2021 APhA/NASPA

NATIONAL STATE-BASED PHARMACY WORKPLACE SURVEY

Final Report

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We also thank the APhA/NASPA project oversight team for their direction and support: April Shaughnessy (APhA), Mitchel C. Rothholz (APhA), Joni Cover (NASPA), and Rebecca Snead (NASPA).

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EXECUTIVE SUMMARY

Introduction

Job stress in pharmacy workplaces has reached an all-time high, especially for those working in community and hospital practice settings. The 2019 National Pharmacist Workforce Survey found that 71% of pharmacists respondents rated their workload as high or extremely high and that job satisfaction was at the lowest point in 20 years. Beginning in 2019 through 2021, several initiatives were launched to address these issues. The 2019 Enhancing Well-being and Resilience Among the Pharmacist Workforce: National Consensus Conference was convened. APhA launched the Well-being Index for Pharmacy Personnel, and APhA/NASPA developed the *Pharmacist's Fundamental Responsibilities and Rights,* Pharmacy Workplace and Reporting (PWWR) tool, and this survey.

Pharmacists' and pharmacy personnel's workplace issues and their relationship to personal well-being continue to be a critical, complex issue across all practice settings and they have been further exacerbated under the COVID-19 pandemic. Also, pharmacists' and pharmacy personnel's workload has been linked to patient safety concerns regarding medication errors. What is needed now is a critical examination of workplace factors to determine how they affect pharmacy personnel's well-being and patient safety. The American Pharmacists Association (APhA) and the National Alliance of State Pharmacy Associations (NASPA) developed a national survey to address this critical need.

Methods

With these issues in mind, the APhA/NASPA Work Group developed a survey based on findings from the Well-being Index for Pharmacy Personnel, a state pharmacy association survey instrument,[1] and principles outlined in the *Pharmacist's Fundamental Responsibilities and Rights.* The exact wording for questions, along with the response categories, are found in the Appendix of this report. The survey was launched nationally in April 2021 by APhA. State pharmacy associations launched this survey at different times during 2021. Promotion of the survey to pharmacists, student pharmacists, and pharmacy technicians continued through the end of August 2021. Social media, email, and online periodicals were used to promote the survey. Responses continued to be received through the end of 2021. For this report, a data file containing 6,973 responses was downloaded on January 7, 2022, for descriptive analysis using IBM SPSS version 27 statistical software.

Limitations

The results did not use a random sample of individuals. Thus, the findings should be used for gaining insight and not be used for making estimates for or to generalize to the entire population of pharmacists and pharmacy personnel. In addition, confounding among variables should be considered when interpreting the findings. As one example, NABP Districts differ significantly in their composition of practice setting type. Thus, differences among NABP Districts could be due to these differences in practice setting composition.

Findings

The findings from this study showed that pharmacy workplaces were so stressful in 2021 that personnel were unable to fulfill both clinical and nonclinical duties. These stressful conditions are contributing to employee burnout. The majority of pharmacy workplaces have cultures for patient safety; however, pharmacy personnel are at a breaking point when adjustments to team training, roles, and responsibilities are not able to be made quickly enough to adapt to change and meet all of their responsibilities. Time allocation, workflow, staffing, policies, payment, and patient expectations/demands are contributors to workplace situations that increase the risk of medication errors or near-misses. Thus, stressful conditions are creating threats to patient safety as well.

[1] Questions for this survey were based on a portion of the Tennessee Pharmacists Association workplace survey fielded in the first half of 2020.

Most of the factors of concern that were identified by this survey relate to work systems and processes of care, which are under the direct control of the employer and management. For the profession, the stress and workplace conditions explored in the survey findings are having a negative impact on the ability to recruit, train, and retain pharmacy personnel. There are opportunities to address issues in an expedient manner; these would use communication channels with pharmacy personnel and revise policies to support pharmacists and pharmacy personnel when encountering patients/customers who are perceived to be threatening or harassing and when pharmacists utilize professional judgment in addressing clinical and workflow issues at hand. Employers need support—especially now as the pandemic continues—from insurers, lawmakers, educators, and the public in order to address patient safety issues, reduce stress and increase satisfaction of pharmacy personnel now and in the future.

Recommendations

The recommendations listed next are for consideration and discussion. Most of them have been proposed for years, but the urgency of this moment might help push them into reality. Concrete action plans will likely vary for various pharmacy practice types. We propose that pharmacists, employers, policy makers, and others need to be engaged for making progress. It is in this spirit that we submit the following recommendations:

- Change work systems and processes of care to minimize interruptions; maximize concentration time; improve training and support; allow autonomy; provide access to needed data/resources; and improve alignment with personnel well-being/resilience, patient safety, and optimal care.
- Create business models that better align incentives and build relationships among organizations so that patient care and personnel's well-being are improved.
- Update practice acts and legislation to accommodate bold changes that allow personnel the ability to exercise clinical and professional judgment. This includes pharmacy licensure requirements and scope of practice expansions for pharmacists and technicians.
- Update pharmacy education to support changes in expertise and credentials. This should include discussion regarding advanced training, multiple tiered degrees, and development of pharmacist assistant training.
- Enhance pharmacy personnel well-being and resilience initiatives that improve dialogue, autonomy, support, and inclusion. Respondent comments suggested that simple things such as communication, follow-up, and a culture of caring mean a lot.
- Attend to the high stress reported by respondents with relatively low practice experience along with the fact that these less experienced pharmacists and technicians now comprise the majority of the pharmacy workforce. Building support systems—including connections, mentoring, and coaching—is needed. Linking experienced and newer personnel could be of help.
- Build community engagement and outreach so that pharmacies can build better access, responsiveness, communication, customization, and value co-creation with the patients and consumers being served.

LIST OF FIGURES AND TABLES

SECTION 1: BACKGROUND, STUDY OBJECTIVES, METHODS

Background

Pharmacists' and pharmacy personnel's workplace issues and their relationship to personal well-being continue to be a critical, complex issue across all practice settings and have been further exacerbated under the COVID-19 pandemic. In recent decades, considerable work has been done to analyze medication errors, including near-misses, and identify their root causes. What the research has lacked is a critical examination of workplace factors to determine how they affect pharmacy personnel well-being and patient safety.

