

Summative supervisor reporting: a quality performance perspective

Luke Hopkins MBBCh, MRCS, ^{1,4} David BT Robinson MBBCh, MRCS, ¹ Christopher Brown MBBCh, MRCS, ¹ Tarig Abdelrahman MD, ¹ Arfon GMT Powell PhD, ^{1,2} M John Pollitt FRCS, ¹ Sarah Hemington-Gorse MSc, FRCS, ¹ Wyn G Lewis MD, DSc, ¹ Richard J Egan MD FRCS^{3,4}.

1. Wales Deanery PGMDE School of Surgery, Health Education and Improvement Wales, Cefn Coed, Nantgarw, CF15 7QQ.
2. Division of Cancer and Genetics, School of Medicine, Cardiff University, Heath Park, Cardiff, CF14 4XN.
3. Department of Surgery, Morriston Hospital, Heol Maes Eglwys, Swansea, SA6 6NL.
4. Swansea University Medical School, Grove Building, Singleton Park, Sketty, Swansea, SA2 8PP.

Correspondence to: Luke Hopkins, Surgical Research Fellow, Health Education and Improvement Wales, Cefn Coed, Nantgarw, CF15 7QQ.

E: lukehopkins@doctors.org.uk

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Abstract

Objective: This study aimed to quality assure Assigned Educational Supervisor (AES) reports, using UK Joint Committee on Surgical Training (JCST) objective criteria, to evaluate contribution Annual Review of Competence Progression (ARCP).

Design: Consecutive 145 AES reports from 75 trainers regarding 68 Core Surgical Trainees were assessed from 9 hospitals (2 Tertiary centres (77 reports), 7 District General Hospitals (68 reports)). Reports were assessed by independent assessors based on free text related to performance mapped to curricular objectives, operative logbooks, and Clinical Supervisor (CS) reports, and overall summary grades assigned ranging from development required, adequate, good, to excellent.

Setting: A core surgical training programme serving a single UK (Wales) deanery.

Participants: Sixty-eight consecutively appointed core surgical trainees and seventy-five consultant surgeon trainers.

Results: Summary grades of adequate or above were achieved in 101/145 (69.7%) reports. Trainees' objective setting meetings were completed within 6 weeks of starting placements in 124/145 (85.5%). The proportions of AES reports containing free text commentary on curricular objectives, portfolio objectives, and operative logbook development were 128/145, 123/145, and 55/145 respectively. AES report quality was not associated with hospital status, subspecialty, or trainee grade.

Female trainers were significantly more likely to provide reports graded as Good or Excellent compared with their male colleagues (7/12 vs. 27/133, $\chi^2 (2) = 9.389$, $p=0.009$). AES reports for male trainees were significantly more likely to be rated as further development required (40/85, 47.1%) when compared with female trainees (4/32, 12.5%, $p=0.007$).

Conclusion: Three in ten AES reports were insufficient to contribute to objective ARCP outcomes and a gender gap was apparent related to engagement. AES trainers should provide more focus if this summative tool is to be an effective career progression metric.

Key words: Surgical training, trainer quality, core surgical training.

ACGME competencies: Practice-based learning and improvement, patient care and procedural skills, medical knowledge, professionalism.

Introduction

Contemporary surgical training takes place in an environment far removed from the traditional apprenticeship or residency model popularised by William Halsted at the end of the nineteenth century. In the United Kingdom, the Intercollegiate Surgical Curriculum Programme (ISCP)¹ allied with the General Medical Council (GMC)^{2, 3} have driven change focused on a competency-based approach, requiring clinical accountability and objective quantifiable educational outcomes and performance. Debate regarding the utility and effectiveness of certain facets of the competency-based approach with regards to Workplace-based Assessments (WBA) has been ubiquitous. These are tools that can be used either formatively or summatively to assess a trainee's competence and performance in both the operative and non-operative contexts. A frequent criticism of these tools is the lack of evidence to establish their validity; and both trainees and trainers have expressed concerns regarding their validity⁴⁻⁷.

