

Lyon,
15/05/2018

Marc Lilot
Anesthésie - HFME



Comment optimiser l'apprentissage grâce à la simulation

La simulation en santé, actualités et perspectives

Nothing to disclose but

cless.univ-lyon1.fr

Site CLESS - Visite virtuelle | Intranet HCL | https://translate.google.co... | ss.univ-lyon1.fr/webapp/website/website.html?id=3735082&pageId=279651

lyon cless
centre lyonnais d'enseignement
par la simulation en santé

Accueil | Le CLESS | La simulation | Formations | Recherche / Publis / Congrès | Actualités | Vidéos | Liens utiles | Réalisation | Facebook

LE CLESS - Présentation des mannequins et des salles

Visite virtuelle:

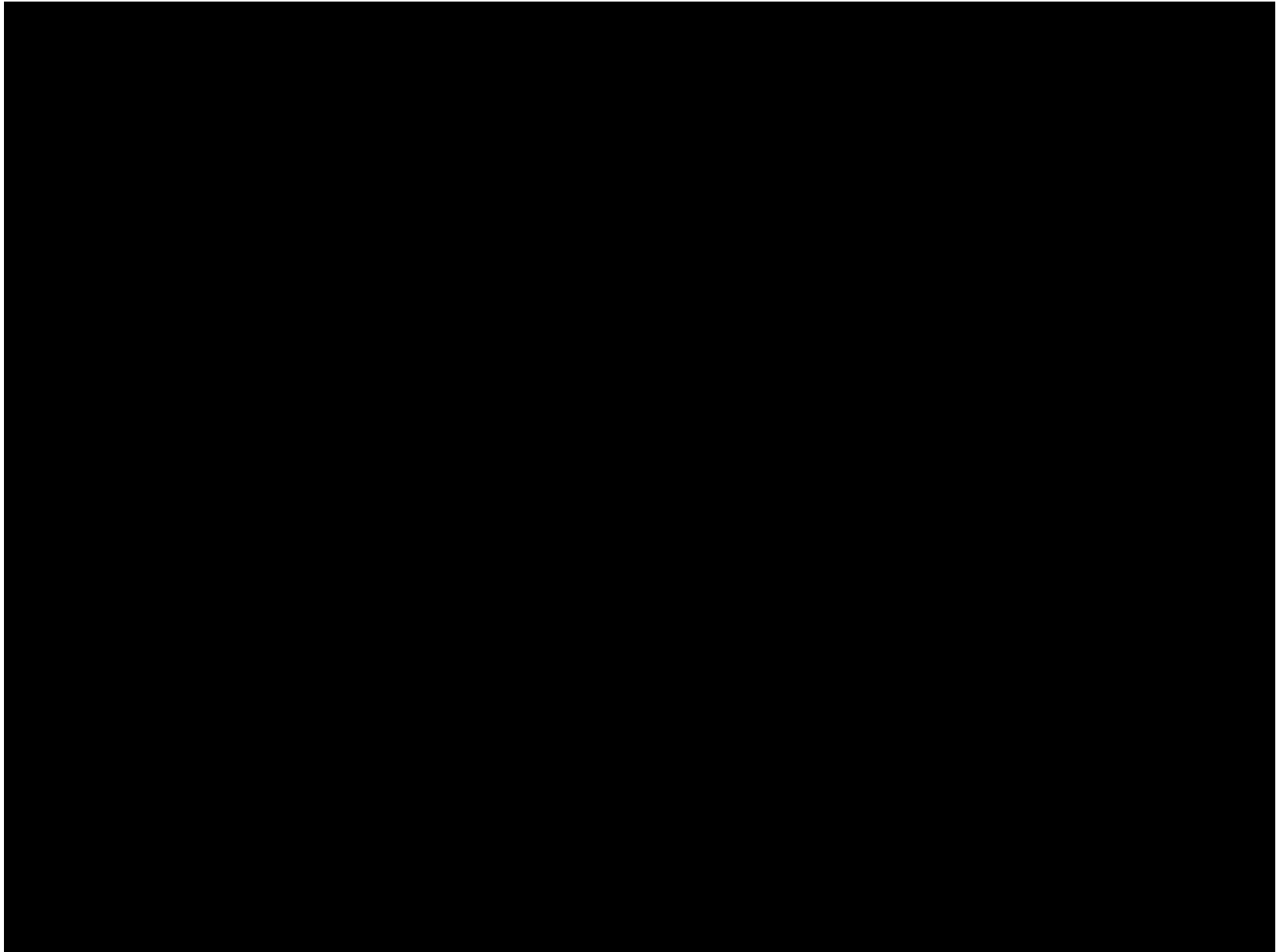
Visite du centre CLESS

Mannequins haute et basse-fidélité :
2 SimMan Essentiel, 3 SimMan 2G, 1 SimKelly, 1 SimJunior, 1 SimBaby, 1 SimNewB, Resusci Anne,...

Tutoriel Mannequins

Logo: sampei
Logo: Hôpital de Lyon
Logo: choisir la version
Logo: J'aime 112

1) Introduction vidéographique



2) Pédagogie et principes déontologiques

Objectif d'apprentissage centré sur l'apprenant (actif)

Impératifs de compétences

Amélioration de la sécurité

Responsabilité

« Jamais la toute première fois sur le patient »

3) Différents modèles de simulation

Procédurale

Basse fidélité

Conversationnelle

Patient standardisé

Haute fidélité

Numérique

Jeux sérieux...

4) Objectifs de la simulation

Savoir

Savoir faire

Savoir être

Métacognition



Technique

Non-technique

Gestion des ressources de crise (CRM)



Compétences techniques

Technical Skills



Compétences non-techniques



Non-Technical Skills

Ronnie J. Glavin , Excellence in Anesthesiology , Anesthesiology 2009; 110:201–3

Peter Oluf Andersen, Identifying non-technical skills and barriers for improvement of teamwork in cardiac arrest teams *Resuscitation*, Volume 81, Issue 6, June 2010, Pages 695–702

Conscience situationnelle



Communication interprofessionnelle



Coordination



Leadership / Followership



D) Interprofessional debriefing



To interrogate after the conclusion of a flight segment in order to obtain classified information, like which bar we're all gonna meet at later.

Apprentissage du savoir être

Professionalism Training For Surgical Residents: Documenting the Advantages of a Professionalism Curriculum.

[Hochberg MS¹](#), [Berman RS](#), [Kalet AL](#), [Zabar S](#), [Gillespie C](#), [Pachter HL](#).

⊕ Author information

Abstract

OBJECTIVES: Professionalism education is a vital component of surgical training. This research attempts to determine whether an annual, year-long professionalism curriculum in a large surgical residency can effectively change professionalism attitudes.

SUMMARY OF BACKGROUND DATA: The ACGME mandated 6 competencies in 2003. The competencies of Professionalism and Interpersonal/Professional Communication Skills had never been formally addressed in surgical resident education in the past.

METHODS: A professionalism curriculum was developed focusing on specific resident professionalism challenges: admitting mistakes, effective communication with colleagues at all levels, delivering the news of an unexpected death, interdisciplinary challenges of working as a team, the cultural challenge of obtaining informed consent through an interpreter, and the stress of surgical practice on you and your family. These professionalism skills were then evaluated with a 6-station Objective Structured Clinical Examination (OSCE). Identical OSCE scenarios were administered to 2 cohorts of surgical residents: in 2007 (before instituting the professionalism curriculum in 2008) and again in 2014. Surgical residents were rated by trained Standardized Patients according to a behaviorally anchored professionalism criteria checklist.

RESULTS: An analysis of variance was conducted of overall OSCE professionalism scores (% well done) as the dependent variable for the 2 resident cohorts (2007 vs 2014). The 2007 residents received a mean score of 38% of professionalism items "well done" (SD 9%) and the 2014 residents received a mean 59% "well done" (SD 8%). This difference is significant ($F = 49.01$, $P < .001$).

CONCLUSIONS: Professionalism education has improved surgical resident understanding, awareness, and practice of professionalism in a statistically significant manner from 2007 to 2014. This documented improvement in OSCE performance reflects the value of a professionalism curriculum in the care of the patients we seek to serve.

Métacognition et performance

Am J Surg. 2017 Dec 8. pii: S0002-9610(17)30842-5. doi: 10.1016/j.amjsurg.2017.11.040. [Epub ahead of print]

Optimizing performance through stress training - An educational strategy for surgical residents.

Goldberg MB¹, Mazzei M², Maher Z³, Fish JH⁴, Milner R⁵, Yu D⁶, Goldberg AJ³.

⊕ Author information

Abstract

BACKGROUND: Stress management programs improve efficacy in aviation, military, and professional sports; however, similar educational strategies have not been adopted in surgical training. We have evaluated the effectiveness of a stress management program for surgical residents.

