



PCAT Webinar

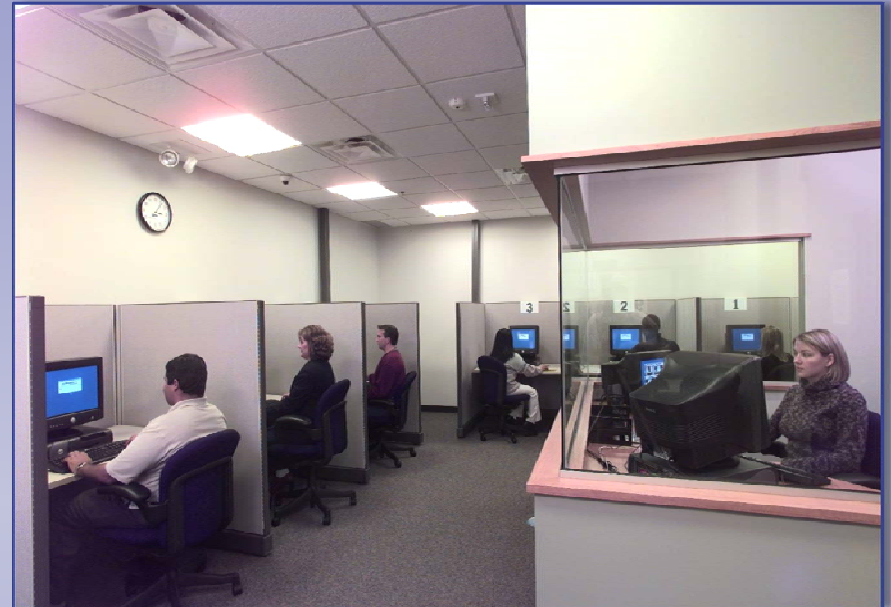
November 16 and 17, 2011

Agenda

- **Updates on 2011 Computer-Based Testing**
- **PCAT 2012-2013 Test Blueprint**
- **Interpreting PCAT Scores**
- **Reliability and Validity**
- **New Norms for 2012**
- **Possible Changes to the PCAT Writing Score**
- **The Official PCAT Practice Test**
- **Questions**

2011 Computer-Based Testing

- Approximately 22,000 examinees tested at Pearson VUE testing centers in July and September 2011.
- Official Reporting was forwarded 3 weeks upon completion of testing window.
- Received positive feedback indicating that the test was user-friendly and that Pearson VUE provided a comfortable testing environment.



2011 Computer-Based Testing

Overview

- Candidates follow a two step process:
 1. Register at PCATweb.info
 2. Schedule at PEARSONVUE.com/PCAT
- We suggest candidates register and schedule by the *“Register and Schedule By”* date to receive their preferred testing date, time, and location.
- Candidates receive an **unofficial** preliminary score report for the multiple-choice subtests at the Test Center immediately after completing the test.
- The multiple-choice subtests and essays are then scored and officially reported by Pearson to PharmCAS, pharmacy school recipients, and candidates.

2011 Computer-Based Testing

Information available to Candidates

- YouTube videos at www.youtube.com/PearsonFieldResearch
- Up-to-date and comprehensive information can be found in the downloadable Candidate Information Booklet (CIB) at PCATweb.info, which is also available as a printed booklet at pharmacy schools and admissions offices.
- A CBT testing tutorial is available at PEARSONVUE.com/PCAT

2011 Computer-Based Testing

2012-13 PCAT Testing Schedule

July 2012

- 18, 19

September 2012

- 18, 19, 24, 25, 26

January 2013

- Jan. 8, 9



Registration opens March 1, 2012.

PCAT Test Blueprint

Current PCAT Blueprint 2011-12

PCAT Subtest	Number of Core Items	Number of Experimental Items	Time Allowed
Part 1: Writing	1 Prompt (either operational or experimental)		30 min.
Part 2: Verbal Ability	40	8	30 min.
Analogies	25	5	
Sentence Completion	15	3	
Part 3: Biology	40	8	30 min.
General Biology	25	4-5	
Microbiology	7-8	1-2	
Anatomy & Physiology	7-8	1-2	
Part 4: Chemistry	40	8	30 min.
General Chemistry	25	5-6	
Organic Chemistry	15	2-3	
Rest Break			Variable
Part 5: Writing	1 Prompt (either operational or experimental)		30 min.
Part 6: Reading Comprehension	40 / 5 passages	8 / 1 passage	50 min.
Comprehension	12-13	2-3	
Analysis	15	3-4	
Evaluation	12-13	2-3	
Part 7: Quantitative Ability	40	8	40 min.
Basic Math	5-6	1-2	
Algebra	7-8	1-2	
Probability & Statistics	7-8	1-2	
Pre-Calculus	9-10	2-3	
Calculus	9-10	2-3	
Total Test	200 multiple-choice items + 1 writing prompt	40 multiple-choice items + 1 writing prompt	240 min. = 4 hrs. + Rest Break

