



Voluntarily Postponing Testing Is Associated with Lower Performance on the Pediatric Board Certifying Examinations

Ying Du, PhD¹, Linda A. Althouse, PhD¹, and Rachael Jin Bee Tan, PhD²

Objective To investigate whether postponing certification testing, either voluntarily or involuntarily, affects a candidate's performance on pediatric certifying examinations.

Study design Both general pediatrics (GP) and pediatric subspecialty (PS) examination candidates were included in the study. Candidates were classified into 3 groups based on time since the completion of training: no delay (<12 months), short delay (12-24 months), and long delay (≥24 months). Examination scores and pass rates in the first GP and PS certifying examinations were compared to assess between-group differences.

Results Significant differences in scores and pass rates were found for GP candidates who voluntarily waited 1 year or longer to take the certifying examination. Similarly, PS candidates who opted not to take the first examination available had significantly lower scores and pass rates. However, no significant difference was found for PS candidates who had to wait to take their examination owing to the Board's offered examination schedule.

Conclusion Candidates who postpone taking the certifying examination are less likely to pass the examination. The longer a candidate elects to wait to take the examination, the less likely he or she is to pass. The availability of the PS examinations once every 2 years does not affect pass rates and scores, as long as PS candidates take the first available examinations after completing fellowship. (*J Pediatr* 2016;177:308-12).

The American Board of Pediatrics (ABP) began offering certification in general pediatrics (GP) more than 80 years ago. Certification in the pediatric subspecialties (PS) followed in 1961. Applicants registering for the GP certifying examination must complete pediatric training in an accredited program and hold a valid, unrestricted license to practice medicine. In addition, applicants registering for PS certifying examinations must achieve initial certification in GP and meet the specific requirement for that subspecialty.

Training for both GP and PS typically ends in early summer. The GP certifying examination is offered annually in the fall, with most applicants taking the examination in the year they complete training (within 4-5 months of completing training). The PS certifying examinations are offered once every 2 years on a single predetermined date in spring or fall. For both the GP and PS examinations, most candidates take the first available examination after completing required training. Some may delay taking the examination for various reasons. Depending both on candidates completing their PS training and on the examination schedule, the time between a candidate completing training to the first available examination ranges from 2 months to 22 months. The ABP has been contacted by some PS candidates who feel they are put at a disadvantage by not having the opportunity to take the examination within a few months after completing required training.

The availability of an examination, as well as the personal decision to postpone testing, are also important to consider in light of recent policy changes at the ABP. The ABP's time-limited eligibility policy, announced in 2009¹ and implemented in 2014, requires that new and repeat applicants successfully complete the certifying examination within 7 years of completing the required training. If the applicant does not meet this requirement, then an additional period of supervised practice in an accredited training program is required to become eligible to take the examination. This policy makes the decision on when to take the certifying exam even more critical, because it limits the number of attempts that candidates can make before losing their eligibility. Before the implementation of this policy, there was no limit to the number of times that an approved applicant could take the GP or PS examinations.

Some medical specialty boards have studied the relationship between a delay in certification testing and candidate performance. The American Board of Surgery (ABS) investigated the effect of a delay in taking the annual ABS qualifying test (required examination to be admissible to the General Surgery Certifying Examination) on

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| ABEM | American Board of Emergency Medicine |
| ABP | American Board of Pediatrics |
| ABS | American Board of Surgery |
| FTT | First-time takers |
| GLM | Generalized linear model |
| GP | General pediatrics |
| ITE | In-training examination |
| PL-3 | Pediatric level 3 |
| PS | Pediatric subspecialties |

From the ¹The American Board of Pediatrics, Chapel Hill, NC; and ²Schroeder Measurement Technologies, Clearwater, FL

The authors declare no conflicts of interest.

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<http://dx.doi.org/10.1016/j.jpeds.2016.06.030>

examination performance.² The results demonstrated that candidates who delayed testing by 1 year or more were at “extremely high risk” of failing the qualifying examination and the ABS certifying examination on the first attempt. The American Board of Emergency Medicine (ABEM) also undertook a study to determine whether a delay in taking the qualifying examination is associated with poorer performance.³ The results confirmed the hypothesis and found that the effect was severe if the delay was greater than 2 years. The National Council of State Boards of Nursing also found that lag time is inversely related to candidates’ pass rate on the National Council Licensure Examination.⁴

The purpose of the present study was to investigate whether there are differences in total mean scores and pass rates for the GP and PS certifying examinations between individuals who took the examination immediately after training and those who postponed testing, either voluntarily or involuntarily owing to the ABP examination schedule.

