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# CHARTING ACCREDITATION'S FUTURE

## Results of the Pre-Conference Survey: ACPE Invitational Conference on Advancing Quality in Pharmacy Education

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## INTRODUCTION

This report summarizes the results of a survey involving a broad array of pharmacy and health care leaders that was developed and administered by the Accreditation Council for Pharmacy Education (ACPE) prior to its invitational conference in Atlanta on September 12-14, 2012.[1] ACPE designed this consensus-seeking conference to ensure that the accreditation of Doctor of Pharmacy (PharmD) educational programs in the United States is well aligned with the future needs of the pharmacy profession. The findings and recommendations emerging from this conference will guide the revision process for ACPE accreditation standards and guidelines.[2,3]

The purpose of the survey was to collect information to stimulate thought and discussion by conference participants and presenters. The survey assessed perceptions of: 1) the competency of current graduates in key practice areas, 2) the competencies needed for future practice, and 3) the effectiveness of current strategies for assessment of student attainment of expected competencies including the North American Pharmacist Licensure Examination (NAPLEX).

Surveys were distributed to those individuals who would be attending the conference (Participants) and to a larger, broader group of practitioners and educators (Stakeholders) using Survey Monkey ® software. The following organizations agreed to invite individuals within their constituencies (Stakeholders) to complete the survey: American Association of Colleges of Pharmacy (AACP), American College of Clinical Pharmacy, Academy of Managed Care Pharmacy, American Pharmacists Association, American Society of Health-System Pharmacists, National Association of Boards of Pharmacy, National Alliance of State Pharmacy Associations, and National Community Pharmacists Association.

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## OVERALL FINDINGS

The Participant survey was sent to 93 expected conference attendees with 74 individuals returning the survey for a 79.5% response rate. The estimated number of individuals in the Stakeholder group who received the survey was 1932 with 761 individuals completing the survey (a response rate of about 40%).

Table 1 shows the demographic descriptors of the survey's 835 respondents. Respondents represented a wide range of interests within pharmacy practice and education. The relative proportion of individuals within each sub-group appeared to be evenly distributed between Participants and Stakeholders groups except that a larger proportion of faculty appeared in the Stakeholder group and a higher proportion of Association Executives and Pharmacy Practice Managers within the Participant group.

Initial analysis found very few differences between Participant and Stakeholder responses so the results of the two groups were combined for purposes of this report. However, when important differences did appear between Participants and Stakeholders, they are noted in this report. Table 2, Table 3, Table 4, Table 5, and Table 6 list the respondent ratings of the survey items. Although the total pool of respondents was 835, the actual number of responses (see Total column) was somewhat different for each question because not all respondents answered all questions.

### Competencies of Current Graduates

Respondents were asked questions regarding whether current PharmD graduates are competent in 27 key areas of practice. They recorded their perceptions using a 4 point Likert-type scale: strongly agree/agree/disagree/strongly disagree. Respondents also were given the option of declaring that they were "unable to answer" each question.

Table 1. Description of Survey Respondents (Conference Participants and Stakeholders)

| Primary Role | Participants, No. (%) | Stakeholders, No. (%) | Total, No. (%) |
|---|---|---|---|
| Academic Administrator | 16 (21.6) | 180 (23.7) | 196 (23.5) |
| Faculty | 12 (16.2) | 338 (44.4) | 350 (41.9) |
| Association Executive | 10 (13.5) | 23 (3.0) | 33 (4.0) |
| Pharm Practice Mgmt | 13 (17.6) | 37 (4.9) | 50 (6.0) |
| General practitioner | 5 (6.8) | 26 (3.4) | 31 (3.7) |
| Specialty practitioner | 2 (2.7) | 44 (5.8) | 46 (5.5) |
| Other | 16 (21.6) | 113 (14.8) | 129 (15.4) |
| Grand Total | 74 (100) | 761 (100) | 835 (100) |

Overall, respondents were in agreement with the majority of the areas; that is, graduates are competent in most of the 27 areas. To identify areas that could be improved, a criterion of 25% or higher level of disagreement (last column in Table 2) was established. Using this criterion, 11 areas (highlighted in Table 2) were identified as needing focused attention with the area of "conducting research and scholarship" having the highest level of disagreement (65.4% of respondents disagreed/strongly disagreed); "managing situations involving prescription drug abuse" having the next highest level (50.5%); and so on. Three general themes emerged as needing further attention: management (5 of the 11 areas), providing care (3), and research/learning (3). These perceptions were consistent across all groups (practitioners vs. academics, preceptors vs. non-preceptors, etc.).