METHODS: From 2011 to 2016, 137 surgical residents participated in a prospective, blinded study. The intervention group (n = 65) underwent training in self-awareness, focus, relaxation, positive self-talk, visualization, and team building. All participants subsequently completed a high-stress trauma simulation, requiring diagnosis and management of a life-threatening problem. Study endpoints included measures of procedural efficiency, and physiologic and subjective measurements of anxiety.

RESULTS: Residents with stress training came to an accurate diagnosis 21% faster than controls (mean diagnosis time: 2.2 vs. 2.8 min; p = 0.04), and performed with greater technical accuracy (mean OSAT scores: 9.4 vs. 8.9; p = 0.03). Both cohorts exhibited similar physiologic and subjective anxiety metrics after simulation.

CONCLUSIONS: Stress management education may enhance technical performance in surgical trainees during simulation. This underscores the need for early, comprehensive stress training in surgical residency.

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KEYWORDS: Resident education; Stress; Stress training; Surgical simulation

PMID: 29275906 DOI: [10.1016/j.amjsurg.2017.11.040](https://doi.org/10.1016/j.amjsurg.2017.11.040)

5) L'efficacité de la simulation?

Technology-Enhanced Simulation for Health Professions Education

A Systematic Review and Meta-analysis

David A. Cook, MD, MHPE

Rose Hatala, MD, MSc

Ryan Brydges, PhD

Benjamin Zendejas, MD, MSc

Jason H. Szostek, MD

Amy T. Wang, MD

Patricia J. Erwin, MLS

Stanley J. Hamstra, PhD

RESPONDING TO CHANGING practice environments requires new models for training health care professionals. Technology-enhanced simulation is one possible solution. We define *technology* broadly as materials and devices created or adapted to solve practical problems. *Simulation technologies* encompass diverse products including computer-based virtual reality simulators, high-fidelity and static mannequins, plastic models, live animals, inert animal products, and human cadavers.

Although technology-enhanced simulation has widespread appeal and many assert its educational utility,¹ such beliefs presently lack empirical support. Despite the large volume of research on simulation, its effectiveness remains uncertain in part because of the difficulty in inter-

Context Although technology-enhanced simulation has widespread appeal, its effectiveness remains uncertain. A comprehensive synthesis of evidence may inform the use of simulation in health professions education.

Objective To summarize the outcomes of technology-enhanced simulation training for health professions learners in comparison with no intervention.

Data Source Systematic search of MEDLINE, EMBASE, CINAHL, ERIC, PsychINFO, Scopus, key journals, and previous review bibliographies through May 2011.

Study Selection Original research in any language evaluating simulation compared with no intervention for training practicing and student physicians, nurses, dentists, and other health care professionals.

Data Extraction Reviewers working in duplicate evaluated quality and abstracted information on learners, instructional design (curricular integration, distributing training over multiple days, feedback, mastery learning, and repetitive practice), and outcomes. We coded skills (performance in a test setting) separately for time, process, and product measures, and similarly classified patient care behaviors.

Data Synthesis From a pool of 10 903 articles, we identified 609 eligible studies enrolling 35 226 trainees. Of these, 137 were randomized studies, 67 were nonrandomized studies with 2 or more groups, and 405 used a single-group pretest-posttest design. We pooled effect sizes using random effects. Heterogeneity was large ($P > .50$) in all main analyses. In comparison with no intervention, pooled effect sizes were 1.20 (95% CI, 1.04-1.35) for knowledge outcomes ($n = 118$ studies), 1.14 (95% CI, 1.03-1.25) for time skills ($n = 210$), 1.09 (95% CI, 1.03-1.16) for process skills ($n = 426$), 1.18 (95% CI, 0.98-1.37) for product skills ($n = 54$), 0.79 (95% CI, 0.47-1.10) for time behaviors ($n = 20$), 0.81 (95% CI, 0.66-0.96) for other behaviors ($n = 50$), and 0.50 (95% CI, 0.34-0.66) for direct effects on patients ($n = 32$). Subgroup analyses revealed no consistent statistically significant interactions between simulation training and instructional design features or study quality.

Conclusion In comparison with no intervention, technology-enhanced simulation training in health professions education is consistently associated with large effects for outcomes of knowledge, skills, and behaviors and moderate effects for patient-related outcomes.

JAMA. 2011;306(9):978-988

www.jama.com

Modification des comportements ?

Intérêt du programme de simulation ?

Processus de détection et de résolution de problèmes
Opportunité d'analyse des situations problématiques
Promotion du raisonnement compréhensif (rôles inversés)



Modification des comportements ?

Intérêt du programme de simulation ?



Amélioration de l'ambiance d'équipe

Equipe plus innovante

Equipe plus flexible aux changements

Meilleure participation à la mission d'organisation

Modification des comportements ?

Intérêt du programme de simulation ?

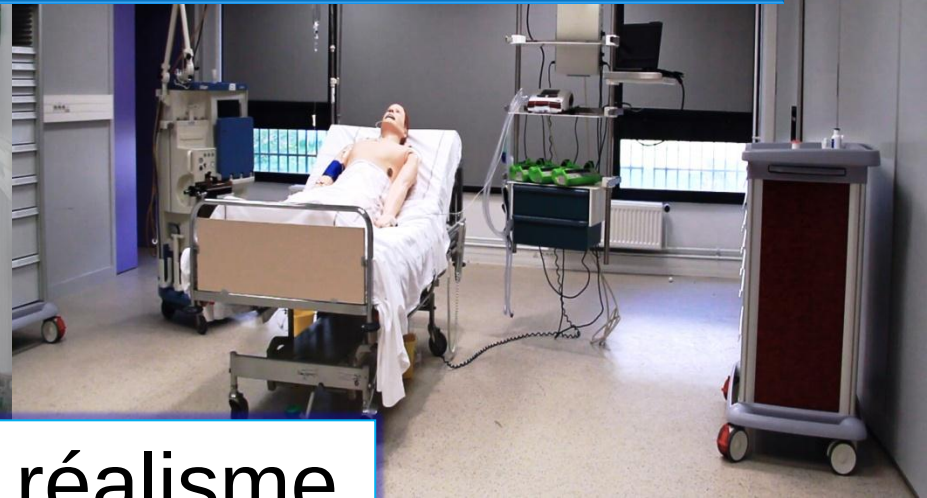
Amélioration de la qualité et de la productivité

