État de l'art de l'enseignement en soins d'urgence en pédiatrie : place de la simulation

Dr Julien NAUD, CESU 33

ELSEVIER

Annales Françaises d'Anesthésie et de Réanimation

Volume 28, Issues 7–8, July–August 2009, Pages 628-633

Article original

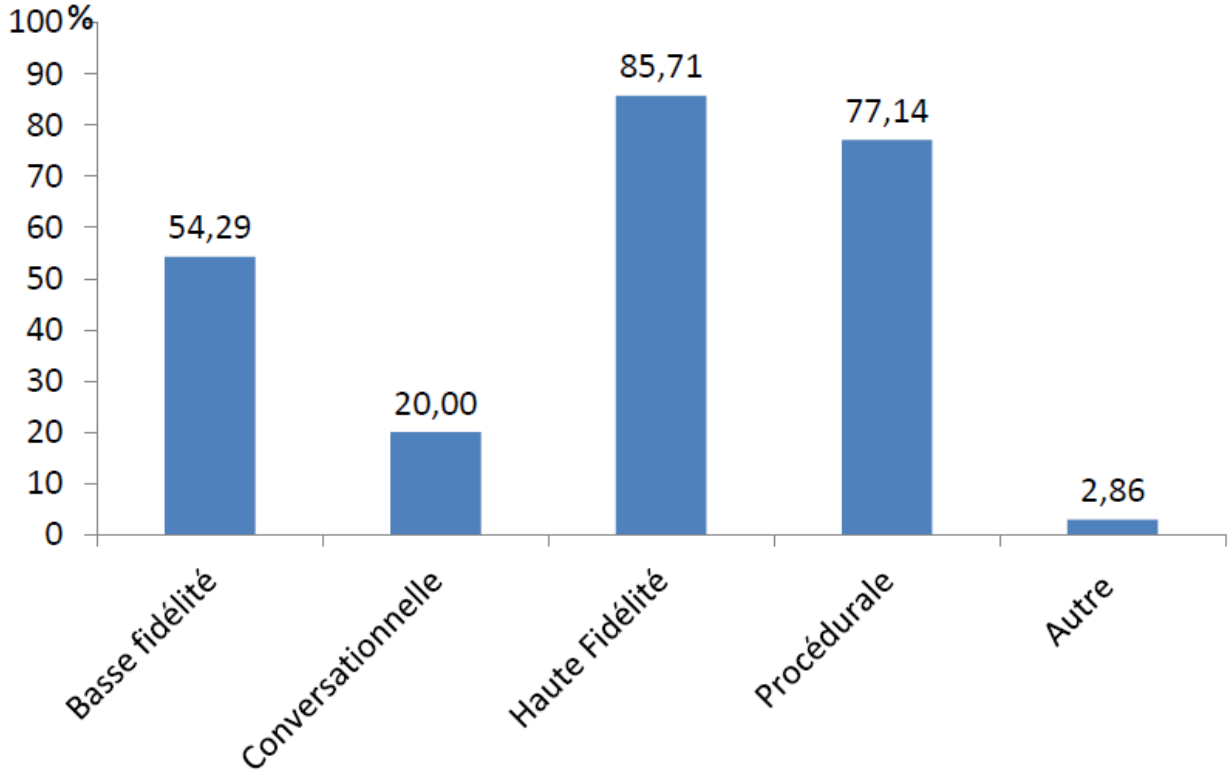
Enquête européenne sur la pratique de la simulation médicale pédiatrique

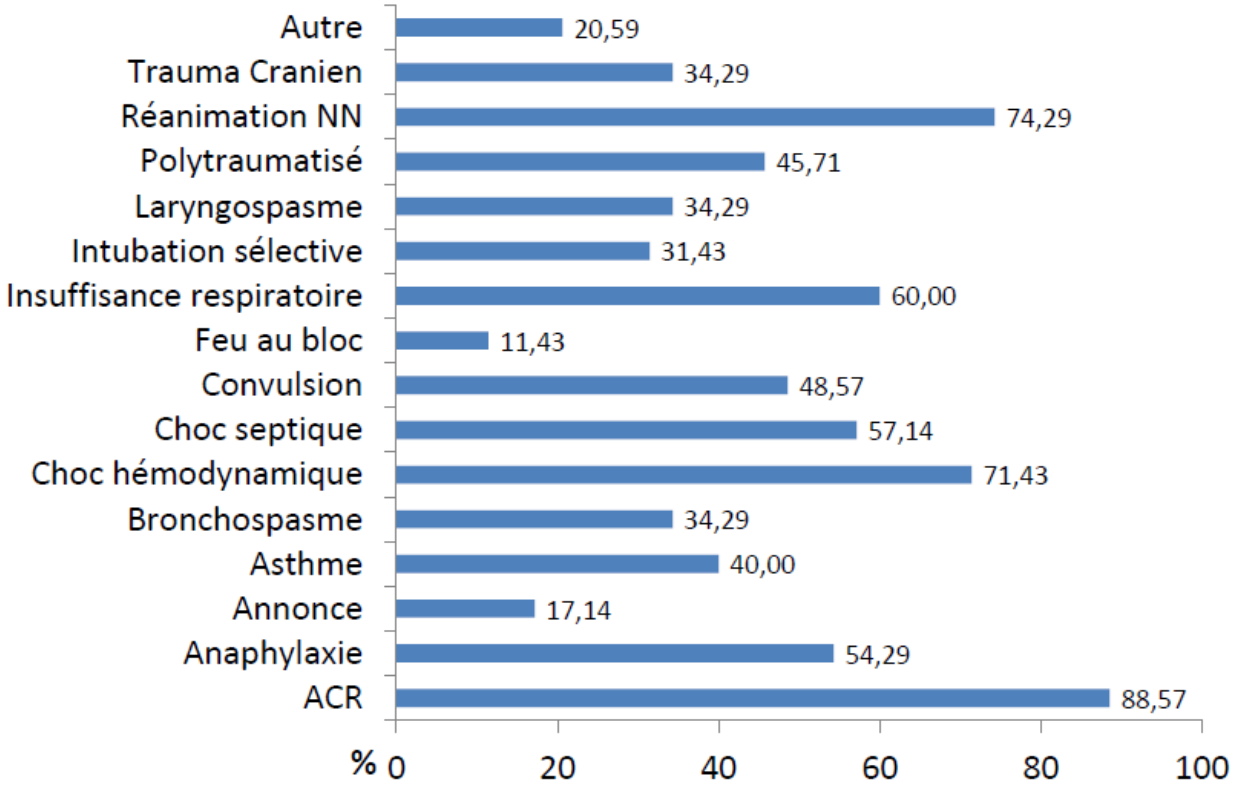
Medical Paediatric Simulation: A European survey ☆

