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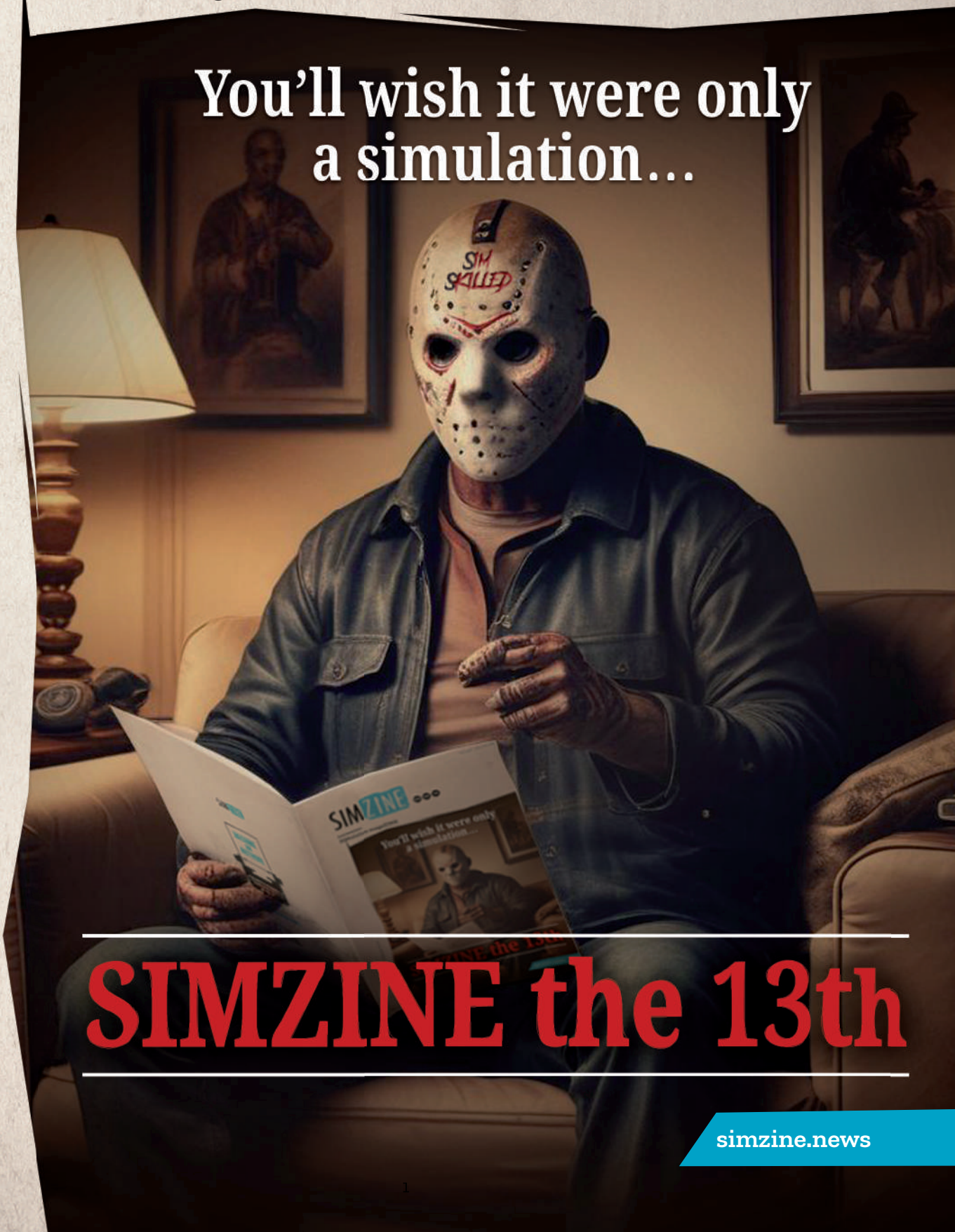

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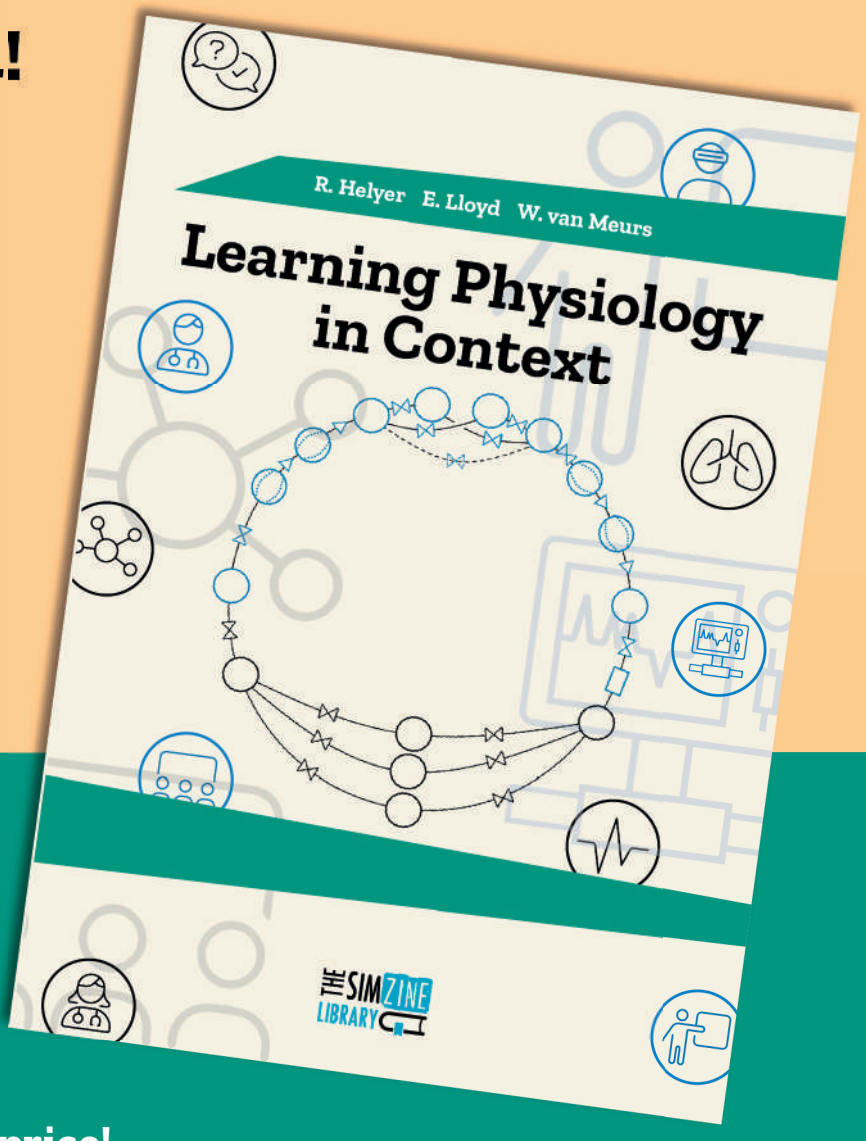

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EDITORIAL

Toward a true profession

The rapidly evolving field of healthcare simulation represents a pivotal evolution in medical training, highlighting the necessity for hands-on, experiential learning. This transformation brings to the forefront a vital discussion about the recognition of simulation-based educators and technology specialists as professionals in their own right. A profession, after all, is not merely a collection of individuals performing a job; it is a community of learned individuals who adhere to specific ethical standards and practices for the greater public good. The journey of healthcare simulation from an auxiliary educational tool to a fundamental pillar underscores the dedication and innovation of these specialists. They possess a unique combination of clinical expertise, pedagogical knowledge, and technological skill, designing scenarios that mirror the complex realities of patient care in order to create experiences which allow participants to reflect afterwards and to transfer new mental models into clinical behaviors. Formal recognition of these roles as distinct professions is a step toward acknowledging the critical value they add to healthcare education and patient outcomes. Thus, transitioning from roles often undervalued or considered voluntary to recognized, compensated positions is not just a matter of professional dignity; it is crucial for the sustainability of the field. Incorporating the broader definition of a profession, we understand that professions such as medicine, law, engineering, and now, simulation in healthcare, are bound by a commitment to work for the public good. This commitment entails not only adhering to rigorous standards of practice but also contributing to the continuous improvement of those standards for the benefit of society at large. **Athena Ryals**, in her thought-provoking article, eloquently champions the emerging recognition of simulation technicians in medical education. Ryals advocates for acknowledging SIM techs, with their diverse backgrounds and skills. Actually, her argument extends beyond mere acknowledgment, delving into the essence of what it means to be a professional in this innovative domain.

As we advocate for the formal recognition and equitable compensation of simulation-based educators and technology specialists, we also embrace the power of storytelling to illuminate the human aspects behind the technology and pedagogy. It's with great excitement that we announce the launch of the SIMLove article series at this important moment. SIMLove articles uncover the personal stories behind our professional journeys. These narratives explore challenges, achievements, and insights, highlighting the diversity and depth within the simulation community. In this number **Dheeraj Lokesha** presents the event which marked a milestone in his career as a simulation technician and **Hilary Gupte** describes her Transformational Journey of a Simulation Educator. We are also happy and honored to have the testimony of **Ferooz Sekandarpoor** who has made his enthusiasm for simulation a successful profession. And, the story of a female entrepreneur, **Mirette Dubè**, who highlights the significant impact of dedication and advocacy for patient safety through health systems simulation.

But we have not forgotten the fundamentals of our profession. **Paolo Castaldi** guides us on the importance of emotional skills, acquaints us with the neurobiological foundations of emotions, and proposes an innovative gradient of emotions offering a new perspective to enrich learning and debriefing in simulated clinical scenarios. As well as we also discuss the art and science of debriefing, with the contribution of **Desiree Diaz** and **Kristina Thomas Dreifuerst** from INACSL, not forgetting simulation devices through the technical gaze of **Antonio Scalogna** and **Scott Crawford** of SimGHOSTS.

I conclude by thanking **Barry Issenberg**, current President of SSH, and inviting you to read the in-depth conversation I had with him on his passions, pathway to leadership, and future aspirations for the society and for healthcare education.

P.L.I.

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SESSEP 2024: Educar con simulación para mejorar e innovar en salud

Del 18 al 20 de abril, Oviedo acoge el XI Congreso Nacional de SESSEP bajo el lema "Educar con simulación para mejorar e innovar en salud". El evento incluye cursos, mesas redondas, y visitas a instalaciones, destacando la importancia de la simulación clínica en la formación sanitaria

Del **18 al 20 de abril**, los apasionados de la simulación están convocados a un evento excepcional: el **XI Congreso Nacional de la Sociedad Española de Simulación Clínica y Seguridad del Paciente (SESSEP)** en Oviedo.

Bajo el lema **"Educar con simulación para mejorar e innovar en salud"**, el congreso se inicia con **cursos pre congreso** el **17 de abril**. Cursos fundamentales como la adquisición de competencias básicas, Seguridad del paciente, E-CRM y la jornada de técnicos en simulación serán un excelente preámbulo al evento principal que dará comienzo el 18 de abril en el Hospital General de Oviedo.

La **mañana del 18 de abril** comenzará con una **visita gratuita** a la sede de Salvamento Marítimo y la Brigada de Salvamento Minero, lugares donde la formación con simulación es crucial. Además, se llevará a cabo un **networking** con diferentes hospitales.

La **conferencia inaugural** del XI Congreso Nacional de SESSEP, el 18 de abril por la tarde, estará a cargo de la **Doctora Michaela Kolbe**, Directora del Centro de Simulación del Hospital Universitario de Zúrich y autora de múltiples artículos científicos. Posteriormente, se llevará a cabo la primera mesa redonda sobre **"La simulación en el currículum de las Sociedades científicas"**, un espacio de intercambio entre SESSEP y las Sociedades Científicas que incorporan simulación clínica en sus programas, abordando su formación, actividades y mucho más.

El **19 de abril** se iniciará con la mesa redonda que versará sobre **"La simulación como requisito en la formación sanitaria especializada"**, adentrándose en la formación sanitaria especializada y explorando el papel crucial de la simulación clínica en estos programas educativos.

Después del almuerzo del **19 de abril**, se llevará a cabo la tercera mesa, sumamente interesante, sobre **"Ingeniería biomédica aplicada a la simulación en salud"**. Esta mesa explorará los avances tecnológicos en la simulación clínica junto con la ingeniería biomédica, presentando a ponentes expertos que la utilizan en su actividad diaria.

Finalmente, el **20 de abril por la mañana**, se celebrará la última mesa redonda sobre **"Seguridad del paciente y factor humano: buscando evidencias"**. Este día también albergará la **Jornada de estudiantes de grado en ciencias de la salud**, donde se desarrollarán diversos escenarios de simulación.

A lo largo del congreso, se presentarán cerca de 200 comunicaciones orales, VideoSim y E-poster, brindando a los asistentes la oportunidad de conocer de primera mano las diversas actividades que se llevan a cabo en las Unidades de Simulación en toda España.

Si estás interesado en asistir al Congreso, puedes inscribirte en: *www.congresosessep.es*

¡Nos vemos en #sessep24!

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sessep 2024

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DID YOU KNOW...

Le emozioni in simulazione

Nell'ambito della formazione medica, le emozioni in simulazione rivestono un ruolo cruciale, andando ben oltre l'acquisizione di abilità tecniche. L'importanza delle competenze emotive, i fondamenti neurobiologici delle emozioni, e un innovativo gradiente di emozioni offrono una nuova prospettiva per arricchire l'apprendimento e il debriefing in scenari clinici simulati.

"Tu chiamale se vuoi..."
(Emozioni, L. Battisti, 1970)

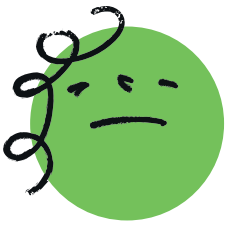
La simulazione in medicina coinvolge i professionisti in maniera profonda.

