

## Recent publications in Simulation Based Education

### Simulation in Anesthesiology

- Kolawole, H., Guttormsen, A. B., Hepner, D. L., Kroigaard, M., & Marshall, S. (2019). Use of simulation to improve management of perioperative anaphylaxis: a narrative review. *British journal of anaesthesia*.
- Kovatch, K. J., Harvey, R. S., Schechtman, S. A., Healy, D. W., Malloy, K. M., Prince, M. E., & Thorne, M. C. (2019). Integrated Otolaryngology-Anesthesiology Clinical Skills and Simulation Rotation: A Novel 1-Month Intern Curriculum. *Annals of Otolaryngology, Rhinology & Laryngology*, 0003489419840682.

### Simulation in Cardiac Surgery/Cardiology

- Aeckersberg, G., Gkremoutis, A., Schmitz-Rixen, T., & Kaiser, E. (2019). The relevance of low-fidelity virtual reality simulators compared with other learning methods in basic endovascular skills training. *Journal of vascular surgery*, 69(1), 227-235. doi:10.1016/j.jvs.2018.10.047
- Chen, S. A., Ong, C. S., Malguria, N., Vricella, L. A., Garcia, J. R., & Hibino, N. (2018). Digital design and 3D printing of aortic arch reconstruction in HLHS for surgical simulation and training. *World Journal for Pediatric and Congenital Heart Surgery*, 9(4), 454-458. doi:10.1177/2150135118771323
- Duffy, M. C., Ibrahim, M., & Lachapelle, K. (2018). Development of a saphenous vein harvest model for simulation-based assessment. *The Journal of Thoracic and Cardiovascular Surgery*, doi:10.1016/j.jtcvs.2018.07.042
- Gustavsen, P. H., Nielsen, D. G., Paltved, C., Konge, L., & Nayahangan, L. J. (2019). A national needs assessment study to determine procedures for simulation-based training in cardiology in Denmark. *Scandinavian Cardiovascular Journal*, 53(1), 35-41.
- Robinson, D. A., Piekut, D. T., Hasman, L., & Knight, P. A. (2019). Cadaveric simulation training in cardiothoracic surgery: A systematic review. *Anatomical sciences education*.
- Tajti, P., & Brilakis, E. S. (2018). Medical simulation in interventional cardiology: "More research is needed". *Catheterization and Cardiovascular Interventions : Official Journal of the Society for Cardiac Angiography & Interventions*, 91(6), 1060-1061. doi:10.1002/ccd.27627 [doi]
- Whitmore, S. P., Gunnerson, K. J., Haft, J. W., Lynch, W. R., VanDyck, T., Hebert, C., . . . Neumar, R. W. (2019). Simulation training enables emergency medicine providers to rapidly and safely initiate extracorporeal cardiopulmonary resuscitation (ECPR) in a simulated cardiac arrest scenario. *Resuscitation*, 138, 68-73. doi:S0300-9572(19)30061-9 [pii]
- Young, M. N., Markley, R., Leo, T., Coffin, S., Davidson, M. A., Salloum, J., . . . Damp, J. B. (2018). Effects of advanced cardiac procedure simulator training on learning and performance in cardiovascular medicine fellows. *Journal of Medical Education and Curricular Development*, 5, Dec. doi:10.1177/2382120518803118 [doi]

## **Simulation in Dermatology**

- Hazan, E., Torbeck, R., Connolly, D., Wang, J. V., Griffin, T., Keller, M., & Trufant, J. (2018). Cadaveric simulation for improving surgical training in dermatology.
- Mitkov, M. V., Thomas, C. S., Cochuyt, J. J., Forte, A. J., & Perdakis, G. (2018). Simulation: an effective method of teaching cosmetic botulinum toxin injection technique. *Aesthetic surgery journal*, 38(12), NP207-NP212.

