines chest compression training by offering a precise and realistic experience, ensuring trainees develop optimal skills for real-life emergencies. Kelsey's ability to replicate the crucial 50/50 duty cycle sets her apart from traditional spring mechanisms. With innovative circumferential shapes and bespoke bio-polymers, Kelsey provides the most authentic training available while presenting the realistic appearance of a teenage girl.

E Sono: Unprecedented Flexibility in Ultrasound Training

Introducing e Sono, the latest innovation in ultrasound training. This online SaaS Ultrasound Training Simulation Tool offers unparalleled flexibility, enabling learning from anywhere, at any time. With a comprehensive library of anatomical and pathological scans derived from real patients, e Sono empowers learners, whether novice or experienced practitioners, to explore real-world ultrasound scans, transforming the ultrasound training experience.

About the 3B Scientific Group of Companies

Founded in 1948, 3B Scientific has grown into a global group of companies dedicated to advancing healthcare and science education worldwide. Their commitment to diversity and respect in the workforce drives real change. Represented in over 120 countries and with numerous releases each year, 3B Scientific sets the pace for innovation and customer-focused solutions in the industry.

Elevate your medical education experience with 3B Scientific and embrace the future of medical training.

Un nouveau podcast de simulation en français

Explorer la simulation en santé grâce au podcasting? Voici SimMoove, le nouveau podcast de simulation en français produit par SIMZINE

Depuis leur création en 2004, lorsque The Guardian a inventé pour la première fois le terme "podcast", la popularité des podcasts a considérablement augmenté. Les podcasts sont des audio numériques diffusés régulièrement sous forme d'épisodes en ligne. Ce secteur est en plein essor et concerne tous les domaines de la vie , qu'il s'agisse de développement personnel ou de finances, et devinez quoi ? Ils font maintenant leur apparition dans le domaine de la simulation en santé. Et c'est une bonne nouvelle ! À mon avis, les podcasts sont le moyen idéal pour recueillir des idées pratiques pour notre communauté et les intégrer dans nos routines quotidiennes. Les podcasts présentent en effet l'avantage de ne pas nécessiter d'attention visuelle. En général, on aime écouter des épisodes de podcasts pendant des tâches répétitives, comme les trajets domicile-travail, la conduite ou même la saisie manuelle de données.

Dans un article publié dans *Trends in Cognitive Science* sur la façon dont les podcasts peuvent bénéficier aux communautés scientifiques (2021), les auteurs indiquent comment les podcasts représentent un moyen de démocratiser l'accès à l'information scientifique. Les podcasts sont en effet principalement en libre accès, contrairement à la plupart des communications académiques traditionnelles qui sont généralement limitées par des portails d'accès payants ou partagées lors de conférences qui nécessitent des frais d'inscription et de transport.

Je me suis donc récemment lancé dans un tour d'horizon des meilleurs podcasts de simulation en 2023 (trouvez mon article sur simzine.news). Pour être transparent, je n'ai aucun parti pris ici - j'apprécie sincèrement chacun de ces podcasts et j'attends avec impatience chaque nouvel épisode. Chacun d'entre eux apporte une contribution unique au monde de la simulation.

Une fois n'est pas coutume, l'anglais est la langue dominante dans le domaine des podcasts de simulation. Je ne veux pas débattre du pour et du contre du "monolinguisme scientifique", mais avec la croissance rapide de la communauté francophone de simulation ces dernières années en France, en Suisse, en Belgique et dans certaines parties de l'Afrique, en particulier le Nord, je pense qu'il est grand temps de changer de paradigme. C'est donc avec beaucoup d'enthousiasme que j'annonce la collaboration de SIMZINE avec un ensemble d'experts francophones afin d'offrir cette ressource précieuse à la communauté française.

Ne manquez pas le prochain podcast francophone consacré à la simulation, **SimMoove**, dont le lancement est prévu sur Spotify en **janvier 2024**. J'ai hâte que vous soyez nombreux à écouter des experts qui partageront leurs expériences, leurs points de vue, leurs défis et leurs réussites dans le domaine de la simulation. Ils vous fourniront les meilleurs outils pour progresser dans ce domaine et renforcer notre communauté pour la sécurité de nos patients.

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Quintana DS, Heathers JAJ. How Podcasts Can Benefit Scientific Communities. Trends Cogn Sci. 2021 Jan;25(1):3-5.

Read in your language

ADVERTORIAL

SIM CORNER

Neo Nate: Advancing Neonatal Resuscitation Skills

In the realm of neonatal care, where every second counts, the introduction of Neo Nate, a state-of-the-art neonatal simulator, marks a significant leap forward. Discover this innovative trainer by Nasco Healthcare

In the critical moments following birth, the skills of neonatal care specialists can mean the difference between life and death. This is where **Neo Nate**, a new neonatal trainer from Nasco Healthcare, steps in, offering a first-rate training experience for those at the forefront of newborn care. This full-body, lifelike simulator is designed to train healthcare professionals in the critical skills needed for neonatal resuscitation and basic care immediately after birth.

What is Neo Nate?

Designed to mimic the lifelike conditions of a newborn, this full-body neonatal trainer is an ideal training platform for nurses, midwives, obstetricians, and neonatal/pediatric care providers. **Neo Nate** is a testament to the advancements in healthcare simulation technology: with its high-quality construction and three-year warranty, Neo Nate is built to last, ensuring that healthcare professionals can repeatedly hone their skills to perfection.

Realistic Training Experience

One of the standout features of **Neo Nate** is its ability to simulate realistic chest compressions with an audible click to ensure proper technique. This is crucial for teaching the correct force and depth which is required in neonatal CPR.

Additionally, the simulator allows for the practice of ventilation with a visible chest rise, ensuring that trainees can visually confirm the effectiveness of their resuscitation efforts. The inclusion of an umbilical cord that can be clamped and cared for adds another layer of realism, preparing healthcare professionals for a wide range of scenarios they might encounter in a real-world setting.

Simulation of Standard and Emergency Care

Neo Nate goes beyond basic resuscitation training. It simulates emergency situations that a newborn might face immediately after birth. Features like simulated birth cries, proper head tilt and chin lift for ventilation, simulated breathing and heartbeat, and visible chest rise and fall, make the training experience as close to reality as possible. The inclusion of airway clearance techniques and auscultation of heart sounds further enhances the learning experience.

Advanced Features for Comprehensive Training

The attention to detail in **Neo Nate**'s design is evident in its additional features. The removable chest overlay with lungs and an umbilical stump allows for an in-depth understanding of neonatal anatomy and post-birth care. These features ensure that healthcare professionals are well-equipped to handle a wide range of neonatal care scenarios.

Additionally, **Neo Nate** is a portable and user-friendly trainer: weighing just over 2 pounds and equipped with a carry bag, this manikin is easily transportable, making it suitable for training sessions in various settings. It is also compliant with global training standards, as it addresses training needs outlined by prominent curricula, including the American Academy of Pediatrics' Helping Babies Breathe and the World Health Organization's Essential Newborn Care Course.

A Step Towards Better Neonatal Outcomes

Neo Nate by Nasco Healthcare is more than just a training tool; it's a commitment to the future of neonatal care. By providing a realistic, immersive training experience, **Neo Nate** ensures that the next generation of neonatal care specialists are prepared for the challenges they will face, ultimately leading to better outcomes for the most vulnerable patients – newborns.

As we continue to witness technological advancements in medical simulation, trainers like Neo Nate represent a beacon of hope and progress. They not only enhance the skills of healthcare professionals but also signify a broader commitment to improving patient care from the very start.

Realidad virtual e impresión 3D: simulador para punción mamaria

Lina María Ramírez Palomino nos habla de su carrera como ingeniera biomédica y de cómo consiguió crear un simulador de biopsia de mama.

Soy ingeniera física, pero siempre he sido una apasionada por la medicina: en el transcurso de mi carrera, llegué a plantearme hacer las dos carreras simultáneamente, aunque circunstancias personales impidieron que lo llevara a cabo. No obstante, siempre me he mantenido inmersa en el ámbito médico y el de la ingeniería, participando activamente en proyectos multidisciplinarios en los que he colaborado estrechamente con profesionales médicos y colegas ingenieros.

Para mi trabajo de fin de grado, realice un "videojuego" en el motor gráfico de Unity 3D, el cual permitía hacer uso de un robot UR5 para la extracción de tumores en la glándula hipofisaria haciendo un abordaje endonasal, todo ello controlado intuitivamente a través del teclado de la computadora. Este proyecto se llevó a cabo en colaboración con el instituto andaluz de automática avanzada y robótica y la Universidad del Cauca en Colombia.

Después de completar mis estudios de grado, tuve la oportunidad de ser seleccionada como practicante en el laboratorio de Fabricación Digital e Impresión 3D, conocido como FabLab Málaga. Durante esta experiencia, me sumergí por completo en el mundo de la impresión 3D y su aplicación en el ámbito médico. Con dedicación, desarrollé un modelo anatómico diseñado específicamente para la exploración del oído interno, logrando imprimir con precisión los huesos del oído a escala real.

Al observar el significativo impacto que mi proyecto generó durante el Congreso CASEIB 2020, tomé la decisión de iniciar mi programa de maestría en Ingeniería Biomédica en la Universidad Pública de Navarra. En esta institución, recibí un valioso respaldo para dar inicio a un proyecto que me introdujo de lleno y me permitió apreciar profundamente el fascinante mundo de la simulación médica.

Dado mi historial de experiencia en la realización de proyectos tanto virtuales como físicos, concebí la idea de combinar ambas técnicas en este proyecto en particular. Mi objetivo era diseñar una intervención médica en realidad virtual con la capacidad de proporcionar una retroalimentación táctil, aprovechando la tecnología de impresión 3D.

Una de las tareas cruciales consistía en identificar la parte del cuerpo más adecuada para integrar tanto la realidad virtual como la impresión 3D en mi proyecto. Consideré diversas opciones, como el cerebro o el abdomen, entre otras. Sin embargo, dado mi compromiso en proyectos relacionados con la salud de las mujeres y mi condición de mujer, opté por abordar la intervención de biopsia mamaria guiada por ultrasonido. A mi parecer, este procedimiento representa un momento traumático para las mujeres que deben someterse a él. Por lo tanto, abordé este proyecto con una profunda sensibilidad y respeto hacia las personas afectadas.