Réduction des coûts et de la maintenance

Réduction du renouvellement d'équipe et d'absentéisme

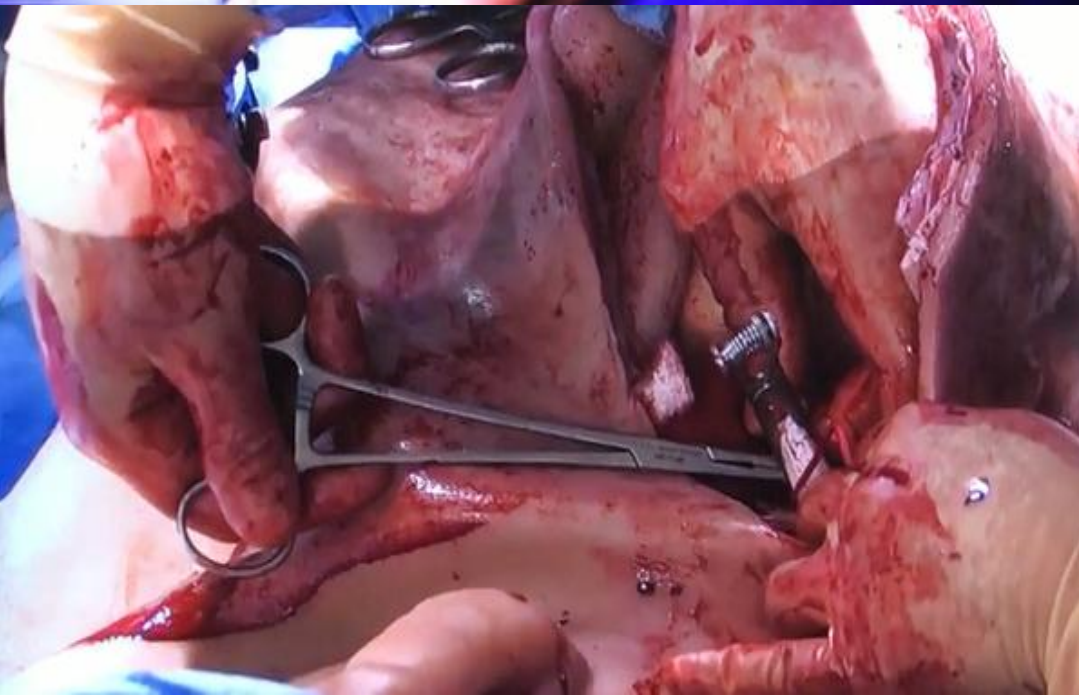


6) La simulation en tant qu'objet