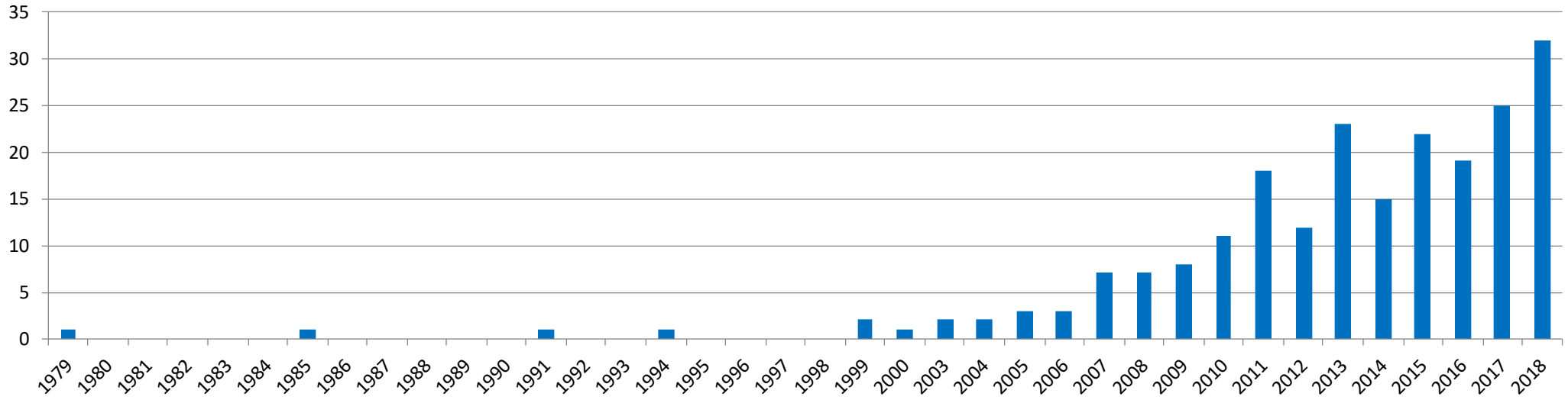
V. Lassalle, J. Berton, G. Bouhours, M. Péres, G. Bossard, J.-C. Granry

- **38 centres de simulations pédiatriques (CSP) en Europe**
- **90% des CSP ont ≥ 1 simulateur pédiatrique HF**
- **80% des CSP ont ≥ 1 instructeur pédiatrique**

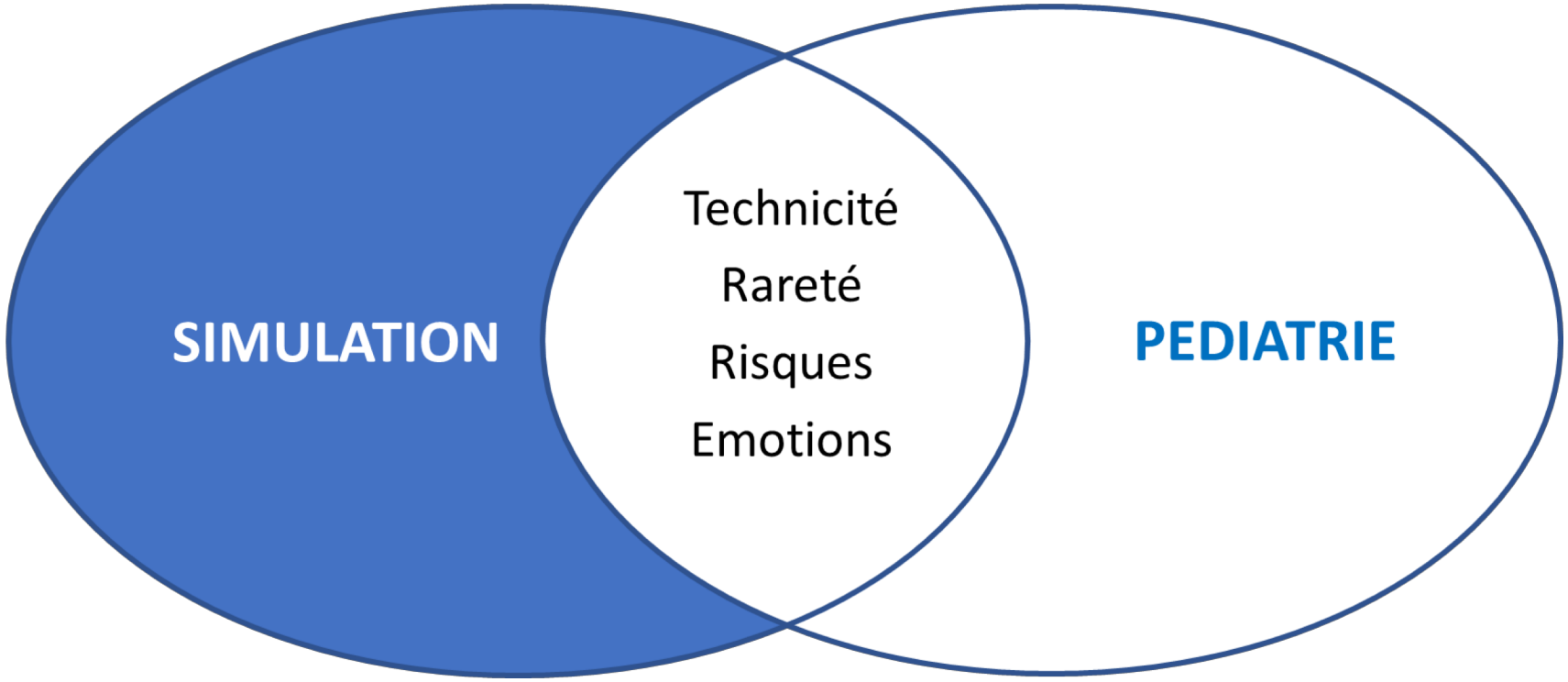
- **35 centres de simulations pédiatriques (CSP) francophones**
- **63% ont un programme d'enseignement en soins d'urgences pédiatriques**


