

PCOA School Outcomes for Students Nearing the End of Their Didactic Curriculum: 2018

Prepared By

The National Association of Boards of Pharmacy®



PCOA School Outcomes for Students Nearing the End of Their Didactic Curriculum: 2018

Published September 2018

Copyright 2018

National Association of Boards of Pharmacy
1600 Feehanville Drive
Mount Prospect, IL 60056
847/391-4406
www.nabp.pharmacy

Carmen A. Catizone, MS, RPh, DPh
Executive Director/Secretary

NABP Mission Statement

NABP is the independent, international, and impartial association that assists its member boards and jurisdictions for the purpose of protecting the public health.

NABP Vision Statement

Innovating and collaborating today for a safer public health tomorrow.

© 2018 by the National Association of Boards of Pharmacy. All rights reserved.

No part of this publication may be reproduced in any manner without the written permission of the executive director/secretary of the National Association of Boards of Pharmacy. The terms "National Association of Boards of Pharmacy," "NABP," "North American Pharmacist Licensure Examination," "Multistate Pharmacy Jurisprudence Examination," "PCOA," and "Pharmacy Curriculum Outcomes Assessment" are registered trademarks of the National Association of Boards of Pharmacy.

Violation of the copyright will lead to prosecution under federal copyright law.

Introduction

This report covers the results of the Pharmacy Curriculum Outcomes Assessment® (PCOA®) administrations for the 2018 Accreditation Council on Pharmacy Education (ACPE) reporting cohort, which consists of students testing with a free voucher as third-year (or equivalent) PharmD students in any of the 2017/2018 PCOA testing windows listed below. The reporting timeframe coincides with the traditional academic year.

- ◆ Window 4 2017: 8/21/2017 – 9/15/2017
- ◆ Window 5 2017: 11/13/2017 – 12/8/2017
- ◆ Window 1 2018: 1/15/2018 – 2/16/2018
- ◆ Window 2 2018: 4/9/2018 – 5/10/2018
- ◆ Window 3 2018: 6/18/2018 – 6/29/2018

This report presents descriptive statistics for PCOA test scores at the school level.

The PCOA is a 200-item examination that covers content from four primary domains: Basic Biomedical Sciences, Pharmaceutical Sciences, Social/Behavioral/Administrative Sciences, and Clinical Sciences. PCOA scores are reported on a scaled-score metric for the overall examination and for each of the four major content domains. Scaled scores account for the difficulty of the items and can be compared across administrations.

Results

The 2018 ACPE reporting cohort contained 14,794 students from 136 schools and colleges of pharmacy. Average scaled scores were computed for each school, and a summary of these mean scores at the overall exam level is provided in Table 1 (average school-level test scores). The school-level mean test scores averaged 348.5 with a standard deviation (SD) of 20.8. The median of the school-level mean test scores was slightly above the mean at 351.5.