Le abilità tecniche sono da sempre il principale obiettivo della formazione universitaria per il mantenimento della competenza nel tempo. Da alcuni anni l'attenzione si è centrata sulle abilità non tecniche, il comportamento, il lavoro di squadra, la tutela di chi assiste, la sicurezza di chi riceve assistenza. Solo recentemente si è compresa l'importanza delle abilità emotive (Capogna, Ingrassia, et al 2022). Gestire le proprie emozioni e quelle del gruppo di lavoro è una sfida continua.

L'uscita dal ruolo è in simulazione la fase in cui si esplorano le emozioni di chi ha partecipato ad uno scenario clinico.

Fondamenti Neurobiologici delle Emozioni

Nel cervello le emozioni nascono nella parte più antica, il palencefalo che comprende locus ceruleus, ippocampo, amigdala, insula, corteccia orbitofrontale e corteccia cingolata anteriore. Le funzioni cognitive superiori del nostro cervello sono rappresentate nel telencefalo. La corteccia cerebrale elabora in modo cosciente gli stimoli percettivi. Il palencefalo influenza il telencefalo ma non avviene il contrario. Le reazioni del palencefalo sono rapide, come nell'espressione della paura. Il nostro corpo entra in contatto con il mondo esterno attraverso i 5 sensi: tatto, vista, udito, gusto e olfatto. Non a caso si parla di sensazione ovvero attivazione di uno degli organi di senso.

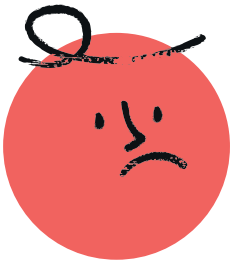


Il cervello trasforma l'informazione sensoriale in una percezione.

La percezione non è mai allo stato nativo: lo stato emotivo, le esperienze precedenti, la prospettiva rispetto all'oggetto della sensazione cambiano il contenuto della percezione.

Un esperimento classico è la dimostrazione che i colori non esistono in natura ma sono il risultato dell'elaborazione che riceve il nervo ottico e che viene elaborata a livello neuronale (Von Foerster 2001 citato in Nardone 2019).

Le emozioni nascono dalla percezione della realtà interna ed esterna che origina dalle sensazioni (Watzalawick 1981). Considerando il percor-



so percezione -> emozione -> reazione (Nardone 2019) la maggior parte delle volte l'interazione - percezione - emozione avviene al di sotto del livello di coscienza (Koch 2012). I processi cognitivi non sono, quindi, responsabili delle emozioni perché sono successivi all'elaborazione delle emozioni (Searle 1990).

Classificazione e Ricerca sulle Emozioni

Un punto di partenza è la ricerca che ha studiato le emozioni universali attraverso le espressioni non verbali nelle varie culture (Ekman 1973, Ekman 1985). Nella prima versione le emozioni universali erano sei: paura, gioia, rabbia, disprezzo, sorpresa, vergogna. In una versione recente le emozioni sono state suddivise in primarie e secondarie. Le primarie si sono ridotte a 4: paura, dolore, piacere e rabbia (Ekman 2010).

Un'altra autorevole classificazione delle emozioni di base o primarie, è quella fornita dallo psicologo statunitense Robert Plutchik (1980). Esso distingue quattro coppie di espressioni delle emozioni: (1) espressioni di gioia contrapposte a quelle di tristezza, (2) paura contro rabbia; (3) attesa contro sorpresa; (4) disgusto contro accettazione.

Rimane il concetto che le emozioni primarie sono per natura inconsapevoli, come risposta agli stimoli interni ed esterni (Nardone 2019). Le emozioni sono anche una "competenza senza comprensione" (Dennet 2018).

La ricerca degli ultimi anni ha analizzato anche le emozioni secondarie che sono passate da 6, a 8, a 11, fino a 27. Il limite è che numerose emozioni corrispondono a stati d'animo, sentimenti o atteggiamenti (Nardone 2019).

La pietra filosofale delle neuroscienze è la ricerca della sede biologica delle emozioni nel cervello. Ad oggi i modelli sperimentali non hanno raggiunto risultati convincenti anche con modelli di anatomia e fisiologia comparata, come nel caso dei ratti.

Dopo avere condotto diversi esperimenti e osservato il cervello di centinaia di persone con l'ausilio di tecniche di risonanza magnetica, Richard Davidson (2012) ha formulato la teoria degli stili emozionali, secondo cui ogni persona ha un suo particolare stile emozionale, che sarebbe il modo che ognuno di noi ha di rispondere alle esperienze della vita. Ogni stile emozionale è governato da circuiti cerebrali specifici e identificabili, e si può osservare utilizzando metodi di laboratorio oggettivi. Con questa teoria si oscilla dalla competenza senza comprensione alla competenza consapevole. I sei stili emozionali controllati dalle funzioni cognitive cerebrali sono: resilienza, prospettiva, intuito sociale, autoconsapevolezza, sensibilità al contesto, attenzione.

La ricerca scientifica si occupa anche della induzione delle emozioni. L'evocazione di esperienze, i ricordi, le fantasie hanno effetti simili allo stimolo dei 5 sensi e quindi possono attivare la percezione e l'attivazione di una emozione. Ne consegue che il nostro cervello attiva le emozioni e le eventuali reazioni, sia attraverso l'attivazione sensoriale che attraverso l'introspezione.

Sull'attivazione delle emozioni esistono almeno 4 scuole di pensiero (Nardone 2019).

- La psicoanalisi prevede l'induzione delle emozioni attraverso la rievocazione. L'analista aiuta l'individuo a far emergere ricordi, sogni, esperienze intense. L'elaborazione guidata tende a rimuovere i traumi sepolti nell'inconscio della persona partendo dalle emozioni che li hanno provocati.
- Il metodo comportamentale induce emozioni attraverso stimoli riflessi fisiologici condizionati. Per sua natura è sperimentale e si svolge in laboratorio
- L'ipnosi stimola le emozioni attraverso uno stato alterato di coscienza con lo scopo di amplificare le percezioni esterne ed interne.
- L'empatia è il metodo basato sulla relazione tra individui per indurre le emozioni. L'emozione è condivisa (Rogers citato in Nardone 2019). I neuroni specchio sono la dimostrazione neurobiologica del valore della relazione empatica (Rizzolati 2006, Ramachandran 2010).

L'ultimo metodo è il più comprensibile anche per chi non lavora nel campo delle neuroscienze. I professionisti della salute si occupano di persone che vivono momenti di grande fragilità. Lo scambio di emozioni attraverso l'empatia è una parte fondamentale della cura. La simulazione con la sua ricerca del realismo tende allo stesso risultato.

Emozioni in Simulazione e il Ruolo del Debriefing

Il debriefing dopo lo scenario clinico è una pratica riflessiva con buon giudizio. Il debriefer analizza la via breve e la via lunga della percezione e della reazione agli eventi accaduti durante lo scenario. La via breve coincide con l'uscita dal ruolo, ossia il de-roleing. La domanda, ancora in sala simulazione o nelle sue vicinanze, «Come ti senti?», «Come ti sei sentito durante lo scenario?» esplora l'emozione predominante del partecipante in quel momento, in quel luogo, in quella situazione. Con il metodo strategico le domande sull'emozione si orientano verso le 4 emozioni primarie, piacere, dolore, paura e rabbia. La prova...

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SIM LOVE

Harnessing the Power of Simulation in Healthcare for Disaster Management Training

SIM Love is a space where simulationists and educators can share captivating personal journeys, dilemmas, or obstacles, allowing you to connect and derive your insights. Here Dheeraj Lokesha presents the event which marked a milestone in his career as a simulation technician: he describes the remarkable moment in which he orchestrated an aircraft disaster drill utilizing healthcare simulation techniques.

dheerajdhee03@gmail.com
in/dheeraj-lokesha

Dheeraj Lokesha

Dheeraj is a Biomedical Engineer who graduated from MS Ramaiah Institute of Technology. He has five plus years of experience in biomedical equipment service and maintenance in simulation center projects. CAE Healthcare had hired him as a customer service engineer. He worked on the turnkey project for Southeast Asia's largest simulation center, Vydehi Advance Simulation Academy. Dheeraj is specialized in Centre management, High Fidelity Patient Simulation, Surgical simulation, Simulation Enhancements, Skills Trainers, Simulator software and Ultrasound simulation. He is currently working in Great Ormond Street Hospital for Children NHS Foundation Trust as a clinical simulation technician. He is captivated by simulation technical difficulties and strives to resolve them by using his skill sets.

As a dedicated Clinical Simulation Technician, my day-to-day responsibilities are rooted in setting the stage for impactful training courses and workshops through innovative simulation in healthcare.

Allow me to share a particularly remarkable experience: orchestrating an aircraft disaster drill utilizing healthcare simulation techniques in March 2023.

The idea

Our journey began in January 2023 when CAE Healthcare proposed hosting their HPSN Conference in India. My team envisioned a groundbreaking approach: why not leverage the largest simulation center in Southeast Asia instead of a traditional conference hall? We crafted a three-day event agenda, dedicating an entire day to an immersive aircraft disaster simulation.

This global announcement was made through CAE's extensive social media networks, amplifying the reach of our innovative approach to simulation in healthcare.

I played the role of the Technical Manager at the simulation center. Now, the plan seemed to be easy, but let me list the numerous challenges I encountered and overcame:

1. Sourcing a decommissioned helicopter.
2. Coordinating with air ambulance services.
3. Conducting comprehensive briefings with the fire brigade and security teams.
4. Setting up a makeshift operating theater within the simulation facility.
5. Arranging for live streaming to facilitate remote debriefing sessions.
6. Applying hyper-realistic moulage to manikins and volunteers, simulating pilots and passengers with injuries.

The scenario

The scenario played out as follows.

A helicopter was set ablaze, with volunteers and simulators on board. The security team promptly secured the area, calling upon the fire brigade and ambulance services. Within minutes, the fire was contained, and the emergency medical services (EMS) team, acting as workshop participants, provided critical on-site treatment. One 'patient' was even airlifted to our simulation center's ER for urgent care, demonstrating...

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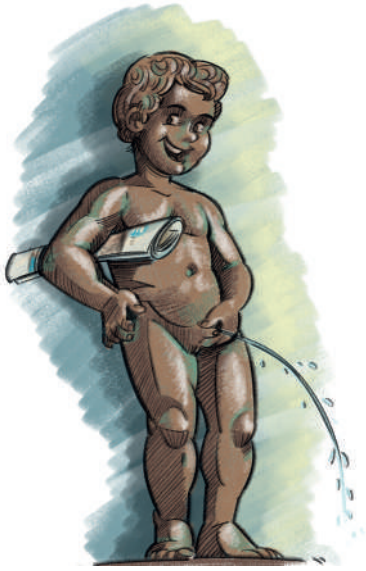
SIM STRIP

A cure for monoglottism?

SIMZINE fights monoglottism in simulationists with multilingual articles, humorously navigating language mishaps in medical simulation

Monoglottism – the ability to speak only one language – is a rare, but serious condition. Fortunately, it is curable. In its three main languages: Italian, Spanish, and English, and two occasional ones: French and Portuguese, SIMZINE contributes to keeping monoglottism rates in simulationists low. Most of its editors and staff speak three or four languages ... half. We were nevertheless able to intercept *explosão de bébes* as a mistranslation into Portuguese of baby boom, yet "Titanic stimulation" for the assessment of deep (sic) neuromuscular blockade almost made it into the printed version. One of the chapters in my recent book The Dolls' Engineer was called "Biomagical engineering", but that was on purpose.



In the debate about the original Flemish-Dutch *manneken*, the derived French *mannequin*, and modern Anglo-Saxon *manikin*, the latter won out, mainly to avoid that the best known monument in Brussels would have to be renamed to *Manikin* Pis. We cannot wait for medical simulators to start speaking in multiple tongues, but want to caution developers not to mix up pain and *pain* (bread in French), and constipação (a regular cold in Portuguese) and its Anglo-Saxon cognate. The dangerous "Asparagus syndrome" may also surface again. Next time you read SIMZINE, try switching to a language that you are less familiar with: it is fun and all about *simulazione*, *simulación*, and simulation!

Read in your language

SIM VOICES

MEGAECODE: Nacimiento y desarrollo eficiente de un proyecto de simulación

Juanjo Zafra nos habla de MegaEcode, un proyecto de formación para médicos en el que se utilizan simulación y ecografía en maniobras de RCP, dirigido a adjuntos y residentes. Este innovador programa busca mejorar estándares de atención y eficiencia diagnóstica, utilizando recursos como ecógrafos y métodos didácticos alternativos para una educación médica más efectiva y realista.

Soy Juanjo Zafra, médico de urgencias hospitalarias de la red de Osakidetza (Servicio Vasco de Salud) en el norte de España y hablo en nombre de tres facultativ@s que nos hemos lanzado a una aventura docente especial.

Pertenecemos a la urgencia del hospital comarcal San Eloy, en la organización sanitaria integrada OSI Barakaldo-Sestao, que cuenta aproximadamente con un@s 21 médic@s adjunt@s y 12 residentes (médic@s en formación) de los 4 años de la especialidad Medicina Familiar y Comunitaria.

¿Cual ha sido nuestra propuesta formativa?

Junto con otras dos colegas médicos de la urgencia, Ana Lourdes Iglesias y Elena Gregorio, me embarqué hace un año en un proyecto (con un sistema como es la simulación, no usado hasta entonces en nuestro entorno laboral), que denominamos MegaEcode, sustentado en la necesidad que tenemos los profesionales de formación y reciclaje en todas las técnica y maniobras de uso diario para mantener un estándar de atención médica, entre ellas la reanimación. Con el fin de mejorar el manejo y consiguientes resultados apoyados en nuevas herramientas diagnósticas de uso por médic@s de urgencias, integramos la ecografía en las maniobras habituales en RCP para conseguir una mayor eficiencia y unos resultados más óptimos.

