



23RD INTERNATIONAL EXPERTS SYMPOSIUM
CRITICAL ISSUES in aortic endografting 2019
LIVERPOOL UNITED KINGDOM **MAY 23-24**

Rupture EVAR Formula 1
style: it is all about team
training

Disclosures

Speaker name: Colin Bicknell.

I have the following potential conflicts of interest to report:

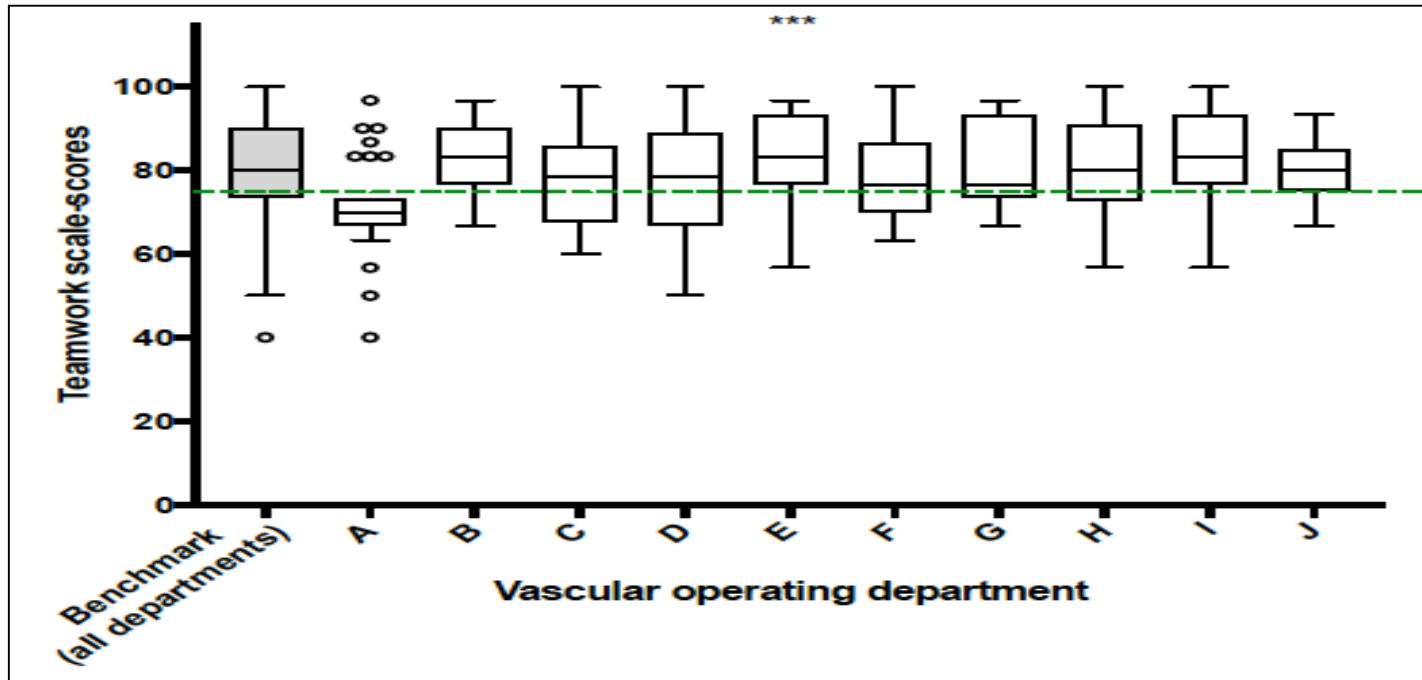
Consulting – Medtronic, Bolton Medical, Orzone