El Servicio Navarro de Salud me concedió la oportunidad de asistir a estas intervenciones médicas, lo que me permitió observar el procedimiento en detalle y adquirir la información necesaria para comenzar a desarrollar el futuro simulador.

Una de las inquietudes que compartió conmigo la médica intervencionista fue la necesidad de una gran precisión al realizar este procedimiento, que implica posicionar una aguja en el adenoma mamario basándose exclusivamente en la observación mediante ultrasonido. Dada la complejidad de esta tarea y la demanda de práctica y entrenamiento para adquirir esta habilidad, surgió la idea de crear un simulador que ofreciera una experiencia interactiva para facilitar el aprendizaje de esta destreza de manera más efectiva.

Inicié el proyecto centrándome en una de las etapas más fundamentales: la creación del entorno de realidad virtual. El uso del motor de videojuegos Unity 3D resultó ser esencial para el desarrollo de este ambiente virtual. En esta fase, diseñé meticulosamente todos los elementos que componen la intervención real, lo que proporcionaría a los usuarios una experiencia inmersiva en el procedimiento y aumentaría significativamente su nivel de realismo. Para lograrlo, modelé con precisión todos los dispositivos necesarios, ajustando sus colores y texturas para que se asemejaran lo más posible a la realidad.

Tras finalizar la fase de diseño virtual y probarlo con las gafas de realidad virtual Oculus Quest 2, que ofrecen una tecnología avanzada y una experiencia visual más cómoda para la inmersión en escenarios virtuales, di inicio a la etapa de desarrollo físico del proyecto. En esta fase, la impresión 3D desempeñó un papel crucial, permitiéndome crear las estructuras necesarias para facilitar la integración del entorno físico con el entorno virtual, lo que se conoce como "tracking".

Imprimí una sonda ecográfica con el propósito de simular las ecografías realizadas en el entorno virtual. Esta sonda física fue diseñada para que se integrara perfectamente con su contraparte virtual, lo que permitió una experiencia de usuario coherente y realista.

Además de la sonda, también diseñé una herramienta especializada para el transporte de las agujas requeridas durante la intervención. Esta herramienta no sólo es compatible con los controladores de las gafas de realidad virtual, sino que también incorpora un mecanismo de adaptabilidad universal que facilita su uso con agujas

médicas convencionales. Esto permite un intercambio sencillo de agujas utilizando los adaptadores correspondientes, lo que amplía su versatilidad y utilidad en el contexto de la simulación médica.

El proceso de diseño y desarrollo de los adaptadores se llevó a cabo con precisión, con el objetivo principal de garantizar una compatibilidad total con los controladores de las gafas Oculus. Esta fase fue de vital importancia para asegurar el funcionamiento óptimo...

Read in your language

SIM MANAGER

Cutting Costs and Innovating in Medical Simulation Labs

About the cost-effectiveness of Medical Simulation Labs: unveiling hidden expenses, the impact of technology like XR on training, and strategies for innovative, budget-friendly healthcare education

1. Navigating the Fog of Current Costs

In today's healthcare industry, cost discussions are pivotal, especially when examining the economics of medical simulation labs. These **labs are at the forefront of educational innovation**, yet they face the challenge of cost-effectiveness. The paradox here is that while routine expenditures in medical simulation labs are often overlooked and legacy systems often hide behind a veil of acceptance, any new technology is thoroughly dissected for its return on investment (ROI). The situation becomes even more complex in healthcare simulation labs, where hidden costs inflate the budget and restrict innovation.

2. The Murky Landscape of Status Quo

Traditional cost models in healthcare often fall prey to a dangerous presumption: that existing expenses are fixed. Once a practice is adopted, its costs are rarely scrutinized. In medical simulation labs, this status quo includes not just overt costs like equipment and facilities, but hidden expenditures such as maintenance, **software licensing**, and staff time. Often, these 'accepted' costs can reach up to $650 per hour, yet are they all indispensable? Rarely do we ask this question.

3. Deciphering the Costs

Operating a medical simulation lab is no small feat. It involves intricate cost layers, from the upkeep of sophisticated equipment to licensing sophisticated proprietary software. Moreover, the staff involved in these simulations often work in ratios that demand one-on-one attention, further increasing operational costs. The complexity of this operation is a perfect example of why we must reevaluate the foggy status quo of healthcare costs.
Consider, for example, the financial implications of training new nurses and the challenge of "being practice ready". Take, for instance, the training of 150 new graduate nurses in a 12-month program. The 5-day onboarding costs alone can reach approximately $195,650. Add the ongoing Clinical Nurse Educator (CNE) costs of $457,600 annually, and the total quickly surpasses half a million dollars. This figure doesn't even include potential losses from a 5-10% turnover rate due to poor retention strategies. These staggering numbers provide further evidence that existing cost models require laser-focused scrutiny

4. The Innovation Opportunity

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5. Redefining Cost Analysis in Medical Simulation Labs

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6. Embracing a Future of Innovation in Medical Simulation Labs

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Read in your language

ADVERTORIAL

SIM CORNER

VenTrainer: Mastering Ventilation through a Mobile App

Hamilton Medical unveils the VenTrainer App, a revolutionary training tool for clinicians in critical care and emergency services. This app offers an immersive learning experience with interactive 360° animations, enhancing understanding of mechanical ventilators and their features. Ideal for healthcare professionals across various disciplines, VenTrainer enhances skill development in handling critical ventilation devices, ensuring better preparedness for clinical settings

Have you ever run a simulation session on your smartphone? If the answer is 'no', then let us introduce you to **Hamilton Medical's VenTrainer**. Tailored for mechanical ventilator training, this free mobile app offers an immersive, user-friendly experience. Through interactive 360° animations, users gain a thorough understanding of ventilator features, enhancing their skills in handling these crucial devices.

Proficiency in Mechanical ventilation management is an educational priority

Mechanical ventilation (MV) serves as a crucial lifesaving measure for respiratory failure, yet its complexity demands careful consideration. Improper handling, in fact, can lead to iatrogenic injury via ventilator-induced lung injury. A recent review analysis revealed that trainees often feel discontent with their training in MV and consider themselves inadequately prepared for managing ventilators in clinical settings (Keller et al., 2019[1]). Several studies indicate that initial ventilator settings in many critical care practices significantly impact the settings used later in the treatment, potentially leading to extended iatrogenic risks (Stephens et al., 2019[2]). Consequently, it's essential for all healthcare professionals who treat critically ill patients, especially in fields like anesthesiology, emergency medicine, general surgery, internal medicine, critical care, pediatric critical care, and pulmonary and critical care medicine, to receive thorough education in proper MV management.

Hamilton Medical, committed to improve Respiratory Care

Founded in 1983 in Switzerland, Hamilton Medical has established itself as a leader in the development of innovative ventilation solutions for critically ill patients. Their journey, rooted in a vision to enhance respiratory care, has led to a series of revolutionary solutions that blend precision, user-friendliness, and clinical adaptability.

The company's commitment to enhancing patient care and supporting healthcare professionals through advanced technology is evident in their diverse product range, which includes high-quality ventilators for intensive care, transport, and emergency use. This drive to innovation has positioned Hamilton Medical as a trusted partner in hospitals and healthcare facilities around the world.

VenTrainer: a comprehensive ventilation simulation tool

The latest innovation from Hamilton Medical is **VenTrainer**, a state-of-the-art virtual training app designed to help healthcare professionals learn mechanical ventilation. Recognizing the complexities of ventilator use, **VenTrainer** offers an interactive training experience, bridging the gap between theoretical knowledge and practical application in a way that is both accessible and effective.

The **VenTrainer** app mirrors the full ventilator interface on mobile and computer devices, enabling clinicians to learn about its functions, graphics, alarms, parameters, and tools. It features a physiological patient model, allowing users to observe the real-time effects of their ventilation strategies on patient outcomes. The app includes adjustable patient models for different lung conditions, such as ARDS with recruitable properties, and supports ABG analysis for optimizing ventilation strategies. This direct feedback helps healthcare professionals enhance their skills and make well-informed decisions.

Hamilton Medical offers additional training and e-learning resources in their eAcademy platform, which can be combined with the VenTrainer app.

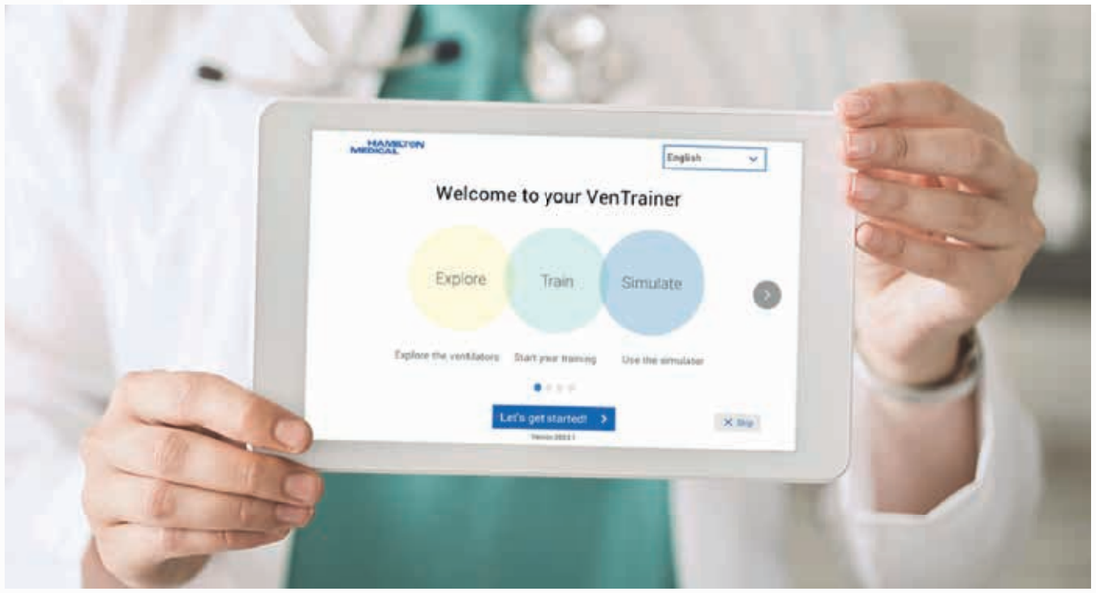
The hallmarks of VenTrainer

What distinguishes **VenTrainer** is its remarkable accessibility. Compatible with a range of devices including Android, iOS, or Windows software, the free app allows students to engage in hands-on learning using their own devices. This approach not only makes the learning process more engaging but also broadens the reach of high-quality training, eliminating the need for expensive, specialized equipment.