New PCAT Blueprint 2012-13

PCAT Subtest	Number of Core Items	Number of Experimental Items	Time Allowed
Part 1: Writing	1 Prompt (either operational or experimental)		30 min.
Part 2: Verbal Ability	40	8	30 min.
Analogies	25	5	
Sentence Completion	15	3	
Part 3: Biology	40	8	30 min.
General Biology	20-22	4-5	
Microbiology	7-8	1-2	
Anatomy & Physiology	12-13	2-3	
Part 4: Chemistry	40	8	30 min.
General Chemistry	20-22	4-5	
Organic Chemistry	12-13	2-3	
Basic Biochemistry Processes	7-8	1-2	
Rest Break			Variable
Part 5: Writing	1 Prompt (either operational or experimental)		30 min.
Part 6: Reading Comprehension	40 / 5 passages	8 / 1 passage	50 min.
Comprehension	12-13	2-3	
Analysis	14-15	3-4	
Evaluation	12-13	2-3	
Part 7: Quantitative Ability	40	8	40 min.
Basic Math	5-6	1-2	
Algebra	7-8	1-2	
Probability & Statistics	7-8	1-2	
Pre-Calculus	9-10	2-3	
Calculus	9-10	2-3	
Total Test	200 multiple-choice items + 1 writing prompt	40 multiple-choice items + 1 writing prompt	240 min. = 4 hrs. + Rest Break

PCAT Blueprint 2012-13

Biology (approximate % for each content objective)

Biology Content	2011 – 2012	2012 – 2013
General Biology	60%	50%
Cellular and Molecular Biology	15%	17%
Diversity of Life Forms	15%	17%
Ecology	5%	—
Plants, Algae and Fungi	5%	—
Animals	10%	—
Health	10%	17%

Microbiology	20%	20%
Microorganisms	4%	4%
Infectious Diseases & Prevention	4%	4%
Microbial Ecology	4%	4%
Medical Microbiology	4%	4%
Immunity	4%	4%
Anatomy and Physiology	20%	30%
Structure	8%	12%
Systems	12%	18%

PCAT Blueprint 2012-13

Chemistry Content	2011 – 2012	2012 – 2013
General Chemistry	60%	50%
Atomic Theory	8%	8%
Chemical Bonding	8%	8%
Reactions and Reaction Mechanisms	15%	14%
Kinetic Theory	8%	8%
Solutions	8%	8%
Basic Organic Chemistry	8%	—
Nuclear Chemistry: Radioisotopes	5%	4%

Chemistry (approximate % for each content objective)

Organic Chemistry	40%	32%
Structure and Properties	20%	16%
Reactions of Organic Compounds	20%	16%
Basic Biochemistry Processes	—	18%
DNA and RNA	—	6%
Lipids	—	6%
Proteins	—	6%

Interpreting PCAT Scores

Score Reporting

- An Official Score Report is available to each candidate online at the PCAT website by logging in to the candidate's profile, with email alerts sent to candidates when the reports are available.
- Official Transcripts, showing all PCAT scores earned within the previous five years, are sent to institutions, either printed (via mail) or electronically (via SFTP for Pearson subscribers or via PharmCAS).
- Pharmacy schools receiving paper transcripts receive a summary of all candidates whose scores were sent to their institution.

Interpreting PCAT Scores

PCAT personal Score Reports and Official Transcripts present three types of scores:

- Scaled Scores
- Percentile Ranks
- Writing Scores

Neither Pearson nor the AACP establishes passing scores for individual PCAT subtests or for the PCAT as a whole. It is the responsibility of each school of pharmacy to determine how it uses PCAT scores.

Interpreting PCAT Scores

Scaled Scores

- Range from 200-600, making scores directly comparable across test forms and from year to year.
- Reported for the 5 multiple-choice subtests and Composite score.

Percentile Ranks

- Range from 1-99.
- Indicate a candidate's performance relative to the current PCAT normative sample (currently, all first-time examinees from October 2004 through May 2007).
- Are provided for each of the 5 multiple-choice subtests and the Composite score.

Interpreting PCAT Scores

Writing Scores

- Range from 1.0 to 5.0.
- Two scores separate are reported: Conventions of Language and Problem Solving.
- Both Writing scores represent an average of scores assigned by two scorers.

For example, a score of 4.5 is the average of one scorer assigning a 4.0 and another scorer assigning a 5.0.

Interpreting PCAT Scores

Mean Writing Scores

- The mean Writing scores differ for each PCAT test administration, reflecting:
 - differences in prompt content
 - slight differences in prompt difficulty, and
 - differences in the group of candidates sitting for the PCAT during testing window.
- For this reason, a candidate's Writing scores should always be evaluated relative to the mean scores for the test date on which the scores are earned.