Traditional models of surgical training assigned individual trainees to a single trainer for a set period of time. Changes in working practices associated with a reduction of duty hours have led to a more team-based approach in most surgical departments. Trainees work for a number of consultants, which on the face of it, may seem to have the advantage of a broader exposure to differing techniques, but has led to concerns about a lack of consistency in training. In keeping with ISCP best practice, all trainees should have an Assigned Educational Supervisor (AES), with overall educational and supervisory responsibility, including setting objectives for the placement, completing assessments, mentoring and pastoral support. The trainee should also have at least one other consultant trainer termed the Clinical Supervisor

(CS). The CS is responsible for delivering training under the delegation of, and in liaison with, the AES.

Feedback is crucial for any learner's progression and it has been reported that one of the reasons for trainees' dissatisfaction with WBAs within the ISCP has been poor quality feedback from trainers.⁷ At the beginning of each placement the trainee is expected to meet their AES to set learning objectives; this should be followed by an interim meeting to assess progress, and a final end of placement review. During this final meeting the AES assesses the trainee against the set objectives by operative logbook review, WBAs completed, and any additional evidence provided, including a Clinical Supervisor report. All trainees undergo an Annual Review of Competence to Progression (ARCP); at this meeting AES reports are used in conjunction with the wider evidence gathered within the ISCP portfolio to agree a final decision regarding the trainee's competence progression. Clearly, given the pivotal role that AES reports play in influencing a future surgeon's career progress, it is important that the quality of AES report' is quality assured. For this explicit reason the UK Joint Committee on Surgical Training (JCST) has recently produced a tool to allow objective assessment of AES reports.⁸ The aim of this study was to evaluate the quality of a cohort of Assigned Educational Supervisor (AES) reports using UK Joint Committee on Surgical Training (JCST) objective criteria, to determine whether the reports meet standards to allow proper contribution to trainees' Annual Review of Competence Progression (ARCP).

Methods

Consecutive, nationally appointed Core Surgical Trainees (CSTs) enrolled on the Core Surgical Training Programme between August 2017 and August 2018 were

identified from the Deanery roster and the Intercollegiate Surgical Curriculum Programme (ISCP). Formal permission under the ISCP Data Governance Structure was not required because the study was in keeping with Deanery training service evaluation. For each trainee, placements with a completed AES report and ARCP outcome were identified using the ISCP Head of School report function. Additional data recorded included, hospital status (tertiary centres or district general (DGH)), trainer and trainee gender, surgical specialty, trainer completion of the Royal College of Surgeons of England Training and Assessment in the Clinical Environment (TrACE) course⁹ and ARCP outcome.

Two independent assessors completed the Assigned Educational Supervisor (AES) Report Feedback Form produced by the JCST to evaluate each report. The feedback form assessed the timeliness of the objective setting meeting, interim review, and content of the final review report. The first part of the AES report concerned the curricula objectives set at the initial meeting. This consists of three components; free text comments regarding objective trainee curricula objectives performance, logbook review with comments, and whether a benchmarking or certification checklist was completed. This latter component was not applicable to this trainee cohort and was not assessed. The second part addresses whether the trainer has made free text comments regarding the trainee portfolio objectives, thirdly the Clinical Supervisors comments are assessed, before an overall summary grade is assigned.

Statistical analysis

The primary outcome measure was the overall AES report objective summary effect on ARCP outcome. Secondary outcome measures included the association

between report quality and hospital status, trainer gender, subspecialty, trainee grade and trainee gender. Associations between categorical variables were tested using Pearson's chi-square test. Statistical analysis appropriate for non-parametric data was performed using GraphPad Prism 8 (GraphPad Software, La Jolla, CA, USA). A p-value of less than 0.050 was considered significant.

Results

Trainee and trainer profile

A total of 68 (21 female, 47 male) trainees completed 145 placements, with AES reports completed by 75 (7 female, 68 male) trainers from nine hospitals (2 tertiary centres, 7 DGH). The median (interquartile range [IQR]) number of reports completed by a single trainer was 1 (1 - 3), and the highest number of reports completed by a single trainer was 7. Placements were undertaken in eight surgical specialties; General Surgery, Trauma & Orthopaedics (T&O), Urology, Vascular Surgery, Otolaryngology (ENT), Oral & Maxillofacial Surgery (OMFS), Plastic Surgery and Neurosurgery.