Institutional level funding, Orzone





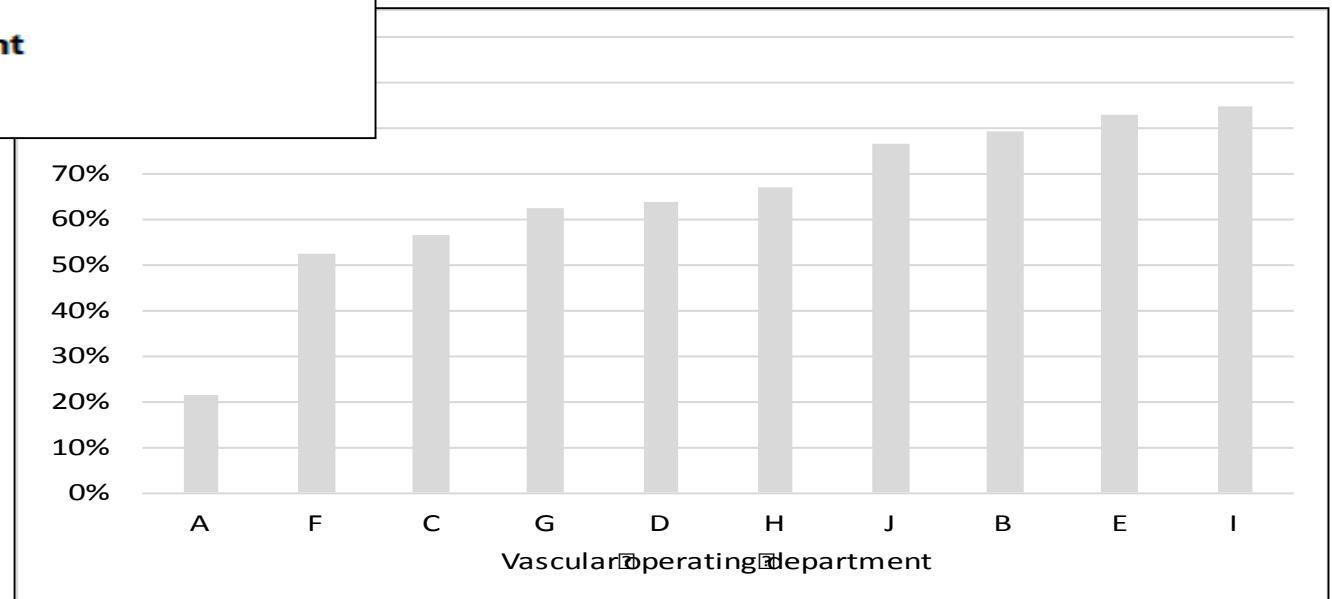
SAFETY ATTITUDE QUESTIONNAIRES - CULTURE



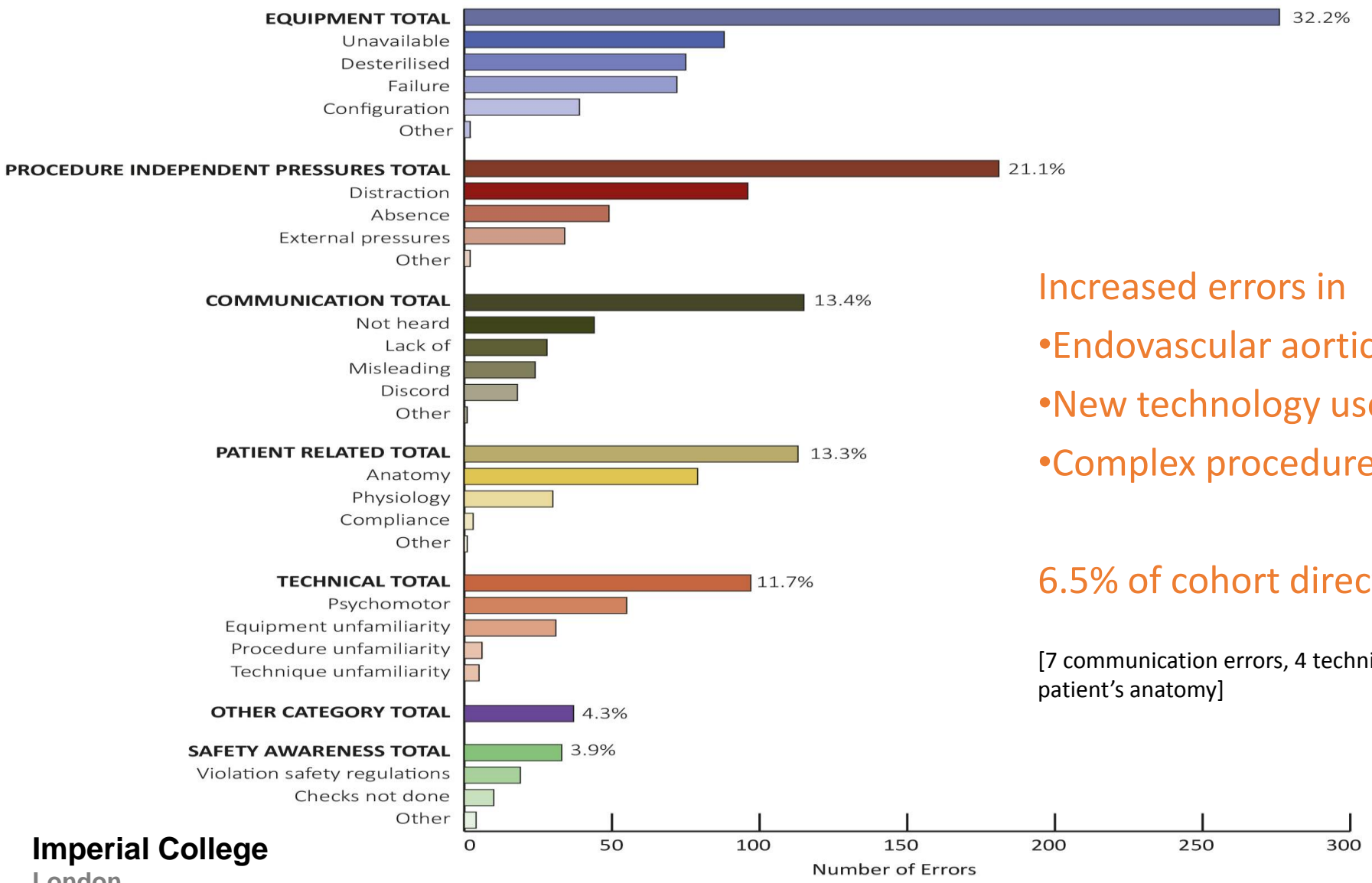
Distribution of teamwork scale-scores across vascular operating departments at ten different hospitals

