

Keith Siau<sup>1</sup>, Rachel Levi<sup>2</sup>, Lucy Howarth<sup>3</sup>, Raphael Broughton<sup>1</sup>, Christos Tzivinikos<sup>4</sup>, Mark Feeney<sup>5</sup>, Ian Beales<sup>6</sup>, Priya Narula<sup>7</sup>

1. Joint Advisory Group on Gastrointestinal Endoscopy, RCP, London; 2. Royal Free Hospital, Pond St, London; 3. Oxford University NHS Trust; 4. Alder Hey Children's Hospital, Prescot Rd, Liverpool; 5. Torbay and South Devon NHS Foundation Trust, Torquay; 6. Norfolk and Norwich University Hospital, Norwich; 7. Sheffield Children's Hospital, Western Bank, Sheffield

## INTRODUCTION

- JAG DOPS are competence assessment tools in adult endoscopy.
- In July 2016, JAG introduced a series of changes in the existing DOPS:
  - Scoring shifted from a competence-based to supervision-based scale
  - Addition of Endoscopic Non technical Skills (ENTS) domain
  - Refinement in DOPS items & descriptors
  - New DOPS including those for paediatric endoscopy
- These changes have shown to improve the validity of DOPS scores in adult endoscopy.<sup>[1]</sup>
- Paediatric DOPS were introduced in 2016 but lack validity data.

## AIMS

- To correlate overall competence rating with components of the Paediatric OGD DOPS (Item/domain/skill set)
- To identify whether ENTS scores correlate stronger with technical vs. cognitive skill set items
- To correlate scores with trainee experience

## METHODS

- Paediatric OGD DOPS submitted on JETS Aug 16-17 were reviewed.
- Trainee grade, lifetime procedure count, trainer role and assessment data were collected.
- Scores were averaged for each domain (pre-procedural, procedural, post-procedural and ENTS).
- Each item (except ENTS) was grouped into cognitive and technical skill sets by 2 investigators, and adjudicated by a third.
- Correlation analyses (item/ average domain/ average skillset/overall score) using Spearman's test.

### Paediatric OGD DOPS

Royal College of Physicians | JAG Joint Advisory Group on GI Endoscopy | Formative DOPS: Paediatric Upper GI (OGD)

Date of procedure		
Trainee name	Membership no. (eg. GMC/NMC)	
Trainer name	Membership no. (eg. GMC/NMC)	
Outline of case		
Difficulty of case	Easy	Moderate
Please tick appropriate box		
Level of supervision	Maximal supervision	Significant supervision
Indication	Pre-procedure	
Risk		
Confirms consent		
Preparation		
Equipment check		
Sedation (NA if General Anesthetic)		
Monitoring		
Comments		
Insertion and withdrawal		
Scope handling		
Angulation & tip control		
Suction/air/items cleaning		
Intubation and oesophagus		
Stomach		
2 <sup>nd</sup> part of duodenum		
Problem solving		
Pace and Progress		
Comments		
Visualisation		
Oesophagus		
Gastro-oesophageal junction		
Fundus		
Level of supervision	Maximal supervision	Significant supervision
Visualisation		
Lesser curve		
Greater curve		
Incisura		
Pylorus		
1 <sup>st</sup> part duodenum		
2 <sup>nd</sup> part duodenum		
Comments		
Management of Findings		
Recognition		
Management		
Complications		
Comments		
Post Procedure		
Report writing		
Management plan		
Comments		
ENTS (endoscopic non-technical skills)		
Communication and teamwork		
Situation awareness		
Leadership		
Judgement and decision making		
Comments		

## RESULTS

### Strongest and weakest correlations between item scores and overall rating

Item	N	rho	P-value
Complications	97	0.852	<0.001*
Angulation & Tip Control	154	0.834	
Problem Solving	139	0.834	
Equipment Check	155	0.528	<0.001*
Risk	144	0.517	
Confirms Consent	136	0.396	