¿A quién va dirigida?

Enfocamos nuestro target discente tanto en l@s adjunt@s como en l@s residentes, todo ello en un ambiente de simulación alejándonos de la típica formación profesorado/alumnado estático.

¿Qué necesitábamos?

Para ello necesitábamos algo que ya teníamos cubierto: el personal docente y el posterior apoyo de la jefatura y dirección/gerencia de nuestra OSI (desde aquí nuestro más profundo agradecimiento)

El personal docente creímos que era el adecuado para la organización de esta formación: una compañera médico acreditada como instructora por American Heart Association (AHA), otra compañera facultativa con amplia solvencia docente y un médico tecnofriki coordinador de grupo de trabajo de ecografía por la sociedad española de medicina de urgencias y emergencias de Euskadi (SEMES-EKALME), todos ell@s tutores de residentes.

Creamos así distintos casos para realizar la simulación con uso de ecógrafo, aplicación de protocolos de RCP replicando en pantalla nuestro programa de gestión de pacientes (Osabide) generando pacientes ficticios y añadiendo videos de otr@s profesionales a los que se les podría realizar interconsultas, embebidos en un Powerpoint que integraba todo.

El apoyo de la jefatura supuso que contáramos con liberación de turnos para dedicarnos a este proyecto y, junto con la dirección y gerencia, pudimos contar con el hardware, dispositivos, localización y resto de infraestructuras.

¿Como empezamos?

Inicialmente y con grupos piloto de residentes, comenzamos en la sala de reuniones del hospital que ambientamos como una UCI (con todas las diferencias que se puedan imaginar) con un muñeco previamente usado en formación en RCP, con uno de los ecógrafos de la urgencias y con los dispositivos de simulación de la marca iSimulate con los que exponíamos los ritmos, analíticas y ecografías dirigidas. Lo más curioso del asunto fue el TAC que usábamos, que lo realizamos con corcho y tubos flotadores de piscina, grabando toda la simulación con nuestros propios móviles y tablets.

Vimos que lo principal de la simulación eran las ganas, la pasión con la que abordábamos la planificación del caso. Todo lo demás (compromiso de ficción, debriefing...) que también es necesario, como vimos más tarde en nuestra propia formación como instructores (formación que consideramos indispensable y de la que luego hablaremos) vendría rodado.

Tras las primeras simulaciones en el hospital "conquistamos" un módulo prefabricado que cuenta con varias salas dedicadas a vacunación y gestión de Covid (pruebas diagnósticas, vacunas...) adecuando dos de estas salas siempre con la conciencia de ir paso a paso.

¿Cómo optimizamos los recursos?

Como digo, fuimos paso a paso, primero informándonos de lo necesario, solicitando ma nuestra gerencia/dirección lo que creíamos indispensable, como una cámara de Gesell (ese espejo unidireccional que impide ser visto desde la sala de simulación), ambientación de sala mediante vinilo que de más realismo y buscando alternativas económicas para ir mejorando.

No se trataba de "tirar la casa por la ventana" sino de rodearnos de material que nos fuese útil para nuestro objetivo. Ya contábamos con los dispositivos de iSimulate y ecógrafo compartido por la urgencia. Ampliamos la familia con un torso de maniquí intubable. Y lo siguiente ya era ir optimizando, aprovechando terminales informáticos existentes, material médico caducado y/o descartado como material de intubación, respirador..., y buscando eficientemente, en distintas plataformas web, los dispositivos necesarios.

Descartamos cámaras de alta resolución de empresas que abastecían a nuestra organización sanitaria, optando por adquirir, mediante plataformas como Amazon, cámaras web orientables, con un audio que fuimos mejorando con la compra de micrófonos bluetooth. Usamos nuestros propios móviles para comunicación con confederado (médico infiltrado en el escenario) y altavoces para sonidos de sirena lejanos, etc.

¿Como nos formamos?

Nos dimos cuenta de que para hablar con propiedad y hacer las cosas bien necesitábamos formarnos. Asistimos a un curso de instructores en simulación en la universidad Francisco Vitoria de Madrid (un saludo a tod@s l@s formadores/as de l@s que aprendimos mucho) y tras una trabajo posterior conseguimos adquirir las habilidades para ser instructores en simulación.

Como pudimos comprobar la simulación tenía matices que no abarcábamos y nuestro buen hacer inicial insistía en conceptos a los que debíamos quitar peso.

¿Cual es nuestra situación actual?

Ahora estamos dando la segunda vuelta docente tanto a adjunt@s como a residentes, ya hablando con propiedad (humildemente dicho) desde el punto de vista de instructoras/es formadas/os y con nuestra pizarra recién comprada para realizar mejores debriefings recopilando encuestas con una muy buena valoración.

Queremos ampliar la formación hacia otr@s profesionales, otr@s especialistas, todo aquel que lo solicite.

En breve iniciamos la simulación con personal de atención continuada (PAC) y seguimos con la misma o más ilusión y pasión. Hacemos visible nuestro proyecto en varios congresos y jornadas (destacando la Jornada de Reconocimiento de Buenas Prácticas de Osakidetza celebrado en el hospital de Cruces y el VII Congreso Nacional de la Sociedad Española de Formación Sanitaria especializada y XIX Encuentro de Tutores y Jefes de estudio en Santander) así como en revistas especializadas como la que estáis leyendo.

¿Algo más que añadir?

Sí, lo fundamental. Consideramos indispensable la simulación para abordar situaciones en ambientes controlados; situaciones cuyo manejo pueda estar comprometido por la baja incidencia según en qué ámbitos.

Y con esto, subrayamos que lo importante para cualquier proyecto es la ilusión que se pone en una idea.

Todo lo demás, vendrá sólo. O lo simularemos.

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SIM CORNER

ADVERTORIAL

Top 5 Medical Simulation Trends of 2024: VR Leads the Way

Medical simulation training technology, digital healthcare tools, and virtual reality training are rapidly evolving and transforming how healthcare professionals learn and practice essential life-saving skills. As we venture into 2024, one can witness certain medical simulation trends prominently shaping the future of medical training and education. SimX VR, a virtual reality (VR) medical simulation leader, is at the forefront of these transformative changes. This article delves into the top five medical simulation trends of 2024, highlighting how SimX VR is not just keeping pace but setting new standards in this dynamic field

Overview of Medical Simulation Trends

While traditional, high-fidelity manikins have come a long way regarding realism, they are still severely limited. For example, it is impossible for a medical manikin to emulate neurological deficits such as unilateral weakness or dynamic facial droop. A manikin cannot break out in hives or a desquamating rash. You'll never have a manikin pacing around the room while trying to sign out of your hospital against medical advice or have a grand mal seizure followed by hematemesis. The inflexible nature of manikins means they'll never reach the level of realism required to truly recreate a clinical patient encounter.

Along with the manikins, traditional medical simulation requires many associated medical tools and devices. By the time you scavenge ventilators, chest tubes, medication vials, drapes, cardiac monitors, code carts, etc., you realize the cost of a fully simulated environment. The medical simulation industry has grown remarkably in recent years, evolving from basic manikins to sophisticated VR environments. In VR, learners can use any tool necessary for any patient. Additionally, learners have immense freedom to assess patients, find the right tools, and experience various virtual environments.

The calculated cost of virtual reality simulation was 40% less than high-fidelity sim manikins. This figure doesn't include the cost of replacing physical manikins when they inevitably degrade. With comparatively minimal setup and maintenance costs, VR is far less expensive than manikin-based sim programs.

In 2022, the global VR medical simulation industry was valued at $954.6 M USD. It is projected to advance at a CAGR of 25.6% from 2023 to 2031 and reach $8.5 B USD by 2031. This evolution mirrors the advancements in technology and the increasing need for more realistic, accessible, and cost-effective training methods in the medical field. Technological advancements and innovation in VR technology are expected to continue to drive the global VR medical simulation market over the next few years.

Importance of SimX VR in 2024

SimX VR, a trailblazer in VR-based medical simulation, has emerged as a key player in shaping the 2024 trends. SimX VR is a state-of-the-art virtual reality platform designed for medical training. It revolutionizes the field by providing immersive, realistic simulations that enhance individual and team-based medical skills. Its innovative solutions change how medical professionals train, offering immersive, realistic, and interactive experiences that closely mimic real-life patient scenarios.

SimX VR can simulate a wide range of medical scenarios, from routine procedures to complex emergencies, across various medical specialties such as:

- Internal Medicine
- Emergency Medicine
- Nursing
- OB/GYN
- Pediatrics
- Psychiatry
- Intensive Care
- EMS/Trauma Care
- Cardiology

Significant growth factors include SimX's partnership with Laerdal in early 2023. Laerdal Medical—a leader in patient simulation—and SimX

announced a partnership to help increase patient safety with VR simulation training. Under this partnership, Laerdal became a main distributor of the SimX virtual reality simulation platform for hospitals, EMS, and government customers in the U.S. and Canada.

As a global industry leader, SimX can be found in over 20 countries and many of the top U.S. hospitals. This influence allows SimX to make the dream of "any time, anywhere" medical simulation training possible worldwide.

Trend 1: Advanced Virtual Reality Integration

The first significant trend in medical simulation for 2024 is the advanced integration of VR technologies. VR has transcended the boundaries of traditional learning, offering immersive environments that replicate real-life medical situations with astonishing accuracy. VR technology has seen leaps in graphical fidelity, user interaction, and scenario complexity. These enhancements allow for more nuanced and realistic simulations, greatly benefiting medical training.

SimX VR has been at the vanguard of utilizing these technological advancements. By offering highly realistic and interactive scenarios, SimX VR enables medical professionals to practice and hone their skills in a safe, controlled environment, bridging the gap between theory and practical application.

Trend 2: Dynamic and Customizable Scenarios

The ability to customize simulations revolutionizes training and educational environments by enabling learners and educators to build virtual patient encounters according to specific learning objectives. Many VR medical simulation companies offer "scenario builders" where users can select certain settings to provide learners with unique challenges and dynamic patient encounters.

In 2023, SimX updated its Virtual Manikin Series with custom case creation technology, revolutionizing medical simulation education worldwide. The SimX Virtual Manikin Series is a customizable collection of simulated patient encounters that allows educators to select patient avatars, environments, and scenario outcomes to create unique simulations. The Virtual Manikin can respond to and interact with learners to gain true-to-life clinical experience. Unlike physical manikins often utilized in traditional medical simulation, the Virtual Manikin can be set up in less than 5 minutes.

Trend 3: Multi-User Simulation Environments

The third trend is the emergence of multi-user simulation environments, which foster collaborative learning and teamwork—essential skills in healthcare. Multi-user environments allow teams to train together, mimicking the collaborative nature of real-world medical settings. This approach enhances individual skills and improves team dynamics and communication.

SimX's patented multiplayer technology is designed for multiple learners to work as a team around the same virtual patient while occupying the same physical space. Each simulated patient encounter has multiplayer functionality, enabling teams to engage in complex scenarios anytime. This fosters a collaborative learning environment, crucial for preparing medical teams for real-life challenges.

Trend 4: Enhanced Realism in Medical Simulation

Enhanced realism in simulations is another significant trend that makes training as close to real life as possible. The push for enhanced realism involves refining a simulation's sensory and interactive elements, including more lifelike visuals, accurate anatomical representations, and realistic scenario dynamics.

SimX VR's commitment to medical realism and true-to-life virtual environments is evident in its detailed and highly interactive scenarios. These simulations provide an immersive experience that closely mimics real medical situations, enhancing the learning experience for trainees and increasing the efficacy of each virtual patient encounter.

Trend 5: Remote Simulation Capabilities

The fifth and final trend is the rise of remote simulation capabilities, which have become increasingly important due to global challenges like the COVID-19 pandemic. Remote simulations break down geographical barriers, providing access to high-quality training regardless of location. This democratizes medical education, allowing more individuals to receive top-tier training.

SimX VR has pioneered remote simulation solutions, ensuring high-quality training is accessible to medical professionals worldwide. This broadens the reach of medical education and ensures continuity of training in times of crisis. In the wake of the global pandemic, remote access to high-fidelity, immersive medical simulation training is increasingly in demand. v

The 5 trends of the VR medical simulation industry expected to take off in 2024 reflect a continued effort to increase the realism and effectiveness of all simulation training around the world. Many VR medical simulation companies advance alongside VR headsets as hardware becomes increasingly sophisticated and accessible. As more VR simulation companies focus on innovation in the coming years, the projected value of the healthcare simulation industry could skyrocket far beyond what one could imagine. This growth signifies global technological advancement and a real commitment to creating life-saving solutions in the healthcare industry. As an industry leader, SimX VR seeks to make all medical simulation training cheaper, easier, and more realistic on their path to save more lives with VR medical simulation training.

Read in your language

SIM SURGERY

Enhancing Operating Theatre Efficiency with Laparoscopic Simulators

Gold Coast University Hospital's Laparoscopic Simulator Program integrated surgical advanced virtual reality technology with a comprehensive credentialing process. This innovative approach was designed to ensure that trainees not only acquired essential laparoscopic skills but also effectively translated these abilities into real-world clinical success, thereby optimizing operating theatre efficiency and enhancing patient care

The efficient utilization of operating theatre time is critical, and requires proficient and safe surgeons. While laparoscopic simulators hold the potential to enhance trainee surgeons' abilities, the translation of these improvements to clinical outcomes is often not realized.

Gold Coast University Hospital (GCUH) in Queensland, Australia invested in a laparoscopic virtual reality simulator (LapSim® 360, Surgical Science, Sweden) with the goal of optimizing operating theatre efficiency. The GCUH LapSim VR program aimed to focus on ensuring the transfer of skills acquired in the virtual environment to real-world surgical settings. Beyond the acquisition of the LapSim VR simulator, the program adopted a multifaceted strategy, integrating elements such as credentialing, an online module and take-home laparoscopic box trainers. The emphasis was not only on the simulation technology itself but on the strategic integration of various educational components.