To address this need, APhA and NASPA joined forces to address pharmacy workplace conditions and pharmacy personnel well-being. The collaboration that began in late 2020 yielded 3 activities that were all launched in 2021.[2] This survey is one of the three.

The work environment for pharmacists and pharmacy personnel has been studied for many years. Early studies examining job stress and satisfaction found that pharmacists tended to be moderately satisfied with their jobs while simultaneously finding the work environment stressful.[A,B,C] In recent years, stress has reached an all-time high, especially for those working in community and hospital practice settings. In 2018, APhA sponsored a qualitative research study using open-ended questions to examine the personal and professional well-being of pharmacists and student pharmacists.[D] While this project found that pharmacists' and students' basic human needs were being met, there were internal (fear of failure/pressure to succeed) and external (employer polices, low reimbursement rates, patient demands) factors negatively influencing their well-being. The 2019 National Pharmacist Workforce Survey found that overall 71% of pharmacists rated their workload as high or extremely high and job satisfaction was at the lowest point in 20 years.[E]

Beginning in 2019, several initiatives were launched to address these issues. The 2019 Enhancing Well-being and Resilience Among the Pharmacist Workforce: National Consensus Conference was convened and provided a set of 50 consensus recommendations for individual and system action. APhA launched the Well-being Index for Pharmacy Personnel which pharmacy personnel can use to assess their level of distress and track it over time. It also provides resources for individuals to access that address contributing factors to negative well-being. Several state pharmacy associations and boards of pharmacy fielded workplace surveys to their stakeholders. APhA/NASPA developed the *Pharmacist's Fundamental Responsibilities and Rights* document, which describes the core responsibilities to which pharmacists dedicate themselves as health care professionals and what is necessary for pharmacists to fulfill those responsibilities (i.e., rights).

The onset of the COVID-19 global pandemic has stretched the health care workforce, including pharmacists, to the breaking point.[F] While pharmacists answered the call—providing access to medications throughout even the most daunting of the pandemic surges to providing COVID testing, vaccination, and treatment—workplace issues remain and have intensified in severity.[G] Pharmacists' and pharmacy personnel's workload has been linked to patient safety concerns regarding medication errors.[H] In addition, student pharmacists' once-positive views of the profession of pharmacy have declined in recent years.[I] These findings demand immediate action from various pharmacy stakeholders.

The study objective for the APhA/NASPA National Pharmacy Workplace Survey was to identify state-specific workplace conditions and sustained stress experienced by pharmacists that may lead to medication errors. The APhA/NASPA Work Group believed the most efficient way to reach pharmacy personnel across the country was to develop a national survey held on a neutral platform that would be distributed through state pharmacy associations and nationally by APhA.[3] Unfortunately, responses for

[2] To learn more about the other APhA/NASPA collaborative projects visit *Pharmacist's Fundamental Responsibilities and Rights* and Pharmacy Workplace and Well-being Reporting (PWWR).

[3] Survey Data Repository - University of Minnesota, Jon Schommer (PI); IRB# 00012292

most states were not large enough to provide robust state-level data. Instead, results will be presented and analyzed by region defined by the established NABP Districts. (See Figure 2.1)

Methods

With these issues in mind, the APhA/NASPA Work Group developed the survey questions based on learnings from the Well-being Index for Pharmacy Personnel, a state pharmacy association survey instrument,[4] and principles outlined in the *Pharmacist's Fundamental Responsibilities and Rights* document.

The survey was divided into 7 sections:

1. Respondent descriptions (demographics)
2. Work environment
3. Employee engagement and value
4. Culture of safety
5. Pharmacy personnel
6. Contributors to stress
7. Insights regarding patient safety and optimal patient care

The exact wording for questions along with the response categories are found in the Appendix.

APhA developed common promotional messaging templates that included the national survey URL and graphics that were used by state pharmacy associations and APhA. The survey was administered through the *Internet-Based Qualtrics^{XM} Survey* platform for receiving de-identified data for analysis. To protect the responders' anonymity, all responses are held at the University of Minnesota, College of Pharmacy. Staff at APhA and NASPA were not provided access to individual responses and only received aggregate results.

The survey was launched nationally in April 2021 by APhA; state pharmacy associations launched at different times during 2021. Promotion of the survey to pharmacists, student pharmacists, and pharmacy technicians continued through the end of August 2021. Social media, email, and online periodicals were used to promote the survey. Due to the number of surveys that were started but not yet completed, a decision was made to keep the survey open for those individuals through November 2, 2021, when a data file containing 4,482 responses was downloaded for preparation of a preliminary report.