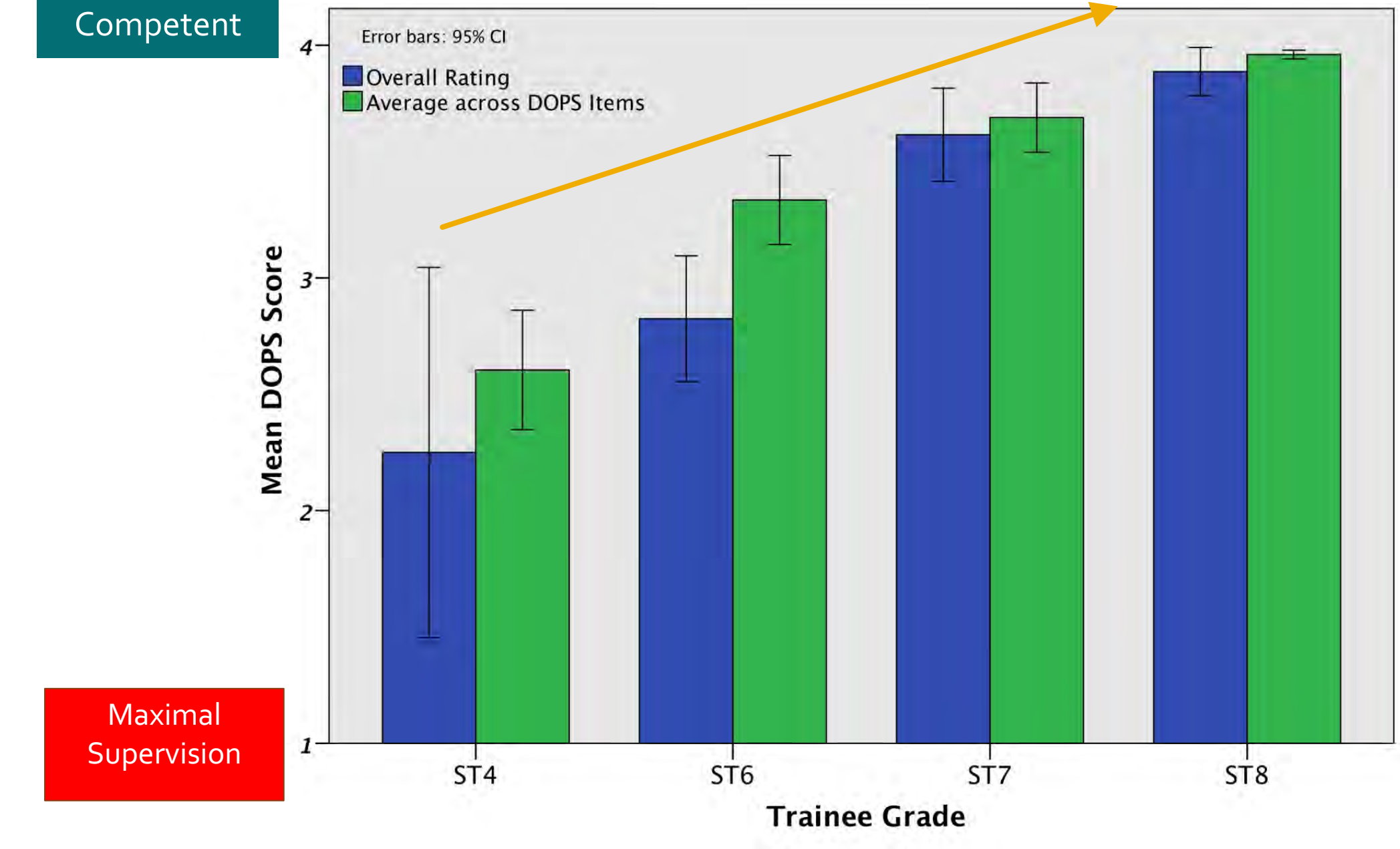
### In descending order, overall competence correlated most with the domains of:

Domain	N	rho	P-value
Insertion and Withdrawal	154	0.884	<0.001*
Management	152	0.834	
Visualisation	152	0.819	
ENTS	152	0.773	<0.001*
Post-Procedural	139	0.611	
Pre-Procedural	157	0.575	