Assessment of AES reports

The objective setting meeting was completed within 6 weeks of the placement commencing in 124/145 (85.1%) of placements. Fewer, 97/145 (66.9%) interim reviews were carried out in a timely fashion. The results of the review of the curricula objectives are shown in Table 1. Completion was ratified in 128/145 (88.3%) of cases, and in 84/128 (65.6%), the rating was 'could be improved'. Logbook performance was poorer, and most reports 90/145 (62.1%) did not contain a surgical logbook review.

The second part of AES report assessed is the portfolio objectives, which is assessed by a single question; 'Did the AES include free text comments on trainee performance?' The results are shown in Table 1. Most, 123/45 (84.8%) commented on trainee portfolio performance, although 84/123 (68.3%) were rated as needing improvement.

Finally, with regard to Clinical Supervisors' comments and their use by AESs, CS comments were completed in 113/145 (77.9%) of reports, but most, 136/145 (93.8%) of the AES reports contained no reference to CS comments.

An overall summary grade was assigned using the descriptors provided with the AES report feedback form, and the results and descriptors can be found in Table 2. Most reports, 100/145 (70.0%) were rated adequate or better; only 3/145 (2.07%) were rated excellent.

Influence of trainer and trainee factors on AES report outcome

Because of the relatively small number of 'Excellent' reports these were combined with 'Good' reports to facilitate analysis. Figure 1 shows the spectrum of AES report grades between cohorts. There was no significant association between hospital, hospital status, trainee grade, trainer completion of RCS England TrACE course or ARCP outcome and the grade of the AES report. Female trainers were significantly more likely to produce a higher quality (Excellent / Good) AES report compared with their male counterparts, $\chi^2 (2) = 9.389, p=0.009$. Conversely, Male trainers produced significantly more AES reports graded as 'Further development required' when compared with female trainers. Moreover, male trainees were more likely to have an AES report graded as 'Further development required' than their female colleagues, $\chi^2 (2) = 8.885, p=0.011$. The relationship between trainer and trainee gender can be found in Figure 2. Although not statistically significant the presence

of a female trainer or trainee did appear to improve the overall quality of the AES report.

Discussion

This is the first study to examine consultant surgeon trainer performance related to the quality of mandatory written feedback for core surgical trainees in a UK deanery, which has revealed significant variation in trainer performance. The principal findings were that nearly one-third of educational supervisors' reports were of insufficient quality to provide meaningful contribution to the trainee's Annual Review of Competence Progression (ARCP) outcome. Comments regarding curricular and portfolio objectives were both rated as 'could be improved' in two-thirds of reports, the vast majority (93.8%) of reports did not comment on the Clinical Supervisor's comments, whilst almost two-thirds of reports failed to reference the trainee's operative logbook, a remarkable and particular concern for any surgical training programme.

It is unclear why this variation is seen between individual trainers and although some variation in performance should be expected, the high numbers of trainers' reports rated as inadequate is troubling. Variation in engagement by trainers with the requirements of a training programme has been previously demonstrated with regards to Workplace-Based Assessment (WBA) completion.¹⁰ In that study it was found that the consultant with an AES role completed significantly more WBAs than other consultant trainers, however there was no assessment of the quality of these WBAs. Nisar and Scott's survey of trainees and trainers identified WBA completion as a marker for training quality.¹¹ The same study also identified trainer engagement with the electronic learning platforms as being seen as a particularly desirable trait amongst Core Surgical Trainees. They explain this as a reflection of more inexperienced trainees still requiring legitimisation of their role within the surgical team and that this is provided by the feedback given during assessments.

There are many variables in training, one of the most important is the deliverer i.e. the trainer, and evidence of progress is a key metric of the effectiveness of training and trainers. In order for an appropriate decision about a trainee's progression to be made, effective assessment tools must be available. Surgery, a complex and multifaceted craft specialty, represents a significant challenge for those designing assessment tools, with summative progress represented by surrogate markers.

Defining a good trainer is complex with many variables to consider.^{12, 13} A systematic literature review has identified super-themes associated with successful surgical trainers including: character, procedural, teamwork, communication, and clinical domains, each associated with individual characteristics or themes.¹⁴ Yet the traits associated with a good trainer are controversial, with key differences reported and perspective dependent.¹¹ Identification of such attributes has led to the creation of validated trainer assessment questionnaires,^{15, 16} and although these tools provide insight into trainer quality, they do not consider trainee ARCP outcome. Moreover, such trainer assessment is not mandated for either undertaking a training role, or ongoing quality assurance.

