

# Using Impromptu In-situ Simulation to Evaluate A Training Program:

## A Pilot Feasibility Study

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**What we did-** Single-centre prospective feasibility before and after study using simulation to evaluate clinical performance following CALS training

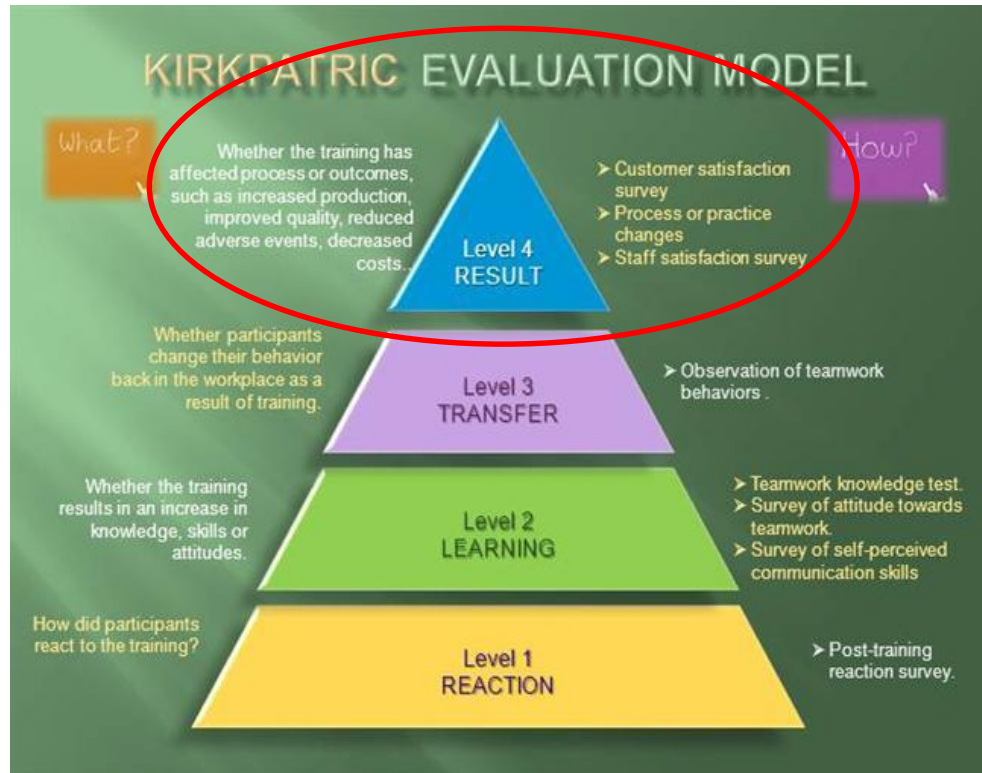


# Are skill-based courses effective?

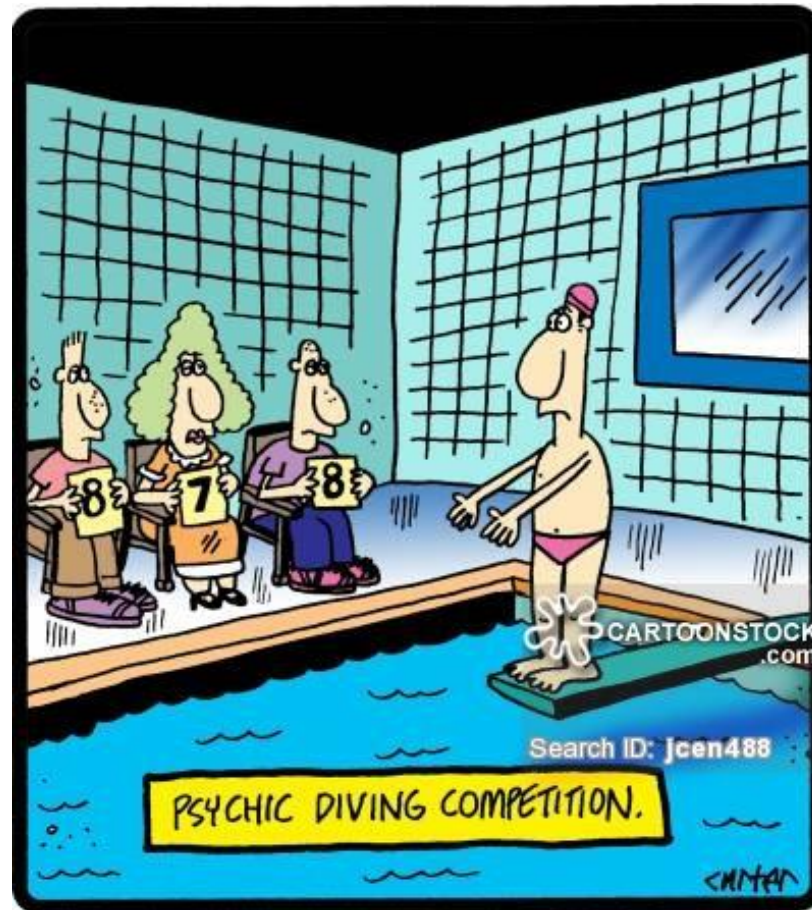


*"I think I know how to make an egg."*

# Gold standard in Education Evaluation- Improved patient outcomes



# Next best evaluation method = assessing “real-time” performance



# Mimic events- then we can assess real-time performance




# Key features of the simulation

- High fidelity- in particular in situ
- Immersive- at no point is it interrupted
- Unannounced- just as a real event would be
- Utilise the Unit's usual equipment, protocols etc
  
- Simulated event can happen as often as required
- The scenario can be created to allow observation of key components of performance to assess →
  - *You can assess what you think is important*
  - *The assessment is standardised*

# Important principles of performance assessment- what should we measure





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- Aspects of performance which have been proven to improve outcomes → usually times → Time to ICM
  - Key skills specific to the successful management of the event → trouble shooting pre-CPR
  - Key management decisions essential to definitively managing the event (often phone calls) → calling cardiac surgeon to get patient to theatre

# What we did



# Primary outcome

- Feasibility of mode of assessment
- Measured by total cost and staff time.