Table 2. Responses of Both Participants and Stakeholders Regarding Current Graduate Preparation

| # | New PharmD grads are competent in: | SA | A | D | SD | Total | %D/SD |
|---|---|---|---|---|---|---|---|
| Q01 | Dispensing/traditional functions | 453 | 313 | 36 | 10 | 812 | 5.7 |
| Q02 | Patient care | 247 | 461 | 90 | 19 | 817 | 13.3 |
| Q03 | Managing systems of patient care | 108 | 438 | 213 | 40 | 799 | **31.7** |
| Q04 | Managing sys population-based care | 58 | 336 | 312 | 76 | 782 | **49.6** |
| Q05 | Disease prevention/health promotion | 251 | 432 | 123 | 11 | 817 | 16.4 |
| Q06 | Provide population-based care | 80 | 378 | 270 | 48 | 776 | **41.0** |
| Q07 | Ensure integrity of med supply chain | 133 | 386 | 197 | 58 | 774 | **32.9** |
| Q08 | Implement syst to minimize med errors | 100 | 443 | 210 | 41 | 794 | **31.6** |
| Q09 | Manage medication errors | 153 | 450 | 167 | 23 | 793 | 24.0 |
| Q10 | Comply legal/regulatory aspects | 441 | 323 | 29 | 6 | 799 | 4.4 |
| Q11 | Recognize prescription drug abuse | 121 | 454 | 167 | 34 | 776 | **25.9** |
| Q12 | Manage prescription drug abuse | 51 | 326 | 317 | 68 | 762 | **50.5** |
| Q13 | Use information technology | 403 | 335 | 60 | 14 | 812 | 9.1 |
| Q14 | Work with technicians | 201 | 468 | 95 | 16 | 780 | 14.2 |
| Q15 | Self-directed, life-long learning | 150 | 444 | 166 | 36 | 796 | **25.4** |
| Q16 | Critical thinking/problem solving | 173 | 469 | 142 | 27 | 811 | 20.8 |
| Q17 | Evaluate published research | 100 | 400 | 224 | 74 | 798 | **37.3** |
| Q18 | Resolve ethical issues | 96 | 511 | 165 | 14 | 786 | 22.8 |
| Q19 | Act professionally | 376 | 398 | 36 | 2 | 812 | 4.7 |
| Q20 | Communicate - patients/caregivers | 350 | 406 | 44 | 3 | 803 | 5.9 |
| Q21 | Communicate - health care providers | 252 | 484 | 64 | 8 | 808 | 8.9 |
| Q22 | Advocate for patients | 168 | 488 | 122 | 10 | 788 | 16.8 |
| Q23 | Contribute to patient care teams | 275 | 439 | 79 | 8 | 801 | 10.9 |
| Q24 | Cultural competency | 114 | 476 | 172 | 18 | 780 | 24.4 |
| Q25 | Physical assessment | 133 | 387 | 198 | 59 | 777 | **33.1** |
| Q26 | Vaccinations | 433 | 311 | 41 | 6 | 791 | 5.9 |
| Q27 | Conducting research/scholarship | 38 | 235 | 315 | 202 | 790 | **65.4** |
| Q28 | Integrate knowledge into gen practice | 181 | 521 | 81 | 10 | 793 | 11.5 |
| Q29 | Residencies are essential for pt care | 248 | 261 | 193 | 109 | 811 | **37.2** |
| Q30 | More pharmacists as 'extenders' | 355 | 360 | 62 | 16 | 793 | 9.8 |

SA=strongly agree, A=agree, D=disagree, SD=strongly disagree

Table 3. Responses of Both Participants and Stakeholders Regarding Future Competencies

