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5 Predicting Initial ABEM Board Passage Rates Using USMLE Scores

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Background: The ACGME mandated emergency medicine residency programs demonstrate an 80% first-time passage rate on American Board of Emergency Medicine (ABEM) certifying exam. Selection committees and program directors assume that USMLE scores are good predictors of resident outcomes. USMLE scores are associated with residency in-training examination scores, which correlate with certifying exams. USMLE scores are also associated with performance on qualifying examinations in Internal Medicine, Pathology, Orthopedic Surgery, and the American Board of Surgery. However, no studies have examined whether USMLE scores are predictive of ABEM certifying exam passage.

Objectives: Examine if USMLE Step 2 Clinical Knowledge (Step 2) scores can be used to select residents that will pass the ABEM certifying exam on their initial attempt.
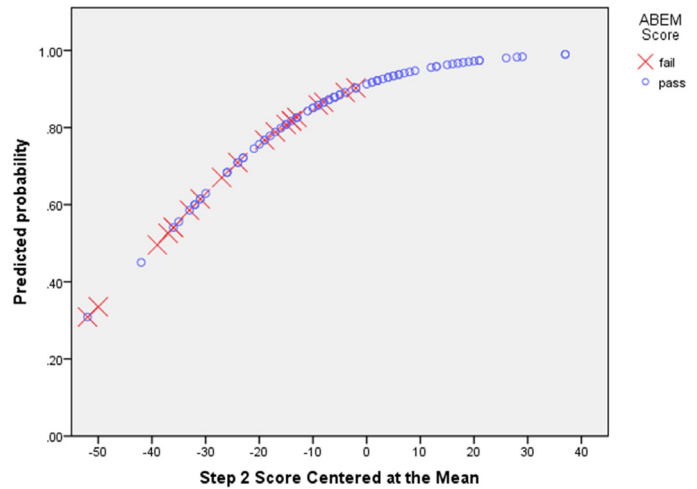
Methods: Design is a retrospective cohort study. With IRB approval, the residency program provided the investigators with a de-identified database containing variables used in this study.

Participants were residents who successfully completed training at our Emergency Medicine Residency Program between the years 2002- 2013. Step 2 scores and initial ABEM board results were available for 101 residents.

Analysis. Mean USMLE scores vary across years. Step 2 scores were centered by subtracting the relevant mean score from each resident's exam score. Logistic Regression was used to determine whether Step 2 scores could predict passage on physicians' first attempt at the ABEM (dichotomously coded pass/fail). ROC analysis was used to obtain sensitivity and specificity.

Results: Step 2 scores were a strong predictor of passing (OR 1.06, P<.001). Figure 1 illustrates how the odds of passing almost double with every 10 point increase on the Step 2. Table 1 provides the sensitivity and specificity at various Step 2 cut points.

Conclusions: USMLE Step 2 scores are highly predictive of passing the ABEM certifying exam on the first attempt. However, residency programs should take many other factors into consideration when selecting applicants, as the best test takers are not always the best physicians. Future studies should examine the utility of USMLE scores using a multi-institutional approach.

Figure. Probability of passing the ABEM on the first attempt as predicted by how many points away from the mean a person scores on teh USMLE Step 2 CK exam.

Table. Sensitivities and Specificities for predicting ABEM Board Passage on the First Attempt from Step 2 CK scores.

Points from Mean Step 2 CK	Sensitivity	Specificity
-19	0.76	0.52
-18	0.73	0.57
-17	0.72	0.57
-16	0.71	0.62
-15	0.70	0.62
-14	0.66	0.67
-13	0.65	0.76
-12	0.61	0.81
-11	0.61	0.81
-10	0.60	0.81
-9	0.57	0.81
-8	0.55	0.86
-7	0.52	0.90
-6	0.50	0.90
-5	0.45	0.90
-4	0.43	0.90
-3	0.42	0.95
-2	0.41	0.95
-1	0.42	0.95
0	0.39	1.00
1	0.38	1.00
2	0.35	1.00
3	0.32	1.00
4	0.30	1.00
5	0.28	1.00
6	0.26	1.00
7	0.23	1.00
8	0.22	1.00
9	0.21	1.00
10	0.21	1.00
11	0.21	1.00
12	0.20	1.00
13	0.18	1.00
14	0.16	1.00
15	0.16	1.00
16	0.15	1.00
17	0.13	1.00
18	0.12	1.00