# Secondary outcomes- Performance before and after



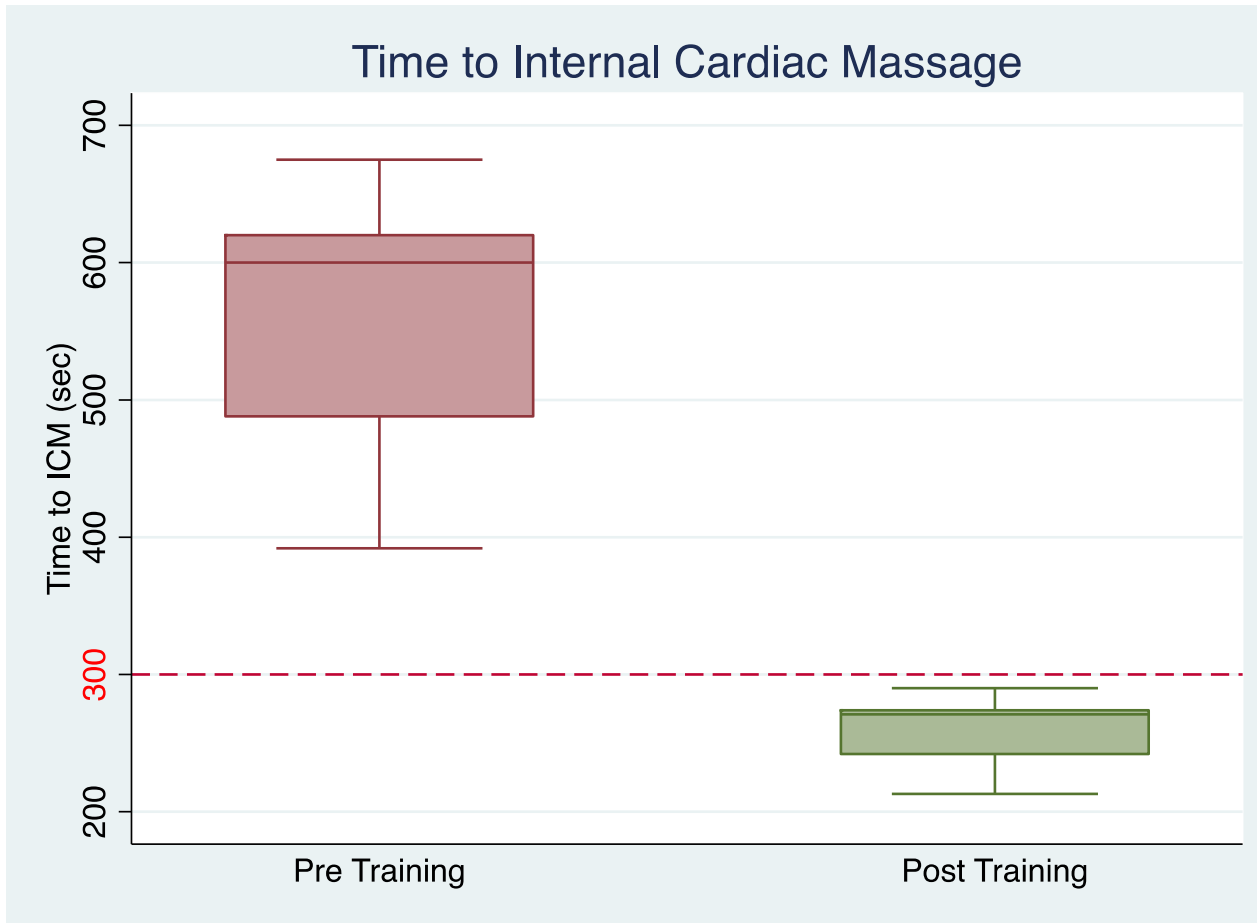
# Performance Tool

- Management of the event (team performance) rather than the individual performance
- Time to Internal Cardiac Massage → important landmarks for this already researched and published
- Other process times to identify the target areas to train
- Time to call Cardiac Surgeon → key step in definitive management
- Points awarded for key steps and skills which are essential for the management → ideal performance, out of 17
- Overall the tool will
  - Measure performance against a standard
  - Score which reflected ideal performance
  - Identify key steps and skills in performance to target in training