| # | Over the next 10 yrs, the following competency requirements will: | Increase Greatly | Increase | Remain Same | Decrease | Decrease Greatly | Total | % Increase Greatly |
|---|---|---|---|---|---|---|---|---|
| Q36 | Dispensing/traditional functions | 18 | 77 | 308 | 280 | 113 | 796 | 2.3 |
| Q37 | Patient care | 363 | 397 | 30 | 3 | 1 | 794 | **45.7** |
| Q38 | Managing systems of pt care | 297 | 394 | 80 | 9 | 1 | 781 | **38.0** |
| Q39 | Managing syst population-based care | 234 | 428 | 97 | 9 | 2 | 770 | **30.4** |
| Q40 | Disease prevent/health promotion | 341 | 373 | 69 | 4 | 1 | 788 | **43.3** |
| Q41 | Provide population-based care | 209 | 429 | 127 | 3 | 1 | 769 | **27.2** |
| Q42 | Ensure integrity of med supply chain | 153 | 287 | 303 | 30 | 2 | 775 | 19.7 |
| Q43 | Implement syst minimize med errors | 259 | 377 | 150 | 6 | 0 | 792 | **32.7** |
| Q44 | Manage medication errors | 231 | 341 | 212 | 7 | 0 | 791 | **29.2** |
| Q45 | Comply legal/regulatory aspects | 127 | 219 | 442 | 3 | 0 | 791 | 16.1 |
| Q46 | Recognize Rx drug abuse | 149 | 334 | 294 | 2 | 0 | 779 | 19.1 |
| Q47 | Manage Rx drug abuse | 158 | 342 | 281 | 1 | 0 | 782 | 20.2 |
| Q48 | Use information technology | 444 | 296 | 52 | 2 | 0 | 794 | **55.9** |
| Q49 | Work with technicians | 171 | 278 | 314 | 21 | 0 | 784 | 21.8 |
| Q50 | Self-directed, life-long learning | 249 | 322 | 217 | 2 | 1 | 791 | **31.5** |
| Q51 | Critical thinking/problem solving | 328 | 305 | 159 | 1 | 0 | 793 | **41.4** |
| Q52 | Evaluate published research | 119 | 379 | 273 | 11 | 1 | 783 | 15.2 |
| Q53 | Resolve ethical issues | 99 | 316 | 361 | 4 | 0 | 780 | 12.7 |
| Q54 | Act professionally | 117 | 253 | 422 | 2 | 0 | 794 | 14.7 |
| Q55 | Communicate - patients/caregivers | 285 | 350 | 155 | 1 | 0 | 791 | **36.0** |
| Q56 | Communicate - health care providers | 350 | 328 | 116 | 1 | 0 | 795 | **44.0** |
| Q57 | Advocate for patients | 285 | 360 | 138 | 3 | 0 | 786 | **36.3** |
| Q58 | Contribute to patient care teams | 416 | 309 | 63 | 1 | 0 | 789 | **52.7** |
| Q59 | Cultural competency | 214 | 374 | 190 | 2 | 1 | 781 | **27.4** |
| Q60 | Physical assessment | 183 | 393 | 186 | 18 | 2 | 782 | 23.4 |
| Q61 | Vaccinations | 230 | 408 | 150 | 2 | 0 | 790 | **29.1** |
| Q62 | Conducting research/scholarship | 70 | 295 | 390 | 17 | 4 | 776 | 9.0 |
| Q63 | Over the next 10 yrs, the length of training for ***general*** practice will: | 56 | 285 | 430 | 14 | 1 | 786 | 7.1 |
| Q64 | Over the next 10 yrs, the length of training for ***specialty*** practice will: | 109 | 400 | 282 | 2 | 0 | 793 | 13.7 |

**Integration of Knowledge**

The majority of respondents felt that recent graduates can indeed integrate what they learn in didactic coursework to actual practice - only 11.5% of respondents disagreed/strongly disagreed with this statement (Table 2). This perception was consistent across all respondent sub-groups.

**Future Considerations**

Respondents were asked to speculate whether the competency requirements for pharmacists would change in the future. Using the same 27 areas addressed earlier, respondents rated whether each competency area would: increase greatly, increase, stay the same, decrease or decrease greatly over the next 10 years. As seen in Table 3, most respondents indicated that competency requirements would be increasing or greatly increasing in 26 of the 27 areas. The one exception being Question 36 "dispensing and other traditional functions" where only 12% indicated that competency requirements related to dispensing and other traditional functions will be increasing in the future.

Areas where at least 25% of the respondents indicated that the area is likely to "increase greatly" over the next 10 years were identified for further analyses. Respondents identified 16 areas (highlighted in Table 3) with the area "using information technology effectively" receiving the most attention (55.9% of respondents indicated it will increase greatly); "contributing to patient care teams effectively" was next (52.7%); and so on.

