

Appendix 3 – Comparative studies with simulator used only as assessment intervention

- 1 BUCX, M.J., VAN GEEL, R.T., WEGENER, J.T., ROBERS, C., & STIJNEN, T. (1995) Does experience influence the forces exerted on maxillary incisors during laryngoscopy? A manikin study using the Macintosh laryngoscope. *Canadian Journal of Anaesthesia*, 42(2), pp. 144-149.
- 2 BYRNE, A.J., & JONES, J.G. (1997) Responses to simulated anaesthetic emergencies by anaesthetists with different durations of clinical experience. *British Journal of Anaesthesia*, 78(5), pp. 553-536.
- 3 DATTA, V., MANDALIA, M., MACKAY, S., & DARZI, A. (2002) The PreOp flexible sigmoidoscopy trainer. Validation and early evaluation of a virtual reality based system. *Surgical Endoscopy*, 16(10), pp. 1459-1463.
- 4 DEANDA, A., & GABA, D.M. (1991) Role of experience in the response to simulated critical incidents. *Anesthesia & Analgesia*, 72(3), pp. 308-315.
- 5 DEROSIS, A.M., ANTONIUK, M., & FRIED, G.M. (1999) Evaluation of laparoscopic skills: a 2-year follow-up during residency training. *Canadian Journal of Surgery*, 42(4), pp. 293-296.
- 6 DEVITT, J.H., KURREK, M.M., COHEN, M.M., & CLEAVE-HOGG, D. (2001) The validity of performance assessments using simulation. *Anesthesiology*, 95(1), pp. 36-42.
- 7 DORAFSHAR, A.H., O'BOYLE, D.J., & McCLOY, R.F. (2002) Effects of a moderate dose of alcohol on simulated laparoscopic surgical performance. *Surgical Endoscopy*, 16(12), pp. 1753-1758.
- 8 EASTRIDGE, B.J., HAMILTON, E.C., O'KEEFE, G.E., REGE, R.V., VALENTINE, R.J., JONES, D.J., TESFAY, S., & THAL, E.R. (2003) Effect of sleep deprivation on the performance of simulated laparoscopic surgical skill. *The American Journal of Surgery*, 186(2), pp. 169-174.
- 9 EMAM, T.A., HANNA, G.B., KIMBER, C., & CUSCHIERI, A. (2000) Differences between experts and trainees in the motion pattern of the dominant upper limb during intracorporeal endoscopic knotting. *Digestive Surgery*, 17, pp. 120-125.
- 10 FRANCIS, N.K., HANNA, G.B., & CUSCHIERI, A. (2002) The performance of master surgeons on the advanced Dundee endoscopic psychomotor tester: contrast validity study. *Archives of Surgery*, 137(7), pp. 841-844.
- 11 FRASER, S.A., KLASSEN, D.R., FELDMAN, L.S., GHITULESCU, G.A., STANBRIDGE, D., & FRIED, G.M. (2003) Evaluating laparoscopic skills. *Surgical Endoscopy*, 17(6), pp. 964-947.
- 12 GABA, D.M., & DEANDA, A. (1989) The response of anesthesia trainees to simulated critical incidents. *Anesthesia & Analgesia*, 68(4), pp. 444-451.
- 13 GALLAGHER, A.G., RICHIE, K., McCLURE, N., & McGUIGAN, J. (2001) Objective psychomotor skills assessment of experienced, junior, and novice laparoscopists with virtual reality. *World Journal of Surgery*, 25(11), pp. 1478-1483.
- 14 GALLAGHER, H.J., ALLAN, J.D., & TOLLEY, D.A. (2001) Spatial awareness in urologists: are they different? *British Journal of Urology International*, 88, pp. 666-670.
- 15 GRANTCHAROV, T.P., BARDRAM, L., FUNCH-JENSEN, P., & ROSENBERG, J. (2003) Impact of hand dominance, gender, and experience with computer games on performance in virtual reality laparoscopy. *Surgical Endoscopy*, 17(7), pp. 1082-1085.
- 16 GRANTCHAROV, T.P., BARDMAN, L., FUNCH-JENSEN, P., & ROSENBERG, J. (2001) Laparoscopic performance after one night on call in a surgical department: prospective study. *British Medical Journal*, 323, pp. 1222-1223.