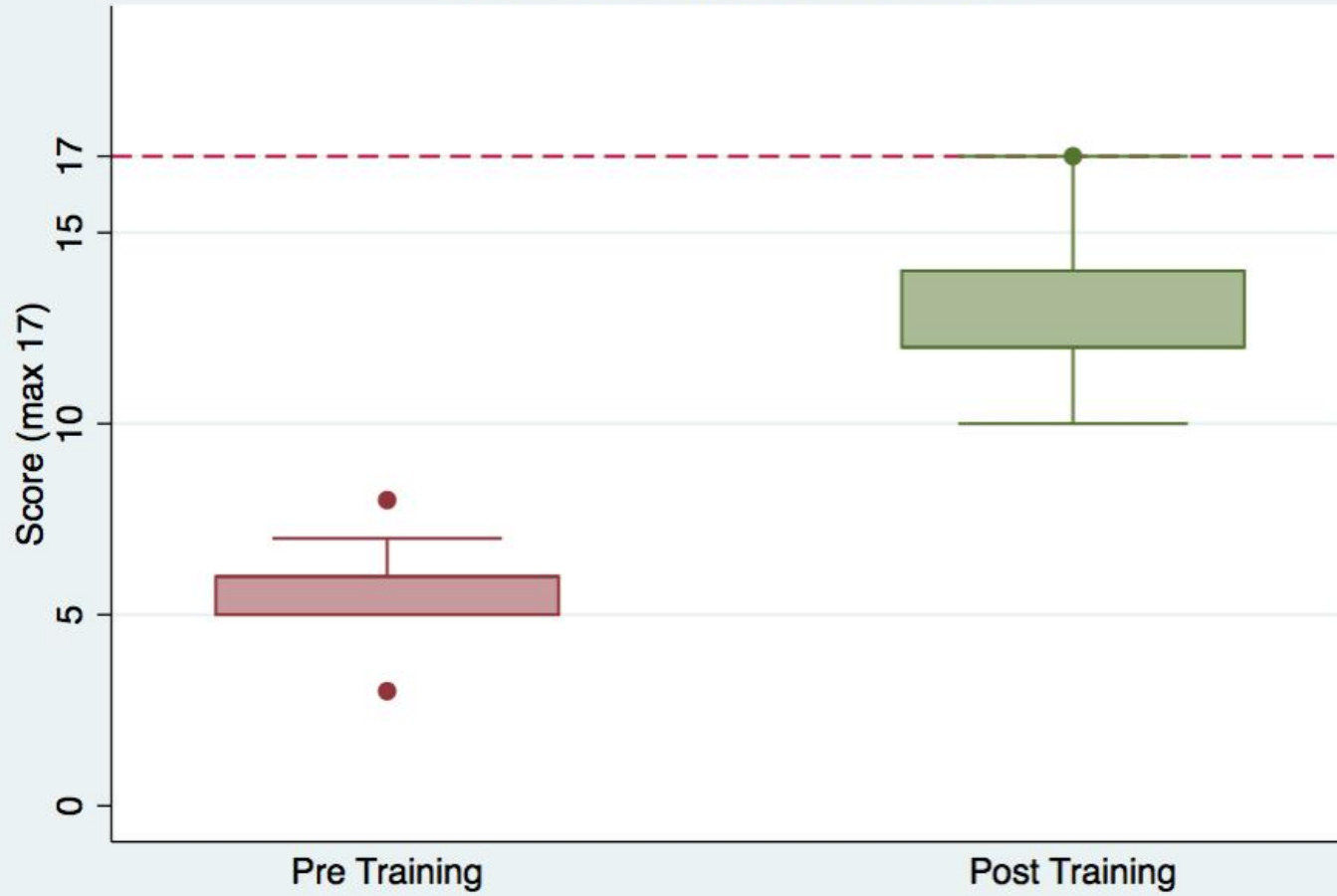
# Results- Primary Outcome

Resources	Cost/time
Equipment (also required for teaching program)	\$14,000
Staff for planning (one off)	
Intensivist	185 minutes
Clinical Nurse Educator	370 minutes
Staff per scenario	
Assessors	
1 Intensivist	60 minutes
1 Clinical Nurse Educator	60 minutes
Participants	
1 Registrar	10 minutes
4 Registered Nurses	10 minutes each