> *While many programs typically view competence as an endpoint, we challenged this approach by making it the initial step and primary goal.*

Key Strategic Elements of the Program

Equipment access: the program secured a LapSim VR machine through a local health service innovation grant and provided take-home laparoscopic box trainers.

Faculty Support: a dedicated simulation technician and leading gynecologist provided essential support and guidance for the program.

Instructional Design: guided by a mastery learning approach, the program utilized incentives and support mechanisms to encourage trainee engagement.

Online module: developed to guide trainees on LapSim VR use and the take-home laparoscopic box trainer program

Structured Training Sessions: weekly and monthly training sessions provided dedicated time for LapSim VR training incorporating mentoring, gamification and test-enhanced learning to enhance trainee engagement

Credentialing: the core tenant of the program

Trainees were required to achieve a pre-specified level of competence prior to being granted 'primary operator' status in real surgical cases. This assumed that credentialing would lead to safer, faster procedures and provide the trainees clear goals and well-defined metrics to strive for. While many programs typically view competence as an endpoint, we challenged this approach by making it the initial step and primary goal.

Measure the program's impact

To comprehensively assess the program's impact, an outcome logic model served as a guiding framework. This model included a nuanced evaluation of effectiveness, feasibility, efficiency, and overall impact on the health service. The outcome of this approach may be more useful to comprehensively evaluate simulation programs than the traditional approaches that seek linear causality. The LapSim VR program did result in a significant reduction in mean operative time of 14 minutes for uncomplicated laparoscopic salpingectomies in our institution between 2020-2021. Despite positive outcomes there were some challenges in our program including trainer trust of simulated laparoscopic credentialing that require further research.

Conclusions

Introduction of a laparoscopic simulation VR credentialing program at our institution demonstrated tangible benefits, showcasing the potential for such programs to significantly improve operating theatre efficiency. Our study highlights that educational programs should aspire to translational, patient-focused outcomes in their design and delivery. Credentialing may be a useful strategy to support clear and transparent communication in surgical goal setting, competence assessment and directed feedback. Adopting an outcome logic model also offers a promising approach to evaluate and complement translational simulation education programs more comprehensively.

If you want to learn more you can read the entire study in the International Journal of Healthcare Simulation.

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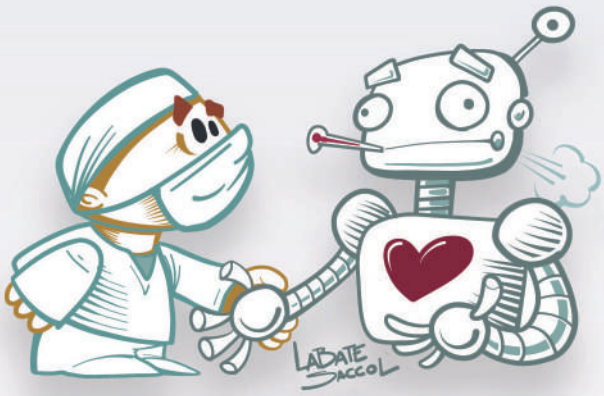

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SIM VOICES

La simulation en santé au Maroc: le train à grande vitesse!

Fouad Marhar est l'auteur de cet intéressant reportage sur l'un des plus importants événements de simulation de santé en Afrique du Nord : HTIC 2024 (Healthcare Training and Innovation Conference) à Fès

Les 22-23 et 24 Février 2024 avait lieu un évènement important pour la communauté de simulation internationale : HTIC 2024 (Healthcare Training and Innovation Conference) organisée par la société savante Morocco Sim, ou Société Marocaine de Simulation en Santé, à la faculté de médecine et de pharmacie et de médecine dentaire de Fès.

Il est quasiment impossible de faire un tour exhaustif de l'ensemble des contenus présenté lors cet évènement mais on peut néanmoins témoigner par cet article de la dynamique de la simulation en santé au Maroc et bien au-delà.

Les chiffres sont parlants pour une conférence qui n'est qu'à sa 3ème édition seulement. La conférence a réuni presque 900 participants dont plus de la moitié étaient des étudiants en sciences de santé et de toutes les filières de soins.

Un congrès plébiscité par la jeune génération qui vit cet événement *"comme une fête de la pédagogie"* avec leurs enseignants et qui souhaitent "en avoir encore plus chaque année".

Plutôt qu'une description de l'ensemble des modules et des sessions disponibles (plus de 112 ateliers/conférences), avec plus de 250 animateurs, j'ai choisi de vous faire vivre mon expérience lors de ses 3 jours de travail intenses dans une ambiance de célébration de l'éducation en santé.

Le ring 360°

Incontestable fil rouge du congrès, cette session, un peu en marge du centre du congrès, a été organisée en partenariat avec La société Laerdal et leur partenaire marocain Reacting. Un grand Ring de sport de combat installé au milieu d'une grande salle avec des gradins permettant aux apprenants et aux observateurs de voir la scène. L'idée véhiculée est celle d'un combat face à la mort quand il s'agit de situations critiques pour les patients. Deux écrans géants complètent cette installation pour ne rater aucun angle d'action. Pendant les 3 jours de la conférence, le Ring a mis en situation des scénarios complets avec débriefing des formateurs référents et discussion avec le public. Un endroit où la concentration des apprenants se mêlait à l'œil attentif des observateurs prêts à donner du feedback de manière constructive.

Les organisateurs parlent d'une "compétition mentale et cognitive" pour apprendre le plus de cet évènement. L'expérientiel de Kolbe par excellence. Nul doute que les apprenants, volontaires parmi tous les étudiants, se souviendront de cet évènement pédagogique pendant longtemps.

La jeunesse

Un fait marquant et unique de ce rassemblement est la présence massive (sur invitation de la Morocco Sim) de jeunes étudiants en médecine de la Faculté d'accueil du congrès. L'ensemble des promotions de la 1ère à la dernière année de médecine est conviée à participer aux sessions de formation et de simulation pendant les 3 jours. Les filières de soins paramédicales sont aussi invitées pour préparer la jeunesse à l'interprofessionnalité. Certains d'entre eux (36 étudiants au total), bénévoles et encore plus motivés représentent la Task Force qui permet d'épauler les organisateurs de la construction des sessions jusqu'à l'accueil des participants. Ces jeunes soignants en formation seront ensuite invités à participer à l'édition de l'année prochaine pour pouvoir assister à toutes les sessions à leur guise. Les interludes musicaux pendant les pauses cafés ont permis de découvrir des talents de danseurs et de chanteurs prometteurs, avec une très belle symbiose formateurs/apprenants. Mais, dès la pause finie, tout le monde s'empresse de retourner au travail dans une des 112 sessions proposées tout au long des 3 jours de conférence.

L'exercice "Mass Casualty" ou médecine de catastrophe

Les situations de médecine de catastrophe sont, on le sait, des événements marquants pour les soignants. C'est la raison pour laquelle le comité d'organisation a profité de la présence de tous les étudiants pour leur proposer un training sur un cas grandeur nature d'attentat à la bombe avec afflux massif de victimes. Une équipe de soignants multidisciplinaire, un COS (Commandant des Opérations de Secours), un triage rapide selon la classification en codes couleurs en

vigueur, de la fumée, de la pluie artificielle et l'installation d'un PMA (Poste médical avancé) dans le hall des exhibitions ont rendu l'expérience très réaliste. Le scénario s'est même terminé par une conférence de presse simulée ou le COS et la responsable média devaient répondre à des journalistes toujours plus curieux et sensationnalistes. Une belle maîtrise de cet exercice par l'équipe pédagogique présente sans oublier des PS (Patients simulés) victimes très engagés, avec un moulage (maquillage plaie et blessures) professionnel.

L'industrie

A la HealthCare Training & Innovation Conference, c'est simple. Les distributeurs de matériels de simulation principaux ne manquent jamais à l'appel : Promamec, MHS et Reacting sont un soutien permanent de l'événement, mais aussi Skills Meducation et Mediot de santé digitale. Il permettent aux congressistes de tester les dernières nouveautés en termes de simulateurs chirurgicaux, de casques de RV (réalité Virtuelle) ou encore de s'exercer aux techniques de soins de base avec, par exemple, la traditionnelle course de massage cardiaque. Les congressistes ont bénéficié de temps d'échange important avec les membres de l'industrie présents et les responsables de programmes de simulation en santé ont pu poser toutes leurs questions aux experts produits avant de faire leur choix pour leur centre.

L'ouverture internationale

Le Maroc bien entendu, mais aussi la Tunisie, le Sénégal, Le Mali, Le Congo, Le Tchad, la France, La Belgique, La Suisse, Le Portugal, les USA, et le Canada, pour ne citer que ces pays, étaient représentés lors de cette édition. Une conférence exceptionnelle, en distanciel, avec le pionnier de la simulation David Gaba nous a permis de nous projeter dans le futur de notre discipline avec un regard très visionnaire. Le CMS (Center For Medical Simulation) de Boston a fait le déplacement en la personne de Lon Setnik. Le SESAM (Société Européenne de Simulation), et l'ABASS (Association Bourguignonne de Simulation en Santé) ont envoyé leurs présidents pour la première fois, marquant un partenariat sur le long terme assuré.

Au total, je crois qu'il faut adresser un grand bravo à l'organisation de ce congrès qui a su proposer une qualité scientifique de haut niveau dans une ambiance familiale et festive. Bravo donc à toute la team de la Morocco Sim et son monsieur Simu National, le Pr Mouhaoui Mohammed.

L'équipe Morocco Sim vous donne RDV dans une année à la 4ème édition à Oujda, une édition qui sera certainement encore plus sensationnelle.

Read in your language

SIMTALKS

An Interview with the CEO of HSSI

We caught up with Mirette Dubè, founder and CEO of Healthcare Systems Simulation International (HSSI). Highlighting the significant impact of dedication and advocacy for patient safety through healthcare systems simulation, her story inspires not only women in healthcare but all aspiring to effect change. Mirette champions the idea that believing in oneself and striving for excellence paves the way for success. Her experience underlines the importance of mentorship, family support, and collaboration in advancing healthcare. Let's take inspiration from Mirette's journey to champion patient safety and innovation in healthcare.

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Hi Mirette, we are so glad to have you with us as we embark on this mission to raise awareness of female entrepreneurs in the field of education and simulation in healthcare. Can you share with us what inspired you to enter the field of healthcare simulation and your journey towards becoming the CEO and Co-founder of Healthcare Systems Simulation International (HSSI)?

Thank you for the opportunity to share a little bit about my education and simulation journey raising awareness of women entrepreneurs.

My career began as a critical care respiratory therapist in the mid 1990's. I was privileged to work in some of the busiest trauma centers in Vancouver (British Columbia) and Calgary (Alberta) with incredibly caring and competent healthcare providers, who inspired me to always advocate for patient safety, remembering it could be our families in these vulnerable positions one day. The concept of simulation was emerging, and fortunately I was able to be involved with it during my critical care role as a frontline professional and educator. Additionally, I pursued several courses and certifications and eventually my master's in applied science because I value education and lifelong learning and believe in expanding specialized skill sets to successfully change practice.

I loved the interprofessional focus and felt privileged to learn from and train hundreds of healthcare teams across Alberta, and globally share ideas on how to improve what we were doing day to day. From 2016-2019 I was fortunate to join the global health team at the University of Calgary in a part time capacity working on several projects called "Simulation for Life- a global health initiative to save lives in East Africa using simulation". This wonderful experience and work focused on maternal and child newborn health and solidified the incredible power of simulation. This opportunity was another defining moment for me that simulation would remain a focus of my career journey, and I was very proud to be a part of the medical simulation community.

My career in Canada moved from simulation educator to the Director of quality and patient safety education in Alberta. This is when I really became interested in patient safety science and human factors and started to reflect on the ideal world where proactive patient safety approaches were the norm, not the exception.

At...

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Data Santorino (left), Mirette Dubé (right): Simulation for Life, Mbarara, Uganda. Pilot testing Helping Babies Breathe simulation scenarios

SIMFACE

Ferooz Sekandarpoor: when enthusiasm is both a virtue and a flaw

Read in your language

We're thrilled to welcome Ferooz Sekandarpoor to our SIM Face series, a space dedicated to spotlighting the influential figures who are shaping the world of simulation. Ferooz isn't just any guest; he's a real simulation enthusiast and an innovator, blending his love for tech with a fierce dedication to elevating medical education and patient care. His influence is truly global: he has helped establish simulation centers, virtually in all parts of the world. He dispelled the myth that exceptional resources are needed to achieve incredible results. Under his leadership SimGHOSTS has grown incredibly. In fact, enthusiasm is both his worst flaw and his best virtue, as he tells us himself in this interview. Sit back and get to know Ferooz better

While it is true that simulation is a technique, it is also true that it relies more and more on technology. And so we could not fail to include among the SIM Faces Ferooz Sekandarpoor, Simulation Technology Specialist at the Faculty of the Medicine University of British Columbia and Past President of the Gathering of Healthcare Simulation Technology Specialists (SimGHOSTS). A vibrant innovator, he was able to blend technology with education, dramatically enhancing patient care and influencing other healthcare professionals with his groundbreaking work and infectious enthusiasm. And in this conversation we talked about simulation, of course - he told us, among other things, what he thinks is absolutely necessary to make simulation devices more relevant and engaging for healthcare professionals - but he also spoke about him, his successes and how past mistakes, from sources of shame, have turned into great lessons.