Lear R, Godfrey A, Riga C, Bicknell C

The proportion of respondents with positive perceptions of teamwork in ten vascular operating departments



ERRORS OCCURRING DURING SURGICAL PROCEDURES



- Increased errors in
- Endovascular aortic procedures
 - New technology used
 - Complex procedures

6.5% of cohort directly harmed by our definition

[7 communication errors, 4 technical errors, 3 unanticipated problems relating to patient's anatomy]

TRAINING - AGGREGATED MARGINAL GAINS THROUGH THE WHOLE PATHWAY

Should we all be looking to aggregated marginal gains?



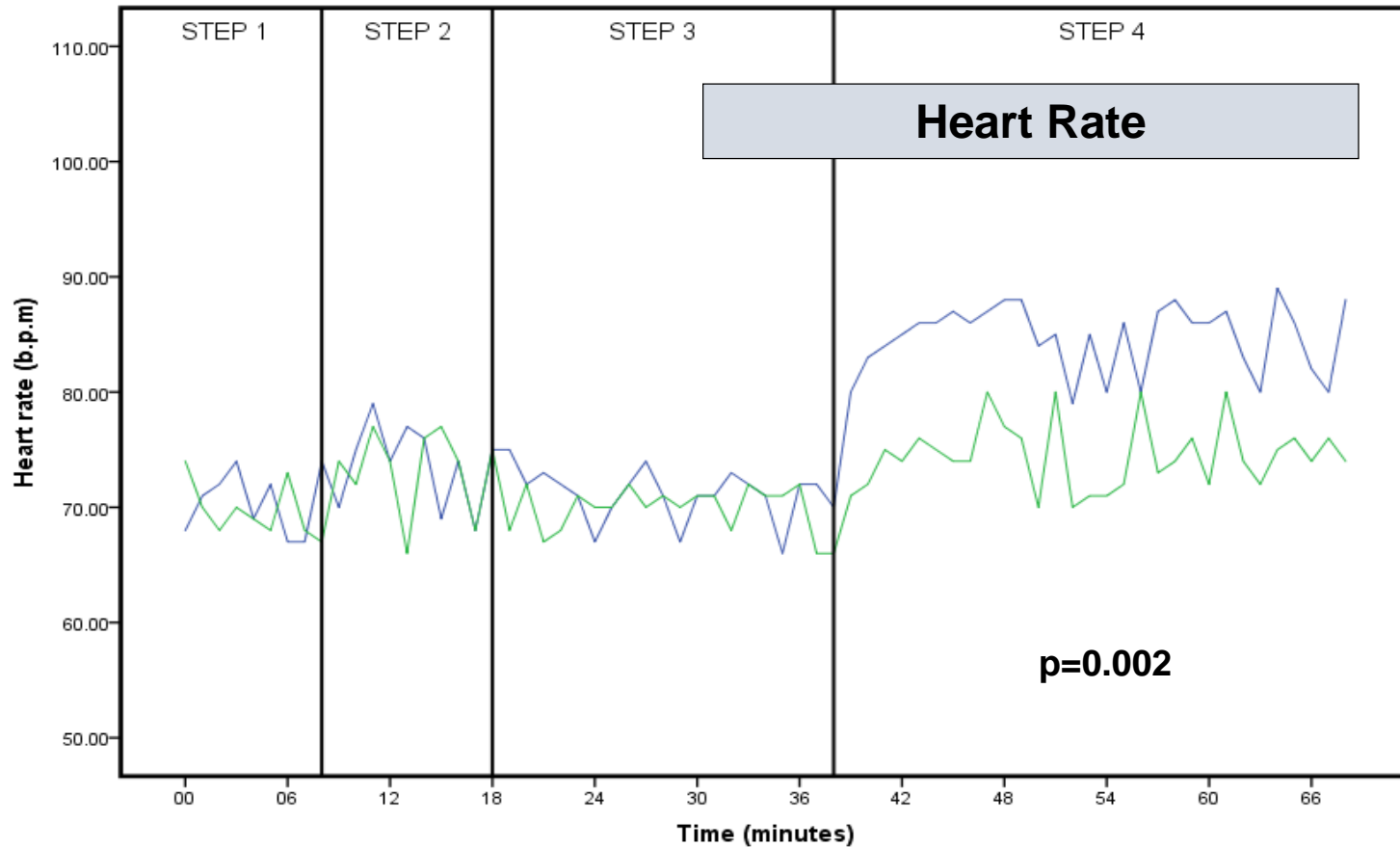
“The principle comes from the idea that if you break down everything you can think of that goes into riding a bike and then improve it by 1% you will get a significant increase when you put them all together”

