Board Certification
A Rite of Passage after Residency

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Outline

• ABIM certifying examination
• Brief Literature review regarding “How to Pass the Test”
• Potential Predictors of Passing the Exam
• Residency Program innovations
American Board of Internal Medicine

• ABIM
  – Established in 1936
  – “works to ensure the quality of our nation’s health care by certifying physicians who practice IM and one or more of its 19 subspecialties.”
  – Voluntary - - “not required to practice medicine”

• “ABIM Board certification is recognized as a marker of a physician’s Professionalism, Knowledge and Skill.”

http://www.abim.org/
American Board of Internal Medicine

• Certification is associated with better care
  – Higher performance on a broad range of quality metrics (Reid RO, Arch of Intern Med. 2010)
  – Higher scores on ABIM exam
    • are associated with better performance on composite measures for chronic care/preventive services (Holmbe ES, et al. Health Serv Res. 2010)
How to Pass ??

• Board Review Course
• Board Review Books
• MKSAP, Medstudy, etc
• Textbooks, Journals, etc
• Flashcards, apps, etc.
How to Pass??

Methods of Preparing for the Certifying Examination in Internal Medicine and their Efficacy (Day SC, et al. JGIM 1994)

• Survey of 1991 Board takers
  – 1-2 weeks prior to exam; 2,780 responses (32%)
  – Asked how they prepared for Boards
    • Study Methods and Study Effort
  – Information available on all subjects
    • Training program, prior attempts, PD rating, current activities, ABIM test score
How to Pass??

• Candidates used a mean of 5.2 methods of study

• Study Method Score
  — Not associated with improved ABIM Score

• Study Effort Score
  — First Time takers: increased effort score associated with a score 7 points higher
  — Repeat Takers: increased effort score associated with a score 35 points higher
How to Pass??

• Best Predictors in this study
  – First Time Takers: Program Director Rating
  – Repeat Takers: Previous Score on Boards, Years since training

• Authors Conclusions
  – “...a candidate previous educational and clinical experiences are far more important predictors of performance ...than are how long he or she prepares and which methods he or she uses to study.”
How to Pass??

• Board Review Courses?
  – Not much info on IM Board Review Courses
  – One study on Dental Board Courses - - No
How to Pass??

• Subspecialty Elective Rotations taken during IM Residency??
  – No
How to Pass?

• Conference attendance during residency??
  – Not so much
    • Note: single institution study
What about the In-Training Examination (ITE)?

• Validity of the ITE for predicting ABIM certifying examination scores. Grossman RS, et al. JGIM 1992
  – 109 Residents
    • 6 programs (community and university)
    • Overall ABIM pass rate was 73%
  – ITE 2 and ITE 3 results correlated with ABIM performance
  – 35th Percentile on ITE
    • ≥35%tile: 89% probability of passing the ABIM exam
    • <35%tile: 83% probability of failing the ABIM exam
What about the In-Training Examination (ITE)?

  – 155 Residents
    • 3 programs in VA
    • Validation sample – 64 residents outside VA
  – Developed Prediction equation based on % correct on ITE exam (A in equation)
    • \(1/(1+\text{power}(2.718,\text{-(12.4+0.2144*A1)}))\)
    • Overall Correct - 79% of the time
  – Conclusion: “ITE is a useful tool in assessing the likelihood of a resident passing or failing the ABIM exam but is less predictive for residents who received ITE scores between 49 and 65.”
Cleveland Clinic Experience
A Nomogram to Predict the Likelihood of Passing the American Board of Internal Medicine Examination

• OBJECTIVES

– To develop a nomogram based on resident characteristics from one internal medicine residency program and assess its accuracy in predicting the graduates’ successful passing of the ABIM certification examination.

– To test the validity of the nomogram using data from two other independent residency programs.

A nomogram to predict the probability of passing the American Board of Internal Medicine examination.
Brateanu A, Yu C, Kattan MW, Olender J, Nielsen C.
• METHODS

– The development cohort – obtained retrospectively from the files of 194 Cleveland Clinic Internal Medicine residents who began training between 2004 and 2008.

– The external validation – retrospectively, on 126 residents who graduated from two other independent Internal Medicine residency programs between 2007 and 2011.
# Baseline graduates characteristics

<table>
<thead>
<tr>
<th>VARIABLES</th>
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<tbody>
<tr>
<td>Age in years</td>
<td>USMLE 1 score</td>
</tr>
<tr>
<td>Sex (male/female)</td>
<td>USMLE 2CK score</td>
</tr>
<tr>
<td>Graduates (MD/DO)</td>
<td>USMLE 3 score</td>
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<tr>
<td>Fellowship aspiration</td>
<td>ITE score in PGY1</td>
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<tr>
<td>Break in years</td>
<td>ITE score in PGY2</td>
</tr>
<tr>
<td>Interview score</td>
<td>ITE score in PGY3</td>
</tr>
<tr>
<td>Noon conference attendance</td>
<td>Number of call months in the last 6 months</td>
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* In-Training Examination score expressed as percentage of questions answered correctly.