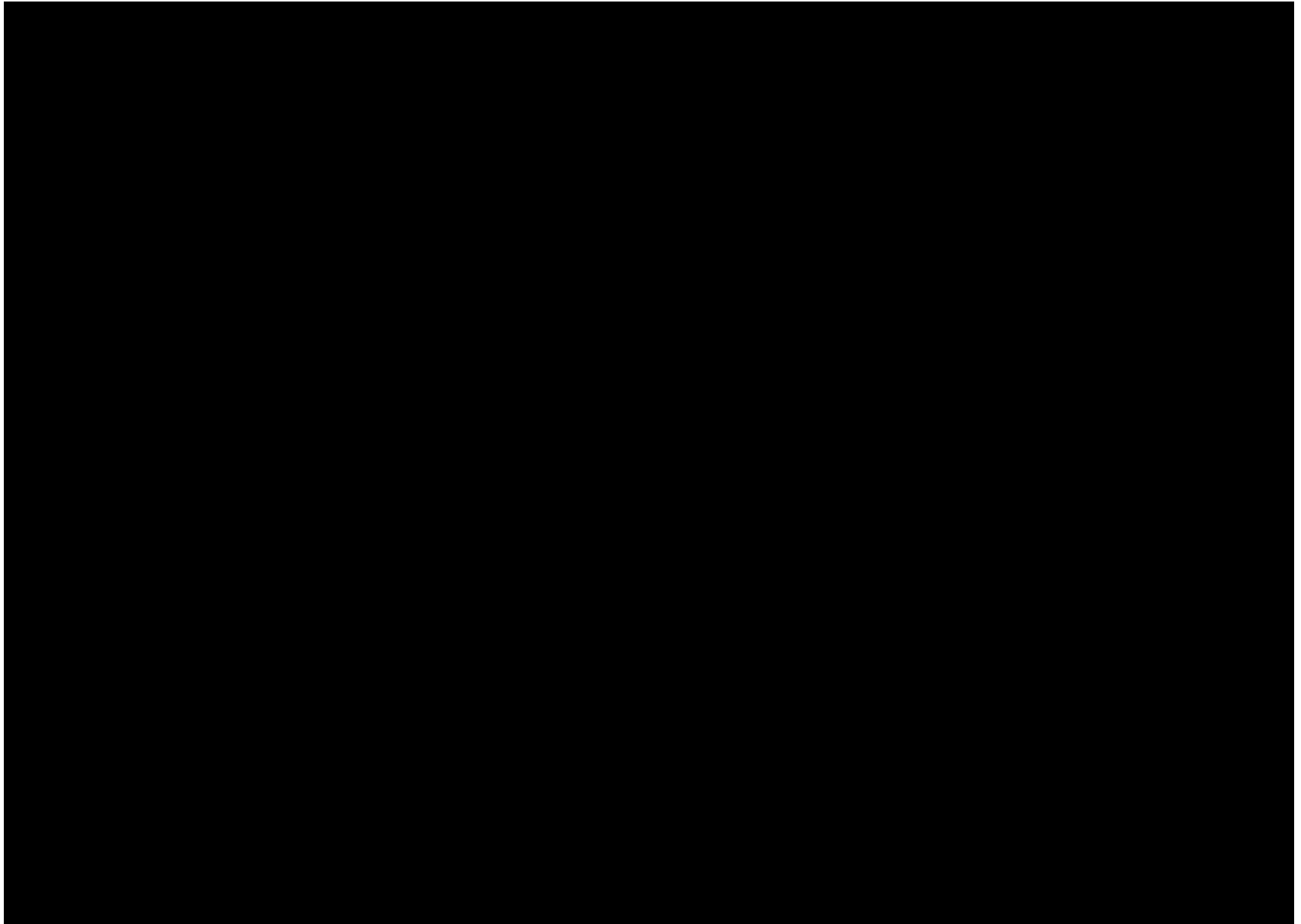


Effort de réalisme

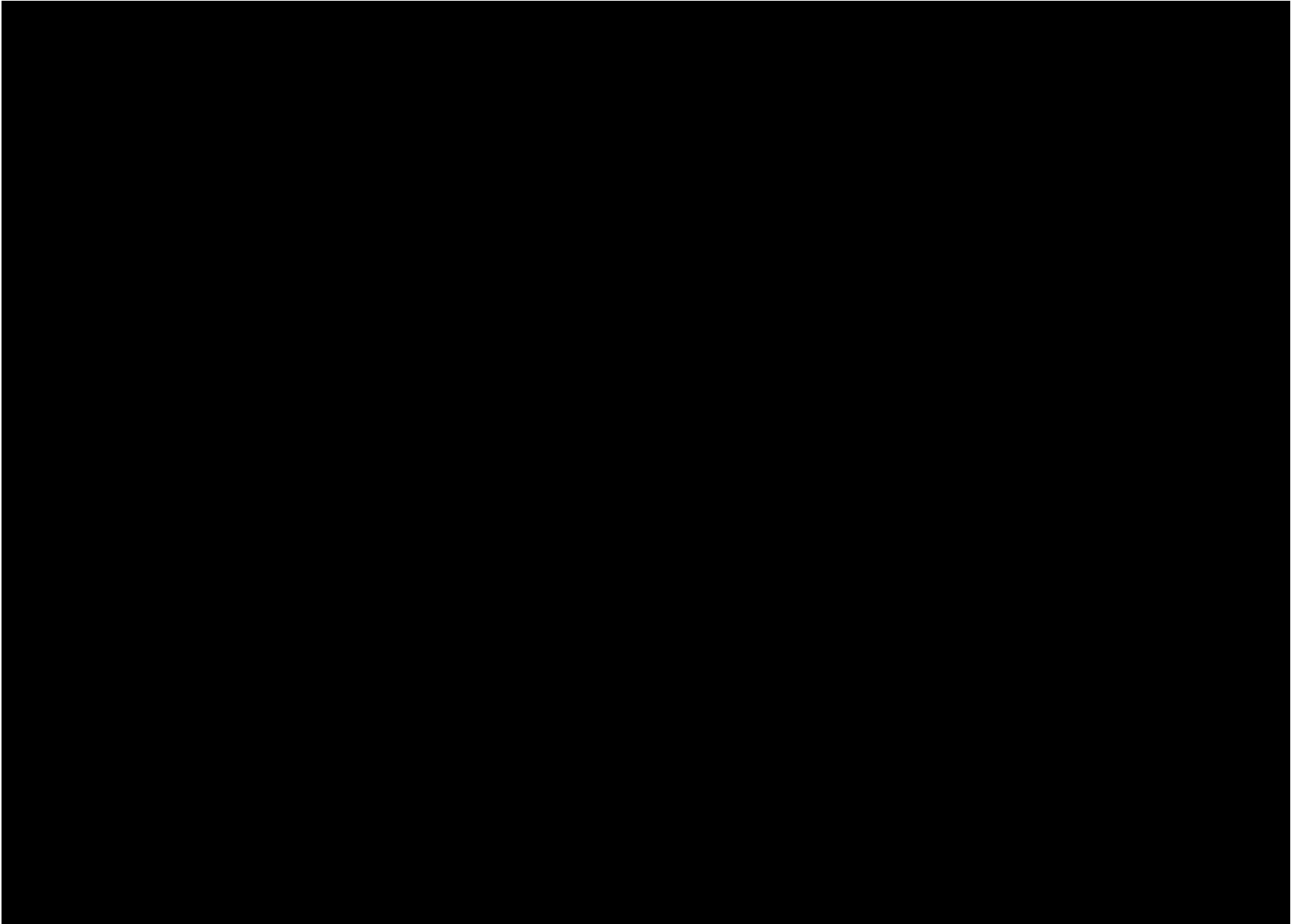


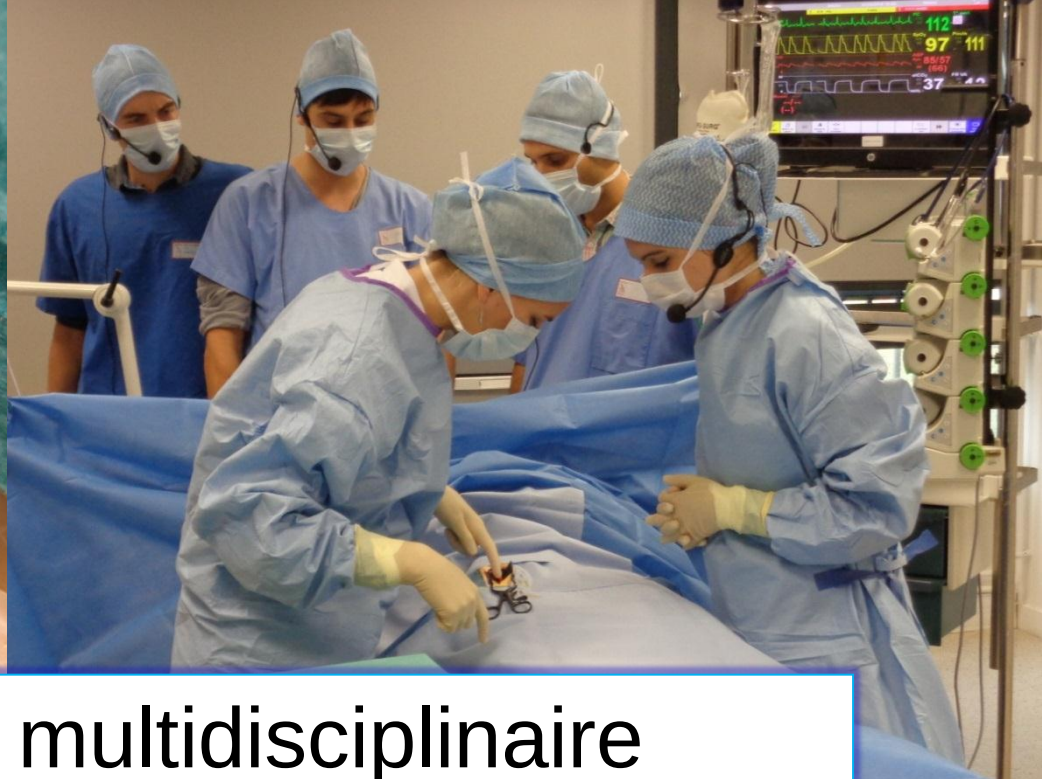
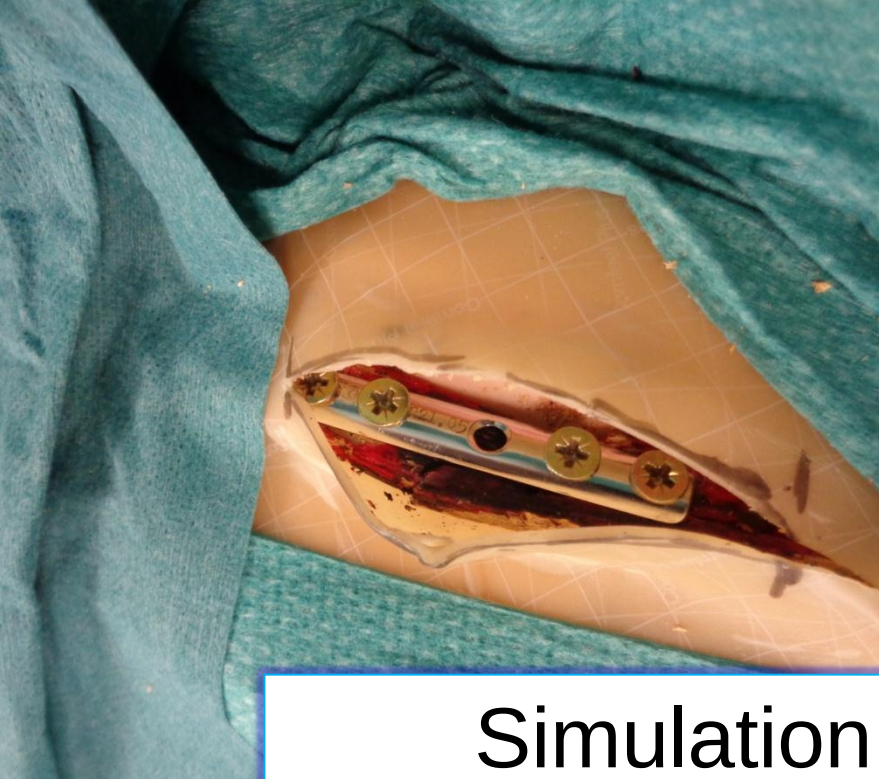