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

Read in your language

SIM SPACE

SIM CIENTÍFICA: la pasión como motor de un centro de simulación

En el corazón de Lima, Perú, el centro de simulación de la Universidad Científica del Sur se establece como pionero en la enseñanza médica avanzada. A través de la combinación de tecnología de punta y enfoques pedagógicos innovadores, prepararan desde hace más de 10 años a los profesionales de la salud para enfrentar los desafíos clinicos. Dotados de simuladores de diversa complejidad y un equipo multidisciplinario dedicado, estan comprometidos con mejorar la calidad educativa y el aprendizaje experiencial.

Bienvenidos a un breve recorrido gráfico por nuestro Centro de simulación de la Universidad Científica del Sur, en Lima, Perú.

Nuestra "Clínica de Simulación", llamada así por su parecido con un centro asistencial por la disposición de sus ambientes, nace de la necesidad de mejorar la calidad de enseñanza en nuestra casa de estudios. En esta, los estudiantes pueden aprender en un entorno seguro, donde el error es parte del aprendizaje.

Alineada a la preocupación de que puedan aprender en un entorno seguro para ellos, donde equivocarse no los afecte psicológicamente.

¿Cómo llegamos hasta aquí?

La Clínica de Simulación inició sus actividades en el año 2014, con un equipo conformado por un educador médico y un técnico (en simulación clínica) armados con dos simuladores de alta fidelidad en un espacio diseñado para dichas actividades. De esa manera y mientras se hacían reformas, se adquirían equipos, y se enrolaba nuevo personal docente y técnico, se logró la introducción parcial de la simulación en unos pocos cursos de la carrera de medicina humana. Sin embargo, la necesidad de abarcar más tópicos, más cursos y más carreras, aunado al crecimiento del número de alumnos, hicieron evidente la urgencia del crecimiento y cambio de estrategia lo cual se vería reflejado unos años más tarde.

Es en esa época, coincidentemente con la coyuntura sanitaria conocida por todos, en que la simulación cobra especial importancia entre las estrategias docentes, pues con mucho esfuerzo, ingenio y creatividad se hizo cargo del logro de la gran mayoría de objetivos de aprendizaje a través de la virtualización de la enseñanza y la práctica remota en forma de telesimulación. Así el éxito del encargo y el dimensionamiento de lo virtual que luego debería trasladarse a lo presencial fue el detonante para la decisión política y posterior ejecución de la ampliación y reequipamiento de nuestra clínica de simulación hasta cómo se concibe hoy en día.

Ya con la ampliación de la infraestructura (pasamos de 400 a 1600m2) y la bien planificada implementación y equipamiento con la mejor tecnología, así como con el crecimiento del recurso humano (pasamos de 1 tecnico y 1 docente a más de 60 personas considerando a los pacientes simulados), es que hoy en día venimos impactando con la metodología de enseñanza basada en la simulación clínica a 45 cursos de las mallas curriculares de los alumnos de las carreras de Medicina humana, Enfermería, Obstetricia, Psicología y Nutrición y dietética.

De esta manera se vienen trabajando con ellos tanto habilidades técnicas como no técnicas, además de haber iniciado fuertemente el camino del registro, sistematización de la información y trabajos de investigación lo cual nos tiene muy activos en eventos que convocan a los protagonistas de la simulación en nuestro medio y en la región en donde empezamos a ser reconocidos por esa pasión, empuje y coherencia con la que hacemos las cosas.

Nuestro Equipo: el Team Sim Científica

En nuestro centro de simulación tenemos un invaluable equipo humano, y cada uno conforma una pieza fundamental para el desarrollo de nuestras actividades.

En la actualidad el equipo lo conforman el responsable del centro, dos docentes investigadores a tiempo completo, doce docentes a tiempo completo de las especialidades de Cirugía general, Pediatría y Neonatología, Inmunología, Endocrinología, Emergencias y desastres, Ginecología y Obstetricia, que son quienes se encargan de la coordinación de los cursos afines a su especialidad y de los docentes a tiempo parcial que

los apoyan, además como todo equipo multidisciplinario contamos con otros colaboradores como una licenciada de Enfermería, **dos personales administrativos**, siete Técnicos de simulación y **44 pacientes simulados.**

Cada persona que forma nuestro equipo tiene el compromiso de brindar un alto nivel de desempeño y desarrollar una función estratégica para el buen funcionamiento del centro. Para ello, nuestros docentes instructores forman una adecuada y eficaz enseñanza dentro de la simulación, participan de 2 días de capacitación distribuidos **dentro de un mismo mes**. Cada día se desarrolla una actividad diferente entre clases teóricas y prácticas, donde los docentes desarrollan la simulación con apoyo de nuestros simuladores de alta fidelidad y de nuestros pacientes simulados. Aquí tienen la oportunidad de practicar el Briefing y luego al término de la simulación desarrollar el Debriefing de las actividades realizadas. Todo esto para asegurar la mejora en la calidad de la enseñanza para nuestros estudiantes.

Los técnicos de simulación son una pieza clave, ya que trabajan para resolver problemas que puedan surgir, llevan la simulación a otro nivel tratando de que cada escenario se asemeje

a la realidad, cuidando los detalles y evitando fallas o su visibilización.

Pacientes estandarizados y simulados: contamos con más de 40 personas que conforman el equipo, quienes reciben una capacitación constante por un docente que pertenece a la carrera de Artes Escénicas, perteneciente a la Universidad. Nuestros pacientes estandarizados y simulados son los protagonistas al momento de desarrollar la simulación, ya que depende de ellos que el alumno sienta al escenario como un caso de la vida real y pueda aprender a interactuar con ellos ya sea dándole atención médica o cuando el paciente simula ser un familiar y debe darle soporte emocional.

De lo anterior podríamos resaltar que la clave para mantener un equipo humano tan grande, identificado y comprometido es que cada uno entregue lo mejor de sí, se apoye y cuide teniendo claro que el objetivo es entregar la mejor enseñanza para los estudiantes y que el centro de simulación al que pertenecen se encuentre a la vanguardia y liderando la simulación en el medio.

Infraestructura

Cabe mencionar que contamos con una sede más, siendo la original y más grande la sede de Villa el Salvador, Lima, Perú contando con un área de 1600m2, distribuido en dos plantas con los siguientes ambientes:

- **Consultorios (8) divididos en dos ambientes: una sala para la simulación y una sala de observación.**
- Salas de Alta fidelidad (5); Alta Fidelidad 1-SOP, sala de Alta Fidelidad 2-UCI (Pediatría), sala de Alta Fidelidad 3- Emergencia y sala de Alta Fidelidad 4 - Parto, Sala de Alta fidelidad 5- shock Trauma, divididos en tres ambientes: una sala para la simulación, una sala de control y una sala de observación.
- Salas de habilidades (5).
- Salas de Hospitalización (2), cuenta con 3 box totalmente equipados y una estación de enfermería.
- Sala de Imágenes, cuenta con 3 pantallas para la proyección.
- Sala de Ecografía, separado en 3 box con camilla y un ecógrafo en cada box.
- **Área de recepción y la sala de espera equipados para atención al público.**
- **Laboratorio con área de Toma de muestras, área de bioquímica y área de microbiología**
- Salas de Evaluaciones clínicas objetivo estructuradas ECOE (10).
- Sala de observación ECOE equipada con 10 ordenadores.
- Almacén, equipado de estantes y empleado para la conservación y almacenamiento de simuladores, entrenadores de partes, materiales e insumos.
- Auditorio.
- Administración.
- Ambulancia denominada Simbulancia la cual se encuentra totalmente equipada, con cámaras de audio y video para poder abordar los casos clínicos llevados a cabo dentro de ella, la misma que va a ser insertada dentro de determinados cursos y los tópicos relacionados a la ambulancia como: las medicinas, cirugías y obstetricias.
- **Contamos también con 10 simuladores de alta fidelidad o complejidad y 5 simuladores de mediana fidelidad o complejidad, 2 simuladores genéricos o de baja fidelidad o complejidad y con más de 200 maquetas de partes.**

Lo que hacemos en la clínica de simulación

Se realizan entrenamiento y evaluación de habilidades y destrezas clínicas que ocupan las salas de habilidades, los casos escenarios...

Se realiza también actividades de soporte vital...

Equipo de simulación,
Clínica de Simulación de la Universidad Científica del Sur
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SIMTALKS

Insights from SSH President: a conversation with Barry Issenberg

An in-depth conversation with Barry Issenberg, current President of SSH, on his passions, pathway to leadership, and future aspirations for the society and healthcare education.

Barry Issenberg

Barry Issenberg, MD, the Michael S. Gordon Chair of Medical Education and tenured Professor of Medicine, and Director of the Gordon Center for Simulation and Innovation at the University of Miami. His career has focused on the research, development, implementation, and evaluation of innovative training and evaluation systems.

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in/barry-issenberg

We sat down with Barry Issenberg, the current President of the Society for Simulation in Healthcare (SSH). With a story that begins in a simulation lab in the 1980s and winds through an impressive career dedicated to healthcare education, Barry's journey is nothing short of a blockbuster. As the Michael S. Gordon Chair of Medical Education, a tenured Professor of Medicine, and Director of the Gordon Center for Simulation and Innovation at the University of Miami, Dr. Issenberg's work spans the research, development, implementation, and evaluation of groundbreaking training and assessment systems. In this lively chat, Barry talks about his strategic vision for SSH, the transformative role of simulation in healthcare education, patient safety, and the challenges and opportunities that lie ahead. This conversation not only sheds light on Barry's personal and professional journey but also highlights the strategic initiatives and future directions of SSH.

Hi Barry, thanks for accepting to share some time and thoughts with us. Please tell us about why you entered the field of healthcare simulation.

I was first introduced to healthcare simulation when I was 14 years-old and my mother joined Dr. Michael Gordon's University of Miami (UM) simulation laboratory in 1982. I already had an interest in medicine and grew up developing video games and computer software programs. The lab became a magical place where I spent my free time during high school and college volunteering, and then working on various simulation technology projects. My dedicated interest in simulation began strengthening during medical school at UM when I became increasingly frustrated with spending all day listening to lectures with no patient contact. I took a year off of medical school after my 2nd year and immersed myself working with Michael Gordon's team in developing and evaluating simulation-based healthcare curricula. Finally, during my internal medicine residency in the 1990's, I could

see that simulation was about to be adopted widely in healthcare and wanted to be part of that transformation.

Can you share with readers when you joined the Society for Simulation in Healthcare (SSH) and what inspired you to get involved with the organization?

From 2003 to 2005, I collaborated with colleagues on a Best Evidence Medical Education (BEME) review, focusing on simulation features that promote effective learning. Our objective was to publish our findings in the Spring 2005 issue of Medical Teacher. In late 2004, the SSH, then known as the SSM, invited me to present at its annual meeting in Miami. This marked my first external presentation of our BEME review findings, attracting a large, engaged audience in a packed hotel conference room. The overwhelming interest and my subsequent reflection on the event signaled a pivotal moment in my career, highlighting a newfound community for my professional interests and growth. Following this, I received invitations to several leadership roles related to research and scholarship, eventually leading to my co-chair position for the 2008 annual meeting. This journey not only marked significant milestones in my professional development but also reinforced the value of our research within the healthcare simulation community.

What made you want to run for President of SSH?

For over twenty years, I've served in various roles within the SSH, adopting a servant leadership style that has offered me a comprehensive view of its mission and the collaborative, consensus-driven approach vital for serving its members effectively. My tenure in senior leadership positions at my institution has broadened my understanding of the diverse needs and challenges across professions and specialties. This experience has deepened my appreciation for interdisciplinary teamwork, involving collaborations with nursing, engineering, and humanities colleagues. I have consistently promoted diversity, trust, inclusion, and leadership development in every role. These principles have not only guided my professional journey but have also prepared me to contribute meaningfully to the SSH, an organization central to my career. My aim has been to leverage my experiences to benefit and enrich the SSH community, reflecting my commitment to give back and support its growth.

What do you plan to focus your efforts on as current SSH President?

As president, I aim to leverage my leadership experience to guide the SSH in broadening its impact on global healthcare quality. This involves a mindful approach to ensure the SSH mirrors the diverse backgrounds and ideas of its expanding membership. Embracing a transdisciplinary strategy is essential for advancing research, innovation, and education, alongside promoting professional and leadership growth among members. Given the complexity of today's global challenges, the SSH must lead in addressing long standing issues, especially in enhancing patient safety and healthcare quality through simulation. This necessitates not only strengthening ties with traditional healthcare academia but also building strategic collaborations with national and international governmental and industry entities dedicated to delivering safe, quality healthcare. My vision includes fostering these relationships to position the SSH as a pivotal force in solving critical healthcare challenges, thereby maximizing its contribution to society.,

In the long term, what is your vision of the future of SSH?

By fostering strategic partnerships across healthcare academia, affiliated simulation organizations, governmental bodies, and industry, the SSH needs to address the complex challenges of patient safety and healthcare quality head-on. The focus will be on advancing research,...