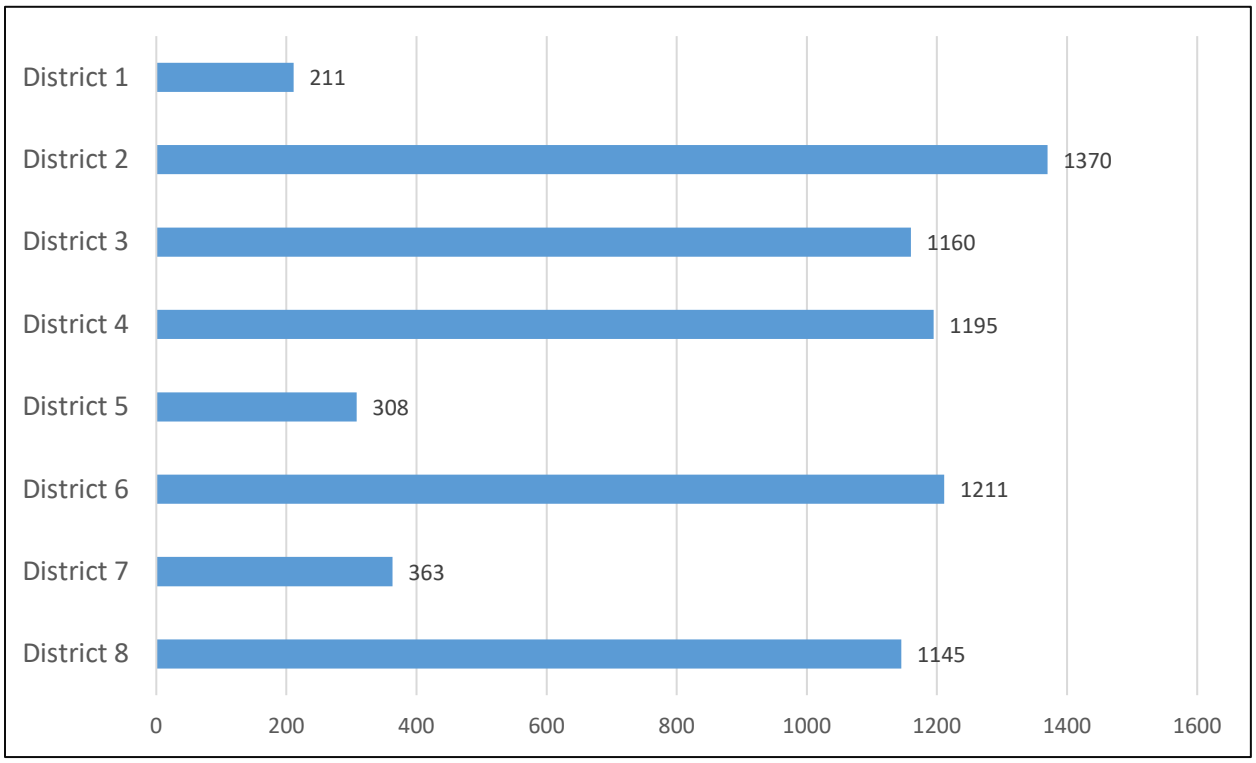
Responses continued to be received through the end of 2021. For this report, a data file containing 6,973 responses was downloaded on January 7, 2022, for descriptive analysis using IBM SPSS version 27 statistical software.

[4] Questions for this survey were based on a portion of the Tennessee Pharmacists Association workplace survey fielded in the first half of 2020.

SECTION 2: DESCRIPTION OF RESPONDENTS

Figure 2.1. Geographic distribution of survey respondents

Overall, 6,973 individuals responded to the survey, with 6,963 responding to this question. This figure shows the number of respondents from each of the 8 NABP districts in the United States and Puerto Rico.[5] It is noteworthy that the distribution of respondents is similar to the distribution of respondents to the most recently conducted National Pharmacist Workforce Survey in 2019. Thus, the APhA/NASPA survey exhibits suitable national geographic representation.



[5]NABP districts - https://nabp.pharmacy/about/districts/

Only U.S. states, DC, and PR are included in this list. Note: actual NABP districts include Canadian provinces.

District 1: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont

District 2: Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania, Virginia, and West Virginia

District 3: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, Puerto Rico, South Carolina, and Tennessee

District 4: Illinois, Indiana, Michigan, Ohio, and Wisconsin

District 5: Iowa, Minnesota, Nebraska, North Dakota, and South Dakota

District 6: Arkansas, Kansas, Louisiana, Missouri, Oklahoma, and Texas

District 7: Alaska, Idaho, Montana, Oregon, Washington, and Wyoming

District 8: Arizona, California, Colorado, Hawaii, Nevada, New Mexico, and Utah

Figure 2.2. Practice setting type of survey respondents

Out of the 6,973 respondents to the survey, 6,674 responded to this question. This figure shows the number of respondents by practice setting type. Respondents working in chain pharmacies accounted for 3,171 (48% of total) of the respondents. Supermarket pharmacy was the next most common practice type (n = 856 or 13% of total), followed by independent pharmacy (n = 667 or 10% of total), and hospital/institutional pharmacy (n = 656 or 9% of total). It is noteworthy that the distribution of respondents in the APhA/NASPA survey is different than the distribution of respondents to the most recently conducted National Pharmacist Workforce Survey (NPWS) in 2019. In the APhA/NASPA survey, there was a higher proportion of community setting respondents and a lower proportion of hospital respondents compared to the 2019 NPWS. However, for the APhA/NASPA survey we intentionally listed a quite granular list of practice setting types and were able to obtain at least 30 responses for almost all of them. This will allow us to describe a relatively large number of pharmacy practice setting types in this study.