VenTrainer in the modern healthcare education

The importance of VenTrainer in the current medical environment cannot be overstated. As the healthcare sector continues to evolve, the demand for skilled professionals in respiratory care is on the rise. The COVID-19 pandemic has highlighted once again the critical role of ventilators and the need for proficient handling of these life-saving devices. **VenTrainer** addresses this need by providing a platform where future healthcare professionals can learn, practice, and perfect their skills in a safe, controlled environment. It exemplifies Hamilton Medical's dedication to improving patient care and supporting the medical community.

1. *Keller JM, Claar D, Ferreira JC, et al. Mechanical Ventilation Training During Graduate Medical Education: Perspectives and Review of the Literature. J Grad Med Educ. 2019;11(4):389-401*
2. *Stephens RJ, Siegler JE, Fuller BM. Mechanical Ventilation in the Prehospital and Emergency Department Environment. Respir Care. 2019;64(5):595-603*



Read in your language

SIMTALKS

A day in the life of a simulation journal editor: Debra Nestel

Debra Nestel, the Editor-in-Chief of the International Journal of Simulation in Healthcare (IJoHS), provides a candid look at her leadership in this insightful interview. With an academic journey, spanning Hong Kong, London, and Melbourne, she discusses her pivotal role in IJoHS and touches on the journal's identity, challenges, and short- and long-term goals. Debra also underscores the journal's commitment to diversity, equity, and inclusion, and provides valuable advice for those aspiring to become EiC in simulation journals

Debra Nestel
Professor of Simulation Education in Healthcare, Monash University, and Professor of Surgical Education, Department of Surgery, University of Melbourne, Australia.
Program lead for the Graduate Programs in Clinical Simulation (Monash University) and the Graduate Programs in Surgical Education (University of Melbourne).
Lead of the national faculty development program for simulation practitioners – NHET-Sim (www.nhet-sim.edu.au).

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Debra Nestel's multifaceted career and influential roles in academia make her a prominent figure in healthcare simulation and education. Her academic journey has touched different locations, such as Hong Kong, London, and Melbourne, highlighting her diverse experiences and her natural capacity to make collaborations and connections. It is surprising how much attention Debra pays to the use of words which, with good reason, are a powerful tool for simulationists. She has been editorial director of two simulation journals and is now at the helm of IJoHS.

Hi Debra, thank you very much for joining this initiative which aims to present a behind-the-scenes look at the journal you lead and provide insights into the editor-in-chief's perspective.

Can you describe your role? What do you do day-to-day?

Thanks for the opportunity to talk with you. As a new researcher, I always wondered what went on behind-the-scenes at journals, so it is interesting (and a privilege) to occupy that space. As EIC, my role is to take ultimate responsibility for the decisions about manuscripts that come into our portal. To do this, I need a reliable manuscript management system, a stellar editorial board and a diligent journal management team. While my core responsibilities are confined to decisions about manuscripts, there is a lot of checking and re-checking, of engaging with editorial board members and reviewers and of course the production team. It's far too easy for manuscripts to linger too long in the system so keeping track of the review process is important. Editorial board members are all busy and so I empathize with the challenges of fitting this into already full professional lives. I probably check the system every couple of days rather than every day. Of course, the manuscript management software is automated, so I get reminders to log in! It is a lot of work on top of my "day job". With our current volume of manuscripts in the system it probably takes me up to two full days a week, but I usually distribute that over several days. Almost everything is done online. My most frequent contact is with our NewGen managing director, Jo Bottrill, and then it is with the Senior Editorial team. As an international journal we schedule meetings at different times of the day – very early for some and very late for others – so we can catch all time zones. We never expect all editorial board members to be present: they attend the meeting that is scheduled for a relatively civilized time. Editorial governance in the journal is important to ensure

we meet standards expected on academic journals. That is the hardest and most demanding part but it is rewarding when I receive notification from satisfied readers, authors, reviewers and board members.

What is your favorite part of the job? And what elements of your job do you think some people could dislike?

I studied at Monash University for my first degree, in sociology. I then moved to Hong Kong where I worked in the medical school at the University of Hong Kong (HKU) as a 'demonstrator' in medical sociology. I had some excellent mentoring at HKU with Dr Carol Betson and Prof Richard Fielding. HKU is where I did my first simulation work, with a simulated patient program for teaching and learning patient-centred communication. That was in 1980! I had three babies in HK and then moved to London where I started working as a Lecturer in Communication Skills at Imperial College. Again, some terrific colleagues. I worked closely with Prof Jane Kidd and Prof Roger Kneebone. When you find colleagues that you love working with then it means pretty much everything. Work becomes such good fun ...

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SIM CORNER

ADVERTORIAL

Transforming Healthcare Simulation: From Resource-Intensive to Efficient and Effective Learning

Stefan Mönk explores the challenges in healthcare simulation, including cost and outcome measurement. He suggests a digitally enhanced, data-driven approach with flexible learning, diverse simulation methods, and extensive data utilization to improve education and patient outcomes while reducing resource demands. Read the article to learn more

Picture this: You're in a world where simulation doesn't feel like a burden. You crave more opportunities for hands-on learning, better feedback, and a deeper understanding of real-world scenarios. But here's the catch – you also want it to be cost-effective. Welcome to the world of healthcare simulation, where the mission is to make learning more efficient and effective.

Efficacy, in simple terms, measures how much it costs to achieve a goal. In the realm of healthcare simulation, we've often fallen short on the efficiency scale. Why? It's primarily because traditional simulation requires a multitude of resources. Think of it as setting up a play: a stage, actors (or learners), props, and directors (facilitators). These resources translate into space, people, time, and equipment, which ultimately means money – both upfront costs and ongoing expenses. In healthcare, where resources are already stretched thin, this poses a significant challenge.

Now, let's talk about outcomes. In healthcare, outcomes matter – a lot. Measuring the effectiveness of simulation, however, has its unique challenges. The Kirkpatrick model, a widely accepted framework for evaluating learning, outlines four levels: Reaction, Learning, Behavior, and Results. While it's easy to gauge participants' reactions (did they enjoy their time with the simulator?), proving higher levels of effectiveness can be tricky. Achieving tangible results in healthcare, such as improved patient safety, involves multiple factors, making it tough to attribute solely to simulation. Traditional setups also struggle with data collection, storage, access, and analysis, which hinders our ability to measure outcomes effectively.

So, what's the solution? I propose a different approach – one that's digitally enhanced, data-driven, flexible, and outcome-focused. Imagine simulation as part of a holistic learning journey, where it comes into play once learners have the necessary knowledge. Picture simulation not limited to full-scale manikins but offered in various forms tailored to different training needs. Envision a world where physical location and office hours don't constrain your access to simulation, and feedback is available when you need it. Think of assessments based on objective performance criteria, not rigid schedules. Imagine the impact this could have on healthcare delivery – it's revolutionary.

But all these improvements rely on data – lots of it. Data is a vast reservoir, where scientists (educators) can fish for insights. It can help identify training needs that go beyond static curricula, based on the performance of large groups during their training. These discoveries can shape the future of education. If gaps are identified and closed, training can adapt, and scenarios can evolve. The curriculum becomes a flexible response to real-world education needs. Next, we can venture into clinical outcome data, but that journey requires us to embrace some discomfort – change isn't easy, but it's needed for safety, and to improve patient outcomes.

Simulation, whether on an individual or systemic level, demands a considerable number of resources. To ease the burden, we need a hybrid, modular, and digital approach. Instead of seeing simulator hardware as the only product, consider it a platform for software innovation. A smaller physical footprint combined with extensive data utilization is the prescription for relief. Do you want more experiential learning, quicker competency development, and a healthcare system that truly heals? A digitally enhanced simulation system that supports learner journeys is the answer (e.g. from CAE Healthcare) – a system that transforms healthcare simulation from a resource-intensive endeavor to a powerful tool for effective learning.

Stefan Mönk
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SIMZINE

SIM VOICES

Imparare dalla simulazione di volo: lezioni di Teamwork e Strategie Operative

Un sogno trasformato in realtà: il racconto onirico di un infermiere nei panni di pilota nella cabina di un aereo, affrontando una situazione di emergenza con professionalità e calma. Il sogno, ricco di strategie operative, si rivela essere un'esperienza in un simulatore di volo. Le riflessioni che emergono esplorano l'importanza della comunicazione, del lavoro di squadra e della simulazione per affrontare sfide complesse. Un invito a sognare e migliorare attraverso la pratica e la collaborazione

Non c'è niente come un sogno per creare il futuro
Victor Hugo

Ho fatto un sogno.
E come tutti i sogni che impressionano, sento il bisogno di raccontarlo, col rischio di annoiare o di sembrare uno con la testa fra le nuvole.

Mi trovavo su un aereo di linea, nella cabina di pilotaggio, proprio nel posto del pilota. Stringevo forte con una mano la cloche di controllo e con l'altra le leve dei motori. I piedi appoggiati alla pedaliera, talloni sul pavimento e punte sui freni. Le cinture a cinque punti mi abbracciavano sicuro al sedile che potevo aggiustare in altezza, distanza e inclinazione. Il braccio destro era appoggiato ad un sostegno di tipo speciale, di cui potevo millimetrare l'inclinazione in modo da non creare alcuno sforzo sul polso e quindi sulla mano che comandava la cloche.

Nel sogno mi son detto: "che siano questi stratagemmi quello che chiamano Fattori Umani?", quelle strategie per costruire attrezzature che facilitano il lavoro degli operatori?

I miei occhi erano saturi di luci, colori e numeri che spuntavano dai display di fronte a me. Un enorme videogioco in cui tutto succedeva in fretta. Cercavo di tenere le ali livellate, di non perdere la velocità, di capire quando e come virare o come salire e scendere. Ma anche di guardare fuori, per evitare le montagne o la cellula temporalesca alla mia destra. Sentivo forte la necessità di non perdere nessun dato e la mia mente lavorava come un processore surriscaldato per tenere tutto sotto controllo, non perdere nessun parametro.