Dave Brailsford, UK cycling performance director

THE YERKES-DODSON HUMAN PERFORMANCE AND STRESS CURVE



SURGEON COGNITIVE LOAD



Mirrored when measuring sympathetic response and NASA-TLX scores and related to technical performance

Bakhsh A, Bicknell C, Martin G, Riga C. STRES Study: STress Response in Endovascular team Simulation, VSGBI 2017

Mental rehearsal



Technical knowledge



Technical simulation



High fidelity immersive team simulation



IMPACT OF MISPLACED TRUST IN PUBLIC PREPAREDNESS



Contents lists available at ScienceDirect

Global Environmental Change

Journal homepage: www.elsevier.com/locate/gloenvcha

The double-edged sword of learning from disasters: Mortality in the Tohoku tsunami

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CrossMark



Business

British Airways Plane Bound for Germany Accidentally Lands in Scotland

THE ASSOCIATED PRESS

March 25, 2019, 2:37 PM GMT

Bloomberg

London (AP) -- The flight on Monday seemed to go perfectly well, until passengers realized that their plane had landed in both the wrong city and the wrong country.

The British Airways flight from London City Airport was supposed to head to Duesseldorf, Germany, but ended up in Edinburgh, the capital of Scotland.



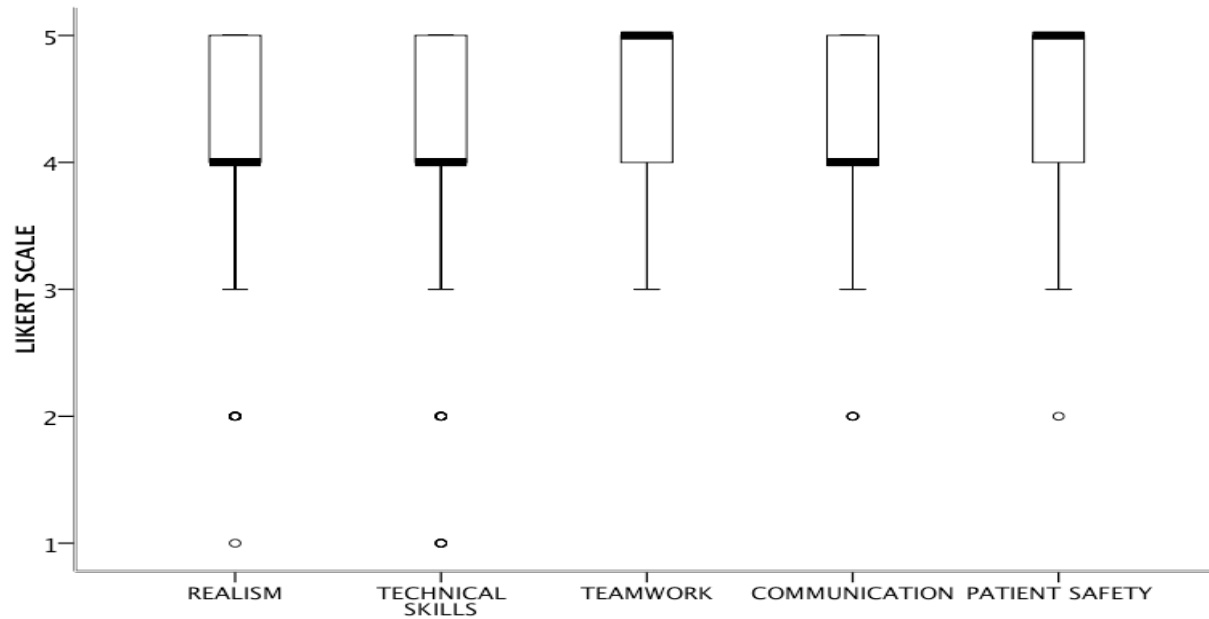
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London