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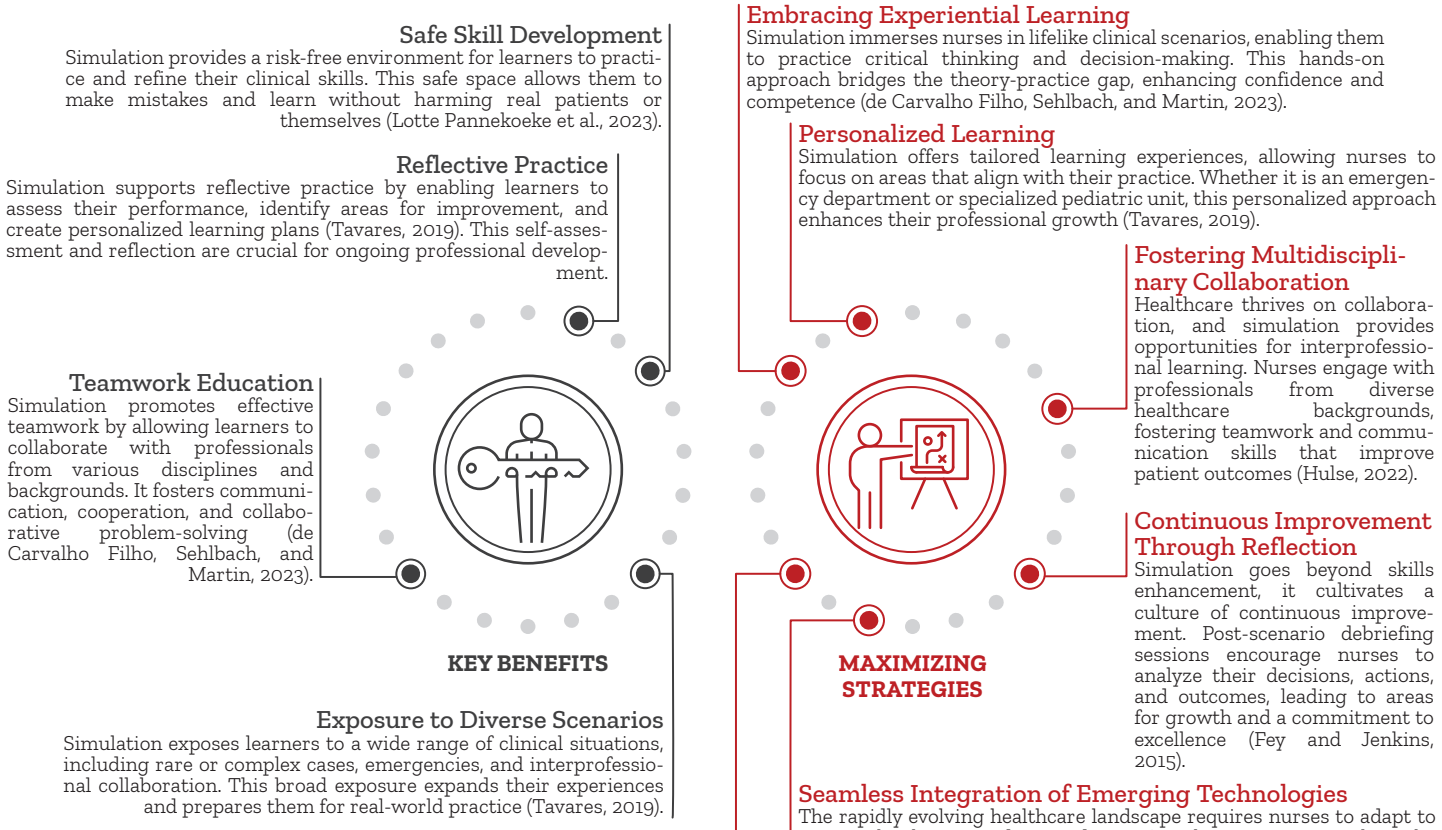
DID YOU KNOW...

Simulation in Continuous Professional Development: benefits and strategies

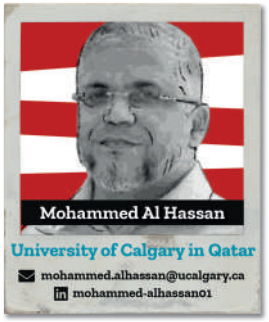
Simulation in Continuous Professional Development (CPD) is scientifically proven to enhance healthcare education, equipping nurses with vital skills for quality patient care. It offers a safe environment for skill development, critical decision-making, and teamwork, bridging the gap between theory and practice. This article presents science-backed benefits alongside effective strategies to increase its impact in nursing professional development. These elements not only foster individual growth but also improve overall patient safety and care standards, showcasing simulation in CPD as a critical, evidence-based tool in healthcare advancement.

Continuous Professional Development (CPD) is essential for healthcare professionals to remain at the forefront of their field, equipped with the latest skills and knowledge. Simulation is an immersive learning experience that replicates real-world clinical scenarios and bridges the gap between theory and practice. It provides, in fact, a secure space for learners to practice clinical skills, decision-making, and critical thinking, fostering competence and confidence that translates directly into enhanced patient care outcomes (de Carvalho Filho, Sehlbach, and Martin, 2023). Therefore, simulation is a cornerstone of CPD in nursing and offers a transformative approach to experiential learning.

In this article we bring you evidence-backed benefits of simulation and strategies for maximizing its impact in CPD for Nurses.



In conclusion, simulation provides healthcare professionals with a dynamic and adaptable learning environment that enhances their competence and prepares them for the ever-evolving healthcare landscape. It not only fosters individual growth but also improves patient safety and the quality of care. The integration of simulation into Continuous Professional Development (CPD) for healthcare professionals is a game-changer. It brings realistic scenarios, personalized learning, interdisciplinary collaboration, and technology integration to the forefront. As the healthcare landscape continues to evolve, healthcare professionals equipped with simulation driven CPD will be well-prepared to deliver the highest quality care while staying ahead of industry advancements.



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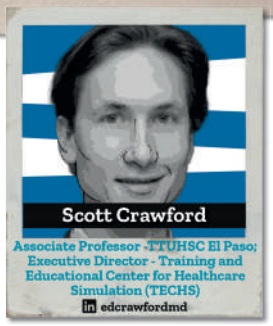
SIM GEEK



How to Get Started with 3D Printing

Scott Crawford, board member of SimGHOSTS, explores the transformative potential of 3D printing for simulation technicians. Highlighting its beginnings in the 1980s and its evolution to accessible home devices, this article underscores the ease of creating prototypes with CAD software. SIMZINE's and SIMGhosts' ongoing partnership aims to delve into simulation technology topics, emphasizing the growing accessibility and utility of 3D printing in the field

In collaboration with SimGHOSTS

SIMGHOSTS

3D printers are capable and functional devices that will soon be staples in the arsenal of every hobbyist and tinkerer. The concept of designing and working with computer aided design (CAD) software and creating your own prototype models may seem intimidating to many, but the concept will quickly seem much more accessible once the hurdle of making your first print has occurred.

Introduction

The concept of 3D printing began in the mid-1980s when the 3D Systems founder created a machine for rapid prototyping of parts. Based partially on the calculus concept of integrals, rapid prototyping technology relies on the creation of thin layers of material applied sequentially to approximate a solid structure. Only within the past decade has the technology advanced in terms of capability and price to deliver home and consumer devices. In current 3D printers, a filament (usually plastic) melts as it passes through a heated nozzle and is directed and applied at a controlled rate to outline and form these layers. Because these layers cool and solidify so quickly and are directed with accuracy measured in microns, it is possible to create movable and articulating parts in a single print. Products that would otherwise be difficult to manufacture or expensive to prototype are simple and quick to create and test.

Home printers most commonly use either PLA or ABS plastic for the filament. Some machines are capable of using metals and ceramics, but are not usually for home use.

Poly Lactic Acid (PLA): Prints at 200 Celsius, is biodegradable with low fume hazards, and is low cost. PLA is the most commonly used material for home printers.

Acrylonitrile Butadiene Styrene (ABS): Prints at 230 Celsius, has a longer lifespan than PLA, is hard and very durable. The downside is that it is oil based, requires ventilation during printing, and is less environmentally friendly. ABS is also commonly used, but more for parts where durability is required.

One other upgrade available even on home-use printers is the ability to print in more than one color or material type. These types of printers are known as dual extruder devices. Another material type that can be used in conjunction with those listed above in a dual extruder device is High Impact Polystyrene (HIPS). This material can be printed to support a structure that doesn't have a solid layer, like an overhang or shelf, and can then be dissolved away after the print is complete.

Printing Process

Design

To begin, a 3D model must be designed or obtained. You can create your own using free websites such as Tinkercad. This site will allow creation of forms by overlaying many predefined and commonly used geometric shapes on a 3D grid. Each shape can be sized or rotated. Multiple pieces can be put together and grouped to form more complex shapes and each shape can also be made into a "hole" or "negative" to remove portions of

the form to make your planned shape. A few hours of trial and error will open up the concept more clearly, and how-to videos and walkthroughs are available on the site. The designs can be saved as files with the extension .obj or .stl.

If you don't have the time or desire to build your own CAD file, the internet and open source websites like Thingiverse may have a design ready for you. This site allows people to share their designs with the world for free. Quick searches for terms like "heart" reveal over 5,000 models, with designs ranging from lockets to full cardiac anatomy models.

Software Rendering

After the CAD file is designed or downloaded, it must be converted by software into a series of thin slices and geometric connections to outline the design. While a solid structure could be produced, it would be heavy, take a long time to print, and require lots of material. Some printers will have software designed to work exclusively with them, like the Cube from 3D Systems, while others will interface with a third party program. One such program is Slic3r. Slic3r will convert the .stl or .obj file into the code that is used by the printer to control the movement of the nozzle in 3D space and control the location and amount of material to be advanced through the nozzle. This set of instructions for the printer is called G-code. While it sounds complex, and it is, this process has been automated for you through the work of software designers, mathematicians and engineers, and is again available free through open source software development. Although the process is automated by the software, the initial use will require some user input so the software knows how to write the code for your system. Commonly required elements that will need to be input are the size of the "bed" (the dimensions of the 3D printer area), the temperature (or at least type of material) you will use for your print, the density of the piece you would like to have printed (often entered as a percentage with 10-20% being strong enough for most designs), the thickness of the layers (this will affect the speed of printing and smoothness of the final product), and the type of "infill" (the shape of the inner, low density portion of the design). The "infill" is of less significance to most models, and refers to the interconnected shape of squares or hexagons that are put in place of the solid structure of the design and allows for the lower density of material.

Printing a G-code File

The G-code file must be sent to the printer. Some printers have a memory card port directly on the control board that can be used to load the G-code file; others will connect to the computer using a USB cable, and some will even connect through a local or wireless network connection. Instructions from your printer manufacturer will help you make this connection.

While dozens of 3D printer manufacturers exist, some with proprietary design and interface programs, the prevailing view on 3D printers is that they should be inexpensive, well supported and accessible. As such, several programs are available to streamline the above processes.

Repetier-Host and Cura are two such programs. These programs have the ability to import a CAD file, slice the file, write the G-code for the printer, send the G-code directly to the connected printer, and start and stop the printing directly from the software.

How Do I Get Started?

Select a Printer

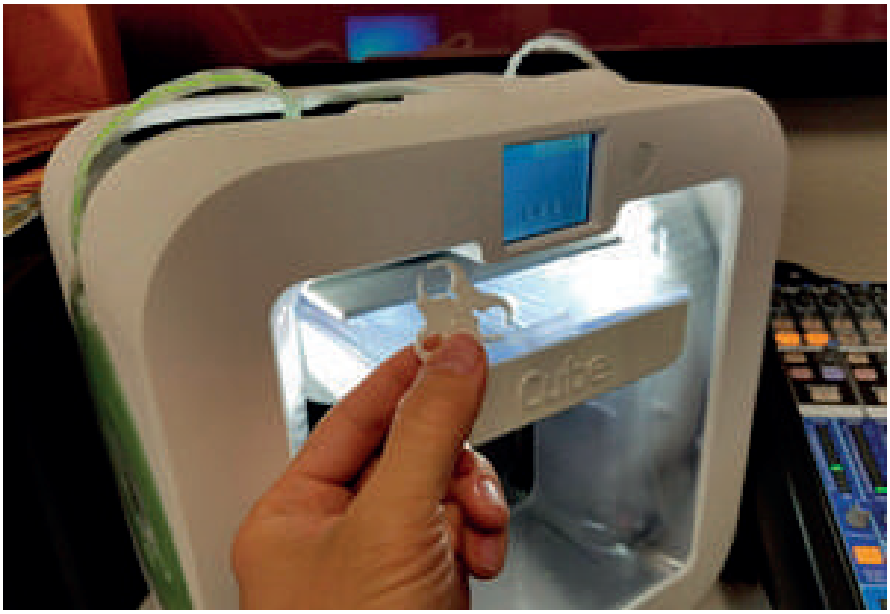
Introductory printers are available from ~$200-$800, with most differences being the size of the print bed, the types of material that can be used and the support of software and community resources. Brand name products like MakerBot Replicator+ ($2,499) sell at a premium but are user-friendly and well designed. A product like the Anet A8 ($170) may appear under multiple names when trying to search for information, making support more difficult, and must be assembled completely before use (plan on at least 6-8 hours).

Quick Troubleshooting

If your printer is having trouble, two common problems are related to bed leveling and filament advancement.

Bed leveling – Each printer should have some way to adjust the height and level of the print bed. This adjustment can likely be performed with a small crescent or allen wrench. A properly adjusted print bed will have the nozzle at the same height across the entire surface of the print bed and should have a gap only the thickness of a piece of paper.

Filament advancement – As the printer begins to print, it should make a small outline of material to prime the nozzle and prepare to print. If this is not happening, the filament may be broken or not in contact with the advancement mechanism. Manual pressure, or the assistance of a pair of pliers, may be required to engage the filament in the advancement mechanism. This can be performed best during a maintenance cycle or even as the print begins.



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Less can be more: simulatori low-cost in ginecologia e ostetricia

L'alta fedeltà e il realismo nelle simulazioni mediche, nonostante siano importanti, hanno portato ad un aumento dei costi che rappresenta una barriera di accesso, specialmente in ambienti con meno risorse. In questo articolo vengono esplorati esempi di simulatori a basso costo in ginecologia e ostetricia, i quali dimostrano l'efficacia dell'apprendimento anche senza l'utilizzo di tecnologie avanzate

In simulazione si parla sempre più spesso di alta fedeltà, realismo e immersività. Questo però sta facendo perdere di vista il fine ultimo della simulazione in medicina: agevolare l'apprendimento di studenti ed operatori sanitari. Infatti, i prezzi di vendita e manutenzione dei simulatori sono diventati sempre maggiori, impossibilitando le strutture con meno risorse a restare al passo con una tecnologia in costante sviluppo. Ciò potrebbe causare una disparità tra università e centri di simulazione, che si rifletterebbe sulle competenze degli operatori sanitari.