- 17 HALUCK, R.S., WEBSTER, R.W., SNYDER, A.J., MELKONIAN, M.G., MOHLER, B.J., DISE, M.L., & LEFEVER, A. (2001) A virtual reality surgical trainer for navigation in laparoscopic surgery. *Studies in Health Technology & Informatics*, 81, pp. 171-177.
- 18 HANNA, G.B., CRESSWELL, A.B., & CUSCHIERI, A. (2002) Shadow depth cues and endoscopic task performance. *Archives of Surgery*, 137, pp. 1166-1169.
- 19 HOLCOMB, J.B., DUMIRE, R.D., CROMMETT, J.W., STAMATERIS, C.E., FAGERT, M.A., CLEVELAND, J.A., DORLAC, G.R., DORLAC, W.C., BONAR, J.P., HIRA, K., AOKI, N., & MATTOX, K.L. (2002) Evaluation of trauma team performance using an advanced human patient simulator for resuscitation training. *The Journal of Trauma Injury, Infection & Critical Care*, 52(6), pp. 1078-1085.
- 20 HOTCHKISS, M.A., BIDDLE, C., & FALLACARO, M. (2002) Assessing the authenticity of the human simulation experience in anesthesiology. *American Association of Nurse Anesthetists Journal*, 70(6), pp. 470-473.
- 21 HOWARD, S.K., GABA, D.M., SMITH, B.E., WEINGER, M.B., HERNDON, C., KESHAVACHARYA, S., & ROSEKIND, M.R. (2003) Simulation study of rested versus sleep-deprived anesthesiologists. *Anesthesiology*, 98(6), pp. 1345-1355.
- 22 JOHNSTON, R., BHOYRUL, S., WAY, L., SATAVA, R., MCGOVERN, K., FLETCHER, J.D., RANGEL, S., & LOFTIN, R.B. (1996) Assessing a virtual reality surgical skills simulator. *Studies in Health Technology & Informatics*, 29, pp. 608-617.
- 23 JONES, D.B., BREWER, J.D., & SOPER, N.J. (1996) The influence of three-dimensional video systems on laparoscopic task performance. *Surgical Laparoscopy & Endoscopy*, 6(3), pp. 191-197.

- 24 JONES, J.S., HUNT, S.J., CARLSON, S.A., & SEAMON, J.P. (1997) Assessing bedside cardiologic examination skills using "Harvey," a cardiology patient simulator. *Academic Emergency Medicine*, 4(10), pp. 980-985.
- 25 LAMPOTANG, S. (1998) Influence of pulse oximetry and capnography on time to diagnosis of critical incidents in anesthesia: a pilot study using a full-scale patient simulator. *Journal of Clinical Monitoring & Computing*, 14(5), pp. 313-321.
- 26 MACKAY, S., DATTA, V., CHANG, A., SHAH, J., KNEEBONE, R., & DARZI, A. (2003) Multiple Objective Measures of Skill (MOMS): A new approach to the assessment of technical ability in surgical trainees. *Annals of Surgery*, 238(2), pp. 291-300.
- 27 MacDONALD, J., KETCHUM, J., WILLIAMS, R.G., & ROGERS, L.Q. (2003) A lay person versus a trained endoscopist. Can the PreOp Endoscopy simulator detect a difference? *Surgical Endoscopy*, 17(6), pp. 896-898.
- 28 MAHMOOD, T., & DARZI, A. (2003) A study to validate the colonoscopy simulator. *Surgical Endoscopy*, 17(10), pp. 1583-1589.
- 29 MCCARTHY, A., HARLEY, P., & SMALLWOOD, R. (1999) Virtual arthroscopy training: do the "virtual skills" developed match the real skills required? *Studies in Health Technology & Informatics*, 62, pp. 221-227.
- 30 McNATT, S.S., & SMITH, C.D. (2001) A computer-based laparoscopic skills assessment device differentiates experienced from novice laparoscopic surgeons. *Surgical Endoscopy*, 15, pp. 1085-1089.
- 31 MOORTHY, K., MUNZ, Y., DOSIS, A., BANN, S., & DARZI, A. (2003) The effect of stress-inducing conditions on the performance of a laparoscopic task. *Surgical Endoscopy*, 17(9), pp. 1481-1484.