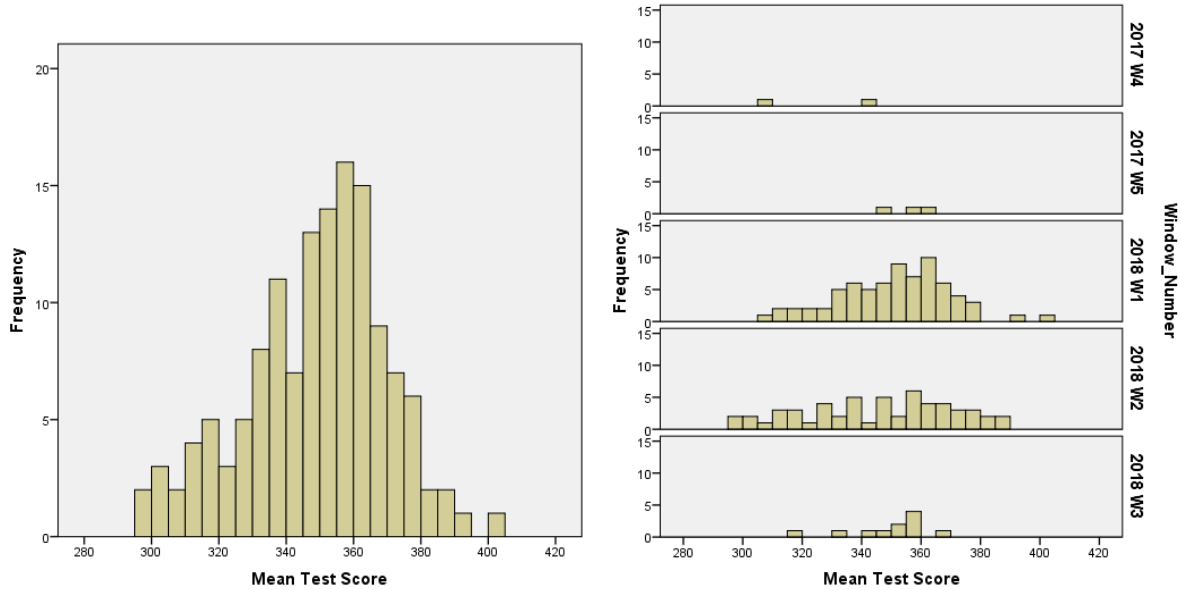
Table 1: *PCOA 2018 Reporting Cohort Exam Summary*

		Window 4 2017	Window 5 2017	Window 1 2018	Window 2 2018	Window 3 2018	Overall
Number of students		34	368	7,821	5,438	1,133	14,794
Number of schools		2	3	73	55	11	136
Average school-level test scores	Mean	322.5	355.7	349.0	345.4	349.3	348.5
	Median	322.5	359.0	352.0	348.0	353.0	351.5
	SD	24.7	6.7	23.1	24.6	13.8	20.8

Note: Eight schools tested students across two windows.

Figure 1 provides histograms of school-level mean test scores for a fuller picture of the variability in school-level outcomes.

Figure 1: *Distributions of School-Level Mean Test Scores Overall and by Window*



ACPE has historically (for the North American Pharmacist Licensure Examination® and the Multistate Pharmacy Jurisprudence Examination®) used a flagging criterion of 2 SD below the mean to identify scores that show a defined level of “departure” from a measure of central tendency. The scaled scores (rounded to the nearest integer) for flagging schools whose scores were at least 2 SD below the average school-level mean in the 2018 cohort are indicated in Table 2. Using these scores, six schools would be flagged for performance deviation at the overall exam level. Table 3 contains average overall scores and content area scores by school. There were 71 unique overall school-level scores across the 136 schools, and the score rank column in Table 3 indicates the rank of overall score among all unique scores observed. Shaded cells indicate scores that fall at least 2 SD below the average of school-level means.

Table 2: Means, SDs of School-Level Means, and Scores 2 SD Below Mean

Test Score	Average of school means	SD of school means	Score 2 SD below mean
Overall	348.5	20.8	307
Basic Biomedical Sciences (Area 1)	349.1	28.8	292
Pharmaceutical Sciences (Area 2)	348.9	22.5	304
Social/Behavioral/Administrative Sciences (Area 3)	349.9	27.7	295
Clinical Sciences (Area 4)	349.5	21.8	306

Table 3: Average Test Scores by School Sorted by Average Overall Score (shaded cells indicate scores that fall below 2 SD of the mean shown in Table 2)

Score Rank	Overall	Area 1	Area 2	Area 3	Area 4	N
1	298	308	294	282	309	67
1	298	270	306	304	295	52
2	302	290	296	298	314	52
3	303	281	298	296	317	68
4	304	321	304	289	309	54
5	306	312	310	301	305	76
6	309	286	314	307	312	105
7	311	279	310	300	328	130
8	312	314	319	306	309	89
9	313	307	333	297	305	184
10	314	298	324	329	302	164
11	316	328	319	314	311	150
12	317	311	330	306	313	130
12	317	314	323	302	322	88
12	317	310	315	300	329	85
13	319	322	330	300	321	62
14	321	326	319	323	322	61
15	324	309	338	324	315	242
15	324	318	336	339	307	74
16	325	330	320	324	330	63
16	325	313	320	324	334	77
17	327	341	336	289	338	55
18	328	348	326	312	336	230
19	329	319	325	342	331	254
20	330	340	346	322	315	312
20	330	325	339	331	323	209
21	332	334	326	334	337	75