100 %
90
80
70
60
50
40
30
20
10
0
54,29
20,00
85,71
77,14
2,86
Basse fidélité
Conversationnelle
Haute Fidélité
Procédurale
Autre


Autre 20,59
Trauma Cranien 34,29
Réanimation NN 74,29
Polytraumatisé 45,71
Laryngospasme 34,29
Intubation sélective 31,43
Insuffisance respiratoire 60,00
Feu au bloc 11,43
Convulsion 48,57
Choc septique 57,14
Choc hémodynamique 71,43
Bronchospasme 34,29
Asthme 40,00
Annonce 17,14
Anaphylaxie 54,29
ACR 88,57
% 0 20 40 60 80 100



- **simula*[title] AND pediatri*[title]**
- **525 publications dont 216 d'intérêt**


SIMULATION
Technicité
Rareté
Risques
Emotions
PEDIATRIE

ELSEVIER

The Joint Commission Journal on Quality and Patient Safety

Volume 39, Issue 6, June 2013, Pages 268-273, AP1-AP3

Identification of Latent Safety Threats Using High-Fidelity Simulation-Based Training with Multidisciplinary Neonatology Teams

Elizabeth A. Wetzel MD, Tara R. Lang MD, Tiffany L. Pendergrass BSN, RN, Regina G. Taylor MA, CCRP (Clinical Research Coordinator), Gary L. Geis MD

Table 3. Improvements Made by the Neonatal ICU (NICU) Leadership as a Result of Threats Identified in Simulation*

Changes Made Within the NICU

- Calculators added to code cart.
- Adenosine added to medication dispensing system.
- Nursing education competency created and executed for adenosine delivery.
- IO infusion drill system education added to NICU fellow and APN skills lab.
- Nursing education competency created for location of defibrillator in NICU.
- Banding gun added to thoracostomy tube tote.
- Education competency created for use of banding gun and ties to secure thoracostomy tube.
- Protocol developed (and education delivered) on testing of defibrillator.
- Education competency developed on proper setup for storage of defibrillator.
- Defibrillator resource cards added to unit defibrillator.
- Revised angiocaths for pre-made needle aspiration kit.
- Malfunctioning electrical outlet in patient room repaired.

Changes Made to the Delivery Room Process

- End-tidal carbon dioxide detector added to delivery cart.
- Transilluminator added to delivery cart.
- Backboard added to delivery cart.
- Slide presentation developed for real-time use before congenital diaphragmatic hernia deliveries.
- Code (recording) sheet created and added to delivery cart for documentation of care.
- Additional RN now attends deliveries.

Change Made Within the Hospital

- Hospital CPR Committee revised labeling for IO access supplies in code carts.

CESU 71

CENTRE HOSPITALIER CHALON SUR SAONE William Morey

CESITECH SANTÉ Centre d'Enseignement et de Simulation du Territoire du Chalonnais

ASSOCIATION NATIONALE DES CESU

Pediatric Anesthesia

Effect of pediatric simulation training on candidate's confidence

Crina L Burlacu, Chris Chin

Volume 18, Issue 6
June 2008
Pages 566-567

Table 1
The mean differences between pre- and postcourse Candidate Confidence Score (CCS) with the postcourse scores being higher than the precourse scores

Simulated Scenarios	Mean difference	SD	95% CI	Significance (two-tailed)
Cardiac arrest	2.00	1.45	1.63–2.36	<0.0001
Trauma	1.87	1.52	1.48–2.25	<0.0001
Critically ill child	2.04	1.73	1.60–2.48	<0.0001
Difficult airway	1.90	1.87	1.43–2.37	<0.0001
Burns	2.30	1.85	1.83–2.77	<0.0001
Fitting child	1.88	1.78	1.42–2.34	<0.0001
Anaphylaxis	1.76	1.65	1.34–2.17	<0.0001

SD, Standard deviation; CI, Confidence intervals.