To explore whether future graduates will be competent in the areas that will likely increase in importance, respondent perceptions of future importance were compared with their perceptions of current graduate competence in six areas (see Table 7). For example, about 56% of respondents felt that competency requirements in the

Table 4. Responses of Both Participants and Stakeholders Regarding Assessment Effectiveness

| # | Programs are effective in assessing: | SA | A | D | SD | Total | %D/SD |
|---|---|---|---|---|---|---|---|
| Q66 | Quality of teaching | 244 | 402 | 86 | 23 | 755 | 14.4 |
| Q67 | Evidence-based methods | 257 | 378 | 84 | 16 | 735 | 13.6 |
| Q68 | Learning in didactic curriculum | 275 | 389 | 76 | 12 | 752 | 11.7 |
| Q69 | IPPE learning | 216 | 373 | 113 | 16 | 718 | 18.0 |
| Q70 | APPE learning | 244 | 364 | 95 | 19 | 722 | 15.8 |
| Q71 | Remediation in student learning | 148 | 334 | 190 | 53 | 725 | **33.5** |
| Q72 | Service on interprofessional teams | 126 | 341 | 210 | 57 | 734 | **36.4** |
| Q73 | Self-directed, life-long learning | 78 | 330 | 249 | 57 | 714 | **42.9** |
| Q74 | Critical thinking | 148 | 401 | 165 | 33 | 747 | **26.5** |
| Q75 | Cultural competency | 105 | 358 | 208 | 38 | 709 | **34.7** |
| Q76 | Professionalism | 254 | 368 | 105 | 25 | 752 | 17.3 |
| Q77 | Scholarship/research | 83 | 300 | 245 | 88 | 716 | **46.5** |
| Q78 | Legal aspects of controlled substances | 319 | 350 | 57 | 6 | 732 | 8.6 |
| Q79 | Ethical grounding - students | 157 | 400 | 152 | 17 | 726 | 23.3 |
| Q80 | Ethical grounding - faculty | 116 | 297 | 205 | 69 | 687 | **39.9** |
| Q81 | Effectiveness of faculty | 172 | 372 | 156 | 34 | 734 | **25.9** |
| Q82 | Effectiveness of preceptors | 116 | 383 | 170 | 57 | 726 | **31.3** |

SA=strongly agree, A=agree, D=disagree, SD=strongly disagree

"use of information technology' would increase greatly in the future. At the same time, a large number of respondents (about 91%) agreed that current graduates are competent in this area. The same holds true for the remaining areas displayed in Table 7 indicating that, overall, respondents felt that current graduates are competent in the areas that may increase in importance over the next 10 years.

### Quality of Assessment

Respondents were asked to rate how schools and colleges are assessing 17 key aspects of pharmacy education. Table 4 reveals that, in general, respondents felt that schools and colleges were performing well in most assessment areas. However, 25% or more of respondents felt that schools and colleges could do better in 9 of the 17 areas with assessment of "student skills in scholarship and research" receiving the most concern (46.5% of respondents disagreed/strongly disagreed); "student skills in self-directed life-long learning" the next (42.9%); and so on. Thus, it appears that the academy needs to enhance its assessment in several areas. Many of these are important to the future growth of the profession as noted earlier in the report; for example, students' skills in research, cultural competency, and critical thinking. In addition, the effectiveness of preceptors and the performance of pharmacy students on patient care teams are especially critical to experiential learning programming. As competency requirements increase in the future, effective assessment mechanisms must be in place to monitor curricular performance.

## VARIATIONS BETWEEN SUB-GROUPS

Ratings among sub-groups that differed by 10 percentage points or more in agreement/disagreement were flagged for further analysis.

### Participants Compared to Stakeholders

When comparing Participant and Stakeholder responses regarding the competency of recent graduates,

Table 5. Responses of Both Participants and Stakeholders Regarding ACPE Standards

| # | ACPE Standards | SA | A | D | SD | Total | %D/SD |
|---|---|---|---|---|---|---|---|
| Q31 | Are evidence-based | 105 | 408 | 170 | 47 | 730 | **29.7** |
| Q32 | Foster innovation | 108 | 415 | 198 | 52 | 773 | **32.3** |
| Q33 | Are adequate for current practice | 189 | 430 | 131 | 32 | 782 | 20.8 |
| Q34 | Are adequate for future practice | 119 | 409 | 198 | 50 | 776 | **32.0** |
| Q83 | Foster improvements in assessment | 171 | 446 | 96 | 24 | 737 | 16.3 |
| Q84 | Foster innovation in assessment | 120 | 398 | 169 | 39 | 726 | **28.7** |