Modèle néonatal

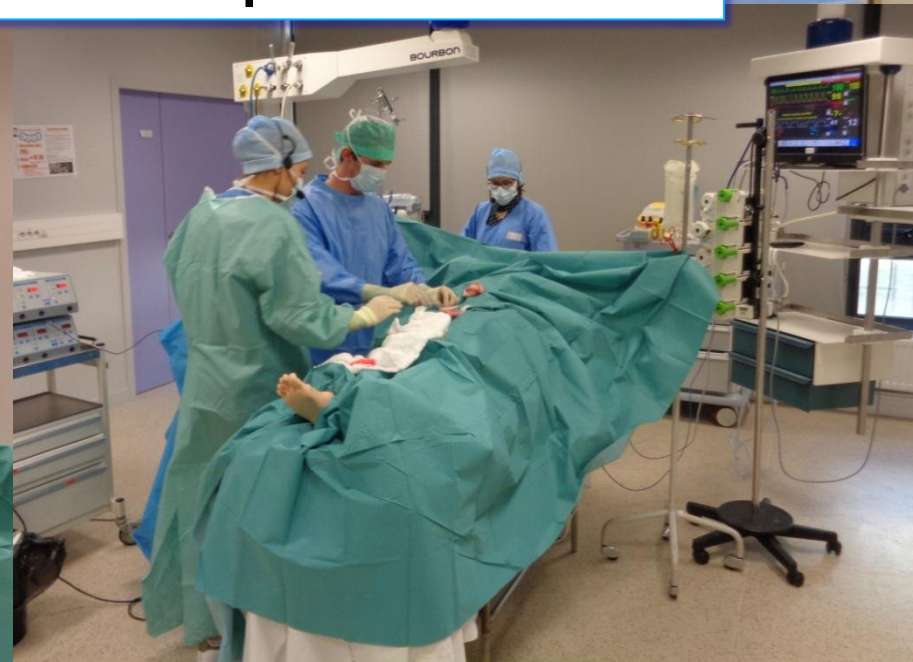


Modèle néonatal





Simulation multidisciplinaire





Simulation in situ interprofessionnelle

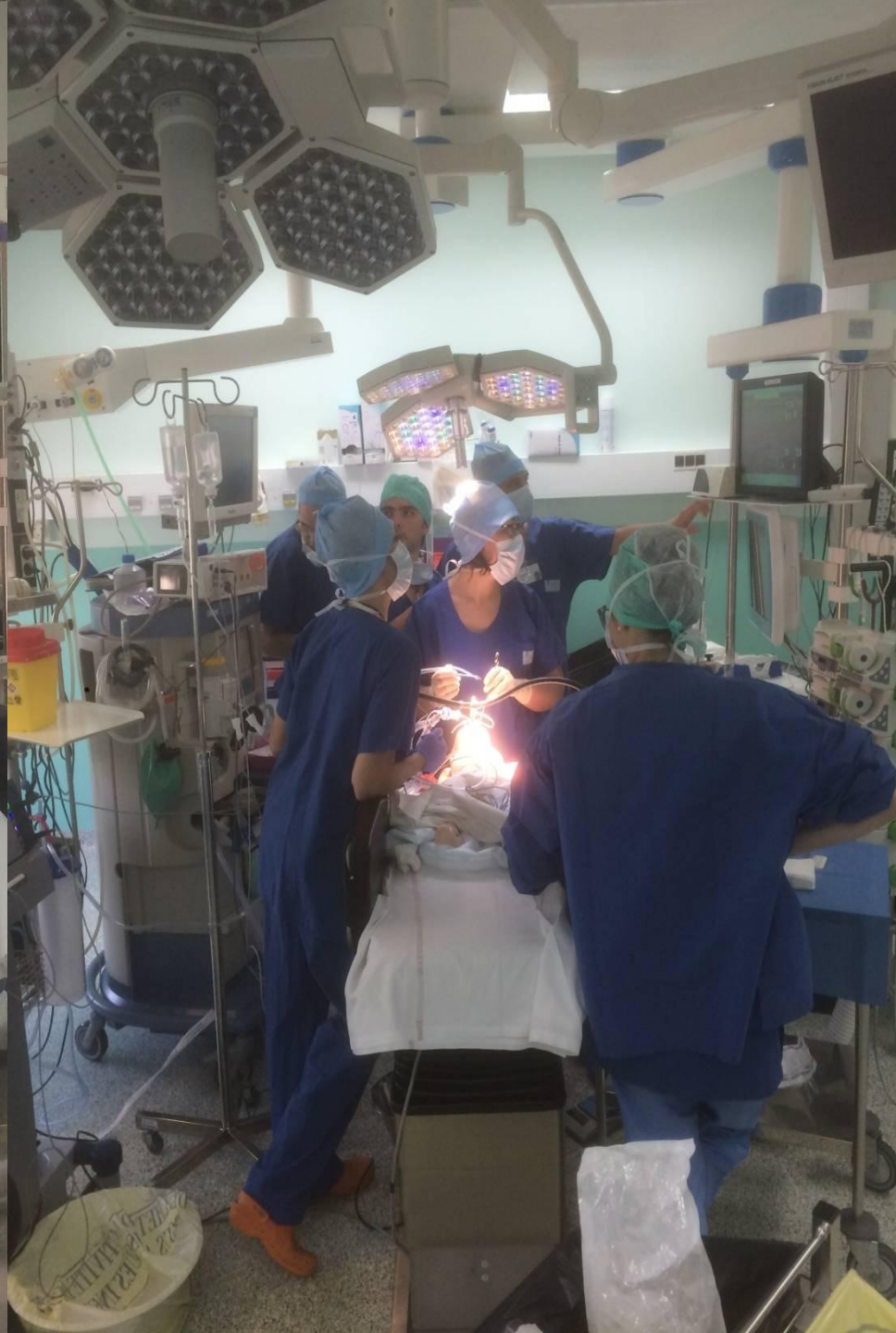


Simulation in situ



Interprofessionnelle et multidisciplinaire



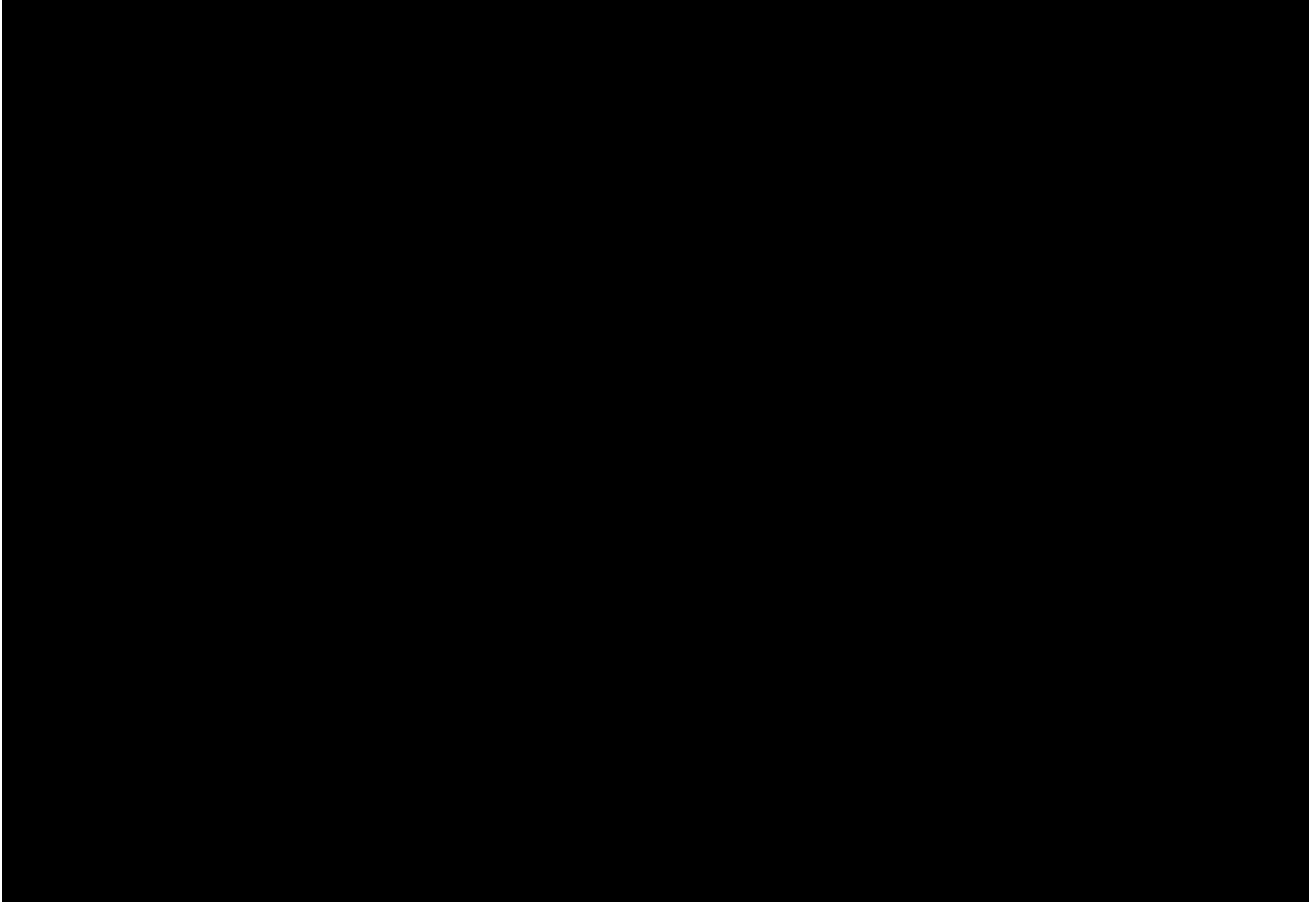




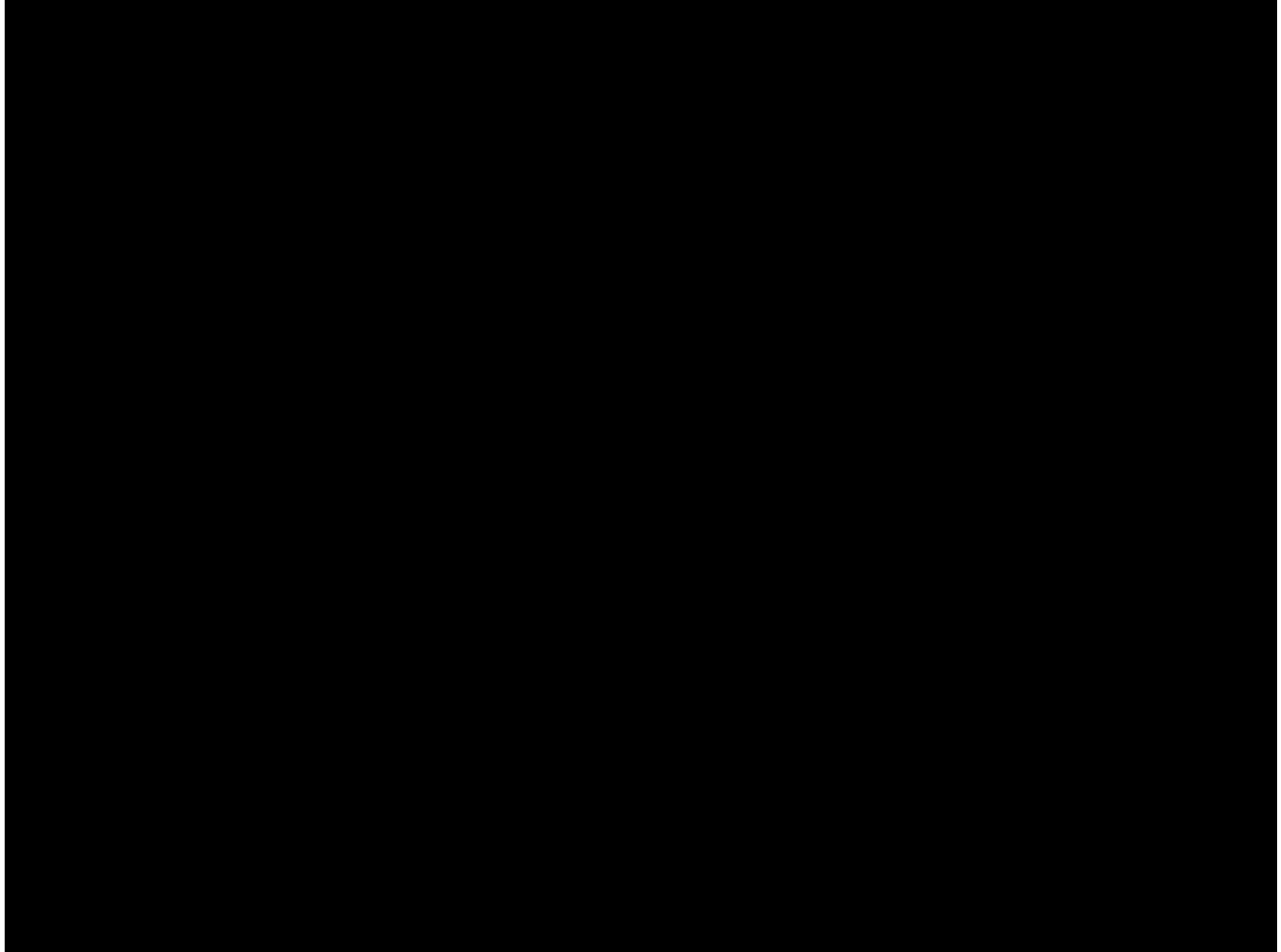
Simulation PEC Pré-hospitalière



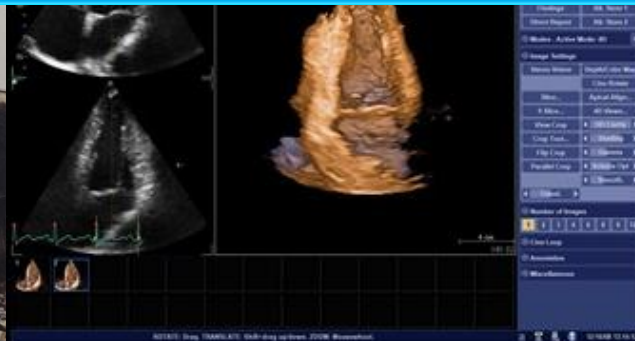
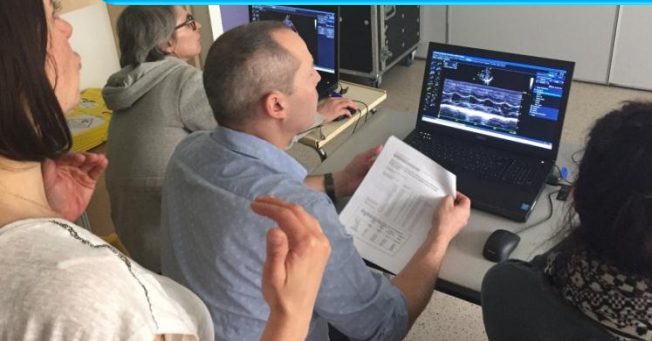
Simulation procédurale et numérique



Simulation procédurale et numérique



Programme thématique de simulation



Kylian H10

	Cal 1	Cal2	Cal3	Cal 4	Cal5
CI	5,14	3,22	3,38	5,31	5,14
SVI	33,19	18,91	20,10	39,59	40,51
RVSI	901,91	1567,46	1421,74	1251,56	1508,37
GEDVi	428,72	482,31	506,42	442,12	428,72
EVLWi	28,51	24,71	25,95	29,40	21,15
VPP	6,00	18,00	23,00	16,00	17,00
FEG	0,31	0,16	0,16	0,36	0,38
PVPI	6,20	4,78	4,78	6,20	4,60
CFI	12,00	6,67	6,67	12,00	12,00
CPI	0,32	0,22	0,24	0,46	0,46



Short communication

A trans-atlantic high-fidelity mannequin based telesimulation experience



Anne Beissel^{a,*}, Marc Lilot^b, Christian Bauer^c, Keith Beaulieu^d, Christopher Hanacek^d, Olivier Desebbe^e, Maxime Cannesson^f, Jean-Jacques Lehot^g, Cameron Ricks^h

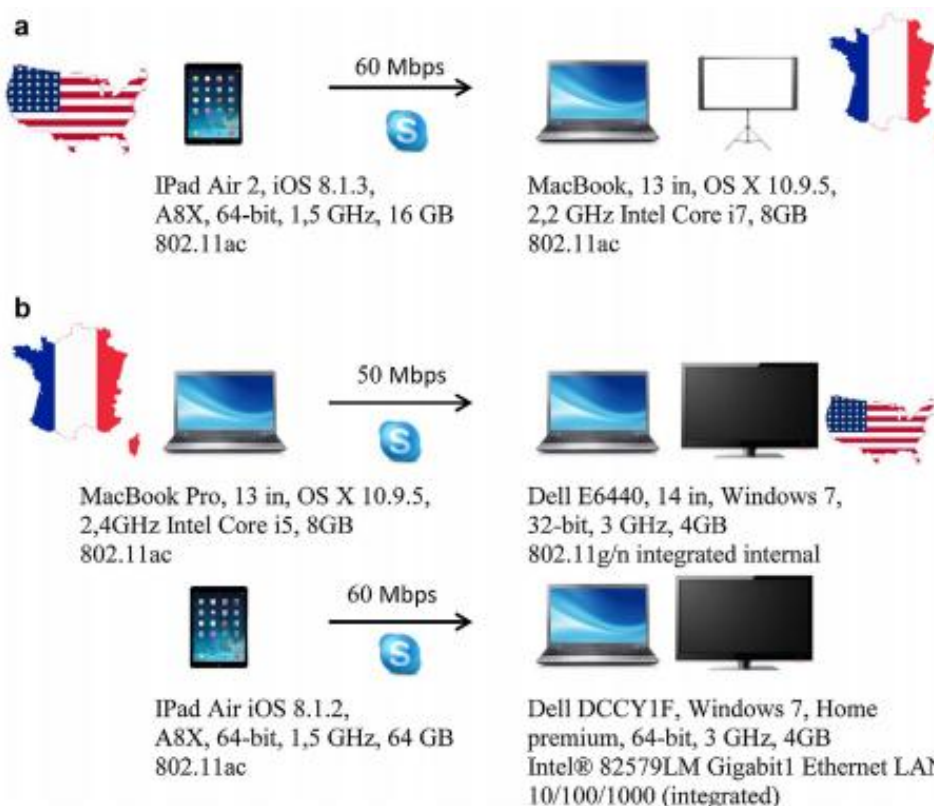