- 32 MORGAN, P.J., & CLEAVE-HOGG, D. (2002) Comparison between medical students' experience, confidence and competence. *Medical Education*, 36(6), pp. 534-539.
- 33 MORGAN, P.J., & CLEAVE-HOGG, D. (2000) Evaluation of medical students' performance using the anaesthesia simulator. *Medical Education*, 34(1), pp. 42-45.
- 34 MURRAY, D., BOULET, J., ZIV, A., WOODHOUSE, J., KRAS, J., & McALLISTER, J. (2002) An acute care skills evaluation for graduating medical students: a pilot study using clinical simulation. *Medical Education*, 36(9), pp. 833-841.
- 35 NAKAJIMA, K., WASA, M., TAKIGUCHI, S., TANIGUCHI, E., SOH, H., OHASHI, S., & OKADA, A. (2003) A modular laparoscopic training program for pediatric surgeons. *Journal of the Society of Laparoendoscopic Surgeons*, 7(1), pp. 33-37.
- 36 NEUMANN, M., FRIEDL, S., MEINING, A., EGGER, K., HELDWEIN, W., REY, J.F., HOCHBERGER, J., CLASSEN, M., HOHENBERGER, W., & ROSCH, T. (2002) A score card for upper GI endoscopy: evaluation of interobserver variability in examiners with various levels of experience. *Z Gastroenterology*, 40(10), pp. 857-862.
- 37 PAISLEY, A.M., BALDWIN, P.J., & PATERSON-BROWN, S. (2001) Validity of surgical simulation for the assessment of operative skill. *British Journal of Surgery*, 88, pp. 1525-1532.
- 38 PEDOWITZ, R.A., ESCH, J., & SNYDER S. Evaluation of a virtual reality simulator for arthroscopy skills development. *Arthroscopy*, 18(6), pp. 1-6.
- 39 PICHICHERO, M.E., & POOLE, M.D. (2001) Assessing diagnostic accuracy and tympanocentesis skills in the management of otitis media. *Archives of Pediatric Adolescent Medicine*, 155(10), pp. 1137-1142.
- 40 PUGH, C.M., & YOUNGBLOOD, P. (2002) Development and validation of assessment measures for a newly developed physical examination simulator. *Journal of the American Medical Informatics Association*, 9(5), pp. 448-460.
- 41 REZNEK, M.A., RAWN, C.L., & KRUMMEL, T.M. (2002) Evaluation of the educational effectiveness of a virtual reality intravenous insertion simulator. *Academic Emergency Medicine*, 9(11), pp. 1319-1325.
- 42 REZNICK, R., REGEHR, G., MACRAE, H., MARTIN, J., & McCULLOCH, W. (1996) Testing technical skill via an innovative bench station examination. *The American Journal of Surgery*, 172, pp. 226-230.
- 43 RISSUCCI, D., GEISS, A., GELLMAN, L., PINARD, B., & ROSSER, J. (2001) Surgeon-specific factors in the acquisition of laparoscopic surgical skills. *The American Journal of Surgery*, 181(4), pp. 289-293.
- 44 ROGERS, P.L., JACOB, H., RASHWAN, A.S., & PINSKY, M.R. (2001) Quantifying learning in medical students during a critical care medicine elective: a comparison of three evaluation instruments. *Critical Care Medicine*, 29(6), pp. 1268-1273.
- 45 SCHIJVEN, M., & JAKIMOWICZ, J. (2003) Construct validity: experts and novices performing on the Xitact LS500 laparoscopy simulator. *Surgical Endoscopy*, 17(5), 803-810.
- 46 SCHIJVEN, M., & JAKIMOWICZ, J. (2002) Face-, expert and referent validity of the Xitact LS500 laparoscopy simulator. *Surgical Endoscopy*, 16(12), pp. 1764-1770.
- 47 SCHIJVEN, M.P., JAKIMOWICZ, J., & SCHOT, C. (2002) The advanced Dundee endoscopic psychomotor tester (ADEPT) objectifying subjective psychomotor test performance. *Surgical Endoscopy*, 16(6), pp. 943-948.