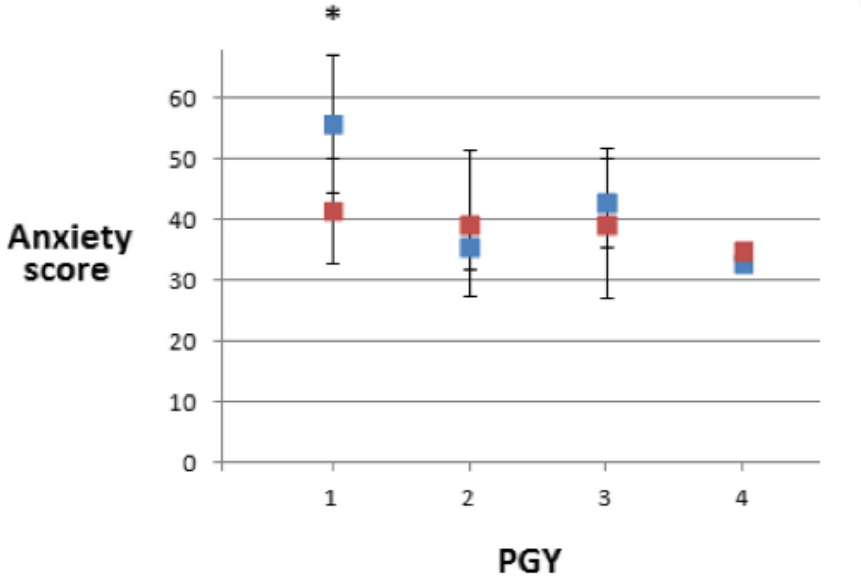
McMillan *et al. BMC Medical Education* (2016) 16:198
DOI 10.1186/s12909-016-0722-1

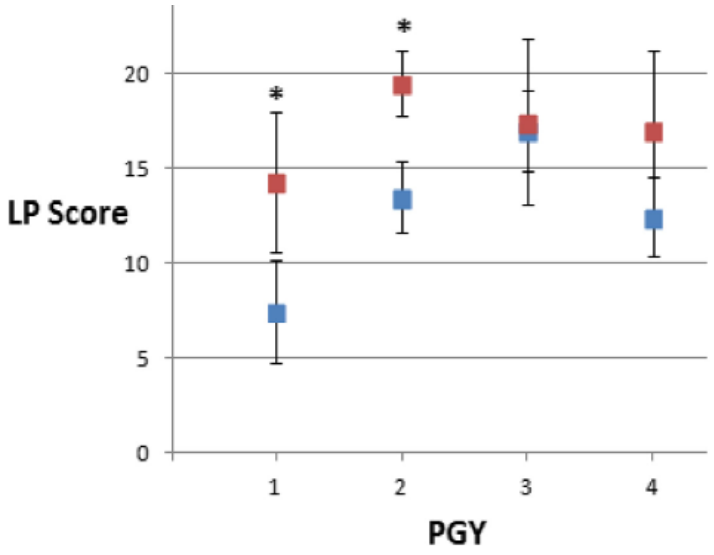
BMC Medical Education

RESEARCH ARTICLE Open Access

Lumbar puncture simulation in pediatric residency training: improving procedural competence and decreasing anxiety

Hugh J. McMillan[1*], Hilary Writer[2], Katherine A. Moreau[3], Kaylee Eady[4], Erick Sell[1], Anna-Theresa Lobos[2], Jenny Grabowski[4] and Asif Doja[1]