Interpreting PCAT Scores

Official Transcript Sample

Most Recent Test Date	PCAT MULTIPLE-CHOICE SCORES							PCAT WRITING SCORES		
	Score	Verbal Ability	Biology	Reading Comp.	Quantitative Ability	Chemistry	Composite		Score	Mean
June 2009	SS	407	392	407	424	446	415	Conventions of Language	4.5	2.90
	PR	60	33	57	79	94	73	Problem Solving	3.5	2.93
Previous Test Dates	PCAT MULTIPLE-CHOICE SCORES							PCAT WRITING SCORES		
	Score	Verbal Ability	Biology	Reading Comp.	Quantitative Ability	Chemistry	Composite		Score	Mean
January 2009	SS	401	390	400	420	440	410	Conventions of Language	3.0	2.92
	PR	50	29	45	74	91	64	Problem Solving	2.5	2.89
August 2008	SS	398	385	396	412	430	402	Conventions of Language	2.0	2.90
	PR	45	22	38	62	85	47	Problem Solving	2.0	2.87

Interpreting PCAT Scores

Reporting Personal Information

- Pearson uses only the last four SSN digits to identify a candidate to reduce candidate exposure to identity theft in the event that data is compromised in any way.
- The PCAT CID (Candidate ID) is a unique identifier and is suggested to be used to match PCAT candidates.

Reliability and Validity

Reliability

- Satisfactory internal consistency for multiple-choice subtest and Composite scores (K-R 20 = 0.80-0.95)
- High inter-rater reliability (0.98 and above) for Writing scores

Validity

- Intercorrelations among PCAT subtest and Composite scores (2010-11)

PCAT Subtest	Vbl.	Bio.	Rdg.	Quant.	Chem.	Comp.	W: CL
Verbal Ability	—	—	—	—	—	—	—
Biology	0.54	—	—	—	—	—	—
Reading Comprehension	0.67	0.47	—	—	—	—	—
Quantitative Ability	0.33	0.45	0.34	—	—	—	—
Chemistry	0.35	0.57	0.33	0.60	—	—	—
Composite	0.77	0.80	0.74	0.71	0.76	—	—
Writing: Conventions of Language	0.22	0.15	0.24	0.13	0.13	0.23	—
Writing: Problem Solving	0.23	0.17	0.25	0.13	0.13	0.24	0.81

Reliability and Validity

Predictive Validity

Correlations Between Predictors and GPA in First Year of Pharmacy Program (N = 2,244)		
Variable	First Year GPA	
	Uncorrected	Corrected
	<i>r</i>	<i>r*</i>
PCAT Verbal Ability SS	0.13	0.16
PCAT Biology SS	0.26	0.35
PCAT Reading Comprehension SS	0.17	0.24
PCAT Quantitative Ability SS	0.21	0.28
PCAT Chemistry SS	0.29	0.36
PCAT Composite SS	0.32	0.44
PCAT Writing: Conventions of Language	0.06	
PCAT Writing: Problem Solving	0.06	
Entering GPA: Cumulative	0.44	
Entering GPA: Math	0.28	
Entering GPA: Science	0.44	

From: Meagher, D. G., Pan, T., & Perez, C. P. (2011). Predicting performance in the first-year of pharmacy school. *American Journal of Pharmaceutical Education*, 75(5), Article 81.

Abbreviations: SS = Scaled Score; GPA = grade point average; *r* = correlation coefficient; *r*² = the percent of one variable explainable by another variable

All correlations are weighted means of the correlations for the 22 schools combined based on Fisher's *z* transformations; the corrected correlations were done using the formula of Cohen, et al. (2003, p. 58).

New Norms for 2012

- Pearson will be introducing new percentile rank norms in July 2012.
- The new norms will reflect the performance of a more recent PCAT examinee population than the current norms.
- The new percentile ranks will be based on the performance of all first-time PCAT examinees who took the test from June 2007 through January 2011.
- The scaled scores will not change.
- A new Technical Manual with detailed information about the norms will be sent to all pharmacy programs in time to use with the July 2012 scores.
- Additional downloadable documents useful in interpreting PCAT scores will be available on the PCAT website (PCATweb.info).

Possible Changes to the PCAT Writing Score

- To achieve a greater and more even distribution of scores than is currently observed, Pearson is conducting a study using a new scoring rubric.
- We are currently analyzing data from a recent pilot scoring of 1,500 essays from the July PCAT using a new 6-point scale for Problem Solving Writing.
- The scoring rubric for the Problem Solving Writing combines elements of the current Conventions of Language and Problem Solving rubrics.
- As soon as all the data analyses are complete, we will be sharing the results with the AACCP PCAT Advisory Panel and will discuss the possibility of introducing the new Problem Solving Writing score with the July 2012 administration.