# Results- Secondary Outcome

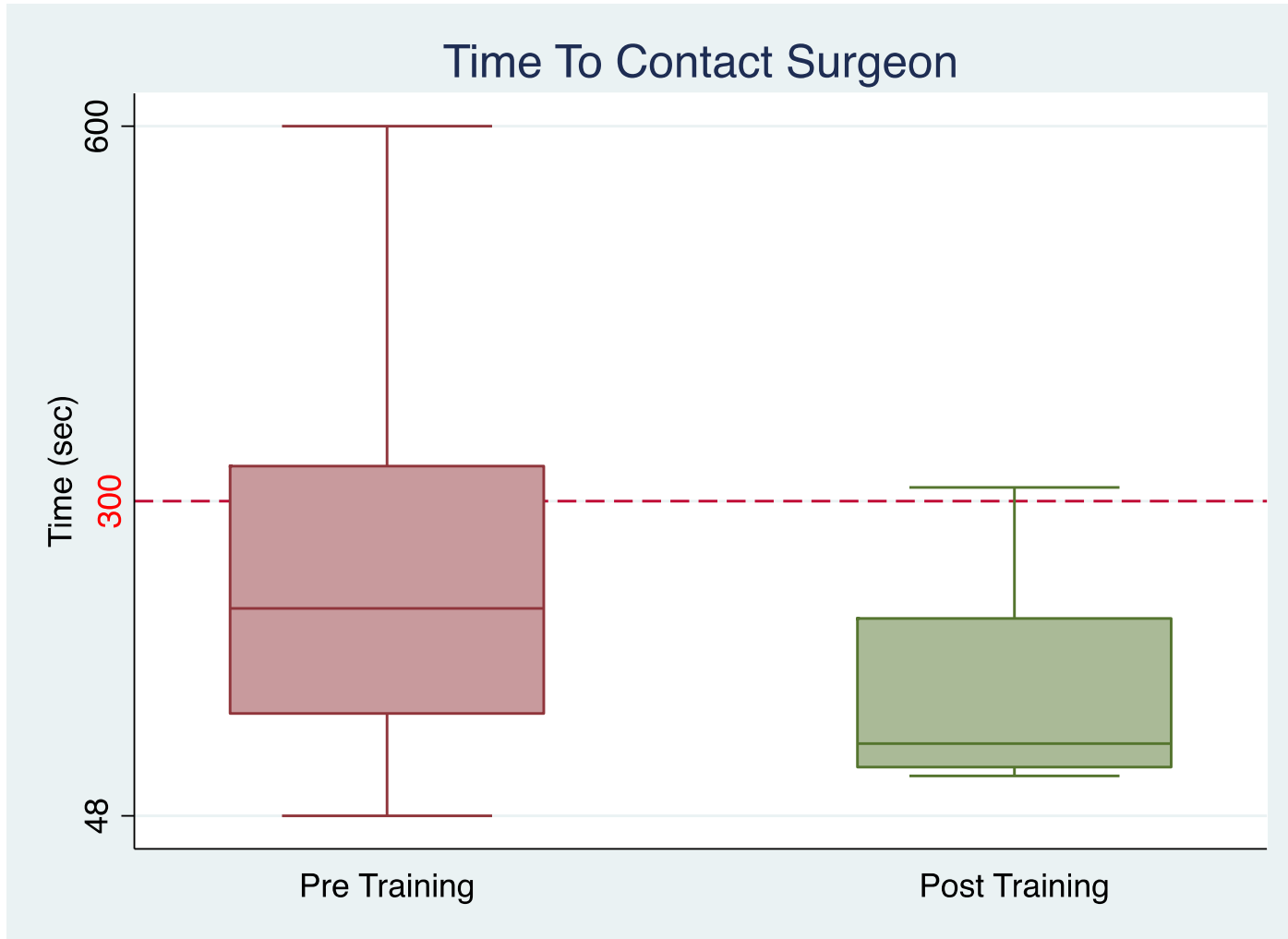


## CALS Performance Score





# Interestingly.....



# Conclusions

- Feasible
- The equipment is required for the teaching program anyway → leaving the “cost” of planning and conducting each scenario which is minor
- Significant improvements in both overall performance and time to ICM → worthwhile to use this technique in future multi-centre studies evaluating the effectiveness of CALS training

# Future Direction

- You control the scenario → this can be tailored to the aspect of performance that you want to examine e.g. a CALS scenario in which trouble shooting appropriately will fix the problem and a resternotomy is not required
- You don't have to use it to evaluate skill based courses → trainee performance as part of training competencies/fellowship exam; assessment to identify deficiencies in a unit that require training

# Questions