School	Overall	Area 1	Area 2	Area 3	Area 4	N
22	333	347	334	328	333	282
22	333	341	327	331	338	51
22	333	335	324	328	347	42
22	333	332	326	347	333	68
23	334	340	326	344	336	247
24	335	338	336	302	354	105
24	335	349	342	327	331	73
25	336	340	336	349	331	219
26	337	360	340	344	327	206
26	337	333	352	341	321	63
27	338	337	329	342	347	148
28	339	312	347	343	338	139
28	339	322	324	343	360	102
28	339	345	343	322	344	68
28	339	322	327	351	350	56
28	339	345	333	346	340	72
29	341	320	338	337	352	97
30	342	370	333	352	339	114
30	342	320	328	380	343	65
30	342	339	347	339	341	117
31	343	323	332	369	347	71
31	343	348	337	362	339	80
32	344	330	357	341	340	80
33	345	350	346	349	344	119
33	345	336	340	335	360	124
33	345	340	347	342	349	148
33	345	347	326	395	340	70
33	345	336	342	365	342	92
34	347	367	334	362	349	34
34	347	365	337	353	350	109
35	348	341	350	343	351	139
35	348	362	349	349	345	81
35	348	391	342	333	354	97
35	348	340	357	341	346	64
36	349	342	366	340	342	146
36	349	339	349	335	360	66
37	350	329	344	349	365	74
37	350	332	367	323	354	91
38	351	351	366	350	337	54
38	351	348	347	338	364	70
38	351	360	361	350	342	78
39	352	384	356	335	352	181

School	Overall	Area 1	Area 2	Area 3	Area 4	N
39	352	367	346	351	356	77
39	352	380	350	363	343	72
39	352	323	341	350	372	70
40	353	321	350	385	352	101
40	353	379	360	370	333	154
40	353	312	356	351	365	109
40	353	361	351	345	359	144
41	354	378	358	371	338	186
42	355	345	342	367	366	132
42	355	371	376	353	334	91
42	355	352	346	366	361	127
42	355	338	359	351	361	44
42	355	327	351	367	364	178
43	356	384	359	357	346	93
43	356	364	366	335	358	35
44	357	379	361	345	356	35
45	358	396	358	359	350	195
45	358	360	342	375	365	104
45	358	357	348	365	366	122
45	358	396	351	358	359	145
45	358	351	347	362	371	67
46	359	373	369	356	348	136
46	359	376	358	324	376	58
46	359	321	366	341	376	40
47	360	343	354	395	356	133
47	360	380	362	368	351	98
47	360	355	376	362	346	145
47	360	340	375	350	360	189
47	360	373	355	360	364	87
47	360	355	348	371	370	85
48	361	356	360	358	369	151
48	361	350	356	373	364	128
49	362	354	351	371	372	72
49	362	378	353	366	367	85
49	362	373	354	355	372	61
50	363	406	364	354	359	116
50	363	361	367	385	353	83
51	364	350	368	395	353	229
51	364	388	343	379	374	67
52	365	360	371	366	363	124
53	366	349	356	391	370	64