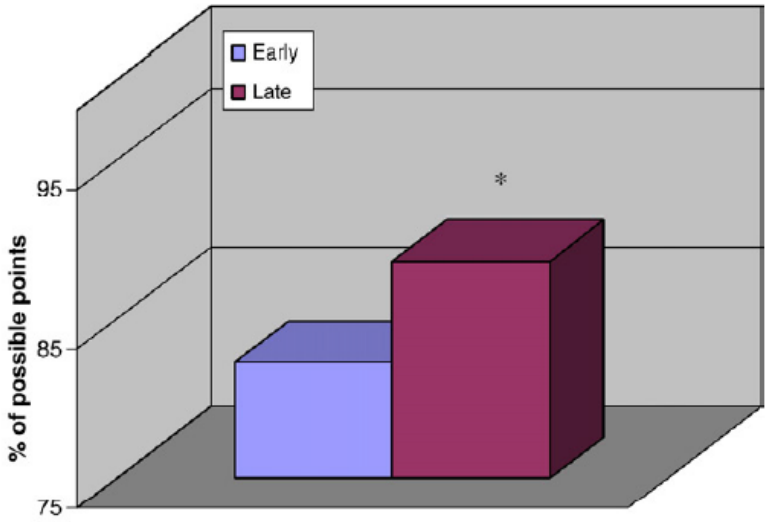


Journal of Pediatric Surgery

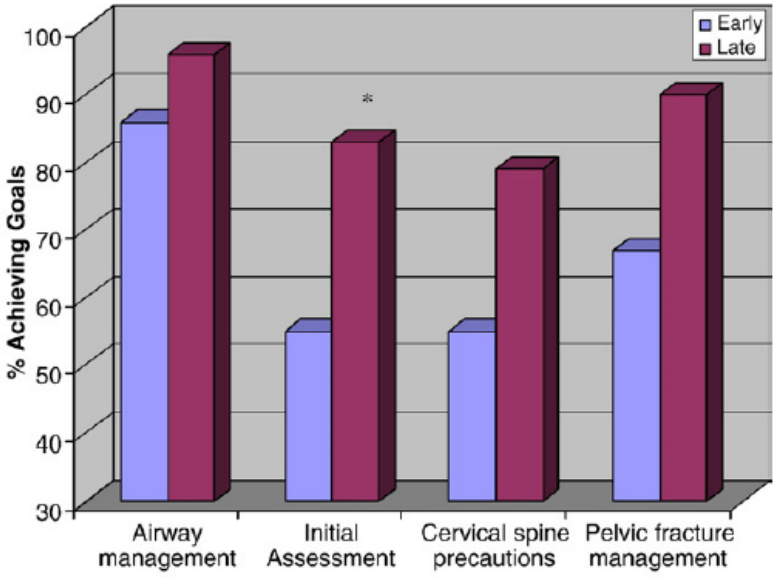
June 2008 Volume 43, Issue 6, Pages 1065–1071

Multidisciplinary pediatric trauma team training using high-fidelity trauma simulation

Richard A. Falcone Jr, Margot Daugherty, Lynn Schweer, Mary Patterson, Rebeccah L. Brown, Victor F. Garcia



*$P < .05$, t-test. N = 23 for each group.



*$P < .05$ t-test

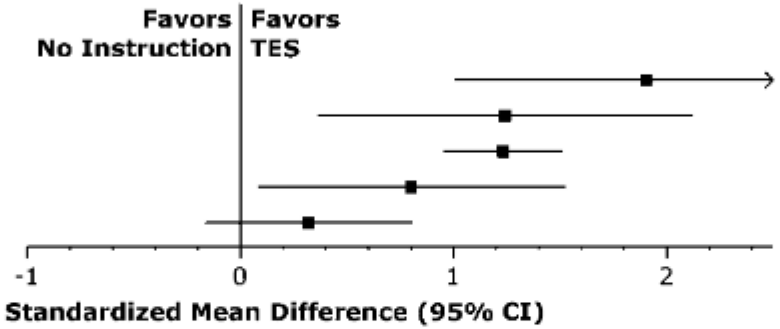
PEDIATRICS®
OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Technology-Enhanced Simulation and Pediatric Education: A Meta-analysis

Adam Cheng, Tara R. Lang, Stephanie R. Starr, Martin Pusic and David A. Cook

Pediatrics 2014;133;e1313
DOI: 10.1542/peds.2013-2139 originally published online April 14, 2014;

Outcome	No. Studies (No. Partic.)	Standardized Mean Difference (95% CI)	*P*	I^2
Knowledge	13 (774)	1.91 (1.01, 2.80)	<.001	98
Time	6 (101)	1.24 (0.36, 2.12)	.006	85
Nontime skill	27 (1027)	1.23 (0.95, 1.51)	<.001	87
Nontime behavior	5 (145)	0.80 (0.08, 1.53)	.03	81
Patient effect	4 (158)	0.32 (-0.16, 0.81)	.20	65



World Journal of Critical Care Medicine

Submit a Manuscript: http://www.wjgnet.com/esps/
Help Desk: http://www.wjgnet.com/esps/helpdesk.aspx
DOI: 10.5492/wjccm.v5.i4.212

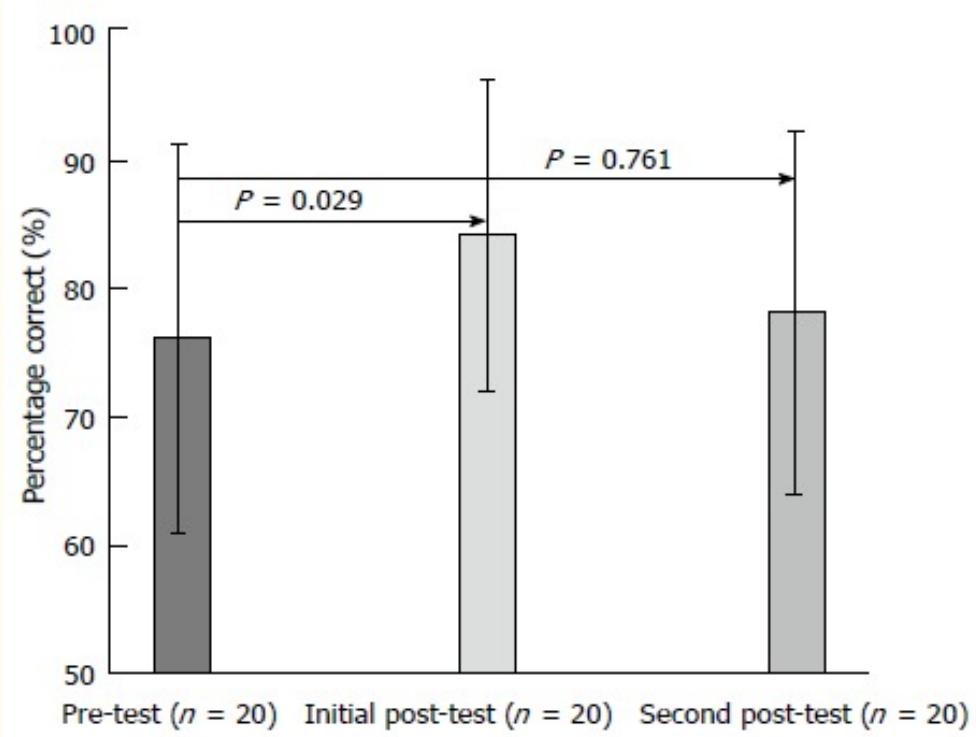
World J Crit Care Med 2016 November 4; 5(4): 212-218
ISSN 2220-3141 (online)