## **Simulation in Emergency Medicine**

- Deutsch, E. S., & Patterson, M. D. (2019). Simulation saves the day (and patient). *Otolaryngologic Clinics of North America*, 52(1), 115-121. doi:S0030-6665(18)30160-9 [pii]
- Drees, S., Geffert, K., & Brynen, R. (2018). Crisis on the game board - a novel approach to teach medical students about disaster medicine. *GMS Journal for Medical Education*, 35(4), Doc46. doi:10.3205/zma001192
- Garcia-Jorda, D., Walker, A., Camphaug, J., Bissett, W., Spence, T., Martin, D., . . . Gilfoyle, E. (2019). Bedside chest compression skills: Performance and skills retention in in-hospital trained pediatric providers. A simulation study. *Journal of Critical Care*, 50, 132-137. doi://doi.org/10.1016/j.jcrc.2018.11.033
- Jeffers, J. M., & Poling, S. (2019). The development and implementation of a 12-month simulation-based learning curriculum for pediatric emergency medicine fellows utilizing debriefing with good judgment and rapid cycle deliberate practice. *BMC medical education*, 19(1), 22.
- Kalidindi, S., Kirk, M., & Griffith, E. (2018). In-situ simulation enhances emergency preparedness in pediatric care practices. *Cureus*, 10(10), e3389. doi:10.7759/cureus.3389
- Kishimoto, N., Mukai, N., Honda, Y., Hirata, Y., Tanaka, M., & Momota, Y. (2018). Simulation training for medical emergencies in the dental setting using an inexpensive software application. *European Journal of Dental Education : Official Journal of the Association for Dental Education in Europe*, 22(3), e357. doi:10.1111/eje.12301 [doi]
- McCoy, C. E., Rahman, A., Rendon, J. C., Anderson, C. L., Langdorf, M. I., Lotfipour, S., & Chakravarthy, B. (2019). Randomized controlled trial of simulation vs. standard training for teaching medical students high-quality cardiopulmonary resuscitation. *The Western Journal of Emergency Medicine*, 20(1), 15. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/30643596>
- Murphy, M., Curtis, K., Lam, M. K., Palmer, C. S., Hsu, J., & McCloughen, A. (2018). Simulation-based multidisciplinary team training decreases time to critical operations for trauma patients. *Injury*, 49(5), 953-958. doi:S0020-1383(18)30009-3 [pii]
- Ng, V., Plitt, J., & Biffar, D. (2018). Development of a novel ultrasound-guided peritonsillar abscess model for simulation training. *The Western Journal of Emergency Medicine*, 19(1), 172-176. doi:10.5811/westjem.2017.11.36427
- Prickett, K., Deshpande, A., Paschal, H., Simon, D., & Hebbar, K. B. (2019). Simulation-based education to improve emergency management skills in caregivers

of tracheostomy patients. *International journal of pediatric otorhinolaryngology*, 120, 157-161.

- Thaut, L., Weymouth, W., Hunsaker, B., & Reschke, D. (2019). Evaluation of Central Venous Access with Accelerated Seldinger Technique Versus Modified Seldinger Technique. *The Journal of emergency medicine*, 56(1), 23-28.
- Thorpe, R. L., Rohant, N., Cryer, M., & Gainey, C. (2019). Inappropriately firing defibrillator: A simulation case for emergency medicine residents. *MedEdPORTAL : The Journal of Teaching and Learning Resources*, 15, 8265.10808. doi:10.15766/mep\_2374-8265.10808 [doi]
- Whitmore, S. P., Gunnerson, K. J., Haft, J. W., Lynch, W. R., VanDyck, T., Hebert, C., . . . Neumar, R. W. (2019). Simulation training enables emergency medicine providers to rapidly and safely initiate extracorporeal cardiopulmonary resuscitation (ECPR) in a simulated cardiac arrest scenario. *Resuscitation*, 138, 68-73. doi:S0300-9572(19)30061-9 [pii]
- Yuan, Y. Y., Scott, S., Van Horn, N., Oke, O., & Okada, P. (2019). Objective evaluation of a simulation course for residents in the pediatric emergency medicine department: Breaking bad news. *Cureus*, 11(1), e3903. doi:10.7759/cureus.3903 [doi]

### **Simulation in Inter-professional Education**

- George, K., & Quatrara, B. (2018). Interprofessional simulations promote knowledge retention and enhance perceptions of teamwork skills in a surgical-trauma-burn intensive care unit setting. *Dimensions of Critical Care Nursing*, 37(3), 144-155. doi:10.1097/DCC.0000000000000301
- Komasa, N., Ohashi, T., Take, A., Doi, Y., Kadoyama, K., Terasaki, F., ... & Akazawa, C. (2019). Hybrid simulation training utilizing augmented reality and simulator for interprofessional advanced life support training. *Journal of clinical anesthesia*, 57, 106.
- Meny, L. M., de Voest, M. C., & Salvati, L. A. (2019). Assessment of student pharmacist learning within an interprofessional simulation: A comparison of small group vs. large group debriefing. *Currents in Pharmacy Teaching and Learning*, 11(5), 533-537.
- Timmis, J., Orlu, M., & Park, S. (2018). Educational potential of using virtual patients for promoting interprofessional learning between medical and pharmacy students: A qualitative study. *Journal of interprofessional care*, 32(6), 794-796.

