Abstract PWE-107 Figure 1 Learning curves in gastroscopy as assessed by the constructs identified in factor analysis: a) Pre-procedure, b) Technical (covering Insertion & Withdrawal and Visualisation domains), c) Non-technical (covering Management, Post-Procedure and ENTs domains).

Results 10086 DOPS were submitted for 987 trainees from 275 UK training centres. Exploratory factor analysis identified three distinct item groupings: representing 'pre-procedure', 'technical' and 'post-procedure non-technical' skills. From generalisability analyses, sources of variance in overall DOPS scores included: trainee ability (31%), assessor stringency (8%), assessor subjectivity (18%), and trainee case-to-case variation (43%). The combination of 3 assessments from 3 assessors was sufficient to achieve the acceptable reliability threshold of 0.70. On ROC analysis, a mean score of 3.9 provided optimal sensitivity and specificity for determining competency. This threshold was attained in the order of: 'pre-procedure' (10–24 procedures), 'technical' (15–74 procedures), 'post-procedure non-technical' skills (20–24 procedures), and overall competency (22–49 procedures) [Abstract PWE107 Figure 1]. Higher lifetime procedure count ($P<0.001$), DOPS count ($P<0.001$), trainee specialty ($P=0.028$) and assessor specialty ($P=0.002$), trainee seniority ($P=0.011$) and lower case difficulty ($P<0.001$) were multivariable predictors of DOPS competence.

Conclusion This study establishes milestones for competency acquisition during gastroscopy training and provides novel validity and reliability evidence to support gastroscopy DOPS as a competency assessment tool.

PWE-108 THE FLEXIBLE SIGMOIDOSCOPY DOPS ASSESSMENT TOOL: EVIDENCE OF VALIDITY AND COMPETENCY DEVELOPMENT DURING TRAINING

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Introduction Data supporting milestone development during flexible sigmoidoscopy (FS) training are lacking. We aimed to present validity evidence for our formative direct observation of procedural skills (DOPS) assessment in FS, and use DOPS to establish competency benchmarks and define learning curves for a national training cohort.

Methods This prospective UK-wide (211 centres) study included all FS formative DOPS assessments submitted to the national e-portfolio. Reliability was estimated from generalisability theory analysis. Item and global DOPS scores were correlated with lifetime procedure count to study learning curves, with competency benchmarks defined using contrasting groups analysis. Multivariable binary logistic regression was performed to identify independent predictors of DOPS competence.

Results 3616 DOPS submitted for 468 trainees were included for analysis. From generalisability analysis, sources of overall competency score variance included: trainee ability (27%), assessor stringency (15%), assessor subjectivity attributable to the trainee (18%) and case-to-case variation (40%), which enabled the modelling of reliability estimates. The competency benchmark (mean DOPS score: 3.84) was achieved after 15–74 procedures. Across the cohort, competency development occurred in the order of: pre-procedural (5–4), non-technical (7–49), technical (12–74) and post-procedural (17–99) skills (Abstract PWE108 Figure 1). Lifetime procedural count ($P<0.001$), case difficulty ($P<0.001$), and lifetime formative DOPS count ($P=0.001$) were independently associated with DOPS competence, but not trainee or assessor specialty.

Conclusion Sigmoidoscopy DOPS can provide valid and reliable assessments of competency during training and can be used to chart competency development. Contrary to earlier studies based on destination-orientated endpoints, overall competency in sigmoidoscopy was attained after 150 lifetime procedures.

Abstract PWE-108 Figure 1

PWE-109 DIRECT OBSERVATION OF PROCEDURAL SKILLS (DOPS) ASSESSMENT IN COLONOSCOPY: VALIDITY AND COMPETENCY DEVELOPMENT DURING TRAINING

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Introduction Formative colonoscopy direct observation of procedural skills (DOPS) assessments were updated in 2016 and

incorporated into UK training but lack validity evidence. We aimed to use DOPS to appraise validity, benchmark performance and evaluate competency development during the training of diagnostic colonoscopy.

Methods This prospective national study identified colonoscopy DOPS submitted over an 18-month period to the UK training e-portfolio. Data on DOPS relevant factors and caecal intubation rates over the preceding 30 e-portfolio procedures were collected. Generalisability theory analyses were conducted to evaluate internal structure validity and reliability. Benchmarking was performed using receiver operator characteristics (ROC) analyses. Learning curves for DOPS items and domains were studied and generalising estimating equations

Abstract PWE-109 Figure 1