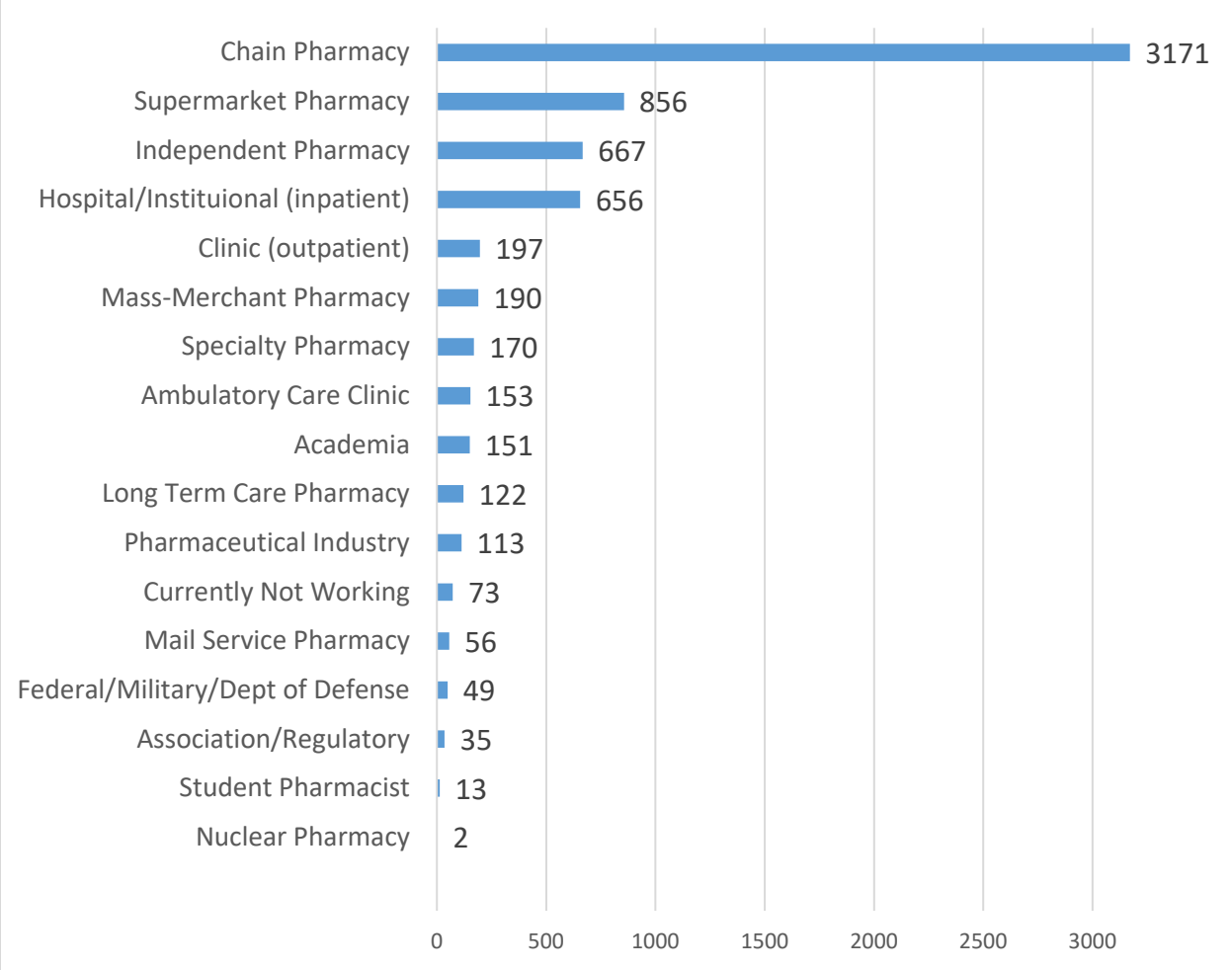


Figure 2.3. Primary role (position) of survey respondents
Out of the 6,973 respondents to the survey, 6,592 (95%) responded to this question. This figure shows the number of respondents by their primary role (position). The most common type of role was staff/clinical pharmacist (n = 3,268 or 50% of total), followed by pharmacist manager/supervisor (n = 1,881 or 29% of total). Pharmacy owner was reported by 226 (4%) of the respondents who answered this question.

In addition to these, 68 (1%) respondents identified as faculty/educator, 65 (1%) identified as consultant/liaison/professional specialist, and 55 (1%) identified as corporate executive/director. Furthermore, 267 (4%) identified as a student pharmacist and 44 (1%) identified as a resident. Finally, certified pharmacy technician was reported by 470 (7%) and pharmacy technician/clerk by 248 (4%) of the respondents.

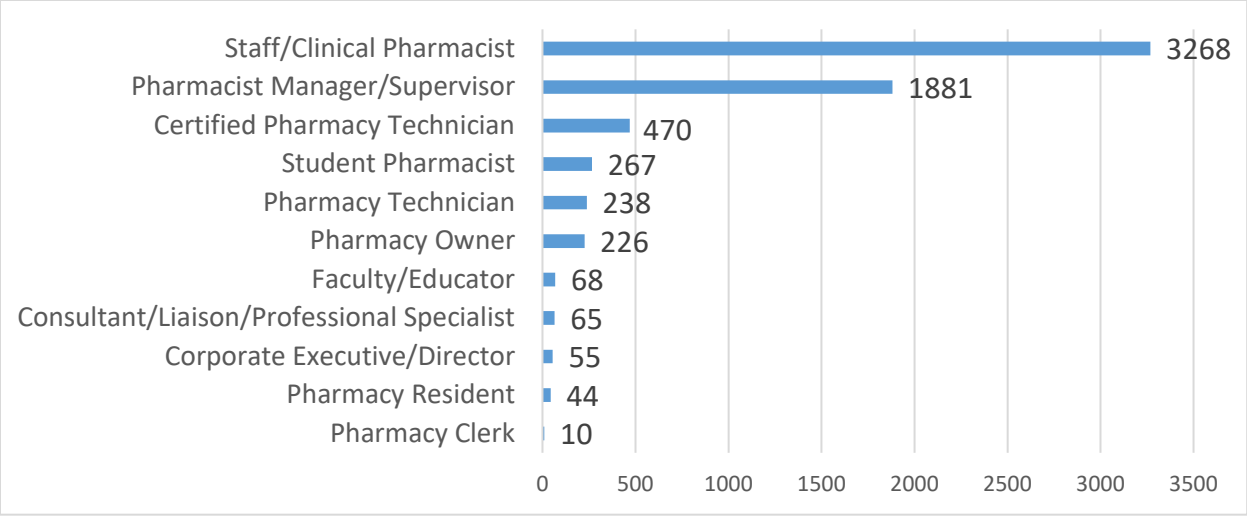


Figure 2.4. Gender identification of survey respondents
Out of the 6,973 respondents to the survey, 4,294 (62%) responded to this question. This figure shows the number of respondents by gender identification. Of those who answered, 2,964 (69%) identified as female, 1,059 (25%) identified as male, 14 (0.3%) identified as other, and 257 (6%) preferred not to answer the question.

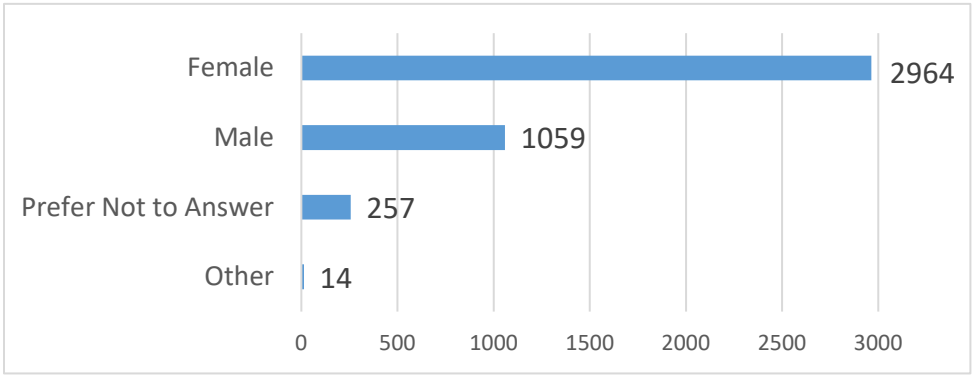


Figure 2.5. Race/ethnicity identification of survey respondents
Out of the 6,973 respondents to the survey, 4,294 (62%) responded to this question. This figure shows the number of respondents by race/ethnicity. Of those who answered, 3,105 (72%) identified as white, 426 (10%) preferred not to answer the question, 342 (8%) identified as Asian, 155 (4%) as Hispanic (nonwhite), 123 (3%) as multiple races/ethnicities, 110 (3%) as Black, 20 (0.5%) as American Indian/Alaska Native, 9 (0.2%) as Middle Eastern, and 4 (0.1%) as Native Hawaiian/Pacific Islander.