- 48 SCHWID, H.A., ROOKE, G.A., MICHALOWSKI, P., & ROSS, B.K. (2001) Screen-based anesthesia simulation with debriefing improves performance in a mannequin-based anesthesia simulator. *Teaching & Learning in Medicine*, 13(2), pp. 92-96.
- 49 SEDLACK, R.E., & KOLARS, J.C. (2003) Validation of a computer-based colonoscopy simulator. *Gastrointestinal Endoscopy*, 57(2), pp. 214-218.

- 50 SEMPLE, M., & COOK, R. (2001) Social influence and the recording of blood pressure by student nurse: an experimental study. *Nurse Researcher*, 8(3), pp. 60-71.
- 51 SHAH, J., BUCKLEY, D., FRISBY, J., & DARZI, A. (2003) Depth cue reliance in surgeons and medical students. *Surgical Endoscopy*, 17(9), pp. 1472-1474.
- 52 SHAH, J., PAUL, I., BUCKLEY, D., DAVIS, H., FRISBY, J.P., & DARZI, A. (2003) Can tonic accommodation predict surgical performance? *Surgical Endoscopy*, 17(5), pp. 787-790.
- 53 SHERMAN, K.P., WARD, J.W., WILLS, D.P., SHERMAN, V.J., & MOHSEN, A.M. (2001) Surgical trainee assessment using a VE knee arthroscopy training system (VE-KATS): experimental results. *Studies in Health Technology & Informatics*, 81, pp. 465-470.
- 54 SORRENTO, A., & PICHICHERO, M.E. (2001) Assessing diagnostic accuracy and tympanocentesis skills by nurse practitioners in management of otitis media. *Journal of the American Academy of Nurse Practitioners*, 13(11), pp. 524-529.
- 55 ST CLAIR, E.W., ODDONE, E.Z., WAUGH, R.A., COREY, G.R., & FEUSSNER, J.R. (1992) Assessing housestaff diagnostic skills using a cardiology patient simulator. *Annals of Internal Medicine*, 117(9), pp. 751-756.
- 56 SUNG, W.H., FUNG, C.P., CHEN, A.C., YUAN, C.C., NG, H.T., & DOONG, J.L. (2003) The assessment of stability and reliability of a virtual reality-based laparoscopic gynecology simulation system. *European Journal of Gynaecological Oncology*, 24(2), pp. 143-146.
- 57 TAFFINDER, N., SUTTON, C., FISHWICK, R.J., McMANUS, I.C., & DARZI A. (1998) Validation of virtual reality to teach and assess psychomotor skills in laparoscopic surgery: results from randomized controlled studies using the MIST VR laparoscopic simulator. *Studies in Health Technology & Informatics*, 50, pp. 124-130.
- 58 TWIGG, S.J., McCORMICK, B., & COOK, T.M. (2003) Randomized evaluation of the performance of single-use laryngoscopes in simulated easy and difficult intubation. *British Journal of Anaesthesia*, 2003, 90(1), pp. 8-13.
- 59 UCHAL, M., BROGGER, J., RUKAS, R., KARLSEN, B., & BERGAMASCHI, R. (2002) In-line versus pistol-grip handles in a laparoscopic simulator. A randomized controlled crossover trial. *Surgical Endoscopy*, 16(12), pp. 1771-1773.
- 60 UHRICH, M.L., UNDERWOOD, R.A., STANDEVEN, J.W., SOPER, N.J., & ENGSBERG, J.R. (2002) Assessment of fatigue, monitor placement, and surgical experience during simulated laparoscopic surgery. *Surgical Endoscopy*, 16(4), pp. 635-639.
- 61 WENTINK, M., BREEDVELD, P., STASSEN, L.P., OEI, I.H., & WIERINGA, P.A. (2002) A clearly visible endoscopic instrument shaft on the monitor facilitates hand-eye coordination. *Surgical Endoscopy*, 16(11), pp. 1533-1537.
- 62 WESTMAN, E.C., MATCHAR, D.B., SAMSA, G.P., MULROW, C.D., WAUGH, R.A., & FEUSSNER, J.R. (1995) Accuracy and reliability of apical S3 gallop detection. *Journal of General Internal Medicine*, 10(8), pp. 455-457.