The last decade has witnessed a remarkable increase in activity aimed at improving surgical training, with considerable effort focused on developing a robust, GMC approved and pragmatic curriculum. There has been greater scrutiny on trainer quality, with a strong resolve to professionalise and certify training delivery. Surgical Royal Colleges, in England and Edinburgh, have developed courses^{9, 17, 18} and guidelines¹⁹ focused on enhancing the quality of surgical trainers, whilst training providers have introduced Educational Supervisors Agreements to formalise the roles, responsibilities and expectations for all parties.²⁰ Yet evidence regarding the effectiveness of these initiatives is thin. UK training fluidity following the introduction

of competency-based training and, in surgery the ISCP, has allegedly contributed to a deal of the criticism and dissatisfaction from both trainees and trainers. The current version of the ISCP is the 10th iteration and whilst frequent revisions likely represent incremental refinement, it has been contended that these alterations have led to disengagement with the process.^{6, 7} As curricular changes have been made, the JCST has updated the form and numbers of WBAs to be completed. The next major curriculum upgrade will see the introduction of Capabilities in Practice (CiP), described as the outcomes required for the completion of training.²¹ To facilitate this a further WBA, the Multi-Consultant Report (MCR) will be introduced, and it has been reported that this should not increase the burden of assessment, because the number of other WBAs required will be fewer. It also reframes the assessment by asking if the trainee is ready to be entrusted with the particular CiP, producing a broader assessment than the more granular WBAs used presently. This should provide a higher quality structured report for the trainee. The MCR will demand that all clinical supervisors to contribute to a report for each trainee, a better reflection of the modern training environment, where a single trainer supervises fewer trainees. Surgery will not be the first UK speciality to introduce the MCR; it has been in use for Internal Medicine training programmes since 2013. Many of the limitations and weaknesses identified in other WBAs have been replicated.²² Given the variation in quality of the current Educational Supervisors reports seen in this study it is possible that the utility of the MCR in surgical training will be similar. Another reason for variable trainer performance may relate to the trainer's perception of the importance of their report. This study has demonstrated a trend (although not statistically significant) towards higher quality reports being produced for trainees with an adverse ARCP outcome. It may be the case that the trainer feels the need to

document reasons for an adverse outcome more than for a satisfactory or excellent outcome.

Gender specific issues were again clearly apparent with the gender of both trainer and trainee appearing to influence AES report quality. Female trainers were three times more likely to write Good or Excellent reports and four times less likely to write a report graded Further Development Required. Male trainees were more than three times as likely to receive a report graded Further Development Required compared to their female counterparts. The reasons for these gender differences are opaque; previous work has suggested that there are differences in the teaching styles of female and male surgeon trainers, but whether these differences are due to the trainers themselves or the trainees' perceptions.²³ It is also possible that females are documenting their progress more diligently within the trainer-trainee relationship, due to a subconscious feeling of scrutiny arising from a hidden curriculum within a gender-bias system. Previous work has suggested relative gender parity within this core-training programme,²⁴ and it may just be that this represents an area where female trainees and trainers simply excel.

There are several potential inherent limitations and criticism of this study. The results only reflect training of core surgical trainees and not higher surgical trainees. As Nisar and Scott identified these trainees have different requirements and expectations,¹¹ meaning educational supervisors need to focus on their specific needs. Core Surgical Training has come under increased scrutiny in recent years; trainee satisfaction has been low, with infrequent operative training identified as one of the most significant concerns.²⁵ In addition this cohort of trainees appears to be particularly susceptible to stress and burnout, of likely multifactorial aetiology.²⁶ It is in response to such concerns that the Improving Surgical Training pilot has been

initiated.²⁷ This aims to provide enhanced educational supervision with 'professionalised' trainers in line with standards set by national guidelines.¹⁹ In Wales, trainers have been encouraged to undertake the TrACE course, the results of this study suggest uptake of this course has been limited. Trainers may well have undertaken alternative courses but unfortunately this is not currently captured by the Deanery records. The report form itself allows for a large amount of subjectivity, decisions about whether the report content was 'helpful' or 'could be improved' are open to interpretation. In an attempt to reduce this, two independent assessors graded the reports and divergence resolved by discussion. It is likely that some educational supervisors could make significant improvements to the quality of their reports by using the feedback form as guidance. This study found that only 6.2% of AES reports referred to the Clinical Supervisors report. It may be that the AES had taken the Clinical Supervisors report into account but if they had not been explicit in stating this it was not included in this assessment, lowering the quality of the report. It is intended that the results of this study will be communicated with trainers in the Deanery and the report form used to guide trainers in the completion of future reports. Reassessment of report quality will form part of ongoing local faculty development.