ORIGINAL ARTICLE

Case Control Study

Interprofessional, multiple step simulation course improves pediatric resident and nursing staff management of pediatric patients with diabetic ketoacidosis

Linnea M Larson-Williams, Amber Q Youngblood, Dawn Taylor Peterson, J Lynn Zinkan, Marjorie L White, Hussein Abdul-Latif, Leen Matalka, Stephen N Epps, Nancy M Tofil



Pediatric Emergency Care

Retention Curves for Pediatric and Neonatal Intubation Skills After Simulation-Based Training

Andreatta, Pamela B. PhD; Dooley-Hash, Suzanne L. MD; Klotz, Jessica J. BS; Hauptman, Joe G. DVM; Biddinger, Bea LVT, VTS; House, Joseph B. MD

Pediatric Emergency Care: February 2016 - Volume 32 - Issue 2 - p 71–76

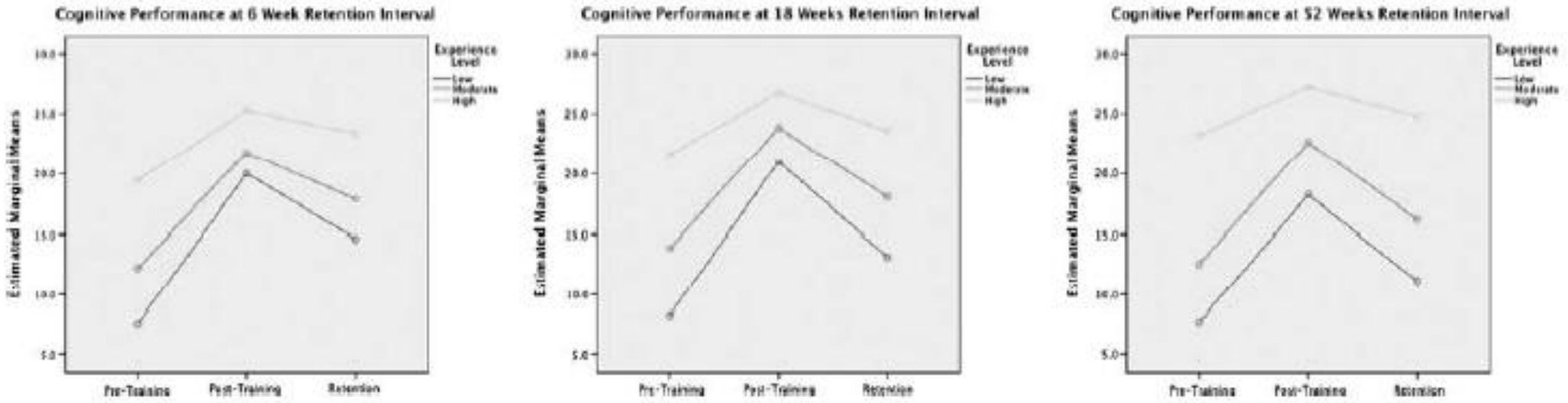


FIGURE 3. Retention interval cognitive scores by experience level.

Pediatric Emergency Care

Retention Curves for Pediatric and Neonatal Intubation Skills After Simulation-Based Training

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Pediatric Emergency Care: February 2016 - Volume 32 - Issue 2 - p 71–76

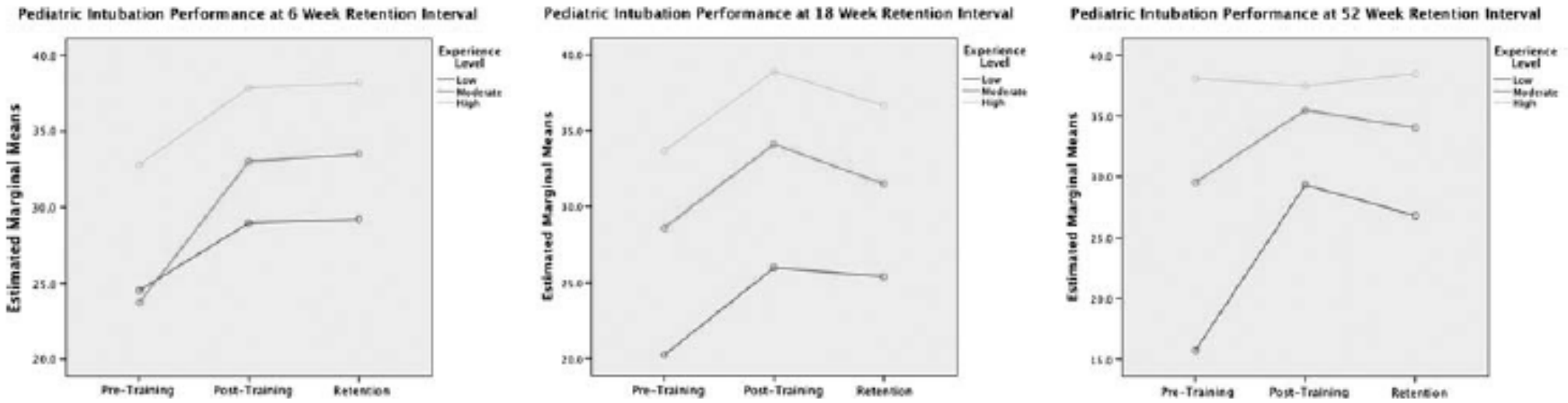


FIGURE 5. Retention interval pediatric intubation performance scores by experience level.