TRAINING IN FULLY IMMERSIVE SIMULATION



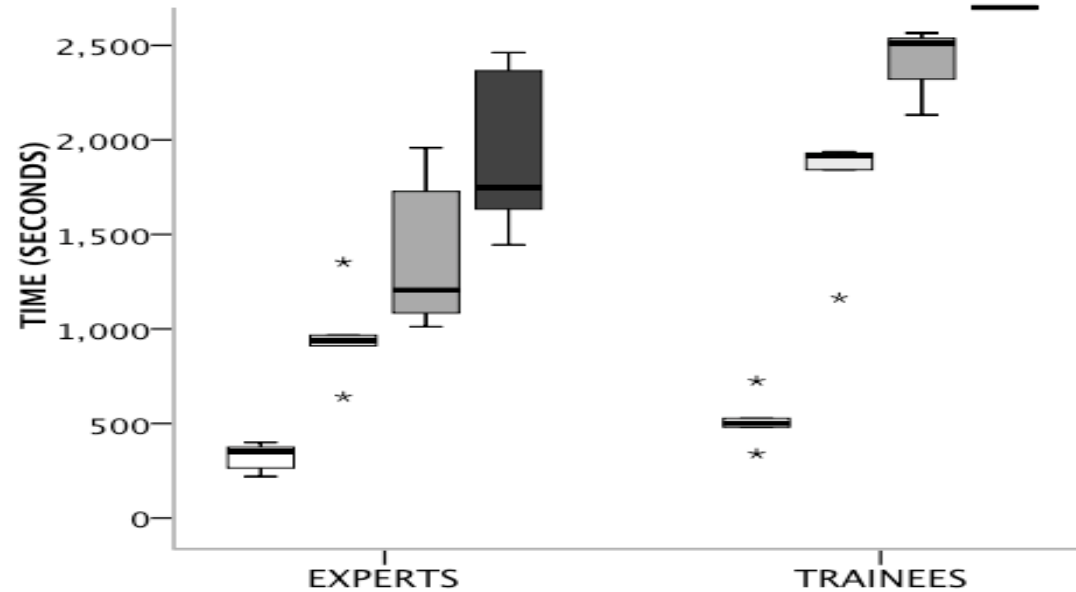
**Imperial College
London**