Fig. 1. a: during the US scenario, an iPad on the US side transmitted to a laptop in France; b: during the French scenario, one iPad and one laptop on the French side transmitted to two laptops in the US.

Exemple de réalité virtuelle



7) La simulation en tant qu'outil

The NEW ENGLAND JOURNAL of MEDICINE

SPECIAL ARTICLE

Simulation-Based Trial of Surgical-Crisis Checklists

Alexander F. Arriaga, M.D., M.P.H., Sc.D., Angela M. Bader, M.D., M.P.H., Judith M. Wong, M.D., M.P.H., Stuart R. Lipsitz, Sc.D., William R. Berry, M.D., M.P.H., M.P.A., John E. Ziewacz, M.D., M.P.H., David L. Hepner, M.D., Daniel J. Boorman, B.S., Charles N. Pozner, M.D., Douglas S. Smink, M.D., M.P.H., and Atul A. Gawande, M.D., M.P.H.

Table 2. Failure to Adhere to Critical Steps in Management, According to the Presence or Absence of Checklists and the Scenario Type.

Scenario Type*	Failure Rate†		P Value‡
	With Checklists	Without Checklists	
	no./total no. (%)		
ACLS scenario	7/100 (7)	15/89 (17)	0.005
ACLS scenario preceded by hemodynamically unstable condition	14/154 (9)	46/172 (27)	<0.001
Other crisis scenario	3/117 (3)	28/118 (24)	0.002

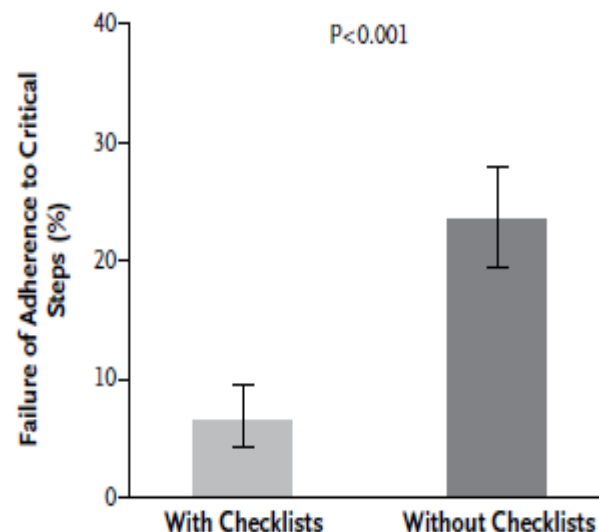
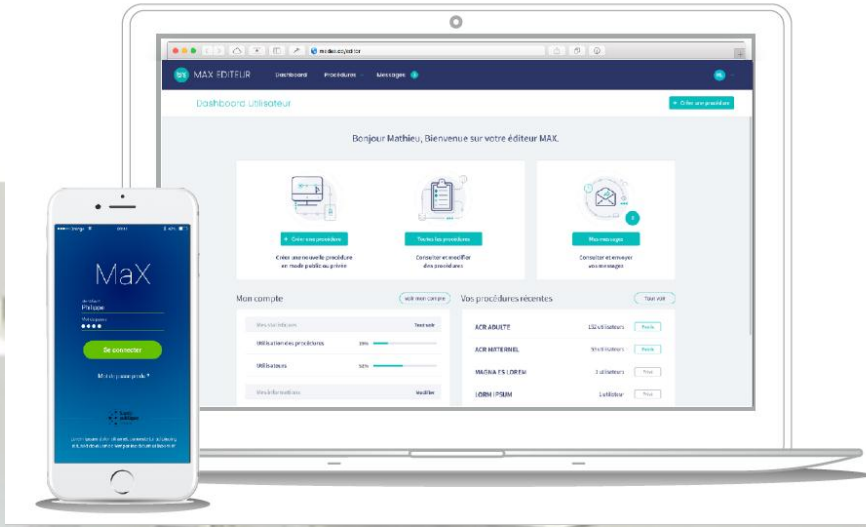


Figure 1. Association between Use or Nonuse of Operating-Room Crisis Checklists and Failure to Adhere to Critical Steps in Management.