- **L'enseignement des soins d'urgence en pédiatrie intègre la simulation.**
- **Intérêt pour augmenter la confiance et les performances des soignants.**
- **Problématique du déclin des apprentissages.**
- **Pas d'analyse sur le patient.**

7 décembre **2018**
5e journée nationale des enseignants de CESU
Colisée **Chalon-sur-Saône**

Utilisation de l'outil éducatif axée sur les besoins des professionnels…


Alberta Children's Hospital

kidSIM™

Un système de soins de l'enfant plus sûr et plus efficace dans leur territoire

Un programme accessible à tous les intervenants autour de l'enfant :

- Les équipes interprofessionnelles de l'ACH
- Les soignants des autres structures du territoire
- Les soignants intervenant au domicile
- Les parents et les soutiens familiaux

OUR DATA SUMMARY

6514
LEARNERS
The KidSIM Program increased our annual learner intake to our highest number yet due to continued infrastructure support for space and personnel.

98%
TEAM TRAINING
Team training continues to be the main priority for the KidSIM Program.

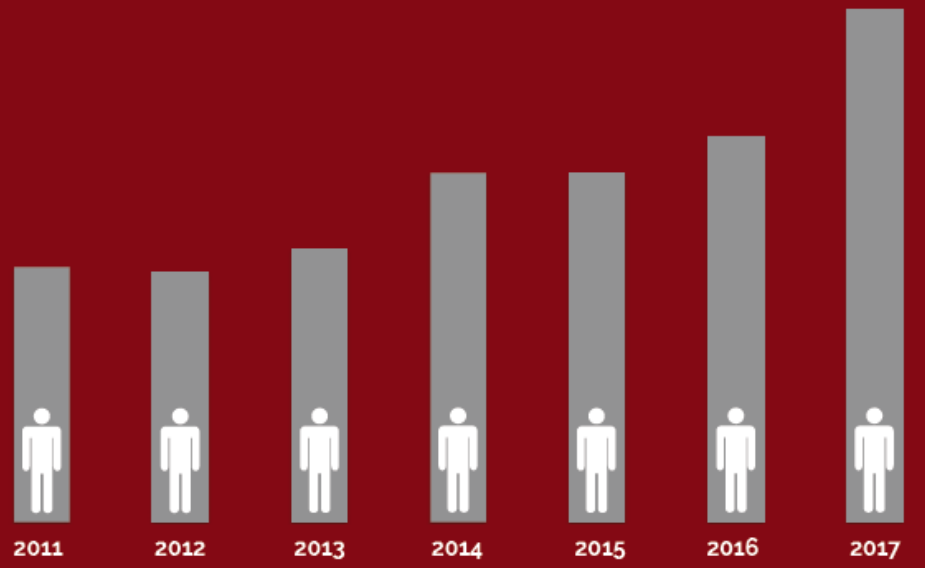
63%
INTERPROFESSIONAL
The KidSIM Program maintains a steady, yet impressive interprofessional rate.

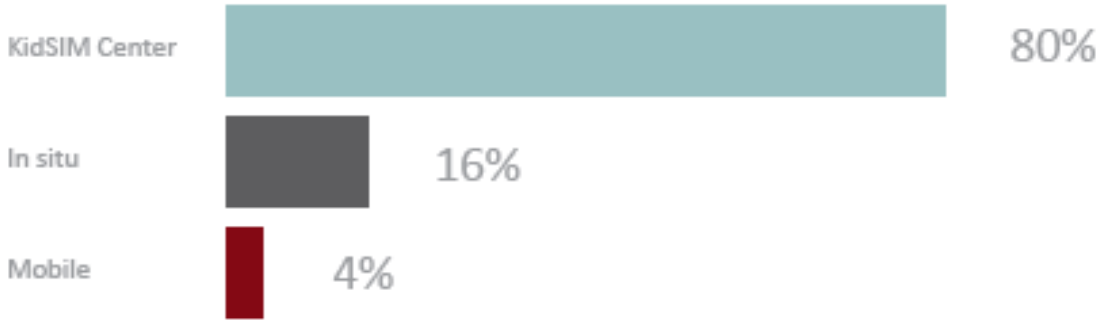
3280
SESSION HOURS
The KidSIM Centre provides additional labs and debrief rooms. KidSIM has the ability to hold larger interprofessional simulation sessions, often running all 4 labs concurrently.

82%
CAPACITY
In 2017 the KidSIM Center was able to increase our center capacity to 82%. This was achieved by booking of the center during off-peak hours in the evenings and weekends.

732
SESSIONS
KidSIM continues to offer an increasing number and variety of sessions .

OUR LEARNERS





Médecine d'urgence pédiatrique

Formation 1er cycle

- Temporalité :

Pendant stage aux urgences pédiatriques

- Interprofessionnalité :

Etudiants médecine, élèves infirmières, kiné, auxiliaires

- Compétences :

Communication, leadership, cas courants

Médecine d'urgence pédiatrique

Formation des internes

- Interprofessionnalité :

Internes en fin de cursus, IDE exerçant aux urgences pédiatriques

- Compétence :