CONSTRUCT AND FACE VALIDITY

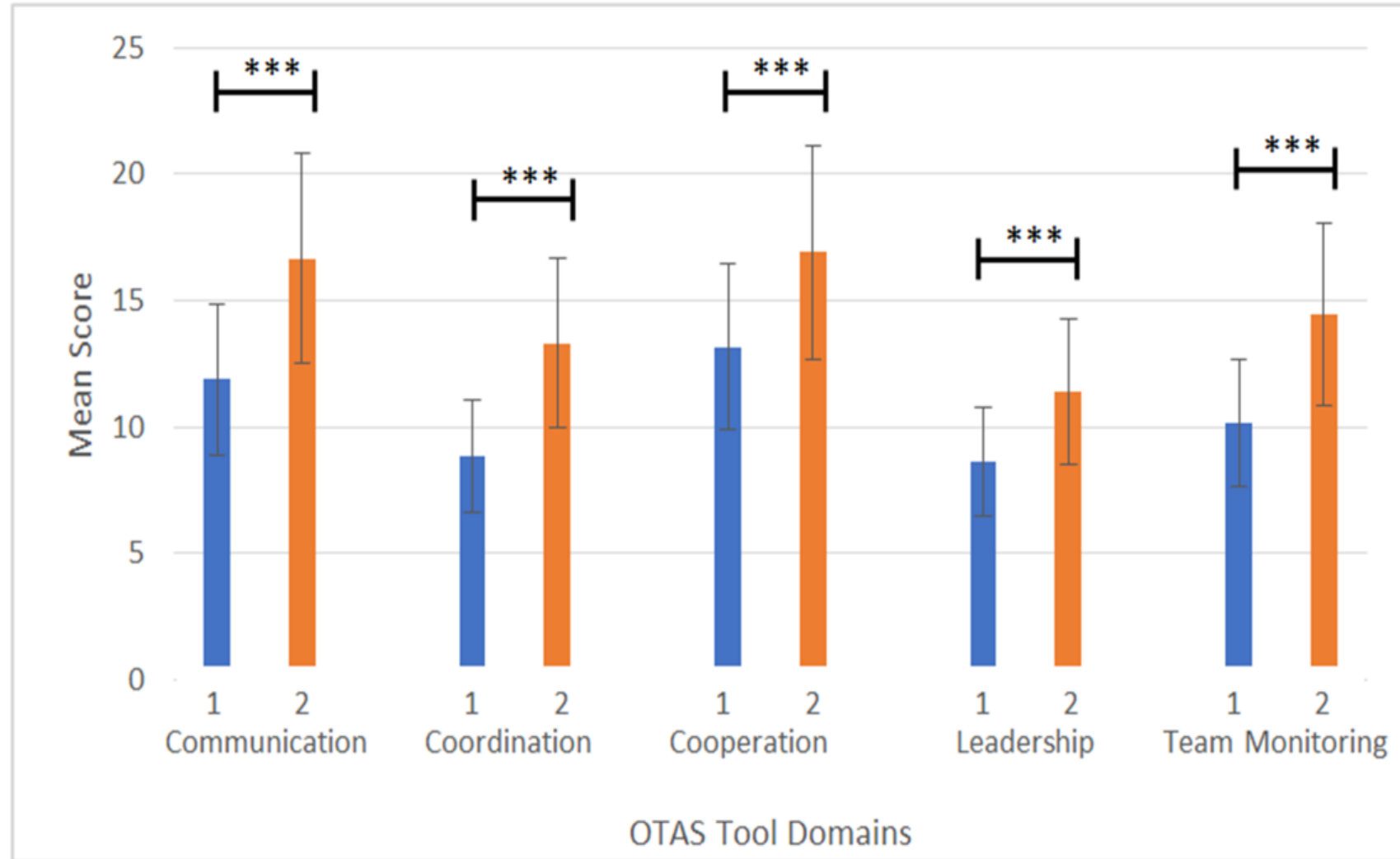
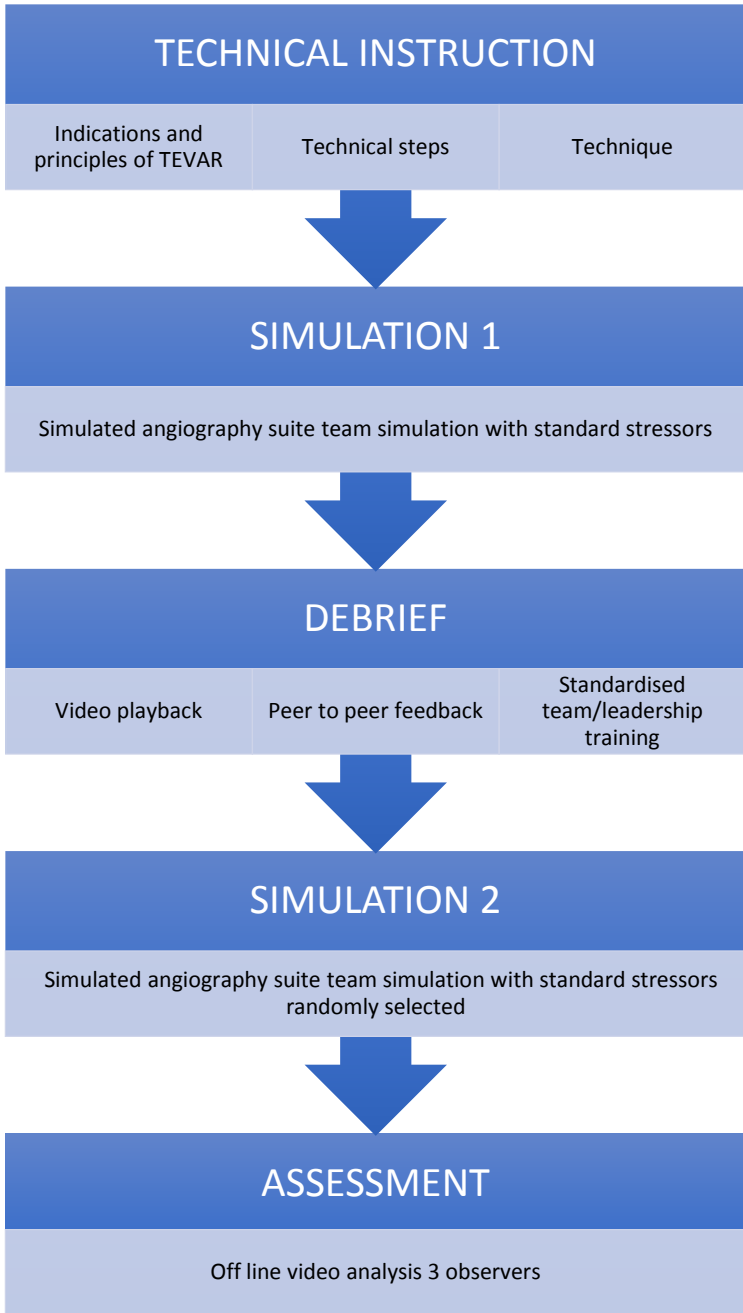