Nel sogno mi son detto: "adesso capisco cosa significa dividere l'attenzione. Non cadere nel tranello della fascinazione o fissarsi su qualcosa che attrae col rischio di perdere il contesto generale".

Ma non ero solo. Al mio fianco un altro pilota che, passo dopo passo, sciorinava una strana litania. Ad ogni mia richiesta ripeteva il mio comando, lo eseguiva e mi confermava ancora una volta di averlo eseguito. Ed io, come un pappagallo meccanico, ripetevo di aver capito che lui aveva compreso ed eseguito. E avanti così, per ogni azione importante.

Nel sogno mi son detto: "che siano questi i famosi Protocolli Comunicativi?", quelle tecniche di scambio di informazioni studiate per non perdere alcun dato importante e condividerlo senza ambiguità con gli altri?

Il mio secondo pilota sorvegliava ogni mia azione. Mi supportava leggendo ad alta voce le checklist, mi anticipava le azioni da fare e la loro sequenza. Ad intervalli regolari, correggeva, integrava, completava.

Nel sogno mi son detto: "non lo fa per controllarmi, ma per proteggermi da errori e dimenticanze".

All'improvviso l'atmosfera si surriscalda e da uno dei display arriva l'avviso d'incendio al motore destro. Una luce rossa, accompagnata da un suono di campana e tante vibrazioni. Il mio collega, con voce calma e chiara, declama «Engine number 2 FIRE: emergency checklist». Nella mia testa ho pensato "Le lancette corrono, corrono, corrono!". Nonostante ciò, a seguire una serie di azioni fatte con studiata lentezza, precedute ognuna da una dichiarazione ad alta voce in modo che potessi seguire ciò che stava accadendo. Senza fretta, con ritmo sostenuto e controllato.

Nel sogno mi son detto: "quindi non serve affannarsi se si può gestire una emergenza in modo ordinato e preciso".

Cosa fare quando si vola con un solo motore? Si decide ...

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DID YOU KNOW...

Enseñando psicología con la simulación clínica en la Universidad de Valencia

La simulación puede jugar un papel importante en la educación psicológica, destacando su rol esencial en la formación clínica de futuros profesionales. Hoy exploramos cómo la Universidad de Valencia, a través del CESIS-UV, implementa técnicas de simulación avanzadas para enseñar habilidades prácticas y comunicativas en psicología y otras disciplinas de la salud. Descubre cómo esta metodología de aprendizaje experiencial y la simulación clínica puede potenciar el desarrollo profesional en psicología, preparando a los estudiantes para enfrentar desafíos reales en entornos sanitarios, mejorando significativamente su preparación y confianza

Introducción a la Simulación en Psicología

La simulación en psicología es una herramienta fundamental para los estudiantes de esta disciplina. Imagina que eres estudiante de Psicología. En tu vida profesional, tendrás que entrevistar a miles de personas en hospitales o consultas. La práctica de habilidades de comunicación (soft skills) mediante la simulación con pacientes simulados, antes de interactuar con pacientes reales, es una parte esencial de la formación.

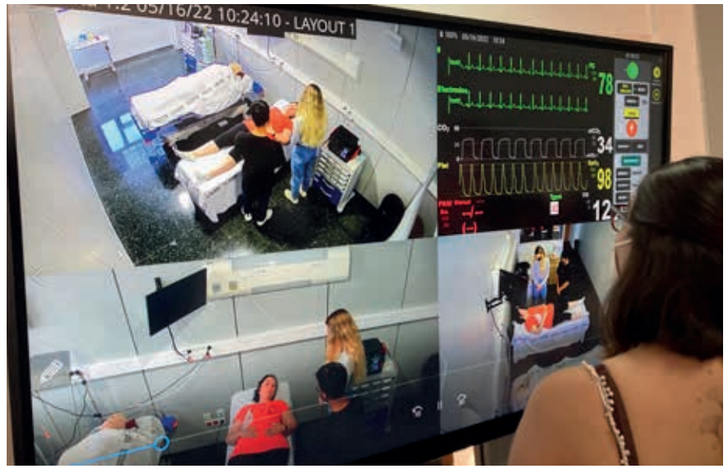
CESIS-UV y la Simulación Multidisciplinaria

La Universidad de Valencia, a través de su Centro de Simulación Clínica para Ciencias de la Salud (CESIS-UV), ofrece una plataforma avanzada para la simulación en psicología. Aquí, estudiantes de diversas disciplinas, incluyendo medicina, enfermería, odontología, nutrición, dietética, fisioterapia y, por supuesto, psicología, colaboran en casos prácticos simulados. Estas simulaciones abordan problemas complejos en un contexto hospitalario, ideales para la formación multidisciplinaria.

El centro tiene los recursos necesarios para simular actividades de entrenamiento en soporte vital básico y avanzado, simuladores de uso específico para la práctica de habilidades procedimentales específicas sin riesgo y consultas para el entrenamiento y evaluación de habilidades clínicas y comunicativas: simuladores de tareas para el aprendizaje de técnicas diagnósticas o terapéuticas, simuladores robóticos de pacientes. Los maniquíes de cuerpo entero con características fisiológicas controladas por ordenador (p.e., frecuencia cardíaca, tensión arterial y otras) permiten realizar intervenciones físicas seguras (suministro de fármacos, inyectables, vías), y también se realizan casos de simulación contando con pacientes simulados por actores o estudiantes. La simulación en psicología se integra en el currículo del Máster Universitario en Psicología General Sanitaria, centrándose en desarrollar competencias relacionales y de comunicación que ha de poseer el psicólogo/a general sanitario.

Importancia y Metodología de la Simulación Clínica en la Formación Sanitaria

La simulación es necesaria en la formación sanitaria por varias razones.

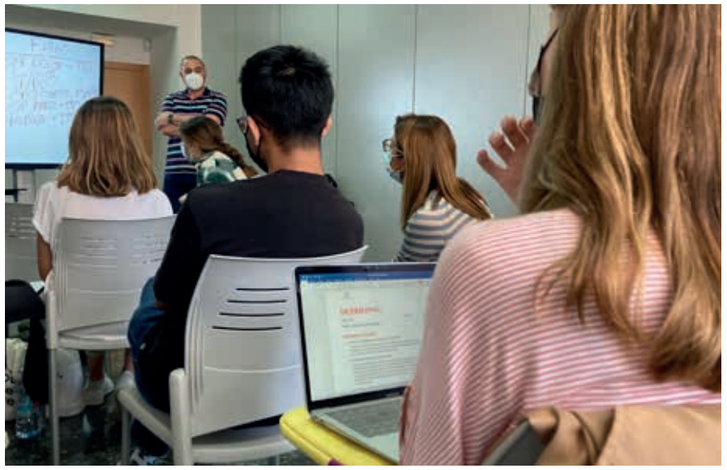


- **La metodología** de simulación clínica pone al estudiante en el centro del proceso de aprendizaje. La simulación permite que el alumnado mejore sus competencias, aprenda a observar y analizar, aprenda haciendo y pueda reflexionar a posteriori viendo las grabaciones y con la tutela y supervisión cercana y directa del docente. El objetivo es formar profesionales seguros creando situaciones y entornos alternativos similares a los reales, en los que aprender habilidades y comportamientos. La simulación ayuda al dominio de la práctica clínica.

- **La simulación** posibilita realizar actividad práctica en grupo, en un contexto seguro a personas que aún no tienen experiencia profesional; permite la práctica repetida para aumentar la probabilidad de que las nuevas habilidades puedan generalizarse. En la simulación en psicología, el alumnado es considerado como profesional sanitario en un ambiente que simula el entorno laboral.

- **La simulación** clínica concede gran importancia al papel activo del alumnado en el aprendizaje porque sin ese nivel de implicación, el aprendizaje no puede producirse. Muchos estudios muestran la relación directa y positiva entre la actividad en simulación clínica y los resultados del aprendizaje (desarrollo de habilidades técnicas como pase de tests y no técnicas como habilidades de comunicación en la entrevista o el trabajo en equipo). Los contenidos no se adquieren en un plano teórico sino experiencial, aumentando la motivación del alumnado. El alumnado aprende mejor cuando construye el conocimiento en lugar de recibirlo y para ello, se busca trabajar con tareas que permitan practicar lo aprendido en sesiones teóricas y disponer de ejemplos que les ayuden.

- **La simulación** permite la retroalimentación instantánea para la corrección de errores y para dirigir el aprendizaje, optimiza el uso del tiempo clínico, mejora la transferencia de conocimientos teóricos al contexto clínico y garantiza que el alumnado sea competente antes de la exposición a pacientes reales.



El formato de las actividades prácticas de simulación tiene varias fases: un *briefing* inicial (sesión previa a la práctica), un momento para la ejecución propiamente dicha (*actividad*), con guías de observación y checklist y rúbricas de aprendizaje y un *debriefing* o *reflexión final* al acabar. En el debriefing el alumnado debe reflexionar sobre lo realizado en la actividad, relacionarlo con sus experiencias y conocimientos, y aplicarlo a lo que será su trabajo cotidiano.

El Impacto y Futuro de la Simulación en la Educación Psicológica

En el espacio europeo de enseñanza superior (conocido como Proceso de Bolonia) la educación y la formación se han orientado hacia un modelo de enseñanza y aprendizaje basado en competencias, que definen los objetivos a alcanzar y los resultados, la evaluación, la actividad práctica y la supervisión. Al mismo tiempo, durante la pandemia por COVID-19 la menor disponibilidad de pacientes para la enseñanza y el aprendizaje de la asistencia sanitaria, y el mayor énfasis en la protección de los pacientes frente a daños innecesarios, limitaron las actividades prácticas, aumentando el interés por formas alternativas de aprendizaje.

Finalmente, la simulación en psicología no solo es una innovación en la formación de futuros psicólogos, sino que también proporciona una base sólida para la atención a pacientes reales. Los estudiantes valoran enormemente la oportunidad de integrar teoría y práctica, colaborar en equipos interdisciplinarios y recibir feedback inmediato, elementos que hacen de la simulación en psicología una experiencia educativa inigualable.