The Official PCAT Practice Test

Three Official PCAT Practice Tests are available on the PCAT website.

Examinees who took the Official PCAT Practice Test:

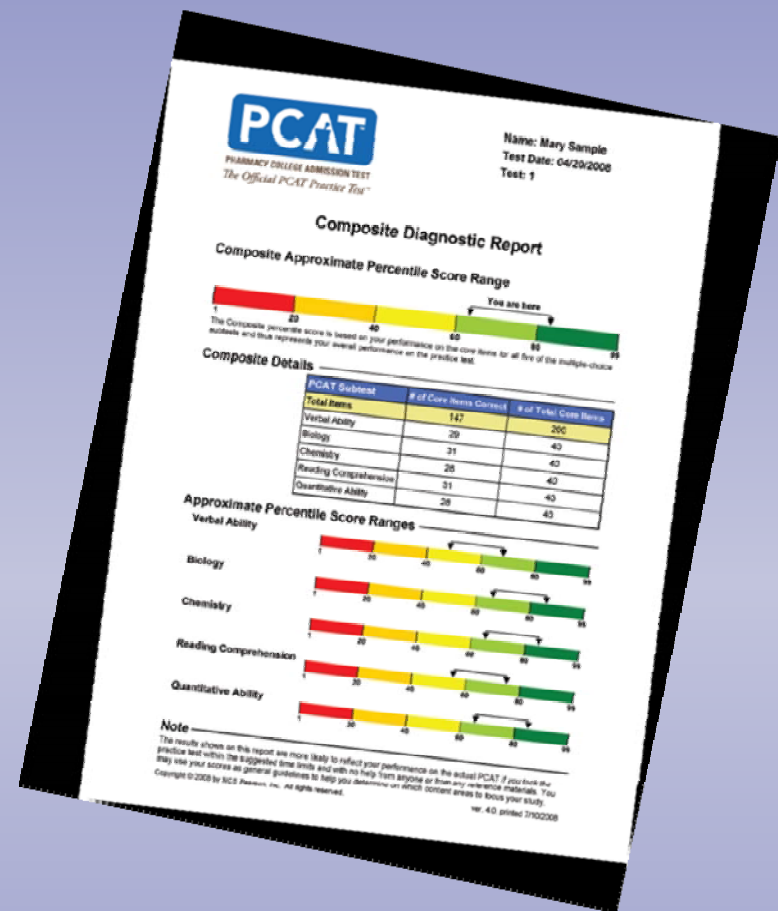
- Average higher on the actual PCAT compared to those who have not taken the Official PCAT Practice Test.
- Show significant score increases on their 2nd PCAT attempt after taking the Practice Test.



The Official PCAT Practice Test

The Official PCAT Practice Test includes a **Diagnostic Report** which:

- assesses performance and
- evaluates strengths and weaknesses by suggesting areas that need review.



The Official PCAT Practice Test

Mean PCAT Scaled Scores and Writing Scores for Three Categories of Examinees 2010–11

PCAT Subtest/Composite	Prior to 1st Attempt PCAT			
	0 OPT	1 OPT	2 OPTs	3 OPTs
Verbal Ability	401.6	409.8	412.5	414.1
Biology	404.5	413.5	418.2	422.1
Reading Comprehension	397.1	404.1	405.9	408.2
Quantitative Ability	400.9	409.0	416.1	418.6
Chemistry	402.2	414.3	422.6	429.1
Composite	401.3	410.1	415.1	418.4
Writing: Conventions of Language	2.82	2.89	2.87	2.93
Writing: Problem Solving	2.87	2.92	2.89	2.96
<i>n</i>	16,407	738	431	445

Note: 0 OPT = cases that took first-attempt PCAT but did not take an OPT first; 1 OPT = cases that took one OPT before taking the first-attempt PCAT; 2 OPTs = cases that took two OPTs before taking the first-attempt PCAT; 3 OPTs = cases that took three OPTs

Questions?

Reference Links

PCAT Technical Manual and PCAT Score Interpretation Quick Reference

www.aacp.org/resources/academicpolicies/admissionsguidelines/Pages/PharmacyCollegeAdmissionsTest.aspx

PCAT Website

www.PCATweb.info

PCAT Validity Study published in AJPE

www.aacp.org/resources/academicpolicies/admissionsguidelines/Documents/PCATPredictiveValidityStudy--GeneralReport.pdf

www.ajpe.org/aj7sos/aj750581.pdf



PHARMACY COLLEGE ADMISSION TEST

Contacts:

Cindy Agonis

Cindy.Agonis@Pearson.com

210-339-5302

Don Meagher

Don.Meagher@Pearson.com

210-339-5297