In questo articolo sono riportati alcuni **simulatori a basso costo** utilizzati in **ginecologia** e **ostetricia**, che si dimostrano strumenti validi nonostante la bassa fedeltà e la mancanza di componenti elettroniche. Abbiamo scelto di analizzare il caso della ginecologia e ostetricia per due motivi: in primis perché questa disciplina risente particolarmente delle differenze di budget tra paesi, centri e strutture ospedaliere. Inoltre, una formazione adeguata di tutto il personale sanitario coinvolto durante il parto porterebbe ad una riduzione della mortalità materno-neonatale, che è un obiettivo chiave dell'agenda 2030 per lo sviluppo sostenibile sottoscritta dai paesi membri dell'ONU.

Partendo dalle soluzioni proposte dall'azienda norvegese Laerdal, esistono diverse opzioni a costo contenuto, tra cui **Mama Birthie** e **Mama Natalie**. Si tratta di sistemi indossabili per il training di parto naturale e complicanze durante il travaglio, quali distocia di spalla o parto podalico, realizzati con materiali facilmente reperibili come plastica, gomma e tessuto, che hanno un costo inferiore ai 2000 euro per pezzo. Mama Birthie permette l'annessione di un modulo aggiuntivo per il parto cesareo, mentre Mama Natalie prevede anche componenti per la gestione di complicazioni post-parto, come l'atonia uterina.

Un'altra alternativa ancora più economica sono i **Parto Pants**, sviluppati dall'associazione no-profit Pronto International e venduti a 500 dollari. Si tratta di un paio di pantaloni da chirurgo modificati manualmente tramite dei tagli a cui vengono cucite delle strutture, per lo più in cotone e materiali elastici, per simulare tutte le aree anatomiche coinvolte. In questo modo è anche possibile inserire una placenta collegata a una bambola rappresentante il neonato. Per simulare la nascita i pantaloni vengono indossati da un attore che spinge la bambola, posizionata sotto ai vestiti, attraverso il canale del parto. Dato che l'attore ha il pieno controllo della posizione e della velocità con cui esce la bambola, è possibile ricreare complicazioni dovute al mal posizionamento del neonato. Inoltre, per aumentare il realismo, si può utilizzare una sacca contenente sangue finto per simulare situazioni di emergenza.

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Beyond the Manikin: Enhancing Clinical Skills with Avkin's Wearable Simulators

In the evolving landscape of healthcare education, the integration of simulation-based training has become a cornerstone for preparing students and professionals for real-world clinical scenarios. Among the innovative solutions making significant impacts, Avkin's wearable simulators stand out for their ability to offer immersive and realistic learning experiences. This article dives into the practical applications of Avkin products and the myriad advantages they bring to training programs

Avkin's suite of wearable simulators, including the **Avbirth**, birthing simulator, **Avwound**, wound care simulator, **Avtone**, for auscultation, and others, are designed to enhance the fidelity of healthcare simulations. Unlike traditional manikin-based simulations, which primarily focus on procedural skills, Avkin's wearables allow learners to engage in complex patient-caregiver interactions, honing in on their communication skills alongside clinical competencies.

The **Avbirth** simulator, for instance, is a game-changer in maternal-fetal health education. It authentically simulates all stages of childbirth, from early labor to delivery, closely mimicking the physiological aspects of the birthing process. Unique features like haptic vibrations to cue the "mother" during contractions and the capability to simulate obstetrical emergencies make Avbirth an invaluable tool for learners. The tetherless design allows for a more dynamic simulation, enabling the "simulated mother" to move freely, which enhances the realism of labor and delivery scenarios.

Moreover, the integration of Avkin's simulators with the Avkin App facilitates a seamless simulation experience. Facilitators can control various aspects of the simulation, such as the release of amniotic fluid, the strength and duration of contractions, and even pre-programmed scenarios to challenge learners and develop their critical thinking skills.

The advantages of incorporating wearable simulators into training programs are multifaceted. They offer a level of realism that bridges the gap between classroom learning and clinical practice. This realism is not only in the physical simulation of medical conditions but also in the interaction with "patients," allowing learners to practice empathy, communication, and teamwork in a controlled environment.

Feedback from both educators and students frequently emphasize the value of Avkin's products in enhancing educational outcomes. The ability to practice both technical and soft skills in a realistic setting has been shown to improve learners' confidence, empathy, and clinical judgment.

Educators have noted significant improvements in their students' ability to apply theoretical knowledge to practical situations, a testament to the effectiveness of Avkin's wearable simulators.

"We have 3 of (Avkin's) products and love using them with Standardized Patient," Debra Loop, an assistant teaching professor & simulation coordinator at Penn State, Erie Campus, said when asked about how her student's reacted to the wearables. "We have excellent student feedback regarding this pedagogical strategy. In fact, students prefer standardized patients over the use of high-fidelity simulators. The added realism that the Avkin products bring to the simulation just enhances student-patient interactions and deepens the level of student learning."

During The International Meeting on Simulation in Healthcare (IMSH) 2024, Avkin demonstrated the Avbirth for hundreds of simulation professionals and students. One of the professionals, Sarah Bebee of Bay Health Medical Center located in Dover, DE, had a special opportunity to take part as the healthcare provider in a birthing simulation. Being a nurse midwife and women's health nurse practitioner by trade, she was taken back by the realism of the simulation, including the real human interaction.

What was it like for Sara Bebee to use the Avbirth?

"Extremely realistic," she answered with a smile.

"I love that the water breaks as well as some bleeding (so) that you're able to check the cervix very accurately." She continued, "The hand positioning and everything was exactly how I would expect it with a regular patient. And I liked that I was able to support a real person throughout her labor."

In her experience, the Avbirth's realism is like nothing else on the market. "Well, it's a person..." she explained, "which is pretty great because you can react and work with a real human who has that feedback, that instant feedback and that real realistic experience."

In conclusion, Avkin's wearable simulators represent a significant leap forward in healthcare education technology. Their practical applications extend across various domains of healthcare training, from obstetrics and wound care to basic assessment skills. The advantages of integrating such technology into training programs are clear: enhanced realism, improved learner engagement, and a holistic approach to developing both technical and interpersonal skills. As healthcare education continues to evolve, tools like Avkin's wearables will undoubtedly play a pivotal role in shaping the next generation of healthcare professionals.

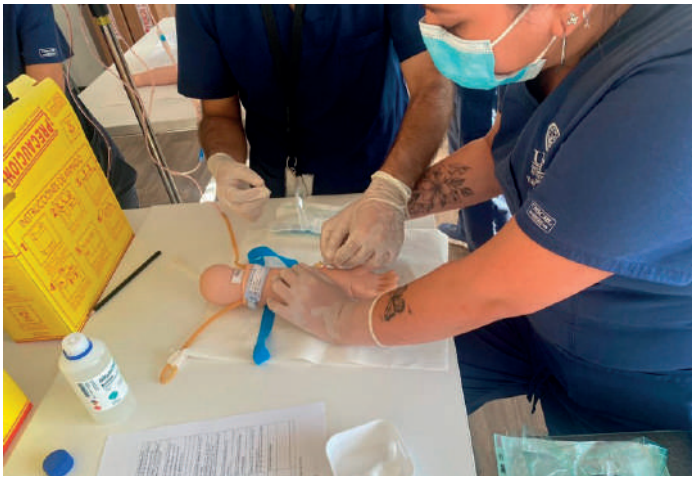
AVKIN
Bring Simulation to Life

Read in your language

DID YOU KNOW...

Diseño E Implementación De Simulación Clínica En Una Universidad Chilena: Una Experiencia A Gran Escala

La Universidad Santo Tomás de Chile implementó con éxito Centros de Simulación en sus 13 campus para mejorar la educación sanitaria de casi 13.000 estudiantes. Esta iniciativa, iniciada en 2014, tenía como objetivo integrar la simulación clínica en el plan de estudios para desarrollar competencias utilizando tecnología avanzada. Sigue leyendo para saber cómo el equipo que trabajó en el proyecto logró alcanzar este increíble hito.



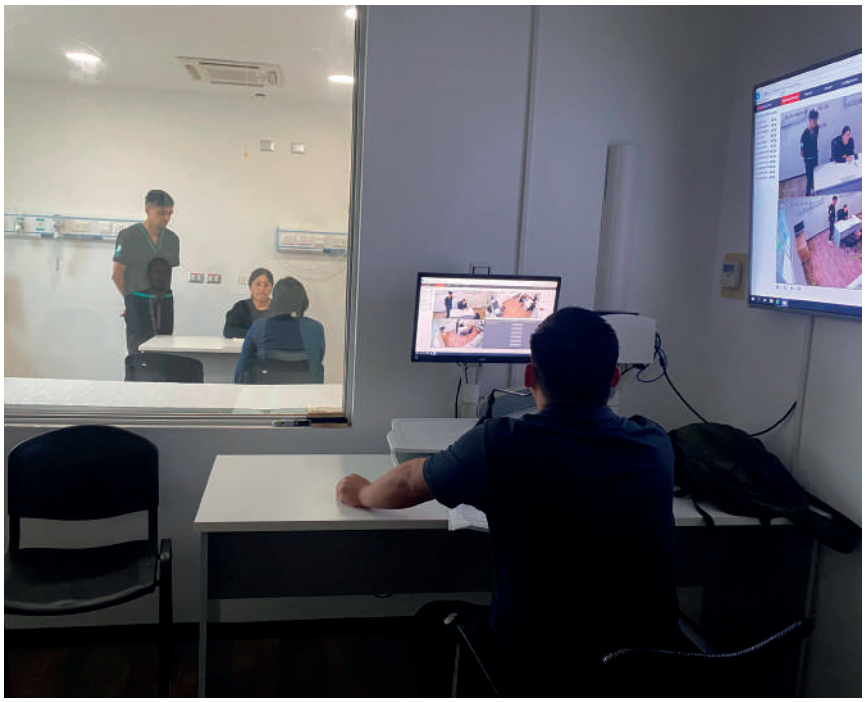
En esta ocasión, queremos contar cómo logramos implementar Centros de Simulación para estudiantes universitarios de pregrado en una institución privada y que está presente en 13 ciudades en Chile.

Los desafíos y aristas de esta implementación fueron varios, pero acá te contamos cuáles fueron los principales ítems que se deben considerar para llevar a cabo esta tarea.

¿Por qué eran necesarios los Centros de Simulación? Porque básicamente, es el método de aprendizaje ideal para que estudiantes del área de la salud, que están en su primera formación, puedan aprender cómo atender a sus pacientes respetando la seguridad clínica de la persona.

En nuestra institución, Universidad Santo Tomás, se inicia en el año 2014 el Proyecto de implementación de Simulación Clínica (SC), que tiene coherencia con la formación basada en el desarrollo de competencias, con uso de tecnologías que fomenten el aprendizaje y el logro del perfil de egreso para las carreras del área de Salud. Como mencionamos antes; contamos con trece sedes o campus desde el norte al sur del país, y debíamos garantizar el acceso al aprendizaje basado en simulación, para cerca de 13.000 estudiantes del área.

Luego de dos años de planificación y diseño de un centro de simulación clínica en cuanto a infraestructura, equipamiento y recurso humano, se implementa uno, en calidad de centro piloto, en la ciudad de La Serena. En base a la ejecución de simulación con estudiantes en este centro, se realizan los ajustes posteriores en cuanto a infraestructura y equipamiento, y se implementan luego al resto de los centros con las mejoras incorporadas.



De esta primera experiencia, no solo obtuvimos aprendizajes respecto a la infraestructura, sino también conocimos la opinión de los primeros docentes y estudiantes respecto a la metodología por medio de un focus group con docentes que participaron en la capacitación, diseño y ejecución de los talleres, y también, con los estudiantes, quienes realizaron una encuesta de satisfacción y un Examen Clínico Objetivo Estructurado (ECOE) para medición de adquisición de habilidades. Podemos destacar que, para todos los participantes, la SC tiene utilidad en el desarrollo de competencias y habilidades clínicas, y valoraron el aprendizaje mediante el error para mejorar la seguridad en la práctica clínica. Estos estudiantes mostraron un 97% de satisfacción con la metodología y un rendimiento académico satisfactorio en el ECOE.

En el comienzo, la tarea más desafiante fue contar con los recursos materiales y de personas para implementar la metodología de forma uniforme en las 13 sedes, para lograr esto, se programaron etapas de implementación progresiva tanto de los centros como de docencia.

La institución definió cinco áreas centrales para la unidad de simulación clínica y

su implementación: la inserción curricular en los planes de estudio, el diseño de la infraestructura, compra de equipamiento, la incorporación y desarrollo de recurso humano y la capacitación docente. Todo esto en 2 etapas entre los años 2018 y 2019.

Respecto a la inserción curricular, las asignaturas que incorporan simulación son aquellas que trabajan competencias disciplinares en una de las líneas de formación de cada carrera, incorporando como criterio aquellas que para la práctica clínica tiene tiempos acotados y tienen aprendizajes claves para el desarrollo de las competencias profesionales.

Si hablamos de la infraestructura, los trece centros de simulación tienen como base: salas para talleres y escenarios, debriefing, oficinas, control audiovisual y bodega, que con el tiempo se han hecho mejoras en el número de salas, dependiendo de la cantidad de estudiantes en sede. Por tanto, algunos centros tienen más salas en comparación con otros, logrando así, tener construidos 1767 m2 para los 13 centros del país en la actualidad.

Otra área que se debe considerar es el equipamiento básico presente en todas las salas para lograr los objetivos de aprendizaje de cada carrera. Esta gran cantidad de equipos requirió ir diseñando y elaborando manuales, procedimientos, y formularios para control de inventario, junto con la mantención de equipos, solicitud de compras, renovación y préstamos para actividades académicas, entre otros.