Reducing Cognitive Load: A Key to Effective Training

This article explores the challenges faced by trainers in managing cognitive loads while teaching. SKILLQUBE, a German company committed to reducing trainers' cognitive load through innovative methods and healthcare simulation technology, introduces the Cognitive Load Theory (CLT) and its relevance to training

The role of trainers is simply defined but often difficult to fulfill. They should be able to instruct and to moderate. They are expected to plan training sessions, use media and materials in a targeted manner, address participants in an appropriate way, and take individual needs into account. This is both a curse and a blessing because on the one hand, the diverse tasks and roles make the job so exciting, and on the other hand, all these tasks can be overwhelming. It is interesting to look at the tasks and coping resources of trainers in their professional context. The Cognitive Load Theory (CLT), which we normally use to think about our participants' learning process, can help here.

The Cognitive Load Theory (CLT)

As a reminder: CLT is a relatively new learning theory that was developed 30-40 years ago by the two psychologists John Sweller and Paul Chandler. The basic assumption of CLT is that working memory is a filter for the permanent storage of new knowledge. Information is loaded into working memory from both sensory memory and long-term memory in order to solve problems.

Three "loads" can be distinguished, which share a limited space and displace each other:

- Extraneous cognitive load (extrinsic cognitive load)
- Intrinsic cognitive load
- Germane cognitive load (learning-related cognitive load)

The extrinsic and intrinsic cognitive load should be kept low in order to allow room for the learning-related cognitive load.

Although the theory is based on the learning process, with a little imagination it can simply be turned around and used to illustrate the (practical) teaching process. Of course, it is scientifically not validated for this purpose. One major advantage, however, is that such ideas could be used to connect with newer teaching concepts ("training is a mutual learning process").

In relation to trainers, the extrinsic cognitive load would be, for example

- the working environment,
- the materials used,
- the group of participants and
- the general working conditions (time pressure, ...).
- etc.

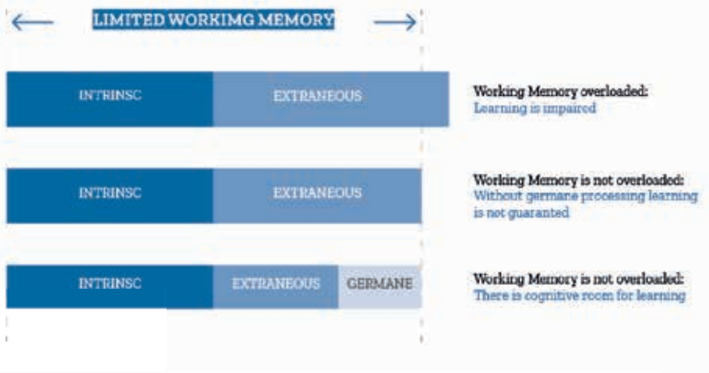
The intrinsic cognitive load would relate to the teaching content.

- Is it very complicated and needs to be simplified?
- Is the trainer sufficiently qualified to talk about it?
- What possible questions from participants can be anticipated?

The learning-related cognitive load would need to be understood as a teaching-related cognitive load. It would include the necessary resources to make the training or teaching effective.

What is the benefit?

The approach of considering the cognitive load of the training team makes it easier to analyze and optimize one's own work processes. The aim is to keep extrinsic and intrinsic cognitive loads low.



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The analysis could, for example, relate to the following areas

- Group of participants (e.g. composition)
- Time for planning processes
- Spatial resources
- Technical resources
- Learning content
- Type of training / SimZones (according to Roussin and Weinstock)
- Personal situation (e.g. family problems) of individual team members

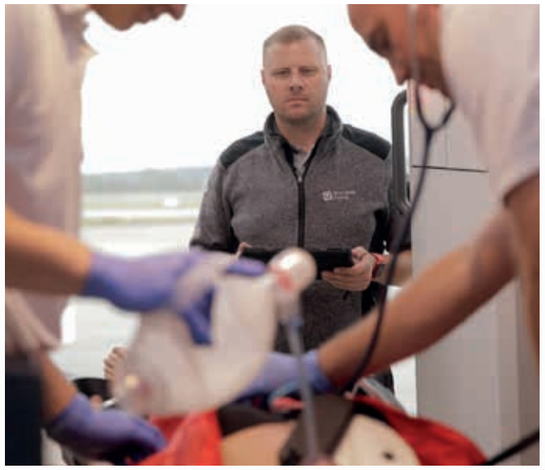
These areas should be considered individually. The basic assumption is always that the intrinsic or extrinsic cognitive load arising from these areas should be kept low in order to enable trainers to train as efficiently as possible.

Using the example of technical resources, this could look as follows:

- Technical resource (extrinsic load)
- Necessary effects and functions that must be mapped in the training (depending on the learning content).
- Technical possibilities and limitations of the available technologies
- (What can the technologies represent? How easy/difficult is it to use them?)
- Resources required
- (Do the trainers know the technologies? Are several trainers/operators required for operation?)
- Comparison of needs, possibilities and resources
- If requirements, possibilities and resources are congruent or if there are more possibilities/resources than required, there is a low cognitive load for the trainers in this area.
- If the requirements are greater than the possibilities and resources, measures must be taken to reduce the cognitive load:
  - Analysis of whether selection, optimization or compensation are possible.
  - Selection: Changing the learning content
  - Optimization: Procurement of other technologies or individual elements required for compensation
  - Compensation: Combination of different technologies/methods or targeted familiarization with elements that cannot be represented

All areas can be considered using this approach. Of course, each of them has some unique features that cannot be changed. For example: An ICU team is trained in a new and highly complex procedure. The selection of participants cannot be influenced very much (selection). However, small optimizations (e.g. changing the methodology) or compensations (e.g. using an expert as team leader in the simulation) may also be successful here.

There are even synergy effects. If such an approach reduces the intrinsic and extrinsic cognitive load on the trainers through optimized processes, the cognitive load on the participants is reduced at the same time.



About SKILLQUBE

SKILLQUBE is a German company based in Baden-Württemberg. As an International Training Center (ITC) of the American Heart Association (AHA), we support 65 International Training Sites (ITS) in Germany, Austria, and Switzerland. Based on our many years of experience in training and hundreds of customer feedback, we started developing our own simulation technology in 2017. Our goal was always to keep the cognitive load for the trainers as low as possible. The connectivity of our monitor and ventilation simulators via our qubeCLOUD, the intuitive and phase-based scenario control, and the logical menu navigation are just the beginning. We aim to shape our customers' training experiences in efficient, ergonomic, and sustainable ways. We are dedicated to this journey.

Read in your language

SIM SPACE

A Surgical Simulation Unit to advance Training & Professionalism in Turkey

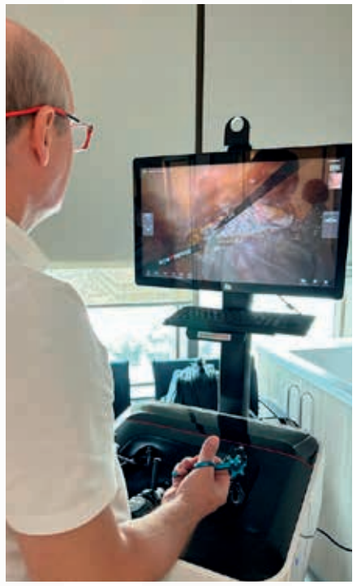
Explore the surgical simulation's innovative approach to medical training at the newly established Surgical Simulation Training Unit, situated within the Karadeniz Technical University Medical Education and Training Simulation Center (KTU MEDSIM). Selçuk Akturan, responsible for surgical simulation training, addresses the key aspects of advancing surgical professional development, including challenges, objectives, and stakeholder engagement. Collaborating with various entities, the Surgical Simulation Unit aims to contribute to the modernization of surgical training in Turkey

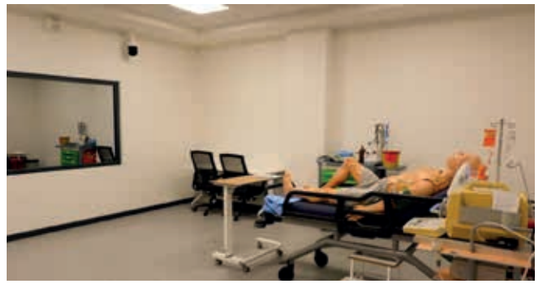
General information about the Surgical Simulation Unit

Surgical Simulation Training Unit was recently established in Karadeniz Technical University Medical Education and Training Simulation Center (KTU MEDSIM). The aim of this unit is to design and carry out the simulation training of the surgical units with an interprofessional team approach. Prof. Dr. Mustafa Imamoğlu is the head of the unit, and I am the director of surgical simulation training.

KTU MEDSIM in brief

Established in 2017, KTU MEDSIM spans 1200 m2 and features six dedicated simulation rooms, including a surgical simulation room, pediatric emergency, newborn care, gynecology, intensive care, and emergency service facilities. Alongside these, KTU MEDSIM boasts a clinical skills laboratory, two debriefing rooms, spacious meeting halls, and specialized preparation rooms for standardized patients. Our facilities extend to separate changing rooms for men and women, a relaxing cafeteria, a system room, and ample storage facilities. The Center is powered by a robust team of 15 academic professionals, including 3 full-time staff from diverse medical backgrounds. At the heart of our simulation expertise are high-fidelity simulators like the Torry S2210, Pediatric Car S2225, Adult Car S3201, Victoria S2200, and the renowned Simbionix LAP Mentor III Surgical Simulation Device. KTU MEDSIM has conducted numerous training sessions in various medical fields, attracting both domestic and international participants.





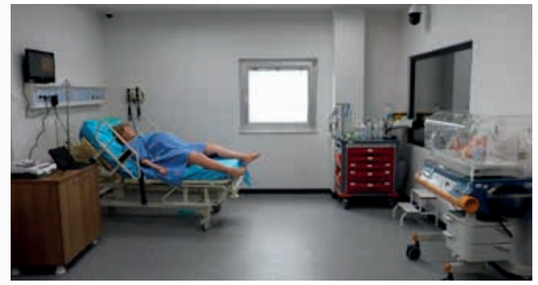
The challenges of surgical simulation training

In the simulation training sessions conducted for surgical residents, there appears to be a lack of consideration for the real-world context in which these residents will eventually practice. Furthermore, there is an underutilization of the residents' observations and experiences within these training sessions. As a result, residents do not have sufficient opportunities to reflect on the disparities between their current performance and the performance standards they need to meet. This deficiency in the training approach makes it likely that residents, who solely focus on mastering surgical techniques, will encounter difficulties in internalizing these practices and applying them effectively in diverse clinical settings. Another issue at hand is the inadequacy in assessing the impact of these training sessions on the clinical performance of the residents. These problems stem from the absence of a comprehensive educational framework that designs processes with a holistic perspective. The Unit is responsible for addressing and managing these challenge

Stakeholder engagement model for Unit improvement

We intend to establish a 'core team,' composed of individuals from various departments, and the selection process for this core team will be finalized soon. Initially, our plan involves creating and implementing simulation training programs with the involvement of surgical units, aligning with the project drafts we've prepared based on current needs identified through our research. As time progresses, our goal is to establish a 'project team' comprising participants from diverse stakeholder groups. This team will be responsible for conducting research to identify perceived training requirements and assessing the impact of training involving relevant stakeholders. We are also open to collaborating with international partners.