### **Simulation in Neurosurgery**

- Tai, B. L., Rooney, D., Stephenson, F., Liao, P., Sagher, O., Shih, A. J., & Savastano, L. E. (2015). Development of a 3D-printed external ventricular drain placement simulator: Technical note. *Journal of Neurosurgery*, 123(4), 1070-1076. doi:10.3171/2014.12.JNS141867
- Odom, M., Gomez, J. R., Danelson, K. A., & Sarwal, A. (2019). Development of a Homemade Spinal Model for Simulation to Teach Ultrasound Guidance for Lumbar Puncture. *Neurocritical care*, 1-9.

- Oliveira, L. M., & Figueiredo, E. G. (2019). Simulation training methods in neurological surgery. *Asian journal of neurosurgery*, 14(2), 364.
- Rostanski, S. K., Kurzweil, A. M., Zabbar, S., Balcer, L. J., Ishida, K., Galetta, S. L., & Lewis, A. (2018). Education Research: Simulation training for neurology residents on acquiring tPA consent: An educational initiative. *Neurology*, 91(24), e2276-e2279.

### **Simulation in Nursing**

- Bracq, M. S., Michinov, E., Arnaldi, B., Caillaud, B., Gibaud, B., Gouranton, V., & Jannin, P. (2019). Learning procedural skills with a virtual reality simulator: An acceptability study. *Nurse education today*, 79, 153-160.
- Covington, C. C., Muckler, V. C., Sheldon, L., Alexander, R., & Morgan, B. (2019). Improving Emergency Airway Knowledge and Self-Efficacy Levels of Outpatient Gastroenterology Staff via Implementation of Online Education and In Situ Simulation. *Gastroenterology Nursing*, 42(3), 242-250.
- Eyikara, E., & Baykara, Z. G. (2018). Effect of simulation on the ability of first year nursing students to learn vital signs. *Nurse Education Today*, 60, 101-106. doi:10.1016/j.nedt.2017.09.023
- Guimond, M. E., Foreman, S. E., & Werb, M. (2019). Evaluation of an unfolding obstetric experience simulation in an undergraduate nursing program. *Nurse education today*, 79, 124-128.

### **Simulation in OBGYN**

- Andreasen, L. A., Tabor, A., Nørgaard, L. N., Ringsted, C., Sandager, P., Rosthøj, S., & Tolsgaard, M. G. (2019). Is simulation training only for inexperienced trainees? A multicenter randomized trial exploring the effects of simulation-based ultrasound training on obstetricians' diagnostic accuracy. *Ultrasound in Obstetrics & Gynecology*. Advance online publication. doi : 10.1002/uog.20362.
- Cornette, J. M., & Erkamp, J. (2018). Internal podalic version and breech extraction: Enhancing realistic sensations in a simulation model. *Obstetrics & Gynecology*, 131(2), 360-363. doi:10.1097/AOG.0000000000002424
- Kogutt, B. K., Sheffield, J. S., Whyne, D., Maragakis, L. L., Andonian, J., Flinn, J., ... & Maloney, R. (2019). Simulation of a spontaneous vaginal delivery and neonatal resuscitation in a biocontainment unit. *Health security*, 17(1), 18-26.
- Nitsche, J. F., Butler, T. R., Shew, A. W., Jin, S., & Brost, B. C. (2018). Optimizing the amount of simulation training used to teach vaginal delivery skills to medical students. *International Journal of Gynecology & Obstetrics*, 140(1), 123-127. doi:10.1002/ijgo.12329

### **Simulation in Ophthalmology**

- Adebayo, T., Abendroth, M., Elera, G. G., Kunselman, A., Sinz, E., Ely, A., ... & Soni, A. (2018). Developing and validating a simple and cost-effective strabismus surgery simulator. *Journal of American Association for Pediatric Ophthalmology and Strabismus*, 22(2), 85-88.

- Rasmussen, R. C., Grauslund, J., & Vergmann, A. S. (2019). Simulation training in vitreoretinal surgery: a systematic review. *BMC ophthalmology*, 19(1), 90.