Sin embargo, los centros de simulación no funcionarían si no tuvieran el recurso humano que los administra y permanece entregando apoyo metodológico y capacitación de los docentes, por lo que en cada uno de los Centro existe un coordinador/a, que es un profesional de salud licenciado(a) con formación certificada en simulación clínica. Además, contamos con personal técnico, encargado y responsable del manejo y cuidado de equipos, montaje de escenarios, entre otras funciones. Para lograr uniformidad en la gestión y metodología en las 13 sedes, existe un Coordinador Nacional de Simulación, quien articula el trabajo académico con las carreras para la implementación de la metodología.

Desde que la institución decidió esto, la formación continua de docentes ha sido relevante para la docencia basada en simulación y, es por ello que hemos desarrollado un proceso que inicia con una inducción, para luego realizar cursos en modalidad presencial y también online, en los temas relevantes para la facilitación, elaboración de talleres de simulación, elaboración de pautas de evaluación, debriefing, aplicación de instrumentos de evaluación de la docencia, y finalmente un diplomado en el área. Se ha constatado que el convertirse en facilitador implica un cambio profundo en el cómo se vive la experiencia de la docencia. Esto involucra entre otras cosas, un desafío permanente en mejorar la oferta y cobertura de capacitación en simulación.

Todo este trabajo ha tenido un impacto positivo en el aprendizaje de los estudiantes. Esto se demuestra en los resultados obtenidos en una investigación que desarrollamos, donde se evidencia una progresión en la adquisición de habilidades comunicativas: traspaso de información clínica, desde los cursos inferiores a superiores, relacionada al incremento en el número de sesiones de entrenamiento con simulación que tienen los estudiantes.

Por tanto, es posible lograr altos niveles de desempeño en los estudiantes, demostrado por la capacidad de transferir este aprendizaje a sus experiencias clínicas, donde finalmente se ve impactada la seguridad de los pacientes.

Dentro de las proyecciones de esta unidad, se encuentra instalar un sistema de acreditación de la calidad del programa de educación basada en simulación, que obtenga certificación internacional, y para ello, este equipo ya está trabajando para lograrlo.

En resumen, este proyecto ha sido una tarea desafiante desde su inicio, pero que ha sido posible gracias a el equipo humano que lo conforma, la confianza de las autoridades y el respeto por la simulación que han demostrado estudiantes y docentes que participan en ella.

Sin duda, estamos entregando herramientas para la seguridad del paciente a los futuros profesionales y eso nos llena de satisfacciones como equipo.

Read in your language

SIM LOVE

Beyond the Classroom: the Transformational Journey of a Simulation Educator

Explore the journey of a simulation educator utilizing virtual reality and immersive simulations to redefine healthcare education

I have been an acute nurse in Leeds, Manchester and London for 20 years, and took on a role as clinical skills and simulation lead in medical education in Leeds Teaching Hospitals in 2018. I was fortunate to walk into a role where in-situ simulation was already embedded in practice across the two large emergency departments (@LeedsEDsim), and I was able to support the program. Witnessing authentic learning take place within the heightened atmosphere of emergency settings wasn't just a professional experience for me, it was a profound moment of realising the real benefits of experiential and immersive learning. This first-hand exposure inspired me to recreate that authenticity and immersion within controlled confines of classroom-based simulated training environments across the curriculum.

Working through COVID, and in the post-COVID landscape, limitations of traditional simulation were becoming apparent. We had reduced capacity permitted in the teaching rooms, and faculty were becoming less available which was a big challenge when traditional simulation required high faculty-to-participant ratios. I recall this sparking my initial interest to explore innovative technologies to continue enabling the benefits of immersive learning and simulation-based education events. Around the same time, funds had become available to explore education with Virtual Reality Headsets.

One avenue I have explored in more depth is the use of 360-degree filming, and capturing genuine real-world environments, complete with standardised patients. I found this wasn't just a logistical solution, it could be a way to expose learners into a diverse range of scenarios preparing them further for the complexities of healthcare practice. The challenge I found as a simulation educator was to create and develop course content that would engage the learners through the different modes of delivery, and then the need to adapt debriefing techniques to fit in with a different form of experiential learning. This has given me the drive and ambition to explore extended reality for education further and given me a whole new world to learn about.

Additionally, the appeal of computer-generated virtual reality has become increasingly compelling and more accessible. Constructing entire simulated worlds, where students could actively engage with artificial intelligence and make decisions in an environment mirroring reality, fills me with a sense of awe and anticipation for where healthcare education is heading. I really look forward to what the possibilities that these immersive technologies hold and hope to be part of them.

As simulation educators, we have a crucial role in shaping the future of education and I have come to realise that this journey goes beyond the strategic implementation of educational tools for me, it taps into the very essence of my passion to provide immersive learning to better prepare healthcare learners for the technical and non-technical challenges they may experience in real-life practice. I am really looking forward to supporting current healthcare practitioners and the next cohort of practitioners in their educational journeys.

The SOTS section of SSH advocates for recognition as a profession

In this article, Athena Ryals talks about the emerging recognition of simulation technicians in medical education, advocating for their acknowledgment as professionals. SIM techs, with diverse backgrounds and skills, are essential in creating realistic training environments, proving they are much more than just 'technicians'.

There is a lot of weight behind the word "profession." It implies history, a cohesive group of people working towards a common goal. There is pride in a profession. There is respect. And – a point that has become increasingly important in this economy – there is usually fair financial compensation for your labor in a profession as well.

As society has industrialized and knowledge has become circulated, many jobs have shifted from "crafts" or "trades" to "professions." Prior to the 1600s, anyone who held a thick enough book and looked like they knew what they were talking about could peddle their opinions as a doctor. However, around the turn of the 19th century, the profession of "doctor" was becoming solidified as a standard of practice. Similarly, nursing was typically carried out in the home or under the care of religious figures such as nuns until the 1850s. Florence Nightingale famously revolutionized how hospital care was conducted during the Crimean War, and is regarded as being the founder of the profession of nursing.

Simulation is currently undergoing a similar revolution. The first medical simulation task trainer, Resusci Annie, was released in 1960, and the field has been slowly evolving since then. The first medical simulation conferences took place in the 1980s, and even back then there was hot debate as to the value and validity of medical simulation. Just as fierce, though, was simulation's defense; Dr. David Gaba asserted in an April 1992 issue of The Journal of Anesthesiology that "No industry in which human lives depend on the skilled performance of responsible operators has waited for the unequivocal proof of the benefit of simulation before embracing it."

The early 2000s saw a great increase in the creation of centers dedicated entirely to the education of students through medical simulation. SSH was founded in 2004, although it was called Society for Medical Simulation at the time. Simulation was still primarily being conducted by people with a background in healthcare, and it was not (usually) their primary job.

It's only in the 2010s that our modern idea of the simulation technician began to emerge. And, just like so many trades that came before, we are refining and improving our craft such that we, too, now deserve to claim the title of "professional." The 2024 theme for the Simulation Operations and Technology Section of SSH is #SimProfessional – an intentional move away from the title of "technician" that is so often thrown around in sim centers today.

A sim tech is never just a sim tech. We bring with us a background, be that a background in healthcare, engineering, psychology, or something else. We have to be good with technology, but we also have to be good with people, too – and that means people of every type. We must be able to guide a nervous student, and de-escalate a frustrated facilitator. Some of us have

to be experts in managing an entire sim center all on our own. Some of us are whizzes at accreditation. Others of us can create moulage that belongs on prestige television. And still others of us write the grants that keep our centers afloat.

We are so much more than technicians and specialists, because we must specialize in so many different things. By the very nature of our work, we must be an expert in everything and always be willing to learn new technology and changing standards of practice. We must be curious self-starters. We must be willing to hold ourselves to the highest standards – because lives depend on it.

And if that's not the mark of a professional, I don't know what is.

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SIMREVIEW

GPhantom, novità in ambito skill trainer ecografabili

In questa nuova recensione del Tecnico di Simulazione, Antonio Scalogna ci presenta i simulatori per accessi vascolari ecoguidati della GPhantom, essenziali per l'addestramento nelle professioni sanitarie, in quanto permettono di acquisire competenzenell'inserimento di cateteri o aghi sotto guida ecografica.

I simulatori per accessi vascolari ecoguidati rappresentano una parte essenziale dell'addestramento all'interno di tutte le professioni sanitarie, consentendo ai professionisti della salute di acquisire competenze cruciali nella realizzazione di accessi vascolari utilizzando l'ecografia come guida.
Questi simulatori sono dispositivi avanzati progettati per replicare fedelmente le condizioni reali dei pazienti, consentendo agli operatori sanitari di acquisire esperienza pratica nella procedura di inserimento di cateteri o ago in vasi sanguigni, sotto la guida dell'ecografia.
All'interno di questo articolo vi parlerò di un simulatore della ditta GPhantom.
GPhantom è un'azienda fondata nel 2014 che sviluppa e produce simulatori medici in diversi ambiti: pediatria, anestesia, accessi vascolari, biopsia, tiroide, faccia, rene e palpazione.
Grazie a Simulkare, che ha portato questi simulatori della casa brasiliana per la prima volta in Italia, ho potuto provare molto accuratamente due simulatori per accessi vascolari durante un corso di accessi vascolari ecoguidati, potendo raccogliere un feedback di istruttori che eseguono la manovra quotidianamente e dei discenti che non stavano imparando ad eseguirla in quel momento.
Per quanto il prezzo non sia elevato per la sua categoria, i materiali utilizzati per la realizzazione di questi simulatori è assolutamente valido. Rispetto ad altri simulatori, questo restituisce un feedback dell'ago più marcato e questa caratteristica, in ambito didattico, è assolutamente essenziale.
Una volta appoggiato l'ecografo l'immagine restituita con e senza gel è assolutamente chiara e priva di disturbi dovuti al materiale utilizzato: ciò permette, oltre ad una visione precise delle arterie e delle vene, anche una visione completa dell'ago che si sta introducendo.
Ma vi è una caratteristica che non ho ancora menzionato, ovvero il riassorbimento delle varie iniezioni. Esattamente dopo due giorni, tutte le iniezioni svolte dovrebbero scomparire e, quindi, il simulatore dovrebbe tornare allo stato iniziale. Ammetto che ero davvero molto curioso, così ho approfittato del corso per metterli "sotto sforzo".
Come potete vedere dalle immagini sottostanti i simulatori sono stati molto usati, circa per 4/5 ore di fila sia da istruttori esperti sia da discenti che non hanno mai provato la procedura prima. Oltre a ciò uno dei due simulatori è stato particolarmente danneggiato da procedure continue non corrette, creando così una crepa ben visibile.

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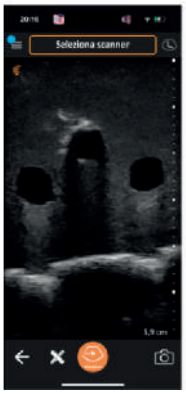
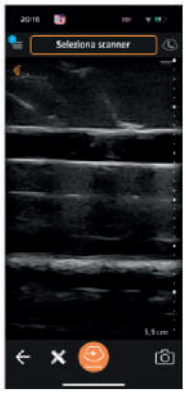
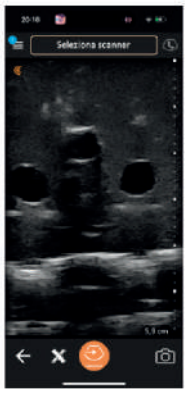
- Resistenti
- Proprietà autoriparanti notevoli
- Non "usa e getta"

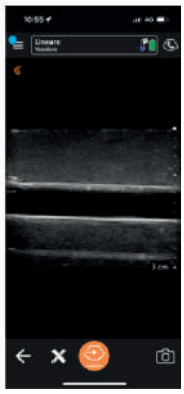
Cons

- Nessuna possibilità di inserire fluidi





The Aesthetic Side of Debriefing

Debriefing in healthcare simulation is a delicate blend of art and science, requiring facilitators to master the intricacies of both reflective practice and structured feedback. This comprehensive approach not only aids in uncovering the thought processes behind decision-making but also nurtures transformative learning experiences. This article delves into the importance of debriefing, offering insights into enhancing this crucial phase of simulation training through intentional thought, cultural humility, and active engagement strategies.

Debriefing is both an art and a science. There is research on the effects of a good structured debrief which encapsulates both constructive feedback and reflective practice. Reflection couches one's actions and deliberates on the action: in-action, on-action, and beyond-action (Dreifuerst, 2009; Schon, 1984). Uncovering the thinking that underpins reasoning and actionable decision-making requires intentional thought and focus. Therefore, a facilitator who can combine the art and science of reflection while also debriefing a learner with relevance and compassion is critical.

Mezirow (1997) noted that it is inherent within adult learning principles to feel a need to learn the information for learning to occur. Moreover, his theory of Transformative Learning, includes four phases: a) having experiences; b) making assumptions; c) challenging perspectives; leading to d) experiencing transformative learning. The art and science of debriefing foster these phases. By incorporating the aesthetic art of debriefing, the facilitator brings relevance for the learner's purview and blends the contextual clinical components while also focusing on a sense of cultural humility. This is not easy or intuitive. In an effort to encourage the global community to refine their debriefing skills there are some added thoughts regarding the debriefing process for consideration.

Find a hook or a common need to engage the learner that entices them to want to understand and comprehend the content beyond the experience being a requirement. Is there a local statistic that makes it relevant?...

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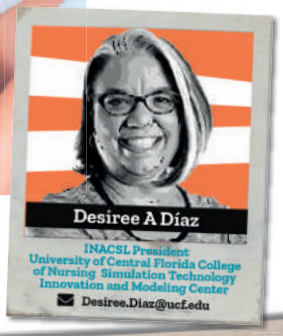

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