SA=strongly agree, A=agree, D=disagree, SD=strongly disagree

Table 6. Responses of Both Participants and Stakeholders Regarding NAPLEX and AACP Surveys

| # | Quality Indicators | SA | A | D | SD | Total | %D/SD |
|---|---|---|---|---|---|---|---|
| Q85 | NAPLEX – quality indicator | 73 | 306 | 255 | 130 | 764 | **50.4** |
| Q86 | AACP Surveys-meaningful indicators | 72 | 385 | 173 | 54 | 684 | **33.2** |

SA=strongly agree, A=agree, D=disagree, SD=strongly disagree

only 5 out of the 27 areas met the 10% criterion (Table 8). Perceptional differences were seen in: managing systems of patient care, providing population-based care, ensuring integrity of medication supply chain, participating in self-directed, life-long learning, and demonstrating cultural competency. In all five areas, more Participants were concerned with PharmD graduates' preparation compared to the number of Stakeholders. Looking at future competency requirements (Table 9), perceptual differences occurred in just two areas: more Participants anticipated an increased need to 1) work with technicians (79% vs. 55%, respectively) and 2) evaluate the published literature (74% vs. 63%). In addition, more Participants had positive impressions of ACPE standards compared to Stakeholders (Table 10). This may possibly be due to the fact that as invited guests to the conference, they might have been more familiar with the accreditation process and more aware about the standards and their purpose.

### Respondents within the Academy Compared to Respondents in Practice

Members of both the academy and practitioners rated the competency of current graduates in a similar manner (using the 10% criterion described above). Regarding future changes in competency requirements, both groups shared the same perception of future pharmacy activities with two exceptions. First, more practitioners (52%) felt that the length of training for general practice will increase compared to the respondents from the academy (42%). Second, more practitioners rated ACPE standards as being evidence based (83%) compared to academics (70%). In the area of assessment, more academics were critical of the assessment processes within the academy. For example, in the assessment of cultural competence, 34% of academicians disagreed compared to 24% of practitioners; scholarship 46% vs. 26%; and the ethical grounding of faculty 38% vs. 17% respectively.

### Academic Administrators Compared to Faculty Members

Comparisons between responses from academic administrators and faculty members revealed that they shared similar perceptions with the following three noteworthy exceptions: more faculty (68% vs. 55%) agreed that a residency is essential for entry into direct patient care; more faculty (48% vs. 38%) felt that the length of education for general practice will increase in the next 10 years; and more administrators (53% vs. 43%) felt that the length of education/training for specialty practice will increase in the future.

## SPECIFIC ISSUES

### Importance of Residency Training

Respondents were asked to express their opinion whether or not residency training is essential to prepare new pharmacy graduates for direct patient care. A majority (63%; Table 2) of all respondents agreed that residencies are essential for preparing pharmacy graduates to provide direct patient care. More Stakeholders (65%) agreed than Participants (about 50%). Specialist practitioners had the highest proportion of supporters (80%), while academic administrators the lowest proportion (55%).

### Future Length of Training and Pharmacists' Roles

Respondents were asked if they felt that the length of training of either general practice or specialty practice

Table 7. Increased Future Responsibilities and Current Graduate Competency

| Area | Future Requirements Will Increase Greatly, % | Agree/Strongly Agree Currently Competent, % |
|---|---|---|
| Use information technology | 55.9 | 90.9 |
| Contributing effectively to patient care teams | 52.7 | 89. |
| Providing direct patient care | 45.7 | 86.7 |
| Communicating with other health care professionals | 44.0 | 91.1 |
| Advocating for patients with other health profession | 36.3 | 78.2 |
| Communicating with patients and caregivers | 36.0 | 94.1 |

Table 8. Comparisons Between Participants and Stakeholders on Selected Current Competencies

| # | Current grads competent in: | Participants | | | | | | Stakeholders | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SA | A | D | SD | Total | %D/SD | SA | A | D | SD | Total | %D/SD |
| Q03 | Mgmt systems of pt care | 6 | 34 | 23 | 6 | 69 | 42.0 | 102 | 404 | 190 | 34 | 730 | 30.7 |
| Q06 | Provide pop-based care | 4 | 27 | 31 | 5 | 67 | 53.7 | 76 | 351 | 239 | 43 | 709 | 39.8 |
| Q07 | Ensure integrity med supply | 7 | 28 | 25 | 7 | 67 | 47.8 | 126 | 358 | 172 | 51 | 707 | 31.5 |
| Q15 | Self-direct, life-long learning | 10 | 36 | 21 | 4 | 71 | 35.2 | 140 | 408 | 145 | 32 | 725 | 24.4 |
| Q24 | Cultural competency | 4 | 40 | 21 | 2 | 67 | 34.3 | 110 | 436 | 151 | 16 | 713 | 23.4 |