### **Simulation in Orthopedics**

- Cetinkaya, E., Cift, H., Aybar, A., Ercin, E., Guler, G. B., & Poyanli, O. (2017). The timing and importance of motor skills course in knee arthroscopy training. *Acta Orthopaedica Et Traumatologica Turcica*, 51(4), 273-277. doi:S1017-995X(16)30346-7 [pii]
- Frank, R. M., Rego, G., Grimaldi, F., Salem, H. S., Romeo, A. A., Cole, B. J., & Adams, C. R. (2019). Does Arthroscopic Simulation Training Improve Triangulation and Probing Skills? A Randomized Controlled Trial☆. *Journal of surgical education*, 76(4), 1131-1138.
- Gustafsson, A., Pedersen, P., Rømer, T. B., Viberg, B., Palm, H., & Konge, L. (2019). Hip-fracture osteosynthesis training: exploring learning curves and setting proficiency standards. *Acta orthopaedica*, 1-9.
- Heaton, S. R., Little, Z., Akhtar, K., Ramachandran, M., & Lee, J. (2016). Using simulation to train orthopaedic trainees in non-technical skills: A pilot study. *World Journal of Orthopedics*, 7(8), 475. doi:10.5312/wjo.v7.i8.475

### **Simulation in Pediatrics**

- McClelland, T. J., Ford, K., Dagash, H., Lander, A., & Lakhoo, K. (2019). Low-fidelity Paediatric Surgical Simulation: Description of Models in Low-Resource Settings. *World journal of surgery*, 43(5), 1193-1197.
- McMillan, H. J., Writer, H., Moreau, K. A., Eady, K., Sell, E., Lobos, A., . . . Doja, A. (2016). Lumbar puncture simulation in pediatric residency training: Improving procedural competence and decreasing anxiety. *BMC Medical Education*, 16(1) doi:10.1186/s12909-016-0722-1

### **Simulation in Radiology**

- Ali, S., Qandeel, M., Ramakrishna, R., & Yang, C. W. (2018). Virtual simulation in enhancing procedural training for fluoroscopy-guided lumbar puncture: A pilot study. *Academic Radiology*, 25(2), 235. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/29032887>
- Nayahangan, L., Nielsen, K., Albrecht-Beste, E., Bachmann Nielsen, M., Paltved, C., Lindorff-Larsen, K., . . . Konge, L. (2018). Determining procedures for simulation-based training in radiology: A nationwide needs assessment. *European Radiology*, 28(6), 2319-2327. doi:10.1007/s00330-017-5244-7

### **Simulation in Surgery**

- AbdelFattah, K. R., Spalding, M. C., Leshikar, D., & Gardner, A. K. (2018). Team-based simulations for new surgeons: Does early and often make a difference? *Surgery*, 163(4), 912-915. doi:S0039-6060(17)30825-5 [pii]