Methods

This study examined results of American Medical School Graduate (AMG) first-time takers’ (FTT) GP certifying examinations between 2000 and 2011. This AMG sample provides the greatest homogeneity for comparing GP scores from year to year. For the PS sample, FTT PS certifying examination results from 1997 to 2012 were used. Examinations administered after 2012 were not used, because the passing standards and score reporting scale have changed. International Medical School Graduates (IMGs) were included in the PS sample, because all subspecialty applicants are required to have passed the GP certifying examination, so there was a minimum level of GP knowledge common across the PS sample. Candidate data collected from training programs were used to classify candidates into 3 groups:

Group 1: No delay. Candidates took the first available examination within a year after completing required training

Group 2: Short delay. Candidates took the examination between 12 and 24 months after completing required training. For the GP, this means that they elected to not take the examination the first available time (short candidate delay); for the PS, this examination would be the next available examination (short ABP delay).

Group 3: Long delay. Candidates did not take the first available examination and were tested more than 24 months after completion of required training.

The ABP also offers an in-training examination (ITE) to residents as preparation for the GP examination. The ITE consists of items that were used in a previous GP certifying examination and is administered by onsite training programs annually in the summer. The ITE is designed as an abbreviated version of the certifying examination and is based on the same content outline. It allows residents to familiarize themselves with the content and to some extent predicts their performance on the certifying examination. The ITE taken during the third year of pediatric training, also known as

pediatric level 3 (PL-3), has been found to have the greatest predictive power for GP certifying examination performance among all 3 residency training years,⁵ and thus served as the baseline measure in the GP sample. The subspecialty in-training examinations were not offered to fellows during their PS fellowship training until 2005. More than 50% of the PS sample had never taken a subspecialty ITE, but everyone had taken the GP certifying examination as a prerequisite for PS certification testing; therefore, fellows’ first GP scores were used as the baseline measure in the analysis of the PS sample. Both the ITE and certifying examinations were scored on a standardized scale of 0–800, with scores reported in increments of 10. The minimum passing score was 410 for the GP certifying examination and 400 for the PS certifying examinations. The baseline measures were included in the study to control for the preexisting knowledge difference, which can influence the Board examination performance.

One-way ANOVA was used to measure the group mean score differences in candidates’ first GP and PS certifying examinations. A univariate generalized linear model (GLM) was used to investigate the power of group affiliation (no delay, short delay, and long delay) in explaining the variance in candidate scores. The χ^2 test and multiple logistic regression were used to assess differences in group pass rates.

Results

The GP sample comprised a total of 22 344 candidates, including 15 794 females (70.7%) and 6550 males (29.3%). The majority of the candidates (20 034; 89.7%), were in group 1, 1726 (7.7%) were in group 2, and the remaining 584 (2.6%) were in group 3. The average age of the FTTs in the GP sample was 30.6 years for group 1, 32.4 years for group 2, and 35.0 years for group 3. The PS sample comprised 10 573 candidates, including 5526 females (52.3%) and 5047 males (47.7%), with 4593 (43.4%) in group 1, 4442 (42.0%) in group 2, and 1538 (14.5%) in group 3. The average age of FTTs was 35.0 years in group 1, 36.1 years in group 2, and 38.5 years in group 3. The **Figure** presents examination scores and pass rates for the GP and PS samples. In the GP sample, group 1 had the highest scores and pass rates and group 3 had the lowest. In the PS sample, performance was almost identical for groups 1 and 2, with group 3 far behind.

The ANOVA identified a statistically significant performance difference among the 3 GP groups ($F_{2,22\ 341} = 625.0$; $P = .000$). The pass rate difference was statistically significant among the groups ($\chi^2_5 = 850.7$; $P = .000$). The ANOVA of the PS certifying examination scores also found a significant difference in group performance ($F_{2,10\ 570} = 98.1$; $P = .000$). The post hoc tests showed a significant difference only between group 3 and the other 2 groups, as did the pass rate difference ($\chi^2_5 = 155.0$; $P = .000$).

The univariate GLM model found that sex, age, group, and PL-3 ITE scores were significantly related to the first-time GP certifying examination scores ($F_{5,22\ 338} = 4903.9$; $P < .000$). Together, these variables accounted for 52.3% of the score variance on GP certifying examinations. PL-3 ITE scores accounted

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