Diriger une équipe de réanimation aux urgences

- Obligatoire tous les ans

Médecine d’urgence pédiatrique

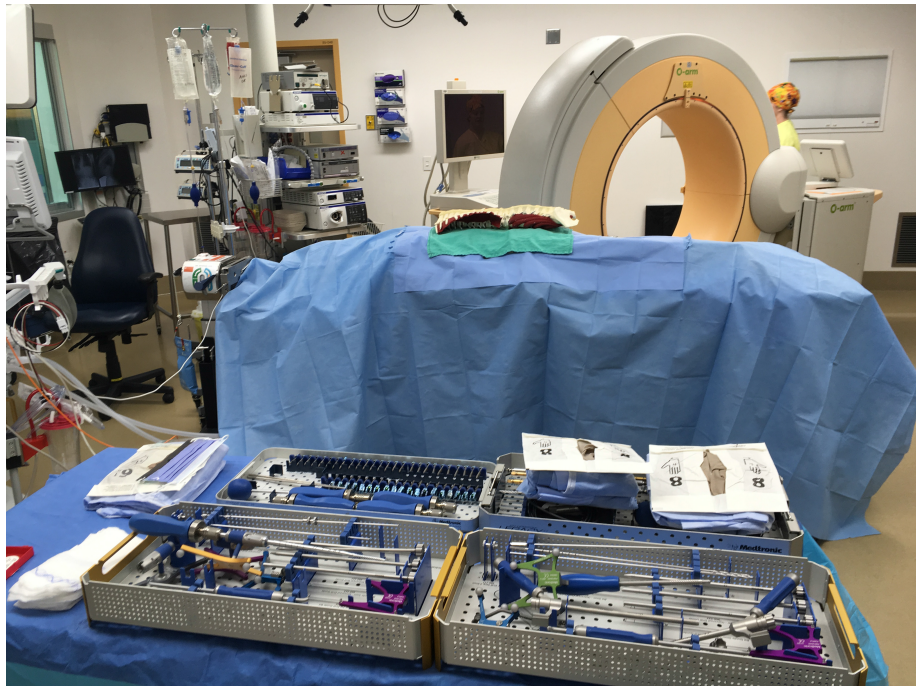
Infirmières des services d’urgence adultes

Equipes de traumatologie

Equipes d’interventions intra-hospitalières

Equipes de transport

Accompagnement de nouvel équipement



Médecine d’urgence pédiatrique

Médecins traitants et infirmières libérales

Equipes des structures du territoire

Education thérapeutique des familles, des gardiens

Journées portes-ouvertes

Just-in-time training

Programme novateur

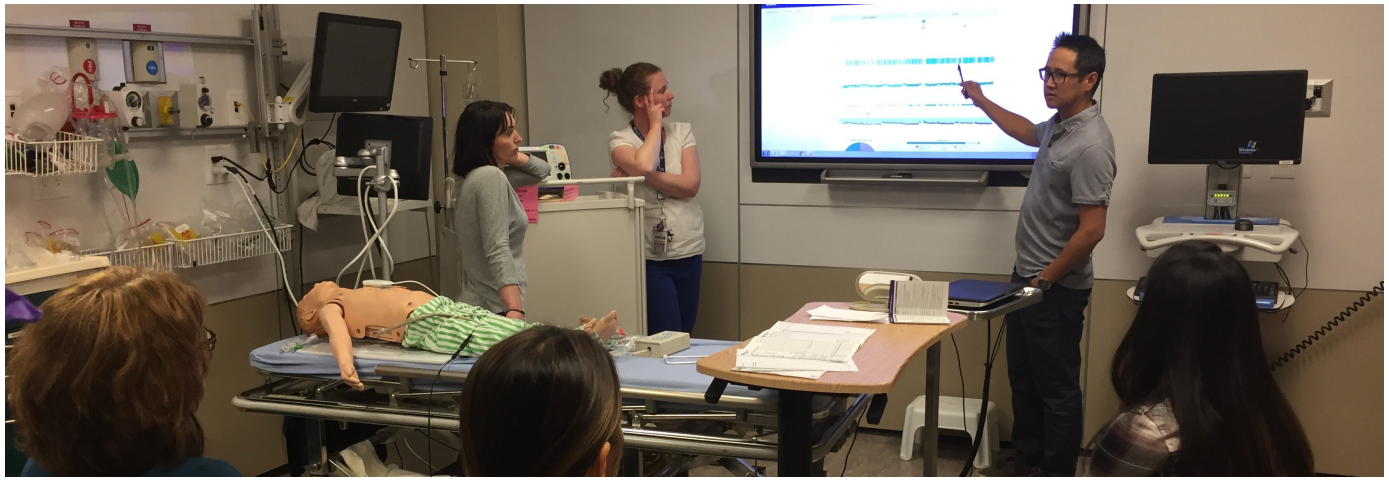
Scénarios conçus autour d'un vrai patient admis avec risque élevé de détérioration

Pour l'équipe qui s'occupe actuellement de ce patient

Joshua’s story

Accompagnement éducatif d’un patient trachéotomisé :

- Équipes interprofessionnelles de l’ACH
- Parents vers un projet de retour à domicile
- Simulations à domicile avec professionnels communautaires



Une déclinaison dans le cadre de travaux de recherche :

- Coach et feed-back de RCP en pédiatrie
- Efficacité de programmes d'éducation thérapeutique
- Confirmation par la simulation chirurgicale d'observations cliniques
- Impact de la présence de la famille pendant la RCP
- Survenue d'erreurs et cécité non-intentionnelle pendant RCP
- …

- **Place de la simulation ?**
- **Limites de son intégration dans le développement professionnel continu.**
- **Au cœur d'une stratégie le mettant au service du patient et de sa famille.**

7 décembre 2018
5e journée nationale des enseignants de CESU
Colisée Chalon-sur-Saône

PATIENT

CENTRE DE SIMULATION

TERRITOIRE