- AlAli, A. B., Griffin, M. F., Calonge, W. M., & Butler, P. E. (2018). Evaluating the use of cleft lip and palate 3D-printed models as a teaching aid. *Journal of Surgical Education, 75*(1), 200-208. doi:10.1016/j.jsurg.2017.07.023
- Bugdadi, A., Sawaya, R., Olwi, D., Al-Zhrani, G., Azarnoush, H., Sabbagh, A. J., . . . Del Maestro, R. (2018). Automaticity of force application during simulated brain tumor resection: Testing the fitts and posner model. *Journal of Surgical Education, 75*(1), 104-115. doi:10.1016/j.jsurg.2017.06.018
- Cook, D. A., Andersen, D. K., Combes, J. R., Feldman, D. L., & Sachdeva, A. K. (2018). The value proposition of simulation-based education. *Surgery, 163*(4), 944-949. doi:10.1016/j.surg.2017.11.008
- Cooke, J. M., Rooney, D. M., Fernandez, G. L., & Farley, D. R. (2018). Simulation center best practices: A review of ACS-accredited educational institutes' best practices, 2011 to present. *Surgery, 163*(4), 916-920. doi:10.1016/j.surg.2017.11.004
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- Franklin, B. R., Placek, S. B., Gardner, A. K., Korndorffer Jr, J. R., Wagner, M. D., Pearl, J. P., & Ritter, E. M. (2018). Preparing for the American Board of Surgery Flexible Endoscopy Curriculum: Development of multi-institutional proficiency-based training standards and pilot testing of a simulation-based mastery learning curriculum for the Endoscopy Training System. *The American Journal of Surgery, 216*(1), 167-173.
- Gurung, P. M., Campbell, T., Wang, B., Joseph, J. V., & Ghazi, A. E. (2019). Accelerated Skills Acquisition Protocol (ASAP) in optimizing robotic surgical simulation training: a prospective randomized study. *World journal of urology, 1*-8.
- Julian, D., Tanaka, A., Mattingly, P., Truong, M., Perez, M., & Smith, R. (2018). A comparative analysis and guide to virtual reality robotic surgical simulators. *The International Journal of Medical Robotics and Computer Assisted Surgery, 14*(1), n/a. doi:10.1002/rcs.1874
- Lindquist, N. R., Leach, M., Simpson, M. C., & Antisdell, J. L. (2019). Evaluating Simulator-Based Teaching Methods for Endoscopic Sinus Surgery. *Ear, Nose & Throat Journal, 0145561319844742*.
- litani, Y., Tsuda, H., Ito, Y., Moriyama, Y., Nakano, T., Imai, K., . . . Kikkawa, F. (2018). Simulation training is useful for shortening the decision-to-delivery interval in cases of emergent cesarean section. *The Journal of Maternal-Fetal & Neonatal Medicine : The Official Journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstetricians, 31*(23), 3128-3132. doi:10.1080/14767058.2017.1365126
- Maddox, M., Feibus, A., Liu, J., Wang, J., Thomas, R., & Silberstein, J. (2018). 3D-printed soft-tissue physical models of renal malignancies for individualized surgical simulation: A feasibility study. *Journal of Robotic Surgery, 12*(1), 27-33. doi:10.1007/s11701-017-0680-6
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- Newcomb, A. B., Liu, C., Trickey, A. W., & Dort, J. (2018). Tell me straight: Teaching residents to disclose adverse events in surgery. *Journal of Surgical Education*, doi:10.1016/j.jsurg.2018.08.006
- Podolsky, D. J., Fisher, D. M., Wong Riff, K. W., Szasz, P., Looi, T., Drake, J. M., & Forrest, C. R. (2018). Assessing technical performance and determining the learning curve in cleft palate surgery using a high-fidelity cleft palate simulator. *Plastic and Reconstructive Surgery*, 141(6), 1485-1500. doi:10.1097/PRS.0000000000004426 [doi]
- Stephenson, E. D., Farquhar, D. R., Masood, M. M., Capra, G., Kimple, A., Ebert Jr, C. S., ... & Zanation, A. M. (2019). Blinded Evaluation of Endoscopic Skill and Instructability After Implementation of an Endoscopic Simulation Experience. *American journal of rhinology & allergy*, 1945892419860973.
- Vento, V., Cercenelli, L., Mascoli, C., Gallitto, E., Ancetti, S., Faggioli, G., . . . Stella, A. (2018). The role of simulation in boosting the learning curve in EVAR procedures. *Journal of Surgical Education*, 75(2), 534-540. doi:10.1016/j.jsurg.2017.08.013
- Whittaker, G., Aydin, A., Raveendran, S., Dar, F., Dasgupta, P., & Ahmed, K. (2019). Validity assessment of a simulation module for robot-assisted thoracic lobectomy. *Asian Cardiovascular and Thoracic Annals*, 27(1), 23-29.
- Zheng, Y., Corvi, J. J., Nicolas, C. F., & Akelina, Y. (2019). Supermicrosurgery simulation training program for submillimeter anastomoses in the rat epigastric artery and vein. *Microsurgery*.

## Simulation in Urology

- Akgul, A. K., Unal, D., Demirbas, M., Oner, S., Ucar, M., Akgul, K., ... & Aydos, M. (2018). A Simple, Non-Biological Model for Percutaneous Renal Access Training. *Urology journal*, 15(2), 1-5.
- Dalkılıç, A., Bayar, G., Demirkan, H., & Horasanli, K. (2018). The learning curve of sting method for endoscopic injection treatment of vesicoureteral reflux. *International braz j urol*, 44(6), 1200-1206.
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- Pinheiro, E. F. M., Barreira, M. A., Moura Junior, L. G. D., Mesquita, C. J. G. D., & Silveira, R. A. D. (2018). Simulated training of a laparoscopic vesicourethral anastomosis. *Acta cirurgica brasileira*, 33(8), 713-722.

- Rai, A., Scovell, J. M., Xu, A., Balasubramanian, A., Siller, R., Kohn, T., ... & Link, R. E. (2018). Patient-specific Virtual Simulation—A State of the Art Approach to Teach Renal Tumor Localization. *Urology*, *120*, 42-48.
- Shim, J. S., Noh, T. I., Kim, J. Y., Pyun, J. H., Cho, S., Oh, M. M., ... & Kang, S. G. (2018). Predictive validation of a robotic virtual reality simulator: the tube 3 module for practicing vesicourethral anastomosis in robot-assisted radical prostatectomy. *Urology*, *122*, 32-36.
- Somasundram, K., Spence, H., Colquhoun, A. J., Mcilhenny, C., Biyani, C. S., & Jain, S. (2018). Simulation in urology to train non-technical skills in ward rounds. *BJU international*, *122*(4), 705-712.
- Von Rundstedt, F. C., Aghazadeh, M. A., Scovell, J., Slawin, J., Armstrong, J., Silay, S., & Goh, A. C. (2018). Validation of a simulation-training model for robotic intracorporeal bowel anastomosis using a step-by-step technique. *Urology*, *120*, 125-130.