SA=strongly agree, A=agree, D=disagree, SD=strongly disagree

will increase over the next 10 years. As seen in Table 3, a majority of respondents (64%) agreed that the length of training will increase for specialty practice; and about one-half (57%) stated that the length will remain about the same for general practitioners. Most respondents (91%) agreed that more pharmacists will be providing primary care services, much like other "physician extenders" within the next 10 years.

### Respondent Perceptions of ACPE Standards, NAPLEX, and AACP Surveys

About one-third of the respondents (Table 5) had negative perceptions about the value of ACPE standards. For example, 30% of respondents felt that the standards were not evidence-based; 32% stated they did not foster innovation; and so on. More academics (30%) felt the standards are not evidence-based compared to practitioners (17%).

NAPLEX is one of the most commonly used outcome measures for graduating students and is monitored annually by ACPE. About one-half of all respondents (50%; Table 6) felt that this examination is not an adequate indicator. Analyses of all sub-groups (practitioners vs. academics, etc.) revealed similar results.

Respondents were asked to rate the value of AACP surveys (which capture perceptions of graduating students, faculty, preceptors, and alumni) as meaningful indicators of quality. Results (Table 6) indicate that two-thirds of all respondents (67%) agreed that they are meaningful indicators with comparisons between the various sub-groups yielding similar results.

## WRITTEN COMMENTS

Respondents were offered opportunities to make written comments about the various survey items which provide additional insights into the various issues. Table 11 describes the recurrent themes that emerged from multiple written comments regarding both current and future competencies. For example, respondents repeatedly drew attention to the need for post-graduate training for new PharmD graduates to achieve competency in multiple areas. In addition, respondents identified the need to address the variability of introductory and advanced pharmacy practice experiences (IPPEs/APPEs) within PharmD curricula. Regarding future competency issues, respondents commented on the need to leverage technology, develop reimbursement mechanisms for cognitive services, collaborate with and at times compete against other health care professionals, and advance continuous professional development initiatives to enhance pharmacists' impact on patient care. Examples of recurrent themes involving assessment included the need to assess the provision of collaborative patient care on interprofessional teams, and the need to enhance the subjective, non-standardized, volunteer-dependent nature of assessing student learning on APPEs.

## ACTION ITEMS

The survey results influenced the recommendations that emanated from the 2012 ACPE invitational conference.[2] In addition, below are some suggestions for the academic and practitioner communities based on the authors' analysis of the survey findings.

Table 9. Comparisons Between Participants and Stakeholders on Selected Future Competencies

| # | Requirements will: | Participants | | | | | | | Stakeholders | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Inc Gr | Inc | Same | Dec | Dec Gr | Total | % Inc | Inc Gr | Inc | Same | Dec | Dec Gr | Total | % Inc |
| Q49 | Work with technicians | 24 | 33 | 15 | 0 | 0 | 72 | 79.2 | 147 | 245 | 299 | 21 | 0 | 712 | 55.1 |
| Q52 | Evaluate research | 12 | 41 | 19 | 0 | 0 | 72 | 73.6 | 107 | 338 | 254 | 11 | 1 | 711 | 62.6 |

Table 10. Comparisons Between Participants and Stakeholders Regarding Selected Key Areas

| | | Participants | | | | | | Stakeholders | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Area | SA | A | D | SD | Total | %D/SD | SA | A | D | SD | Total | %D/SD |
| Q29 | Residencies essential | 13 | 19 | 28 | 9 | 69 | 53.6 | 235 | 242 | 165 | 100 | 742 | 35.7 |
| Q69 | IPPE learning assessment | 18 | 24 | 18 | 5 | 65 | 35.4 | 198 | 349 | 95 | 11 | 653 | 16.2 |
| Q70 | APPE learning assessment | 18 | 30 | 15 | 4 | 67 | 28.4 | 226 | 334 | 80 | 15 | 655 | 14.5 |
| Q32 | ACPE Stds foster innovation | 11 | 46 | 13 | 2 | 72 | 20.8 | 97 | 369 | 185 | 50 | 701 | 33.5 |
| Q84 | ACPE Stds foster innovation in assessment | 11 | 50 | 7 | 1 | 69 | 11.6 | 109 | 348 | 162 | 38 | 657 | 30.4 |

