Title: The Internship as a Predictor of Residency Performance

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Introduction: Increased applications for anesthesia training have prompted residency directors to seek new ways to improve the selection process. In addition to using knowledge tests as an indicator of academic promise, some programs have evaluated components of application information. These methods include calculating composite scores based on interview ratings, National Board scores, recommendation or Dean's letters, etc.. In general, these methods have not proved useful. [1] We assessed the correlation between clinical performance during Internship (I) and Anesthesia (A) with the hope of identifying candidates most likely to excel or have problems during residency. We also reexamined some methods mentioned above.

Method: We studied residents from 1982-1985 who had completed (I) & (A) within the institution. Their files contained clinical evaluations for (I) and (A), residency applications, interview ratings, recommendation & Dean's letters, scores for National Boards (NBS), Departmental (DE) and Intraining exams (IE). Monthly clinical evaluations were used to calculate mean rating scores and obtain faculty comments; these were categorized and analyzed according to + & - frequency.

Residents were then ranked according to: (1) NBS (R_{NBS}), (2) mean DE (R_{MDE}), and IE scores (R_{MIE}), (3) a mean score from the average number of negative comments and +/- ratio from (I) (R_{MCI}) and (A) (R_{MCA}) and (4) a mean score of faculty rankings based on overall clinical competence (R_{MFR}). Correlation coefficients [Pearson (r)] were calculated for (1-4). We also compared frequency of comment on performance criteria in (I) and (A).

Results: Complete records were available for 21 residents. 11 of 13 faculty who taught all residents ranked them according to overall competence. Average clinical rating scores were calculated and 2102 comments were analyzed.

(I)= 995 [(+)=719; (-)=276; (+/-)=2.6]

(A)=1107 [(+)=543; (-)=564; (+/-)=0.96]

Dean's or recommendation letters, interview scores and comments or clinical ratings could not be used to discriminate between residents. (r)s for R_{NBS}:R_{MDE}, R_{MIE}, R_{MCI}, R_{MCA} and R_{MFR} were not significant. NBS $\leq$ 460 were associated with scores $\geq$ 0.5 S.D. below MDT or MIE. Table 1 shows (r) for rankings; Table 2, presents criteria receiving most frequent comment (+/-).

Discussion: Evaluation forms in (I) and (A) were designed to rate performance criteria rather than elicit comments. However, comments were sufficient to demonstrate a correlation between performance in (I) and (A). Also, (r) for R_{MCA}:R_{MFR} suggests that negative comments and +/- ratios can be used to develop a measure that reflects faculty judgements regarding overall performance. Though faculty commented frequently on knowledge, (r)s for exams & clinical ratings were low.

Comment distribution during (I) and (A) suggests that faculty apply a basic set of performance criteria that are independent of content and level. Frequency of comment about technical skills was low; surprising for (A). In (I), perhaps those who observe procedures rarely submit evaluations; this is not the case in (A). Increasing the frequency of assessment during (A) and soliciting reports from direct observers during (I) might add information about procedural aspects of training. Studies are in progress to document the clinical problems in (I) which persist into (A).

Our findings indicate that evaluations from (I) can provide information which might (1) improve PGY-II resident selection and (2) permit the early identification of residents likely to require special attention during specialty training.

TABLE 1

	RMDE	RMIE	RMCI	RMCA	RMFR
RMDE	1.00				
RMIE	0.64	1.00			
RMCI	0.32	0.14	1.00		
RMCA	0.33	0.12	0.75	1.00	
RMFR	0.53	0.47	0.74	0.83	1.00

TABLE 2

CLINICAL PERFORMANCE CRITERIA (I) VS (A)

(+)	(I)	(N=719)	(+)	(A)	(N=543)
1.	I.PER.SKLS.	21.6%	1.	MANAGEMENT	23.9%
2.	CONSCIENT.	16.3%	2.	I.PER.SKLS.	15.8%
3.	MANAGEMENT	14.4%	3.	CONSCIENT.	14.3%
4.	KNOWLEDGE	8.6%	4.	KNOWLEDGE	11.9
5.	EAG.TO LRN.	7.9%	5.	EAG.TO LRN.	8.6%
	% OF TOTAL = 80.1			% OF TOTAL = 74.5	

(-)	(I)	(N=276)	(-)	(A)	(N=564)
1.	CONSCIENT.	16.3%	1.	MANAGEMENT	16.4%
2.	KNOWLEDGE	15.9%	2.	KNOWLEDGE	12.5%
3.	MANAGEMENT	14.4%	3.	CONSCIENT.	11.7%
4.	I.PER.SKLS.	11.5%	4.	I.PER.SKLS.	10.1%
5.	CONFIDENCE	11.2%	5.	CONFIDENCE	9.2%
	% OF TOTAL = 80.5			% OF TOTAL = 69.9	

Reference:
1. Freidman, RB, M.D., "Sounding Board; Fantasy Land", NEJM, vol 308, No. 11, 1983.