In essence, our objective is to evolve as a unit that thrives through active stakeholder engagement, welcoming all units or individuals who have an interest in surgical simulation training to participate in the process.



Facilitating Professional Identity Development

The impact of the longstanding surgical work culture, heavily influenced by implicit norms developed over centuries, falls short of meeting the contemporary societal demand for more compassionate and interactive communication practices. As a result, this unit focuses on programs aimed at enhancing the professional attitudes and behaviors of surgical residents, including humanitarian communication, crisis management, delivering bad news, and effective team leadership. Within this endeavor, Standardized Patients (SPs) play a crucial role as valued team members, having received training through the 'Standardized Patient Training Unit' at the KTU Department of Medical Education.

The conceptual framework of surgical simulation trainings

Our goal is to assess the competence of residents within a clinical context that closely mimics real-world clinical environments. Furthermore, we are committed to creating opportunities and settings for surgical assistants to engage in self-reflection and learn from the experiences of themselves and others, thereby fostering their professionalism and professional growth. Another fundamental aspect of our training framework is to evaluate the effects of training within clinical settings. Thus, the key principles that underlie our simulation training programs encompass the importance of context (contextuality), reflective learning from experiences (reflection on experiences), and the measurement of their impact in clinical settings (measuring their impacts).

Objectives and Ambitions of the Surgical Simulation Unit

The objectives of this unit include:

- Setting a positive example for the establishment of additional training units within KTU MEDSIM.
- Playing a pivotal role in fostering an interprofessional working environment within our institution.
- Promoting the adoption of simulation methods across various disciplines.
- Aspiring to attain authorization to conduct surgeons' board examinations in specific domains.
- Striving to become a prominent center for surgical simulation training within both our country and the broader regional context.
- Transforming stakeholder-generated ideas into tangible outcomes through the utilization of national or European funding opportunities.

We wholeheartedly believe in our ability to successfully execute short-term, medium-term, and long-term plans in collaboration with our stakeholders. We look forward to sharing our experiences and positive outcomes with the broader surgical simulation community in the near future.

Read in your language

SIMREVIEW

Laerdal Monitor, un monitor desfibrilador sencillo y elegante

Nuestro técnico de simulación Antonio Scalogna ha testeado para nosotros Laerdal Monitor, una de las herramientas más avanzadas para escenarios militares o no hospitalarios.

Al diseñar un escenario de simulación o una serie de escenarios, siempre hay que tener en cuenta la fidelidad, que no es sólo un factor del maniquí, sino también del entorno y la instrumentación utilizados.

Por ejemplo, en el caso de un escenario extrahospitalario o militar, es muy poco realista utilizar el software de un maniquí avanzado con su propio ordenador, táctil o no táctil. Por el contrario, es muy realista utilizar un monitor simulado autónomo, es decir, no necesariamente conectado al maniquí; en este caso, la experiencia global gana mucho pero el realismo del maniquí se reduce (sigue siendo posible utilizar dos mandos separados).

Laerdal Monitor es una de las herramientas más avanzadas para este tipo de situaciones.

Gracias a Laerdal Italia, pude probar y hacer probar este dispositivo en dos ocasiones muy diferentes, es decir, escenarios clásicos de SVA dentro del Centro de Simulación y simulaciones militares dentro de un hospital de campaña, es decir, desde el transporte del paciente hasta la llegada y el tratamiento completo dentro del hospital, todo ello con el mismo monitor.

Diseño y materiales

Cuando vi y probé este monitor por primera vez, apreció mucho la elección del diseño y los materiales de la carcasa, incluidos los soportes laterales. El conjunto es realmente robusto y elegante, lo que personalmente aprecio mucho, ya que a menudo contrasta con el entorno en el que se utiliza.

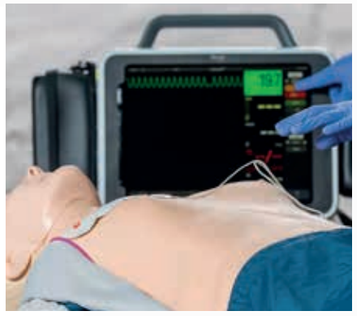
Los soportes laterales son muy robustos y de gran capacidad, pueden alojar todos los sensores necesarios sin problemas ya que siempre están muy ordenados incluso durante la ejecución del escenario, los cables no siguen ningún camino extraño, no se retuercen alrededor del cuerpo del monitor desfibrilador y, sobre todo, se pueden fijar en su interior.

Funcionalidad y conexión

Llamar a este dispositivo "Monitor Desfibrilador Simulado" es muy reductivo, ya que estamos hablando de TruMonitor, la app de TruCorp que, además de disponer de diferentes gráficas de los desfibriladores más famosos (Philips, Zoll, LifePack, etc.), permite el uso del ventilador con gráficas muy clásicas (TruVent), permitiendo siempre una completa interacción por parte del alumno en ambos modos.

Monitor y maniquí Laerdal

Además del monitor respiratorio, el maniquí Little Anne QCPR puede integrarse en el monitor Laerdal, que es detectado automáticamente por el software; de nuevo, la conexión es absolutamente fiable.



Pros

- Diseño moderno y robusto
- Aplicación muy intuitiva
- Los parámetros vitales del instructor siempre en primer plano, sin demasiados adornos gráficos
- Conexión entre dispositivos Apple, es decir, no a través de WiFi
- Gestión de informes sencilla e intuitiva
- Utilización del maniquí de retroalimentación RCP

Cons

- Ampliación del catálogo de patología
- Mejorar la aplicación de la presión invasiva
- Supervisar la ampliación del catálogo
- Sólo disponible mediante suscripción
- No hay posibilidad de imprimir el ECG en el monitor directamente en el lado del iPad del alumno

Read in your language

SIMZINE

SIM NURSE

20 Years of Simulation Excellence (2003-2023)

Since 1976, the International Nursing Association for Clinical Simulation and Learning (INACSL) has revolutionized nursing education with its innovative simulation practices and global standards. Emphasizing interdisciplinary collaboration, it continues to lead in nursing simulation, driving advancements in healthcare education and research, while fostering inclusivity and international partnerships

The **International Nursing Association for Clinical Simulation and Learning (INACSL)** (*www.inacsl.org*) began the journey to simulation excellence in 1976. The original group of educators created a space for nurse educators to collaborate and discuss psychomotor skill education and learning resources best practice. Over 20 years later, as practice in the skills laboratory setting began to shift to the use of advanced technology, Learning Resource Center conference attendees determined there was interest in the establishment of an organization to provide ongoing support and resources to the nursing skills laboratories and simulation community of practice. Thus the inception of what is currently known as INACSL.

In 2003 INACSL was officially incorporated as an organization. The founding Co-Presidents, Drs. Debra Spunt and Teri Boese, created a structure of co-presidency to ensure INACSL was built on a solid foundation, creating a stable and sustainable organization. The structure eventually shifted to a presidential structure of having an immediate past president that maintains consistency and historical perspective to the Board (Laura Gonzalez 2023), a current president that begins officially after the annual conference (Desiree A. Díaz), and an onboarding year of president-elect (Ashley Franklin). The three presidents serve with a Board of Directors to ensure the mission, vision and core values of the organization move forward in an innovative and positive direction.

Over the last 20 years, INACSL has made great strides in impacting the global simulation community. Our inclusive nature of all nursing simulationists around the world was the catalyst for developing, creating, and using systematic reviews to formulate the interdisciplinary Healthcare Simulation Standards of Best Practice (HSSOBP) in 2011. These standards combine the intellectual power of many disciplines across many countries. Advancing one of the strategic goals, embrace the international community, the HSSOBP™ are a free download and available in numerous other languages. All translations adhere to best practice of translation.

INACSL has led nursing innovation and science in simulation through its tenure as an interdisciplinary organization. The global membership has embraced the science around simulation pedagogy and worked diligently to design, generate, and test strategies that not only impact nursing but all healthcare professions. We strive for inclusivity and diversity within the simulation world keeping in alignment with our core values. We recognize the importance of building relationships across simulation organizations by building strong partnerships with our affiliates.

The organization is strong, impactful, and eager to transform lives with the advancement of simulation practice, education and research. We look forward to continued growth and success in the next decade as we collectively meet the needs of the nursing community and continue to be an interdisciplinary collaborator and resource internationally.

Read in your language

SIM CORNER

ADVERTORIAL

30 Anni di Laerdal Italia

Intervistiamo Novella Callero, Country Manager di Laerdal Italia, in occasione del 30° anniversario dell'azienda. Durante la chiacchierata, Novella ci racconta come è nata la divisione italiana di uno dei principali produttori nel campo della simulazione e quali sono stati i primi progetti realizzati sul territorio, per poi spostare lo sguardo verso il presente e futuro

Fondata nel 1994, Laerdal Italia continua a svolgere un ruolo chiave nell'evoluzione della formazione medica, contribuendo in modo significativo alla qualità dell'assistenza sanitaria italiana. Abbiamo tentato di ricostruire le tappe storiche della società attraverso una chiacchierata con Novella Callero, Country Manager di Laerdal Italia.

Novella, ci aiuti a percorrere le tappe salienti di Laerdal in Italia?

I colleghi che hanno assistito alla fondazione di Laerdal in Italia si emozionano sempre quando racconto del progetto chiamato Public Access Defibrilation Chain (acronomico PAD Chain) che si proponeva di introdurre in Italia la defibrillazione precoce sul territorio, mettendo in correlazione diverse entità dalle istituzioni al sistema dell'emergenza 118. Se oggi si parla di catena della sopravvivenza come un dato acquisito è anche grazie all'impegno pionieristico di Laerdal nel promuovere attivamente progetti come questo, che attivamente permise l'implementazione di oltre 5900 defibrillatori e conseguente piano formativo.