SA=strongly agree, A=agree, D=disagree, SD=strongly disagree

**For Schools and Colleges of Pharmacy**

1. Academia needs to revise curricula and recruit appropriate faculty to teach the areas highlighted in this report; for example, skills related to information technology, management, and communication with patients, caregivers and other health care providers.
2. Academia needs to better prepare graduates to deliver primary patient care and to serve on interprofessional health care teams.
3. Graduates need to be better prepared to manage technicians as the role of the technician evolves in many areas of practice.
4. Graduates need to be better prepared to evaluate and interpret research results, but not necessarily conduct research themselves.
5. Schools and colleges must continue to develop effective assessment mechanisms to both report successes in new practice roles and also to identify areas where quality needs to be improved. Schools and colleges should collaborate in the development and use of these new assessment tools and methods.
6. Stronger assessments of preceptor and faculty effectiveness are needed.
7. Academia must consult with practitioner groups and with ACPE during the development of future assessment strategies.

**For Practitioner Groups**

1. Practitioner groups must continue to define the scope of pharmacy practice; that is, what are the knowledge, skills, and abilities needed by pharmacists to provide better patient care? Once identified, these expectations need to be communicated to academic programs so that they can be incorporated into revised curricula.
2. Similarly, practitioner groups need to continue to work with schools and colleges to make sure that academics and practitioners share the same perception of actual pharmacy practice.
3. The role of dispensing and other traditional activities within pharmacy practice will continue to change, and thus practice groups must determine what components are essential for general practice education and what elements for specialty practice education.
4. Practitioner groups should participate in ACPE's accreditation standards review process to make sure elements of practice are addressed appropriately within the standards.
5. Residency training issues will continue to be discussed and debated, and thus practitioner organizations, in collaboration with AACP, need to clarify the patient-care competency-level targets for PharmD education versus those for PGY1 residency training.

## SUMMARY

Survey results indicated that overall schools and colleges of pharmacy are graduating students who are competent in most critical areas of practice. In addition, a majority of respondents felt that ACPE standards are effective in assuring the quality of pharmacy education. However, as outlined above, respondents offered several suggestions on how academic pharmacy and ACPE could foster further innovation in the development, delivery, and assessment of Doctor of Pharmacy programs. A recurrent theme embedded within these results is the need for all groups (academia, practice, and ACPE) to continue to work together – that they cannot work in isolation - as they develop future enhancements to the profession and to PharmD programs. More specifically, all groups need to advance continuous professional development initiatives to enhance pharmacists' impact on patient care; and to foster interprofessional health care delivery whenever possible.

Table 11. Recurrent Themes within Written Responses for Current and Future Competencies

| Competency/ Statement Topic | Recurrent Themes | |
|---|---|---|
| | **Current Competencies** | **Future Competencies** |
| Dispensing and other traditional pharmacy functions[a] | • Most new graduates require "on the job" training to be competent<br>• New graduates are not prepared for managerial roles straight out of school<br>• Most programs have de-emphasized these skills in favor of clinical education<br>• Most programs rely on IPPEs/APPEs for this and the time dedicated may not be sufficient<br>• Competence is dependent on whether or not the graduate worked as a technician during school | • Automation and increased leverage of technicians (e.g., tech-check-tech) will displace many of these functions for pharmacists<br>• Less emphasis on dispensing, more emphasis on preventing medication errors and ensuring patient safety<br>• Greater roles managing/supervising technological systems and technicians are expected |
| Providing direct patient care[a] | • Both intra- and interschool variability is high<br>• New graduates are better prepared than in the past<br>• Prepared for basic/average patient complexity; residency training required for high complexity cases<br>• Dependent upon graduates' level of maturity; some have knowledge and skills but lack confidence and critical thinking skills<br>• Inconsistency/variability of IPPEs/APPEs works against this | • Hopeful, but not confident<br>• Will depend upon economic models/opportunities to get reimbursed for cognitive services<br>• Increases in the number of physicians, physician assistants, and nurse practitioners will challenge our ability to do this<br>• Will require legislative changes at the state and federal level<br>• Will depend on whether chain pharmacies develop patient care initiatives |
| Managing systems of providing medication-related patient care services[b] | • Graduates have the foundation to become competent with experience<br>• Requires "on the job" training<br>• Something that should be learned in a residency/master's degree program<br>• Not adequately addressed by most curricula | • Competency requirements for average PharmD graduates will remain the same<br>• Pharmacists with advanced training (e.g., residency) and/or additional education (e.g., MBA, MHA) will manage these systems<br>• Will depend on how managed care systems evolve |
| Managing systems of providing medication-related population-based services[a] | • Most graduates have been introduced to concepts via didactic coursework but opportunities to develop skills are lacking/limited<br>• A large weakness throughout curricula<br>• Managing systems is a higher-level competency than is appropriate for new graduates | • Hopeful, but not confident<br>• Emphasis on populations will continue to increase<br>• The sub-set of pharmacists interested in this area will require additional, post-graduate training |