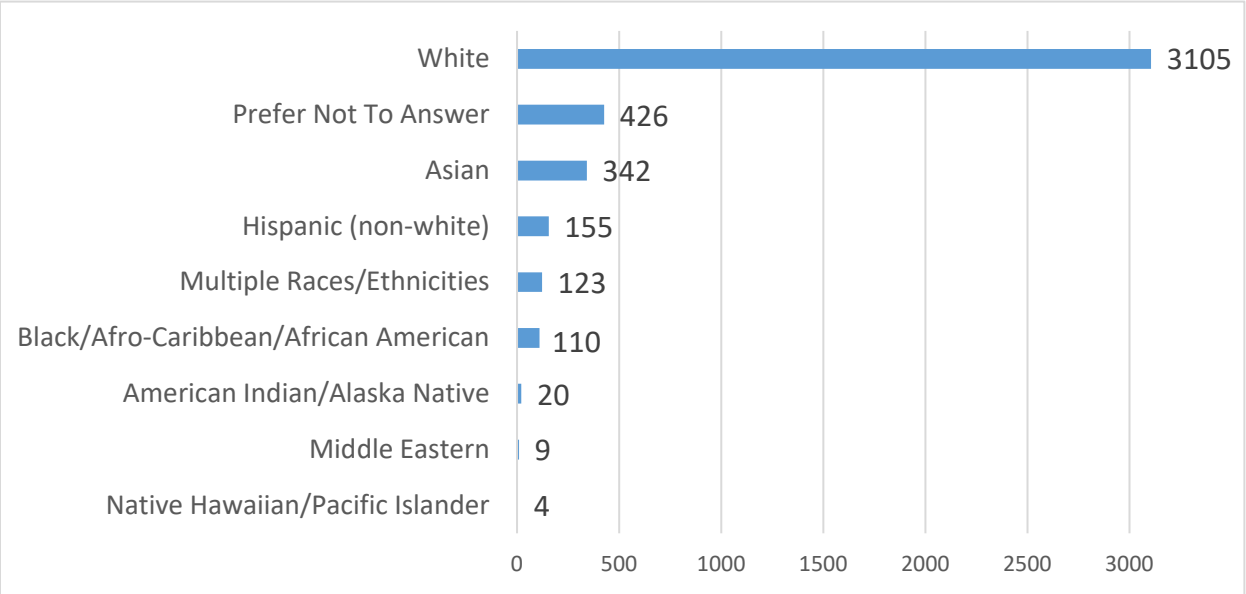


Table 2.1. Years in practice of pharmacist and technician respondents
Respondents were asked to report how many years since they completed their pharmacy degree or how long they had been a pharmacy technician. The distribution of responses for 3,664 pharmacists and 433 technicians is presented in the table. Fifty-nine percent of pharmacists graduated fewer than 15 years ago and 69% of technicians have been in this role for fewer than 15 years.

Year Categories	Pharmacist (n = 3,664)	Technician (n = 433)
0–4 years	21%	33%
5–14 years	38%	36%
15–24 years	18%	20%
25 or more years	23%	11%

SECTION 3: WORK ENVIRONMENT

There were 12 questions developed for this section of the survey that focused on the respondent's work environment and how time allocation, staffing, policies, payment for services, and workflow design affected their ability to meet both clinical and nonclinical duties. Each item was rated from 1 = strongly agree to 5 = strongly disagree.

Table 3.1. Proportion of respondents who disagree with survey items about their work environment
Out of the 6,973 respondents to the survey, 5,589 (80%) responded to this question. Over 60% of respondents disagreed with each of the 12 statements in the table. It is noteworthy that 3 out of 4 respondents (75%) disagreed with the statement "Sufficient time is allocated for me to safely perform patient care/clinical duties."

Survey item	% Disagree
Sufficient time is allocated for me to safely perform administrative/nonclinical duties.	77%
Non-pharmacist staff personnel are available for shifts sufficiently to meet clinical duties.	76%
Sufficient time is allocated for me to safely perform patient care/clinical duties.	75%
Sufficient non-pharmacist staff personnel are available during shifts to meet administrative/non-clinical duties.	75%
Employer policies facilitate my ability to safely perform administrative/nonclinical duties.	73%
Sufficient pharmacists are available during shifts to meet patient care/clinical duties.	71%
Sufficient number of pharmacists are available during shifts to meet administrative/nonclinical duties.	68%
Sufficient pharmacists overlap and procedures exist to ensure transfer of information and status.	68%
Payment for pharmacy services supports our ability to meet clinical and nonclinical duties.	66%
Employer policies facilitate my ability to safely perform patient care/clinical duties.	65%
Workflow design facilitates my ability to meet nonclinical duties.	63%
Workflow design facilitates my ability to meet clinical duties.	62%

Chi-square analysis showed significant associations between the responses to these questions and the following demographic variables:

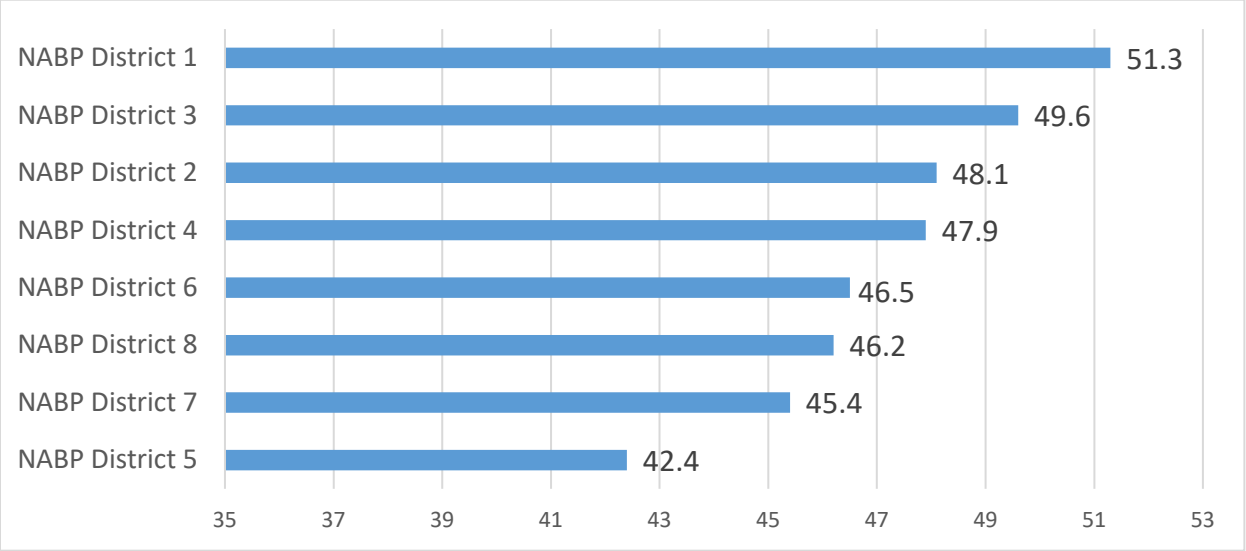
- NABP district
- Practice setting
- Primary role (position)
- Gender
- Ethnicity
- Years in practice (pharmacist)
- Years in practice (technician)

In order to present key findings, the scores for each of the 12 items listed in Table 3.1 were summed into an overall Work Environment Index Score. Respondents rated each item from 1 = strongly agree to 5 = strongly disagree. Therefore, the range for the Work Environment Index Score was from 12 to 60 (theoretical midpoint = 36). The figures presented next summarize the Work Environment Index Score for various categories of respondents. Higher scores reveal a higher level of disagreement with the items in Table 3.1.

It should be noted that univariate descriptions (cross-tabulations) are presented. When interpreting findings in the figures and tables, confounding among variables should be considered. For example, NABP districts differ in their composition of practice setting type; thus, differences among NABP districts could be due to these differences in practice setting composition. Furthermore, primary role (position), gender, ethnicity, and years in practice are all associated with practice setting type; for example, respondents who identified as staff/clinical pharmacist, female, Asian, or having relatively fewer years in practice were more likely to work in chain pharmacy practice settings. Such confounding should be kept

in mind when interpreting the findings. However, the univariate findings are instructive for thinking about how various groups of individuals are being affected by their work environments in terms of their ability to meet both clinical and nonclinical duties. These descriptions can provide insights for deeper evaluations through in-depth interviews, focus groups, and discussions.

Figure 3.1: Work Environment Index Scores for respondents categorized by NABP district[6]
Out of the 6,973 respondents to the survey, 4,913 (70%) responded to this question. This figure shows that each district's mean score was above the theoretical midpoint of 36. This suggests general disagreement with the 12 survey items listed in Table 3.1 (i.e., more stressful work environment). The strongest disagreement was found in NABP Districts 1 to 4.



Work Environment Index Score = sum of 12 items (Table 3.1) rated from 1 = strongly agree to 5 = strongly disagree. Range is 12 to 60 (theoretical midpoint = 36). The higher the score, the stronger the disagreement with the survey items.