The use of checklists during operating-room crises resulted in nearly a 75% reduction in failure to adhere to critical steps in management. Of 371 critical steps in the management of surgical crises, 24 (6%) were missed when the checklists were available, as compared with 89 of 379 steps (23%) missed when the checklists were not available. I bars indicate 95% confidence intervals.



Use of a hand-held digital cognitive aid in simulated crises: the MAX randomized controlled trial

R. Lelaïdier^{1,2,*}, B. Balança^{1,3,4}, S. Boet^{5,6}, A. Faure^{1,2}, M. Lilot^{1,7,8}, F. Lecomte⁸, J.-J. Lehot^{1,4,8}, T. Rimmelé^{1,2,10} and J.-C. Cejka^{1,2}

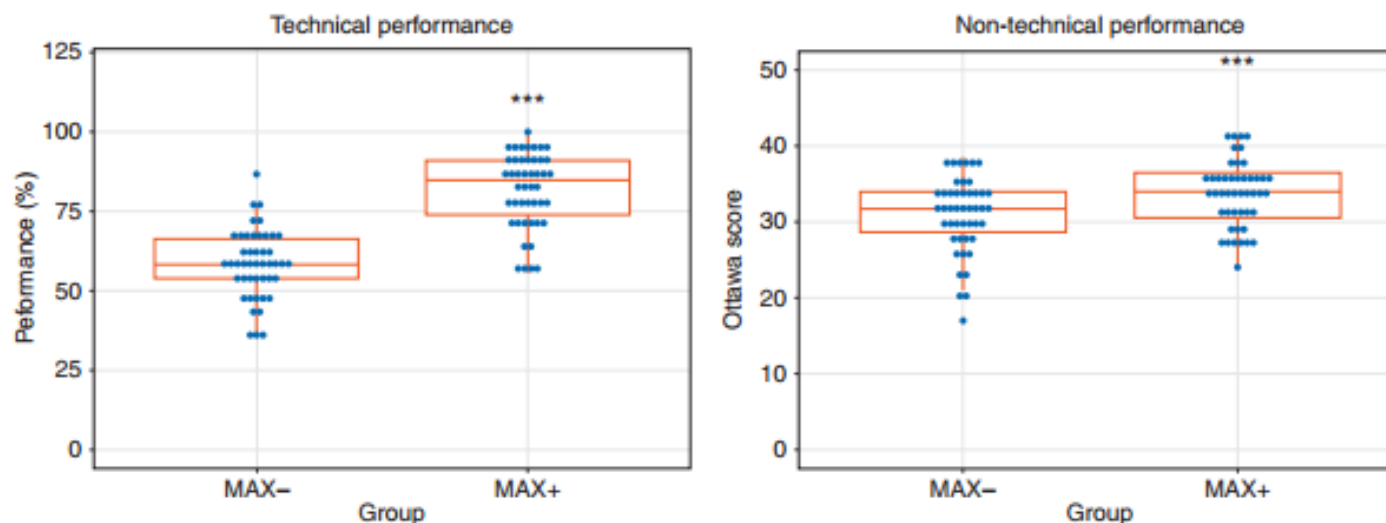
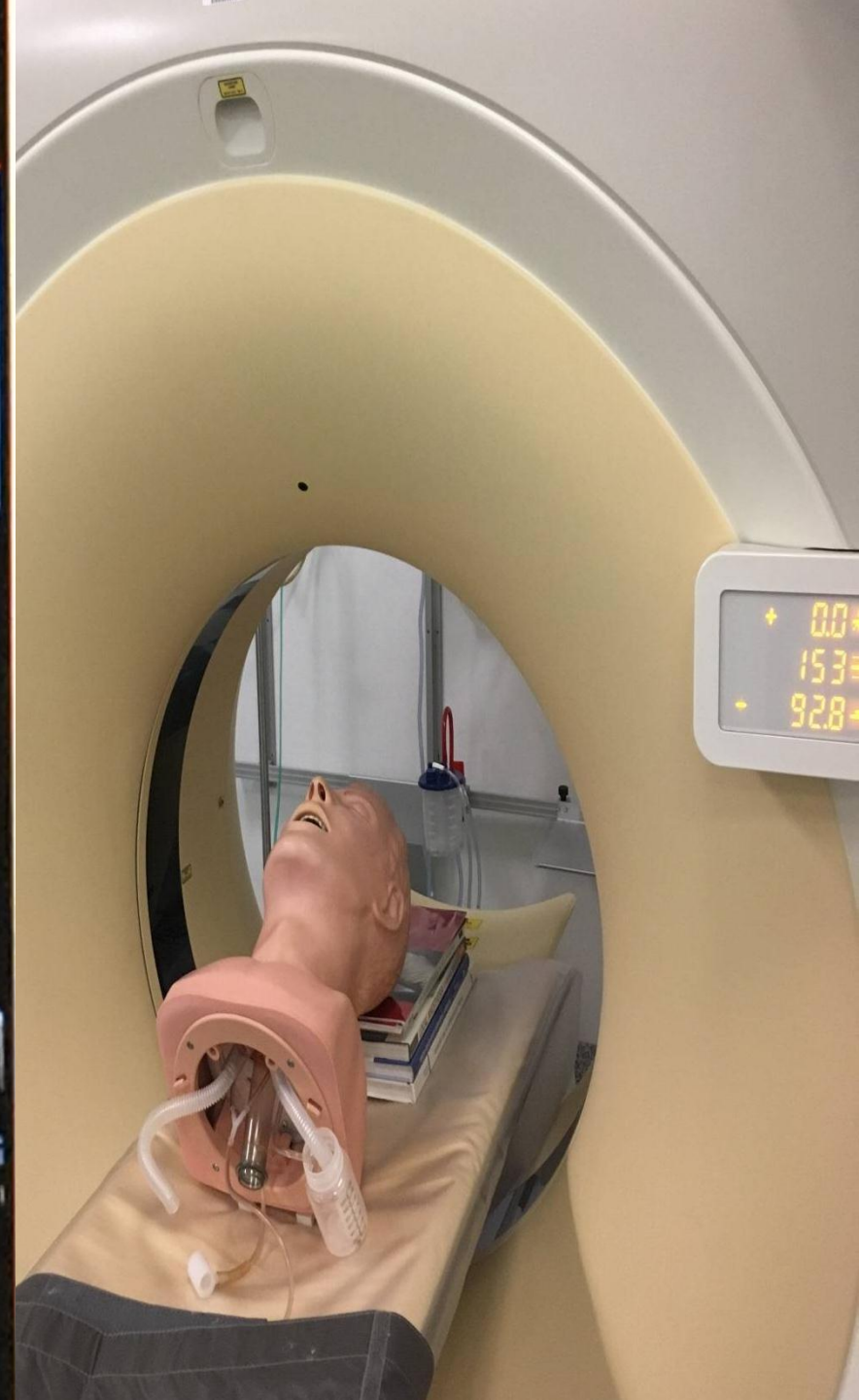
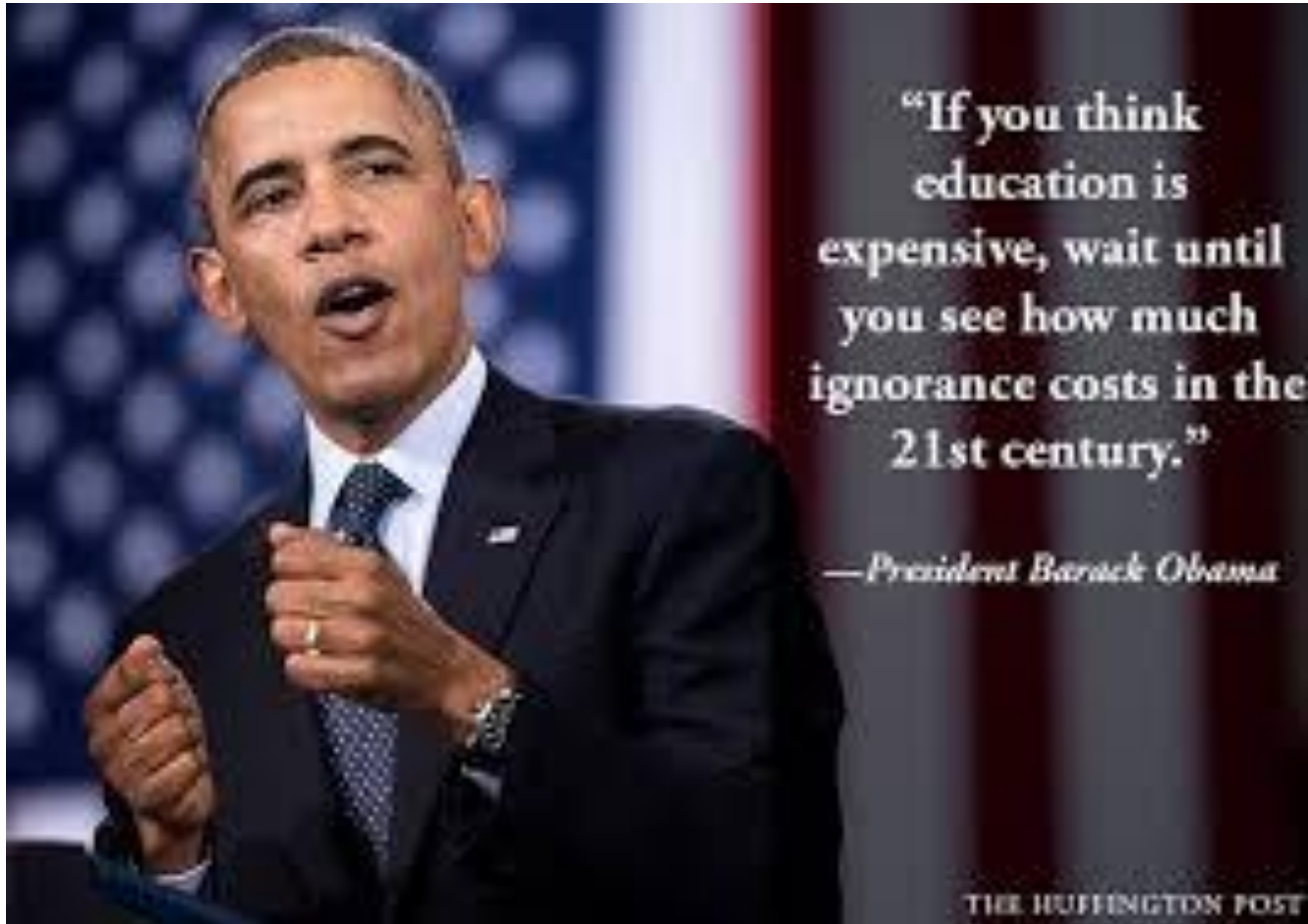