School	Overall	Area 1	Area 2	Area 3	Area 4	N
53	366	353	368	365	371	76
54	367	374	373	366	363	61
55	368	357	343	383	392	143
55	368	359	356	390	373	98
55	368	388	376	345	372	96
56	369	365	363	394	366	113
56	369	389	376	377	356	137
57	370	361	371	390	364	144
58	371	416	378	367	358	130
58	371	397	366	395	359	145
59	372	361	378	380	368	80
60	373	374	368	378	377	134
60	373	348	378	390	369	132
61	374	367	365	391	382	97
62	375	401	378	373	370	141
62	375	387	373	393	369	63
63	376	361	392	357	376	102
63	376	395	385	375	368	160
64	377	388	389	385	361	125
65	378	393	399	361	369	111
66	381	360	380	383	392	110
67	384	393	388	369	388	44
68	385	365	382	393	393	77
69	386	406	384	382	389	90
70	393	379	403	404	384	84
71	403	394	416	388	405	59

The standard error of the school means can also be taken into account when evaluating the relative performance of schools on the PCOA. Figure 2 provides a plot of overall test score 95% confidence bands for each school. The vertical reference lines indicate the mean (center line) and scores two SD below (left) and above (right) the mean. The confidence bands indicate the degree of sampling error in each school’s mean test score. The performance for two schools should be considered similar if their confidence bands overlap. Similarly, a school should be considered as performing similar to a criterion (ie, two SD below the mean, average performance) if its confidence band clearly contains the criterion score. From Figure 2 it can be seen that two of the eight schools flagged for performance deviation show performance that is significantly lower than two SD below the mean.

Figure 2: 95% Confidence Bands for Overall Test Score (Scores listed in the same order as Table 3)

Note: The three vertical lines indicate (from left to right): mean - 2SD, mean (from Table 2), and mean + 2SD.

