



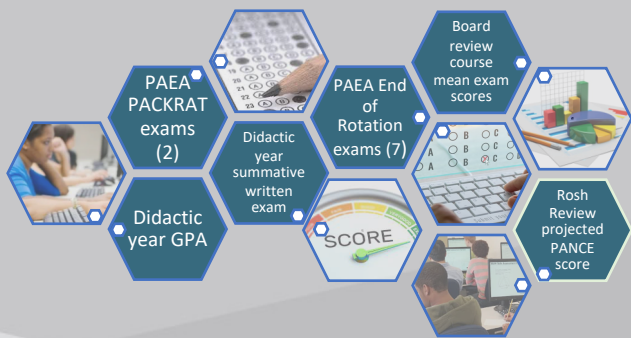
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# A Model for Determining the Strongest Predictors of PANCE Performance at Individual PA Programs

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## Background & Purpose

- Research has shown a positive correlation between Physician Assistant National Certifying Exam (PANCE) performance and didactic year grade point average (GPA), PAEA Physician Assistant Clinical Knowledge Rating and Assessment Tool (PACKRAT) exams, and PAEA End of Rotation exams (EOR).<sup>1-4</sup>
- Their predictive ability was not uniform across PA programs, making the results difficult to generalize.
- This study was conducted to determine which assessment measures of student knowledge had the strongest correlation to PANCE performance at one PA program.



## Methods

- Retrospective analysis of PANCE performance and 13 assessment measures of student knowledge, across five cohorts at one PA program (Class of 2017 – 2021) was conducted.
- The assessment measures were completed at various points during the two-year PA program. (See Graphic)
- Linear regression models were used to determine the correlation between each variable and PANCE performance.
- Multiple linear regression models were used to determine the correlation between multiple variable groupings of the assessment measures to PANCE performance.

## Results

- Positive correlations between PANCE performance and each assessment measure were found (n=346).
- The individual and grouped variables are listed in order of strongest correlation to PANCE performance, all showed statistical significance. (See Tables)
- The mean of the PACKRAT and EOR exams had a stronger correlation to PANCE performance than the individual exam scores.
- Analyses revealed the combined grouping of didactic year GPA, EOR exams mean, and PACKRAT exams mean most accurately predicted PANCE performance and accounted for 70% of the variance in PANCE scores. (See Table)

### Correlation of Individual Variables to PANCE Performance

Assessment Measure	Multiple R	R <sup>2</sup>	p-value
Mean of PAEA EOR exams	0.81	0.65	<.0005
Mean of PAEA PACKRAT exams	0.72	0.52	<.0005
Didactic year GPA	0.72	0.52	<.0005
Didactic year summative written exam score	0.47	0.22	<.0005
Rosh Review projected PANCE score	0.42	0.18	<.0005
Mean of board review course exams	0.18	0.03	<.005

### Correlation of Multivariable Groupings to PANCE Performance

Assessment Measure Grouping	Multiple R	R <sup>2</sup>	p-value
GPA, EOR exams mean, & PAKCRAT exams mean	0.84	0.70	<.0005
EOR exams mean & GPA	0.83	0.69	<.0005
EOR exams mean & PACKRAT exams mean	0.83	0.68	<.0005
GPA & PACKRAT exams mean	0.78	0.60	<.0005
GPA, PACKRAT (didactic year) score, Didactic year summative exam score	0.77	0.59	<.0005
GPA & PACKRAT (didactic year) score	0.74	0.54	<.0005

## Conclusions

- All assessment measures had positive correlations to PANCE performance, with the PAEA EOR exams mean having the strongest individual correlation.
- The grouping of three predictors - didactic year GPA, PAEA EOR exams mean, and PAEA PACKRAT exams mean provided the most reliable and accurate prediction of PANCE performance.
- Other PA programs can analyze their assessment measures using regression models to determine the strongest predictors of PANCE performance in their program.
- This information will benefit PA programs in developing more meaningful risk stratification of students and better allocation of program remediation resources to improve rates of passing the PANCE on the first attempt.

## References

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