- Intra-aortic balloon
- Deploy main body
- Contralateral limb
- Completion

RUPTURED IRAAA EMERGENCY CASE SIMULATION.

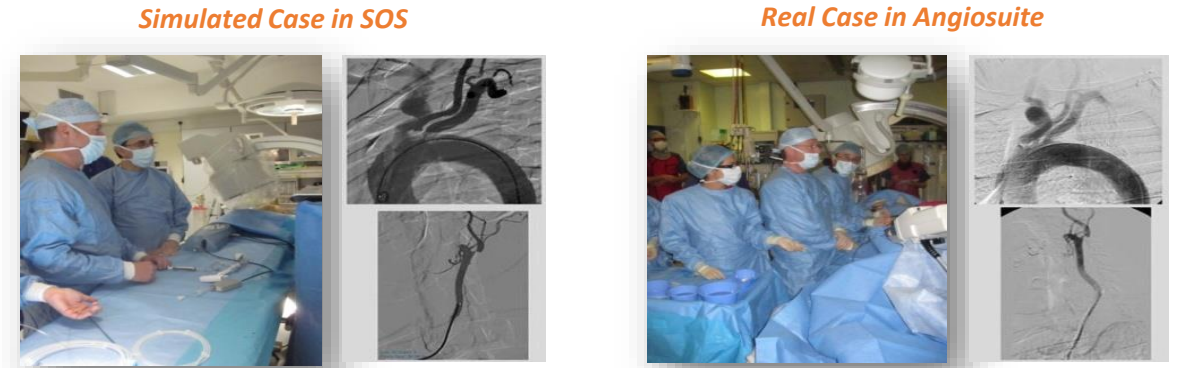
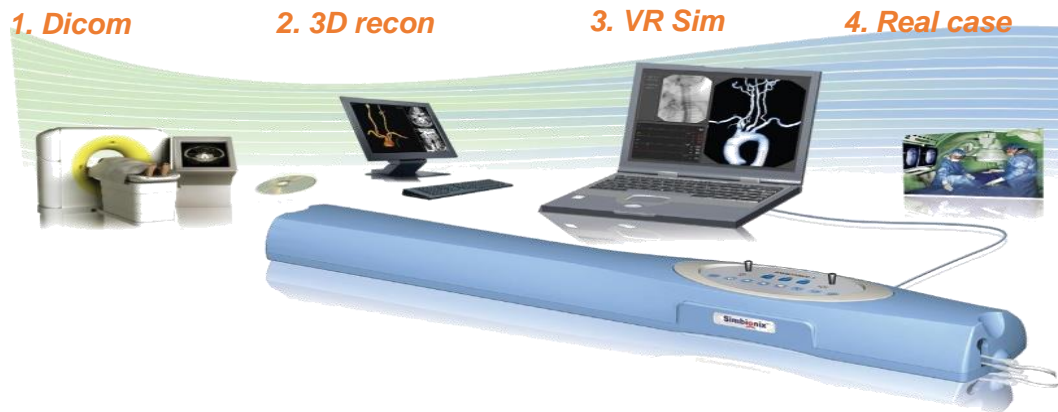