(*Continued*)

Table 11. (*Continued*)

| Competency/ Statement Topic | Recurrent Themes | |
|---|---|---|
| | **Current Competencies** | **Future Competencies** |
| Ensuring the integrity of the medication supply chain[a] | • Students lack a complete understanding of/direct involvement with the medication supply chain<br>• Focus of most programs is patient care/ clinical pharmacy, not operations management<br>• High variability between colleges/ schools; lacking in most curricula<br>• Requires "on the job"/residency training to be competent | • Technology performance is important in this arena<br>• Much of this is the responsibility of the producer and wholesaler |
| Implementing systems to minimize medication errors[a] | • Beyond the scope of a new graduate<br>• Requires "on the job"/residency training to be competent<br>• Competent at using systems, not implementing them | • Pharmacists are already heavily involved in the process<br>• This area offers a unique niche for pharmacy to improve patient safety and medication error prevention outcomes<br>• Pharmacists have an opportunity to become better incorporated into the team of other health care professionals already working in this area<br>• Will increase greatly in the area of informatics |
| Conducting research and scholarship[b] | • New graduates are competent at evaluating literature, not conducting research<br>• Highly dependent upon students' interests, past experiences, motivation, and faculty mentors<br>• Should not be a competency expectation of new PharmD graduates, more appropriate for graduate students/research fellows/residents | • Not likely to change much<br>• Should not be a competency requirement for all PharmD graduates<br>• Opportunities to conduct practice-based research and outcomes assessment will continue to increase |
| Providing disease-prevention and health-promotion services[c] | • Knowledge and interest is present, but lack of financial incentives is a significant barrier<br>• Students are competent at providing immunizations and smoking cessation but lack training/opportunities in other areas (eg, diet modification, weight loss/obesity, mental health)<br>• This type of work is better suited to other professionals such as physicians, dieticians, exercise personnel, public health specialists (MPHs), etc. | • A great opportunity for pharmacy to make a large impact<br>• Pharmacists will do this working alongside other healthcare providers as part of an interprofessional team<br>• Many other healthcare providers can do this<br>• Will depend on economics/ reimbursement/opportunities to decrease health spending |

(*Continued*)

Table 11. (*Continued*)

| Competency/ Statement Topic | Recurrent Themes | |
|---|---|---|
| | **Current Competencies** | **Future Competencies** |
| Self-directed life-long learning[c] | • Not a strength of new graduates<br>• Requires a level of interest/motivation that may not be present<br>• Lack of life-long learning is linked to current system of CE/CPE for re-licensure<br>• Difficult to measure without longitudinal data/cannot assess for years after student has graduated and left the college/school | • As the pace and complexity of change in patient care has increased alongside pharmacist desire to take on greater roles and responsibilities in this arena, the importance of self-directed life-long learning has grown<br>• Pharmacists will need these skills to interpret and digest an ever-growing body of available information<br>• This will improve as the current continuing education system adopts more continuous professional development approaches |

[a] Topic was of high interest based on written response rate for both the current and future competencies sections.
[b] Topic was of high interest based on written response rate for the current competencies section only.
[c] Topic was of high interest based on written response rate for the future competencies section only.

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## REFERENCES

1. Zellmer WA, Vlasses PH, Beardsley RS. Summary of the ACPE consensus conference on advancing quality in pharmacy education. *Am J Pharm Educ.* 2013;77(3): Article 44.
2. Zellmer WA, Beardsley RS, Vlasses PH. Recommendations for the next generation of accreditation standards for doctor of pharmacy education. *Am J Pharm Educ.* 2013;77(3):Article 45.
3. Vlasses PH, Beardsley RS. What's next in the ACPE accreditation standards revision process? *Am J Pharm Educ.* 2013;77(3):Article 49.