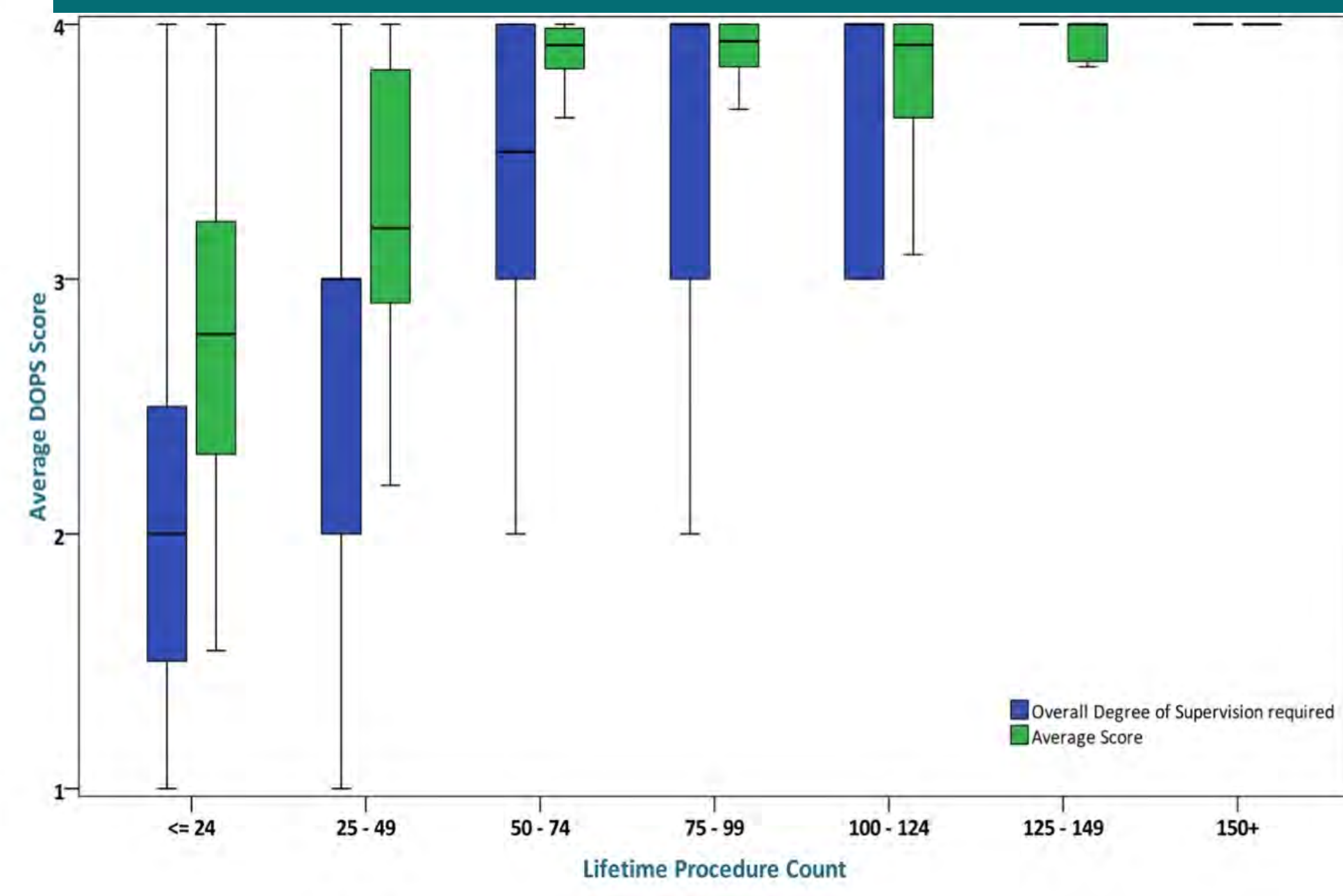
### Correlations by skillset

	Overall	Technical	Cognitive	ENTS
Overall	-	0.860*	0.788*	0.773*
Technical	-	-	0.875*	0.814*
Cognitive	-	-	-	0.852*

### DOPS scores in relation to trainee grade



### Association between lifetime procedure count and DOPS scores



### Interpretation of correlation analyses using Spearman's rank test<sup>[2]</sup>

Spearman's rho	Strength of Correlation
>0.9	Very strong
0.7 - 0.9	Strong
0.5 - 0.7	Weak
0.3 - 0.5	Very weak
<0.3	Negligible

### 157 DOPS for 17 unique trainees by 20 unique trainers:

Grade	Total DOPS	Unique Trainees
Research Fellow/LAT	6	3
ST4	4	1
ST6	57	4
ST7	26	4
ST8	53	4
Staff Grade	11	1

## CONCLUSION

- Competencies in Paediatric OGD, as assessed with new DOPS, vary in their correlation with overall competence.
- DOPS performance correlate with experience and lifetime procedure count
- As assessors are completing new DOPS in a consistent manner, this provides novel validity evidence for new Paediatric OGD DOPS.

## REFERENCES

- Siau K et al. Changes in Scoring of Direct Observation of Procedural Skills (DOPS) Forms and the Impact on Competence Assessment. Endoscopy 2018
- Hinkle DW. Applied Statistics for the Behavioral Sciences 5th Ed 2003.