Caspita! Di che anni stiamo parlando?

Stiamo parlando degli anni novanta. Nel 1994 c'è stata la trasformazione da Distributore a Filiale di Laerdal. Nello stesso anno, a Sirolo, con sede temporanea presso l'ospedale di Lancisi, nasce l'Italian Resuscitation Council, I.R.C. il cui atto di nomina è incorniciato in Laerdal a testimonianza dell'attenzione da sempre rivolta al supporto e collaborazione con le società scientifiche. Nel 1998 e nel 1999 si stringono altre due collaborazioni importanti con la Società dell'Emergenza Urgenza – SIMEU e con la società dei Cardiologi Ospedalieri – ANMCO.

Ma tu quando sei entrata in Laerdal?

Io sono entrata in Laerdal a fine 2010 ed ho esordito assistendo alla Consensus Conference di Roma, sulla 'High fidelity simulation: the gold standard for medical education' organizzata da Laerdal col patrocinio di IRC e la supervisione scientifica di Erga Cerchiari, Alessandro Barelli, Marcus Rall, Vinay NadKarni, Paolo Biban. Un evento senza precedenti per la portata scientifica e per il coinvolgimento di tutti gli esperti di simulazione nazionale e internazionale di quegli anni. Ebbi l'impressione – confermata poi in diverse altre occasioni – del ruolo di Laerdal, ossia un'azienda capace di connettere l'Italia all'Europa e al mondo grazie alla nostra dimensione internazionale, alle numerose esperienze e collaborazioni in tutti i paesi. Mi piace pensare che siamo dei facilitatori e propulsori di nuove idee, progetti e buone pratiche.

Cos'era questa Consensus Conference?

Si trattava del tentativo di definire un percorso di evoluzione e disseminazione che portasse ad una condivisione intersocietaria della simulazione come fondamentale in tutti i processi di formazione in sanità. Credo che questo sia un bisogno attuale anche al giorno d'oggi; non per mancanze di quel tavolo tecnico, ma perchè le società cambiano, assieme alle persone e ai bisogni e diventa fisiologico prevedere dei periodici appuntamenti di riallineamento tra gruppi di lavoro appartenenti a società scientifiche differenti o ad ambienti diversi. Se non ricordo male anche la Commissione sulla Formazione in Simulazione che si è costituita nel 2021 ha finalità affini a quelle che si proponeva la Consensus Conference.

Facciamo un fast forward ai giorni nostri, quali sono state le attività recenti che Laerdal ha supportato?

Potrei parlare per ore, ma ci sono alcune recenti esperienze che meritano un'evidenza particolare. Mi riferisco alla partnership grazie alla quale si è realizzata la prima Master Class in Debriefing Strategico, con la presenza del professor Nardone che ha introdotto le basi del Dialogo Strategico e la trasposizione di questo nel contesto del Debriefing post-simulazione curato dal Giorgio Capogna e Pier Luigi Ingrassia. La presentazione durante il congresso SIMMED delle risultanze in pillole del progetto Safety2020, di cui siamo partner a fianco all'Università di Foggia, con la Professoressa Cinnella e la Professoressa Mirabella alla guida di questo Erasmus Plus. E' stata un'esperienza straordinariamente formativa seppur impegnativa, basti pensare che tra gli esperti della Simulazione era presente Peter Dieckmann.

E poi l'esperienza della Sim-Excape Room fatta durante il congresso della Siaarti. Sono particolarmente orgogliosa di questa esperienza perché oltre ad essere la prima nel suo genere, ci ha regalato momenti di lavoro assieme a persone straordinarie umanamente e professionalmente come Stefania Brusa, che ha coordinato il gruppo di istruttori sui contenuti clinici dell'attività didattica svolta. E poi l'incontro con eroi quotidiani come una "prof" dell'Aldini Valeriani di Bologna che, oltre a investire molte energie nel centro I.R.C. di formazione permanente alla RCP presente nell'istituto, con noi ha partecipato ad un'iniziativa in Piazza L. Dalla, voluta dall'Assessore del Navile, dedicata alla popolazione o meglio ai giovani e giovanissimi del quartiere.

Come avete intenzione di celebrare questo trentennale?

Abbiamo deciso di celebrare questo anniversario non con un evento unico, ma attraverso una pluralità di eventi, progetti. Fedeli alla nostra natura che da sempre ci vede presenti in ambiti diversi ci muoveremo a tutto campo, da iniziative sulla rianimazione che sostengono ancora una volta la cultura RCP precoce sul territorio a iniziative sulla simulazione medica avanzata con attenzione ai bisogni della sanità di oggi.

Ci sembra di capire che non vuoi anticipare nulla...?!

Diciamo che spero che ci seguiate durante l'anno, evento per evento tramite SIMZINE, Social e quant'altro.

Allora quali novità accompagneranno le celebrazioni del 2024?

Presenteremo all' IMSH MamaAnne® e la nuova gamma di simulatori per la gestione dell'emergenza ostetrica; si parlerà della collaborazione con SimX per la realtà virtuale e con Limbs and Things per la realtà aumentata; verranno presentate le nuove features per quanto riguarda SimCapture, inteso non solo come sistema audio-video ma come piattaforma per la gestione della formazione/apprendimento in simulazione... e poi tanti nuovi servizi, ad esempio KnowledgeHub, per facilitare la gestione dei centri di simulazione e per portare la simulazione "chiavi in mano" all'interno dei piani formativi delle organizzazioni sanitarie.

Quindi le novità non mancheranno!

Sì, infatti la tecnologia evolve rapidamente anche nell'ambito della simulazione, molto più di quanto non accadesse 10 anni fa. Noi continuiamo ad abbracciare l'innovazione tecnologica avendo chiaro l'obiettivo e il fine ultimo. Guidati da valori quali Focus on Impact faremo del nostro meglio per fornire soluzioni avanzate che, con rinnovata attenzione alla sostenibilità economica, contribuiscano a migliorare la formazione medica, al fine di garantire un più alto impatto sulle competenze degli operatori sanitari e quindi sulla clinica e sui pazienti.

Grazie, crediamo che questo aiuti a capire meglio l'unicità della vostra mission: Helping Save Lives.

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Read in your language

SIM VOICES

Virtual Reality in Healthcare Education: future or present?

Virtual Reality in Healthcare Education is not the future anymore, it's the present! Michelle Aebersold tells us how she is using immersive VR simulation to provide realistic and safe learning environments to improve preparation for real-world nursing challenges and veteran care

Welcome to the future of simulation -based learning

Since the '90s, healthcare education has had quite a digital facelift. And now, we're ushering in a new age, harnessing the latest technological innovations to redefine healthcare education and training by using the latest simulation technologies, Extended Reality (XR). So, what is XR? The XR Safety Initiative (XRSI) recently created a taxonomy to define varied technological terms. Extended Reality (XR) is the overarching term for all types of alternate realities, encompassing **Virtual Reality (VR)**, Augmented Reality (AR), and Mixed Reality (MR) technologies. VR simulation offers a fully digital, immersive environment experienced through special equipment like head-mounted-displays. 360 Video, another immersive format, records views from all directions viewable on a computer or similar devices. This technology is ever changing so what we know today will advance.

Why Virtual Reality in Healthcare Education?

With VR, we can put our learners into a **realistic clinical experience** loaded with all the complexities of real-world healthcare. It's fantastic, because unlike many simulation setups, these VR environments offer a controlled environment for the learners to try their hand at things like prioritization, decision making, delegation, and more. They can practice being the healthcare provider in a true to life role, without putting patients at risk.

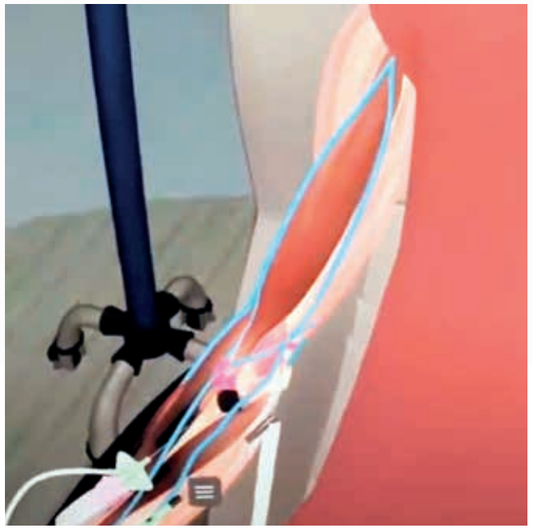
What is Happening in the world of Immersive Virtual Reality?

As an early innovator and adopter of technology driven learning at the **University of Michigan School of Nursing**, I have been lucky to be involved with a great team of people to develop interesting VR applications. Our team has been using 360-degree videos to get a better grasp on how we can better care for the deaf or hard of hearing, and our military veterans. If you watch these videos, you'd see these mini dramas showing interactions between nurses and patients which reveal the specifics of their care needs. In one video, you see a nurse trying to communicate with a deaf family member who uses American Sign Language (ASL) in a trauma bay after a car accident. It's a bit of a frustrating scene as they struggle to talk without a qualified medical interpreter until finally, a Video Remote Interpreting (VRI) service comes into play making communication smoother!

In another set of videos, we dive into caring for Military Veterans. These 360-degree videos feature scenes of nurses and veterans interacting positively, and these clips brilliantly showcase their unique care needs and efficient ways to assist and support them.

Although this was developed in the United States the needs of the Veterans are universal and relevant to many countries. The cool thing about the videos is they can be viewed through YouTube VR for free.

This can be done on a phone/tablet or using a VR headset. And then there's this cool VR simulation, **"Under the Skin"**, that we're using to better understand oncology emergencies.



Using an experiential approach, learners are introduced to two patients undergoing chemotherapy where there's a possibility of serious tissue injury if the medication leaks out of the blood vessel (extravasation). This VR program is part of our efforts to ensure safer chemotherapy administration. Learners can practice protective gear usage, responding to an extravasation event, and they even get to see the cellular effects of the drug on the human body. The immersive nature of this experience helps learners understand the urgency to treat a medication leak quickly to prevent damage. This program is available for free to download on the Meta App Lab.