[6] NABP districts: https://nabp.pharmacy/about/districts/
Only U.S. states, DC, and PR are included in this list. Note: actual NABP districts include Canadian provinces.
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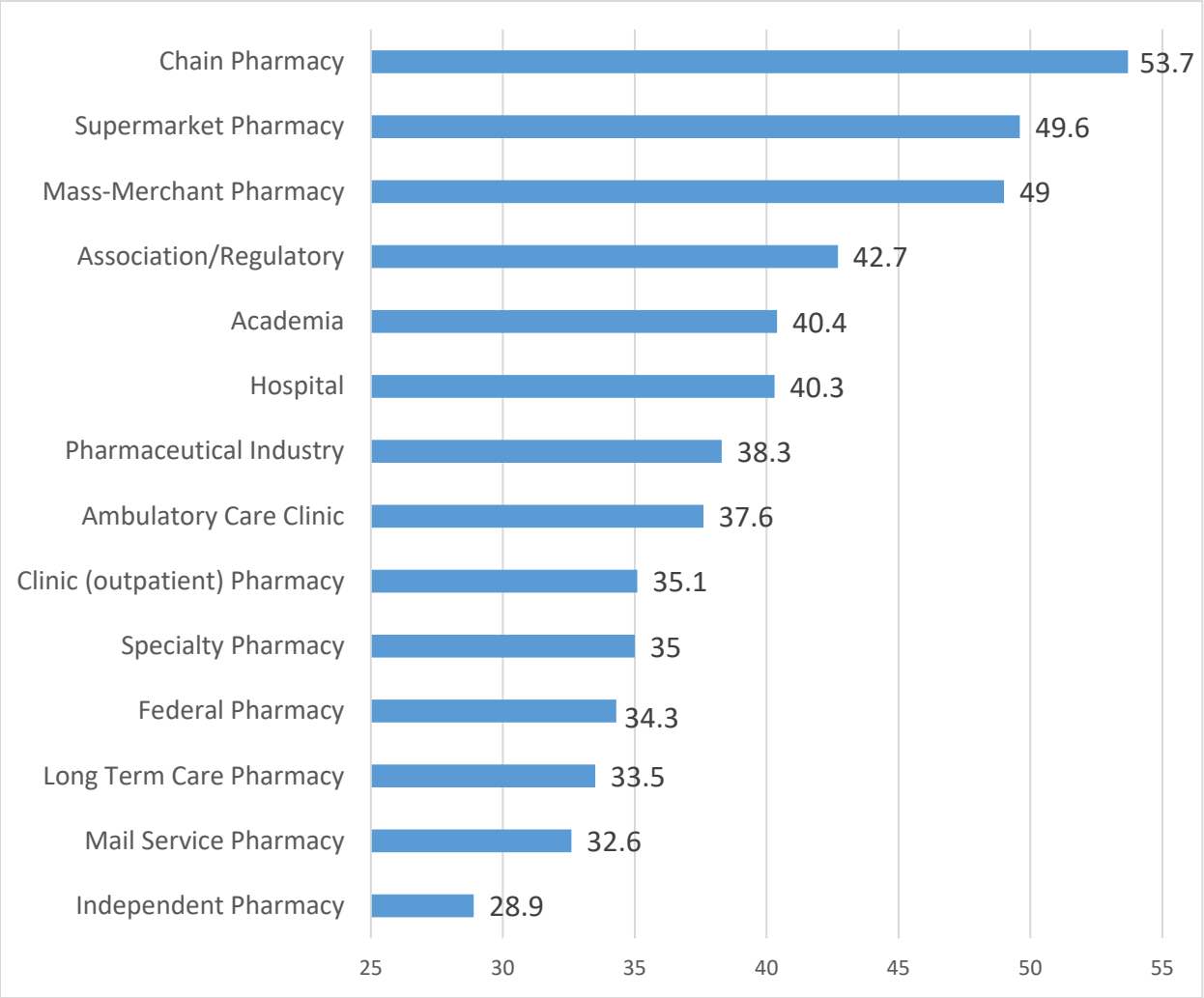
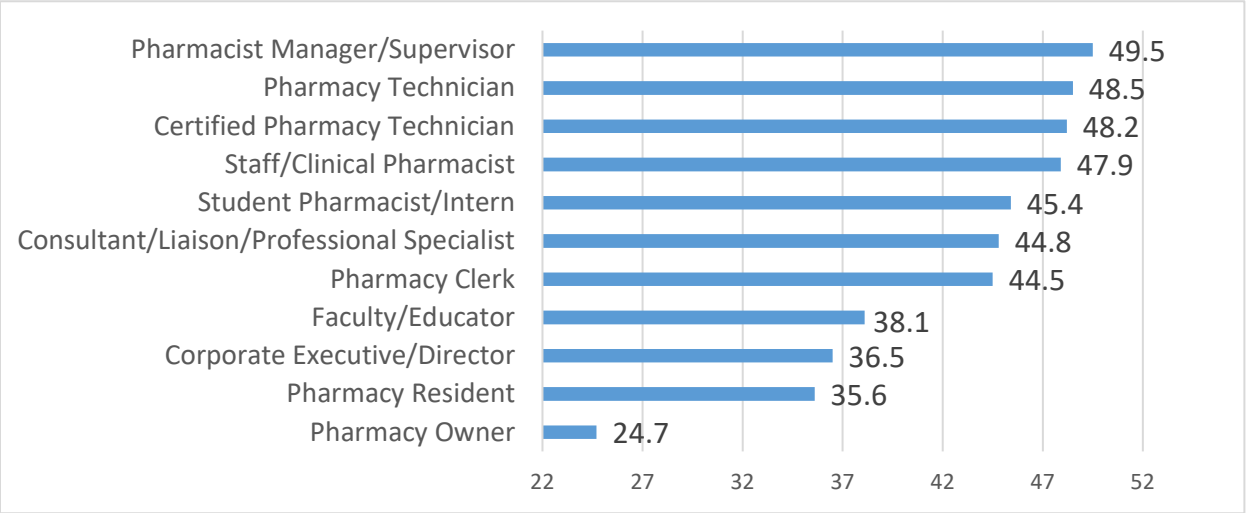
District 2: Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania, Virginia, and West Virginia
District 3: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, Puerto Rico, South Carolina, and Tennessee
District 4: Illinois, Indiana, Michigan, Ohio, and Wisconsin
District 5: Iowa, Minnesota, Nebraska, North Dakota, and South Dakota
District 6: Arkansas, Kansas, Louisiana, Missouri, Oklahoma, and Texas
District 7: Alaska, Idaho, Montana, Oregon, Washington, and Wyoming
District 8: Arizona, California, Colorado, Hawaii, Nevada, New Mexico, and Utah

Figure 3.2. Work Environment Index Scores for respondents categorized by practice type
Out of the 6,973 respondents to the survey, 4,911 (70%) responded to this question. This figure shows relatively high scores (that is, disagreement with the 12 survey items listed in Table 3.1) for chain, supermarket, and mass-merchant pharmacy types. Independent pharmacy had the lowest average score as a practice type, followed by mail service pharmacy with other practice types being closer to the theoretical midpoint of 36.



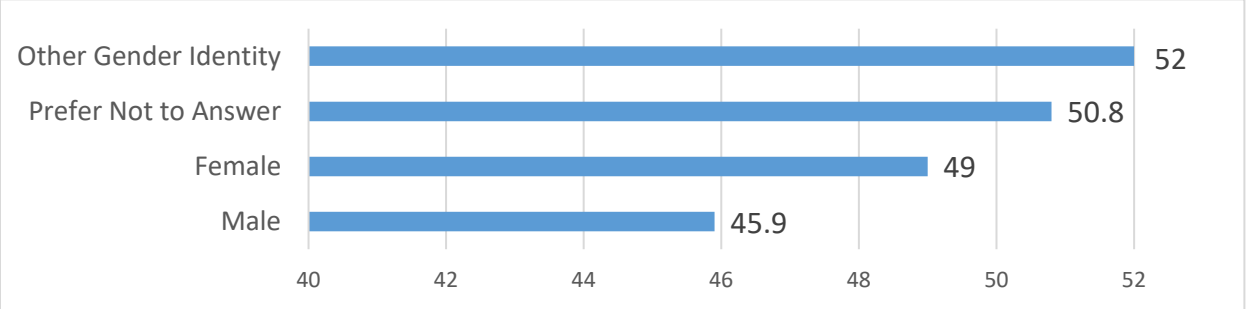
Work Environment Index Score = sum of 12 items (Table 3.1) rated from 1 = strongly agree to 5 = strongly disagree. Range is 12 to 60 (theoretical midpoint = 36). The higher the score, the stronger the disagreement with the survey items.