Abbreviations: ABIM = American Board of Internal Medicine; MD = medical doctor; USMLE = United States Medical Licensing Examination; CK = Clinical knowledge; ITE = In-training examination; PGY = postgraduate year


A nomogram to predict the probability of passing the American Board of Internal Medicine examination.

Brateanu A, Yu C, Kattan MW, Olender J, Nielsen C.
• **Statistical analysis**
  
  – Multivariable logistic regression analysis was conducted to investigate the predictive power of each individual and demographic characteristic on the ABIM exam performance.
  
  – All the collected variables were included for initial evaluation except the USMLE 3 score due to more than half of the residents who didn’t have the score on file.


A nomogram to predict the probability of passing the American Board of Internal Medicine examination. Brateanu A, Yu C, Kattan MW, Olender J, Nielsen C.
• Results
  – Of the 194 graduates, 175 (90.2%) successfully passed the ABIM certification examination.
    • the mean age of the Cleveland Clinic residents was 28.6 years and two thirds were males.
    • Most residents were MD graduates (80.4%), with a smaller percentage coming from osteopathic schools (19.6%).
    • The mean time passed between the medical school graduation and beginning of the residency program was 1.7 years.
    • There was a high interest in pursuing a fellowship career in more than 80% of the residents.
  – Of the 126 graduates from the other two residency programs used for external validation, 116 (92.1%) passed the ABIM examination.
The final multivariable logistic regression analysis, on which the nomogram was based.

<table>
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<tr>
<th>Predictor Variables</th>
<th>Odds Ratio (95% C.I.)</th>
<th>P - value</th>
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<tbody>
<tr>
<td>ITE* score in PGY1</td>
<td>1.27 (1.02, 1.58)</td>
<td>0.031</td>
</tr>
<tr>
<td>ITE* score in PGY2</td>
<td>1.19 (1.07, 1.33)</td>
<td>0.002</td>
</tr>
<tr>
<td>ITE* score in PGY3</td>
<td>1.58 (1.23, 2.04)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Number of call months in the last 6 months</td>
<td>0.34 (0.11, 1.06)</td>
<td>0.065</td>
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The nomogram concordance index in the development cohort: 0.98 (95% CI. 0.95 – 1.00).
The nomogram concordance index in the validation cohort: 0.94 (95% CI, 0.90 – 0.99).

A nomogram to predict the probability of passing the American Board of Internal Medicine examination.
Brateanu A, Yu C, Kattan MW, Olender J, Nielsen C.
Predictive graphic nomogram for the probability of passing the American Board of Internal Medicine (ABIM) exam.

A nomogram to predict the probability of passing the American Board of Internal Medicine examination.
Brateanu A, Yu C, Kattan MW, Olender J, Nielsen C.
Predicting the likelihood of passing the American Board of Internal Medicine (ABIM) certifying examination

In-Training Examination (ITE) score in the postgraduate year (PGY) 1  50
In-Training Examination (ITE) score in the postgraduate year (PGY) 2  51
In-Training Examination (ITE) score in the postgraduate year (PGY) 3  62
Number of call months in the last 6 months of the residency  3

Probability of passing the American Board of Internal Medicine (ABIM) certifying examination

67%

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• CONCLUSIONS

– The nomogram is a simple tool that predicts the probability of internal medicine residents passing the ABIM examination.

– The nomogram has the potential to help programs design curricular activities to support at-risk residents preparing for the ABIM examination.

A nomogram to predict the probability of passing the American Board of Internal Medicine examination. Brateanu A, Yu C, Kattan MW, Olender J, Nielsen C.
Projects to improve the medical knowledge and ITE scores

• Transitioning from a Noon Conference Model to an Academic Half-day Curriculum Model
Transitioning from a Noon Conference to an Academic Half-day Curriculum Model

• INTRODUCTION
  – The academic half-day (AHD) curriculum is an alternative to the traditional noon conference (NC) curriculum in graduate medical education.
  – At our institution we have 3 separate AHD arranged per PGY Level
    • PGY I Class – Tuesday 12 to 3
    • PGY II Class – Wednesday 12 to 3
    • PGY III Class – Friday 12 to 3
• **OBJECTIVE**

  – To investigate the association between the AHD and NC curriculum and medical resident knowledge acquisition, as reflected by the Internal Medicine In-Training Examination (IM-ITE) 2 and 3 scores

  – To assess resident learning satisfaction under both curricula
• CONCLUSION

– At our institution, the transition to the AHD curriculum was associated with improvement in resident medical knowledge acquisition and increased learning satisfaction.
Thank you!
Questions??