In conclusion, the findings of this study have demonstrated that there is considerable room for improvement in the compilation of a significant proportion of AES reports within a UK core surgical training programme. The AES is in a unique position to assess and critique an individual trainee's progress and can draw on information from a number of sources to ensure that an accurate annual review outcome is awarded. The AES report may be seen as a surrogate marker for trainer engagement or, at the very least, for a functioning trainer-trainee relationship. The

AES Report Feedback Form introduces a method of evaluation for UK surgical trainers. The AES report is important, but only a single facet of the trainers' overall quality. There are an increasing number of tools available to allow training programme directors to ensure that trainers are delivering effective training. Within the ISCP trainers can now ask both trainees and fellow trainers to provide feedback on their performance. In combination with other assessments this can allow appropriate reflective practice and for targeted improvement when required. Emphasis must be placed on the delivery of high quality, safe surgical training, delivered by accredited trainers in a grade-adapted fashion. Transparency of training quality data will allow trainees and trainers to construct high quality learning agreements and educational contracts.

CURRICULA OBJECTIVES	Yes (this was helpful)	Yes (could be improved)	No
Did the AES include free text comments on trainee performance?	44	84	16
Was there a logbook review with comments?	24	31	89
PORTFOLIO OBJECTIVES	Yes (this was helpful)	Yes (could be improved)	No
Did the AES include free text comments on trainee performance?	39	84	21
CLINICAL SUPERVISOR COMMENTS	Yes	No	
Were comments from the Clinical Supervisor entered into the portfolio?	113	32	
Did the AES refer to the Clinical Supervisor's comments in their report	9	136	

Table 1. Assessment of Assigned Educational Supervisor (AES) reports using Joint Committee on Surgical Training (JCST) feedback form.

	Excellent	3
	Good	31
GRADE	Adequate	66
	Further development required	45
Excellent	Full report on curriculum (to include logbook) and portfolio objective, with detailed referral to Clinical Supervisor comments.	
Good	Some inclusion of curriculum and portfolio objectives, and referral to Clinical Supervisor comments.	
Adequate	Minimal reference to curriculum and portfolio objectives, or Clinical Supervisor comments.	
Further development required	No reference to curriculum and portfolio objectives or Clinical Supervisor comments.	

Table 2. Overall summary grades for AES reports with descriptors for the grades taken from the Joint Committee on Surgical Training (JCST) feedback form.