TRAINING OF LEADERSHIP SKILLS



PATIENT SPECIFIC REHEARSAL

ESA-RANDOMIZED CONTROLLED TRIAL
Patient-specific Rehearsal Before EVAR
 Influence on Technical and Nontechnical Operative Performance. A Randomized Controlled Trial
 Liesbeth M. Desender, MD,* Isabelle Van Herzele, MD, PhD,* Mario L. Lachat, MD,†
 Zoran Rancic, MD, PhD,‡ Johan Duchateau, MD,‡ Nung Rudarakanchana, MD, PhD,§
 Colin D. Bicknell, MD,§ Jan M. M. Heyligers, MD, PhD,*¶ Joep A. W. Teijink, MD, PhD,||
 and Frank E. Vermassen, MD, PhD*, on behalf of the PAVLOV Study Group



Variable	Errors Intervention group (95% CI)	Errors Control group (95% CI)	Difference intervention vs. control group	95% confidence interval	p-value*	p-value multivariate analysis‡
Major errors Complete procedure	0.08 (0.03 to 0.21)	0.34 (0.21 to 0.55)	-76.5%	-92.1 to -30.1%	0.009	0.009
Minor errors Complete procedure	3.14 (2.67 to 3.67)	4.24 (3.71 to 4.85)	-25.9%	-39.8 to -9.0%	0.004	0.002

HOW MCLAREN LEARNED TO TREAT ITS PIT CREW LIKE ATHLETES



In short, the pit crew was trained like a team of elite athletes. Soon, they were performing like one. That season, McLaren's crew went on to set pit stop record times in Canada, Valencia, and Silverstone. On July 22, at the German Grand Prix in Hockenheim, they serviced Button's car in just 2.31 seconds, breaking the record for the fastest pit stop in history.

TEAM TRAINING



- Multidisciplinary in teams
- Structured
 - Routine
 - Emergency
 - Reactive
- Entire pathways of care

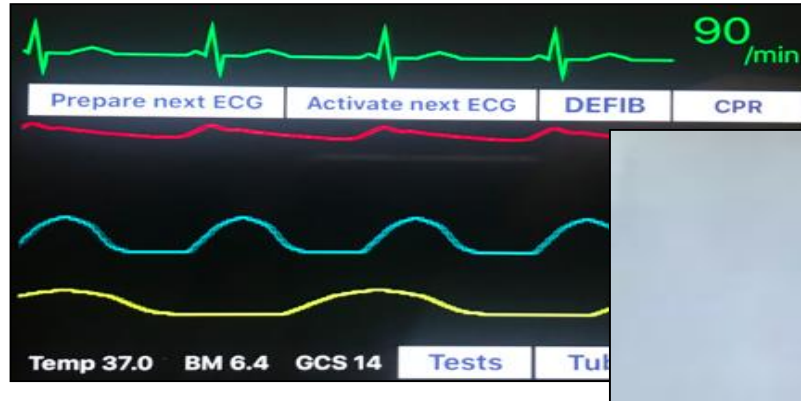


Mentored

Device specific



CRISIS TRAINING – ILIAC RUPTURE



DEALING WITH SERIOUS INCIDENTS



TEAM TRAINING
TEVAR & SPINAL
CORD PROTECTION

“on the night of the team training day, I was asked to assess a patient with paraplegia with a spinal drain ... effective management using new knowledge and skills from the course led to a reversal of the paraplegia”

HELPING OUR TEAMS TRANSFORM

- Stream 1: MDT simulation
- Stream 2: Human Factors learning
- Stream 3: In situ Coaching and Learning



#HOTT
Programme
Helping Our Teams Transform



Maternity, 32

QCCH

Lover of closed-loop communication,
briefs and debriefs. 🙄

I enjoy an SBAR 📄

I never fail to pause for the gauze.



Urology



I am looking for...
support and communication in
times of stress.



#HOTT
Programme
Helping Our Teams Transform

KEY THEMES

F1 style rAAA is a noble aspiration

...in reality it isn't going to work like this but training teams will likely bring significant benefits, focusing on:

- TEAMS
- CULTURE
- WHOLE PATHWAY
- IMMERSIVE TRAINING
- CASE SPECIFIC
- CRISIS TRAINING
- A FOCUS ON TRAINING AFTER ERROR



RESEARCH TEAM

With many thanks to....

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All of the LEAP study collaborators