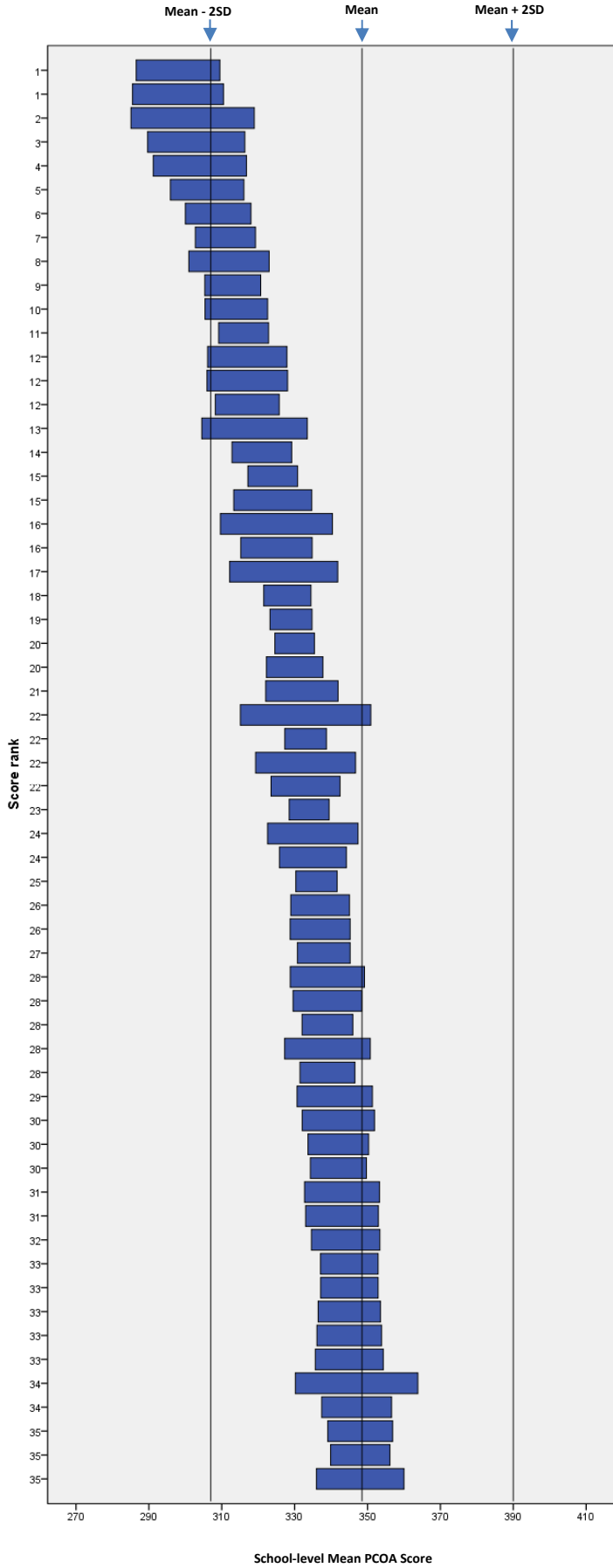


Figure 2, continued: 95% Confidence Bands for Overall Test Score

Note: The three vertical lines indicate (from left to right): mean – 2SD, mean (from Table 2), and mean + 2SD.

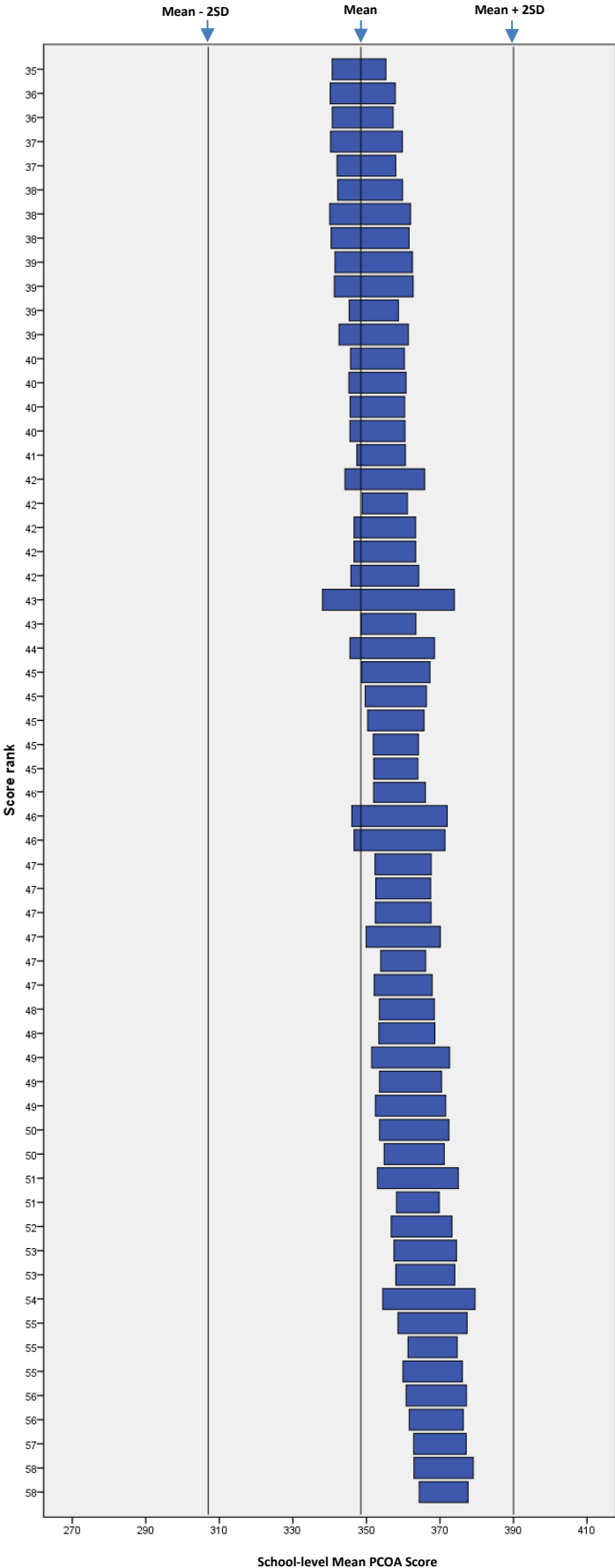


Figure 2, continued: *95% Confidence Bands for Overall Test Score*

Note: The three vertical lines indicate (from left to right): mean – 2SD, mean (from Table 2), and mean + 2SD.