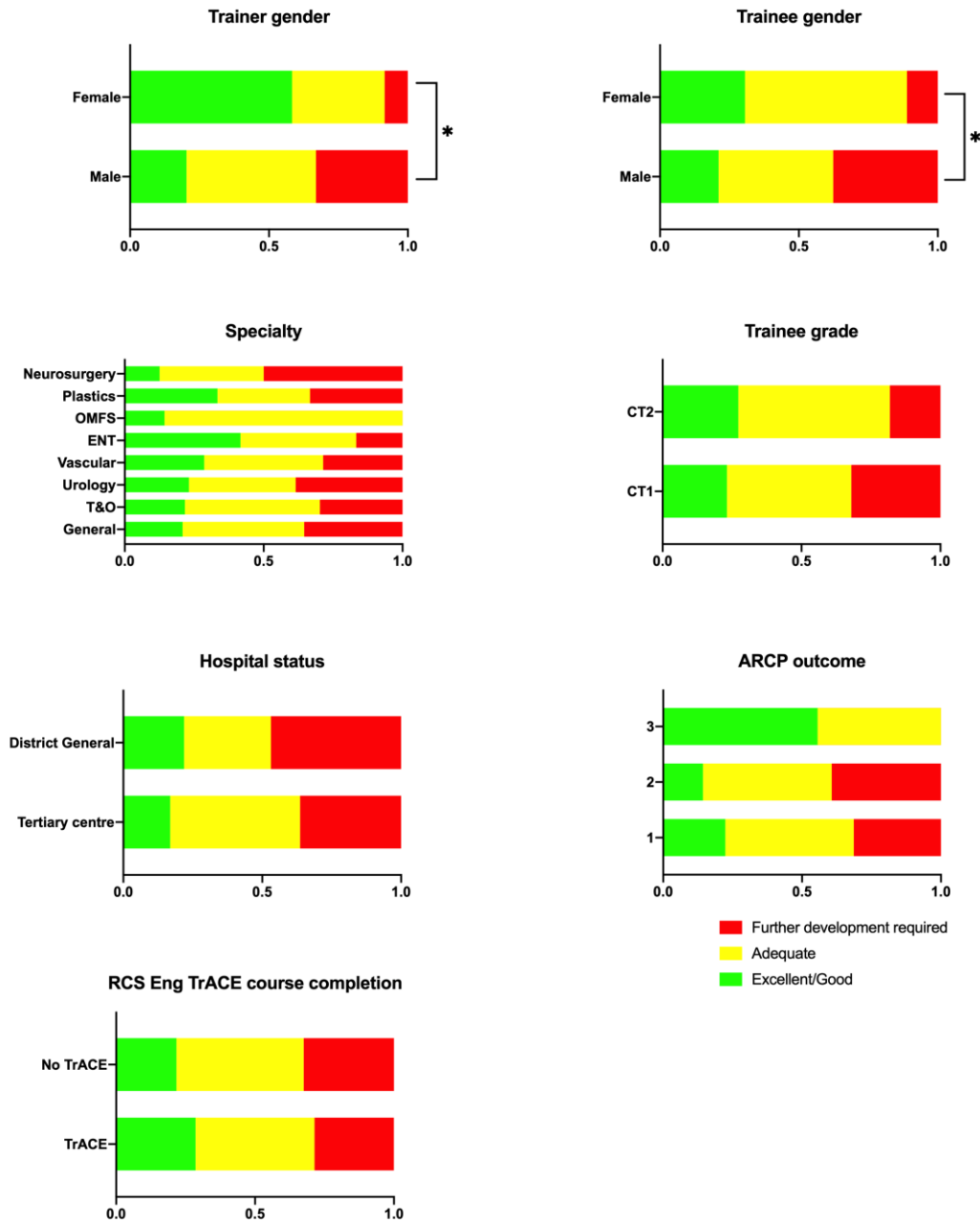


Figure 1. Stacked bar charts showing proportions of AES report grade related to trainer gender, trainee gender, specialty, trainee grade, hospital status, RCS Eng TrACE course completion, Annual Review of Competence Progression (ARCP) outcome. * $p < 0.05$ (Pearson's chi-square test). *OMFS: Oral and Maxillofacial Surgery, ENT: Otolaryngology, T&O: Trauma and Orthopaedic Surgery.*

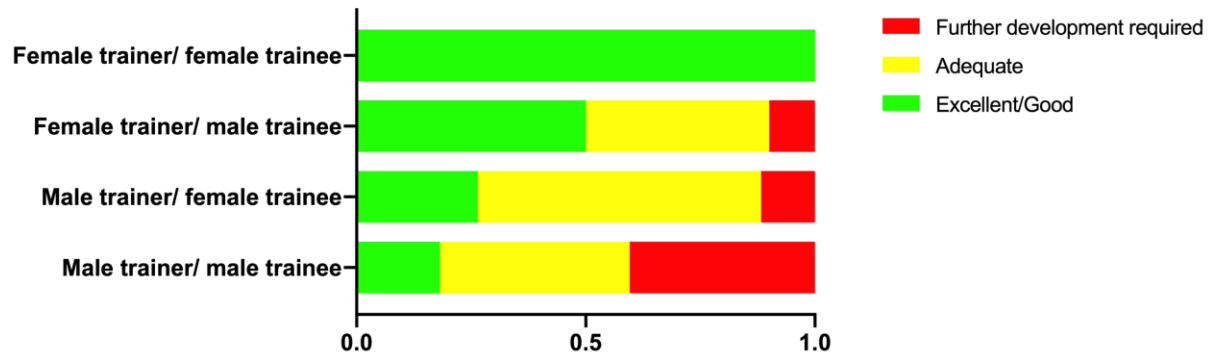


Figure 2. Stacked bar chart showing proportions of AES report grade related to trainer and trainee genders.

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