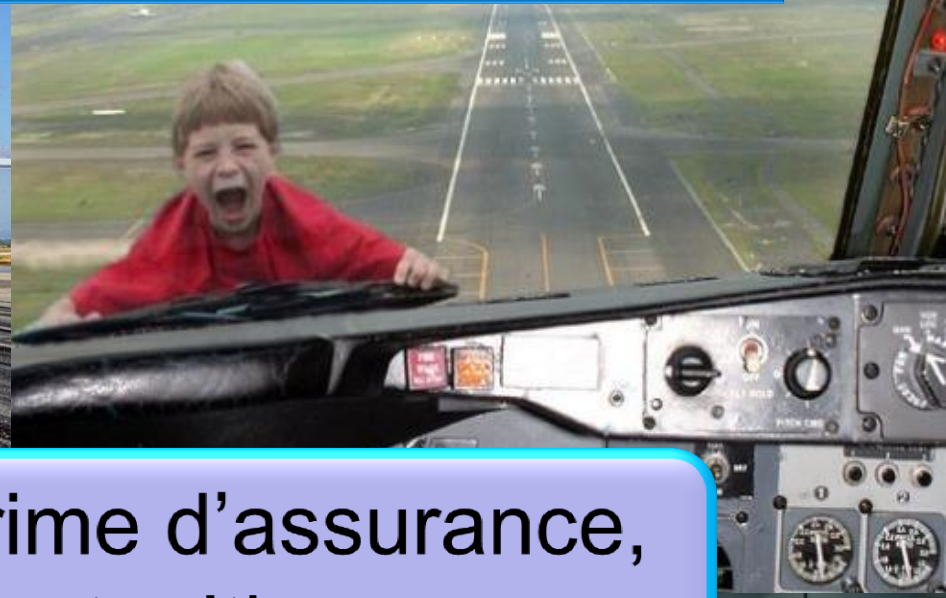
Fig 1 Effect of the Medical Assistance eXpert (MAX) on technical and non-technical performances during critical event management. Technical performances (left) were rated by two independent observers between zero and 100% of vital actions to be completed. Non-technical performances (right) were also evaluated by the same observers using the Ottawa Global Rating Scale, ranging from zero to 42. *** $P < 0.001$ with pairwise Wilcoxon rank sum test (left) or Student's paired t-test (right).



8) Conclusion:



8) Conclusion:



Certification, prime d'assurance,
Expertise post critique ...





Docu : l'hôpital en burn-out total

— 1 octobre 2017 à 20:26

➔ Docu : l'hôpital en burn-out total

Le réalisateur Jérôme Le Maire, accompagné du philosophe Guillaume Chabot, a filmé les coulisses de l'hôpital Saint-Louis, à Paris, montrant chirurgiens, infirmières et personnel soignant débordés. pages 18-19 ➔

f PARTAGER





La simulation intégrée dans la stratégie de prévention pour améliorer le sentiment d'efficacité personnelle et celui des équipes

Chabot, a filmé les coulisses de l'hôpital Saint-Louis, à Paris, montrant chirurgiens, infirmières et personnel soignant débordés. pages 18-19 ➤

« Hope for the best, prepare for the worst »

January 2016 Luxembourg
Sarrebruck, flight LG 9562



« Upps sorry »

http://www.bfu-web.de/EN/Publications/Interim_Reports/IR2015/I1_Report_15_1354-AX_DHC8_Saarbruecken.pdf?_blob=publicationFile

Est-ce que cela va vous arriver ?

Comment allez vous réagir quand ça va vous arriver ?

La Simulation comme outil au service de l'excellence

« ...from a team of experts

To an expert team... »

Recherchez
par maladie



🔊 Écouter



Simulation en santé

La simulation en santé correspond « à l'utilisation d'un matériel (comme un mannequin ou un simulateur procédural), de la réalité virtuelle ou d'un patient standardisé, pour reproduire des situations ou des environnements de soins, pour enseigner des procédures diagnostiques et thérapeutiques et permettre de répéter des processus, des situations cliniques ou des prises de décision par un professionnel de santé ou une équipe de professionnels » 1



Vos interloc

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- > [Simulation en santé - Rapport](#) (📄 5,5 Mo) 🔊 Écouter
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- > La HAS définit les bonnes pratiques pour développer des programmes de simulation en santé
- > Evaluation des infrastructures de simulation en santé

WEB PAPER
AMEE GUIDE

Simulation in healthcare education: A best evidence practical guide. AMEE Guide No. 82

IVETTE MOTOLA¹, LUKE A. DEVINE², HYUN SOO CHUNG³, JOHN E. SULLIVAN¹ & S. BARRY ISSENBERG¹¹University of Miami Miller School of Medicine, USA, ²Mount Sinai Hospital, Toronto, Canada, ³Yonsei University College of Medicine, Seoul, Korea

Identifying Nontechnical Skills Associated With Safety in the Emergency Department: A Scoping Review of the Literature

Lynsey Flowerdew, MBChB, MD, Ruth Brown, MBBS, Charles Vincent, PhD, BA, Maria Woloshynowych, PhD, BSc

From the Centre for Patient Safety and Service Quality, Department of Surgery and Cancer, Imperial College, London, UK (Flowerdew, Vincent, Woloshynowych); and St Mary's Emergency Department, Imperial College Healthcare NHS Trust, London, UK (Brown).

A. L. Garden et al

Anaesth Intensive Care 2015 | 43:3

Review

Debriefing after simulation-based non-technical skill training in healthcare: a systematic review of effective practice

A. L. Garden*, D. M. Le Fevre†, H. L. Waddington‡, J. M. Weller§

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Web: www.amee.org

Features and uses of high-fidelity medical simulations that lead to effective learning: a BEME systematic review

BEME Guide No 4

S Barry Issenberg MD, William C McGaghie PhD, Emil R Petrusa PhD, David Lee Gordon MD & Ross J Scalese MD

This review is published in *Medical Teacher*.



Merci de votre Attention

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