What is Next on the Horizon of Healthcare Education?

The current project I am involved with is called "The Big Ten Practice Ready Nursing Initiative". Led by Dr. Cynthia Bradley at the **University of Minnesota** we partnered with **Oxford Medical Simulation** to create a series of single-player, multi-patient scenarios. The goal was to create simulations to teach crucial skills like clinical reasoning, decision making, prioritization, along with interpersonal skills, such as communication and collaboration.

So, what's the word on the ground? Early tests of these multi-patient VR scenarios at three nursing programs hinted at their potential and were well-received by students. The use of robust simulation strategies based on the **Healthcare Simulation Standards of Best Practice™**, has created a safe and positive learning experience. VR can be an amazing and engaging form of simulation that can be easily used by all **simulationists** and will truly benefit our learners!

Read in your language

ADVERTORIAL

SIM CORNER

Introducing MATTi™: A NEW Female Medical Simulator

MATTi™ by TacMed Solutions is an advanced medical simulation trainer designed for casualty and critical care scenarios involving female patients. Visit TacMed Solutions at IMSH Booth 725 for a hands-on demonstration of MATTi™ and its innovative features, revolutionizing female patient care simulation.

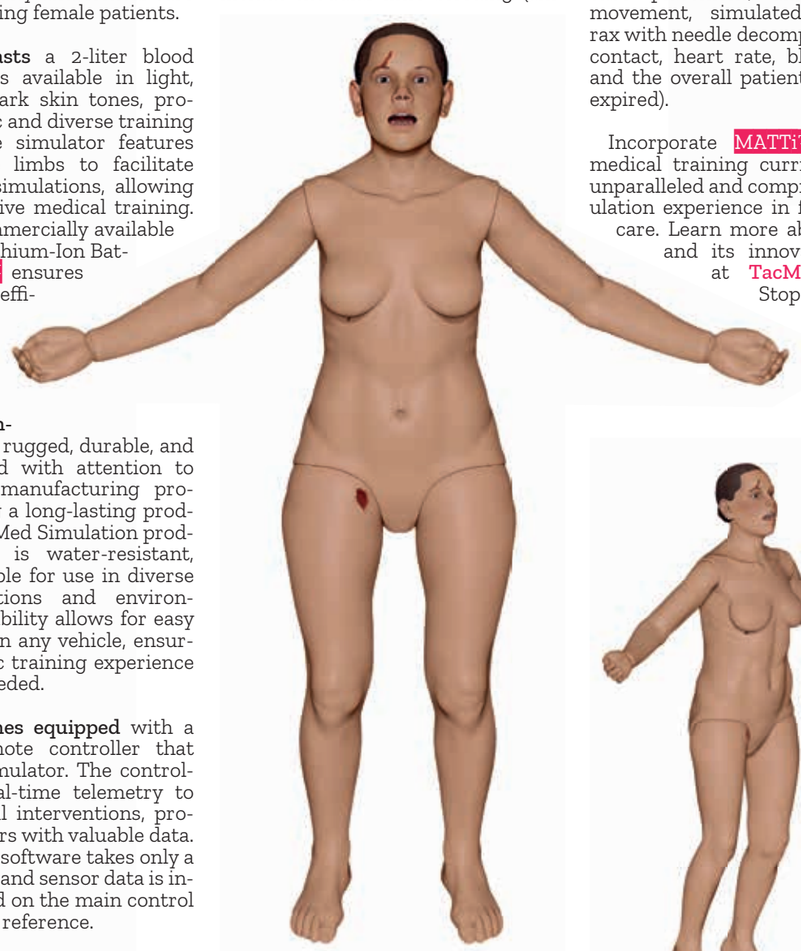
Explore the cutting-edge MATTi™, TacMed Solutions latest innovation in advanced medical simulation. This state-of-the-art modular treatment trainer is specifically designed for training in casualty and critical care scenarios involving female patients.

MATTi™ boasts a 2-liter blood reservoir and is available in light, medium, and dark skin tones, providing a realistic and diverse training experience. The simulator features interchangeable limbs to facilitate various injury simulations, allowing for comprehensive medical training. Powered by commercially available rechargeable Lithium-Ion Batteries, MATTi™ ensures a reliable and efficient training session.

Built to withstand the rigors of training, MATTi™ is rugged, durable, and carefully crafted with attention to materials and manufacturing processes, ensuring a long-lasting product. Like all TacMed Simulation products, MATTi™ is water-resistant, making it suitable for use in diverse weather conditions and environments. Its portability allows for easy transportation in any vehicle, ensuring an authentic training experience wherever it's needed.

MATTi™ comes equipped with a long-range remote controller that operates the simulator. The controller includes real-time telemetry to monitor medical interventions, providing instructors with valuable data. The easy-to-use software takes only a minute to learn, and sensor data is instantly displayed on the main control screen for quick reference.

Key vital signs and the effectiveness of student interventions, such as tourniquet application, wound hemostasis, airway intervention, needle decompression, and chest tube placement, can be monitored. Some of the notable features that can be observed include modular limb bleeding (amputation or gunshot), blood loss volume, respiration rate, airway status, intubation sensors, consciousness levels, respiratory status, inguinal crease wound, NPA insertion, chest tube placement, animatronic leg movement, simulated pneumothorax with needle decompression, teeth contact, heart rate, blood pressure, and the overall patient status (alive/expired).



Incorporate MATTi™ into your medical training curriculum for an unparalleled and comprehensive simulation experience in female patient care. Learn more about MATTi™ and its innovative features at TacMed Solutions. Stop by Booth 725 at IMSH for a hands-on demo.

Read in your language

SIMZINE

The top conferences you must attend in 2024

Are you struggling to find which simulation conferences are worth investing your time and money in? We've put together a list of the top events that you should attend in 2024

IMSH

20-24 Jan. - San Diego, USA

Celebrating 24 years, IMSH 2024 is themed 'IDEA: Innovate, Disseminate, Educate, Advocate'. With innovative presentations and industry-leading workshops it is the perfect blend of in-person engagement and virtual learning.

SAVE

9 Feb. - Virtual

Curated by SESAM, it is a virtual collaborative event with AFriSim Network, SHARE, and PediSTARS, aiming to engage the global simulation community, especially from traditionally underrepresented regions.

HTIC 2024

22-24 Feb. - Fez, Morocco

HTIC 24, the 3rd Morocco SIM congress, unites pedagogy, research, e-health, and simulation for healthcare educators. A milestone event in the Region, it offers immersive learning and innovation.

ASiT 2024

8-10 Mar. - Bournemouth, USA

The ASiT 2024 Surgical Conference, hosted by ASiT, focuses on over 10 surgical specialties, offering insights into modern clinical practices, training advancements, and future surgical education.

SESSEP Congress

18-20 Apr. - Oviedo , Spain

SESSEP 2024 Congress, themed 'Educating with Simulation to Improve and Innovate in Health Care,' marks the 11th edition of this influential event. Held at the Hospital Universitario Central de Asturias, it's the first time the congress is hosted in a healthcare institution in Spain.

ASE Annual Meeting

23-25 Apr. - Orlando, USA

ASE 2024 Congress, a highlight of Surgical Education Week, showcases surgical education excellence. It's a forum for educators to share innovations and research and includes prestigious awards.

INACSL Congress

12-15 Jun. - Raleigh NC, USA

INACSL24 is a key platform for simulationists, researchers, and solution providers focusing on advanced skills, simulation operations, and applications. Don't miss the chance to register now.

SESAM 2024

19-21 Jun. - Prague, Czech Rp.

SESAM 2024 marks 30 years of healthcare simulation excellence under 'Supporting Excellence in Healthcare'. Celebrating training innovations and patient risk reduction, it's a key meet for simulationists, educators, engineers and curious clinicians.

SimGHOSTS USA 2024

6-9 Aug. - Indianapolis, USA

SG24USA, led by the SimGHOSTS and hosted by IU Health, IU School of Medicine and Nursing, is a key event for simulation operation specialists. With hands-on workshops, demos, and presentations, it's an ideal platform for simulationists, technicians, game developers and academics.

AMEE 2024

24-28 Aug. - Basel, Switzerland

AMEE 2024, themed 'Develop your educational career: connect, grow, and inspire,' is the ideal platform for all healthcare educators. This year edition focuses on promoting excellence, collaboration and research.

ASPiH 2024

3-5 Nov. - Edinburgh, UK

ASPiH's 15th Anniversary Conference, focusing on 'Transformative Simulation' in healthcare, builds on 2023's success. It gathers experts to discuss advancements in simulation and its impact on patient care.

SOCHISIM Congress

7-8 Nov. - Puerto Montt, Chile

SOCHISIM's 2024 congress explores AI in clinical simulation. A unique chance to see how AI shapes healthcare training, featuring expert seminars, workshops and debates.

SIMFACE

Lou Oberndorf's bold leap: from Aerospace to Medical Simulation

Read in your language

Explore the inspiring journey of Lou Oberndorf, a pioneer in medical simulation, from aerospace to healthcare innovation

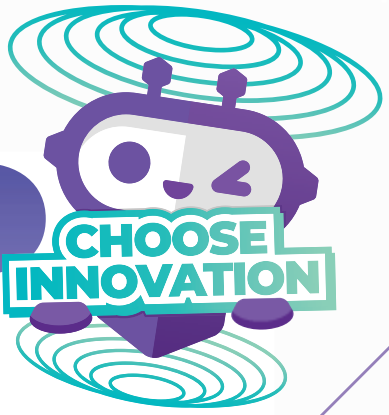
Today we're in conversation with Lou Oberndorf, a luminary in the medical simulation industry, whose revolutionary work has redefined healthcare education. In our exclusive interview, uncover the remarkable story of how Lou Oberndorf emerged from collegiate indecision to become a key architect in this cutting-edge field. We learnt about the audacity and vision that drove Lou to challenge the status quo, forever changing the landscape of medical training. And we dived into the wisdom of Lou Oberndorf, whose legacy continues to inspire innovation and excellence in healthcare simulation worldwide. Join us for a deep and inspiring dive into the life and triumphs of Lou Oberndorf.

Read our interview with him to find out more on simzine.news

Startups in Healthcare Simulation Take Centre Stage at

IMSH 2024

STARTUP CENTRAL



Join us on stand SC1-SC9 to meet the people behind the best in innovation at IMSH 2024

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