Figure 3.3. Work Environment Index Scores for respondents categorized by primary role (position)
Out of the 6,973 respondents to the survey, 4,859 (70%) responded to this question. This figure shows relatively high scores (that is, disagreement with the 12 survey items listed in Table 3.1) for manager/supervisor, technician, and staff/clinical pharmacist positions. Pharmacy owners had a relatively low score, with other position types being closer to the theoretical midpoint of 36.



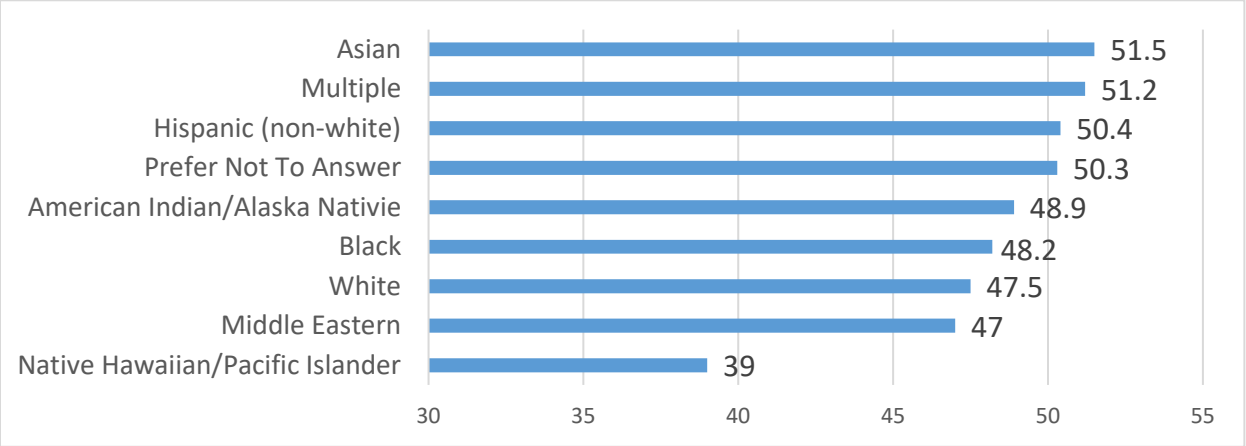
Work Environment Index Score = sum of 12 items (Table 3.1) rated from 1 = strongly agree to 5 = strongly disagree. Range is 12 to 60 (theoretical midpoint = 36). The higher the score, the stronger the disagreement with the survey items.

Figure 3.4. Work Environment Index Scores for respondents categorized by gender
Out of the 6,973 respondents to the survey, 3,738 (54%) responded to this question. This figure shows relatively high scores (that is, disagreement with the 12 survey items listed in Table 3.1). Respondents who identified as male had significantly lower scores than those who identified as female or other or those who preferred not to answer.



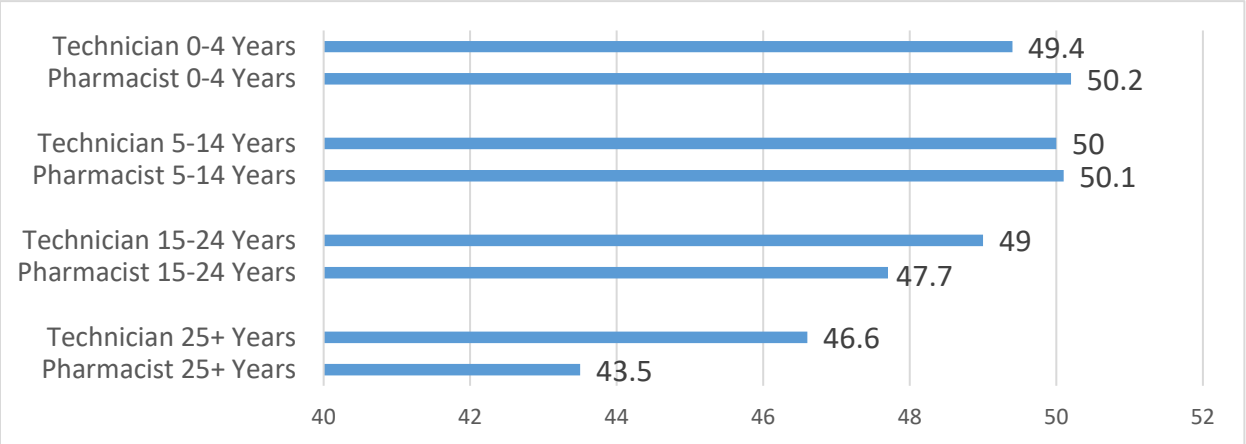
Work Environment Index Score = sum of 12 items (Table 3.1) rated from 1 = strongly agree to 5 = strongly disagree. Range is 12 to 60 (theoretical midpoint = 36). The higher the score, the stronger the disagreement with the survey items.

Figure 3.5: Work Environment Index Scores for respondents categorized by ethnicity
Out of the 6,973 respondents to the survey, 3,378 (54%) responded to this question. This figure shows relatively high scores (that is, disagreement with the 12 survey items listed in Table 3.1) for Asian, Multiple Ethnicity, Hispanic (non-white), and Prefer Not to Answer categories. Native Hawaiian/Pacific Islanders had the lowest average score, with other ethnicity types all having scores higher than the theoretical midpoint of 36.



Work Environment Index Score = sum of 12 items (Table 3.1) rated from 1 = strongly agree to 5 = strongly disagree. Range is 12 to 60 (theoretical midpoint = 36). The higher the score, the stronger the disagreement with the survey items.

Figure 3.6. Work Environment Index Scores for respondents categorized by years in practice
Out of the 6,973 respondents to the survey, 3,182 pharmacists and 381 technicians responded to this question. This figure shows relatively high scores (that is, disagreement with the 12 survey items listed in Table 3.1). For both pharmacists and technicians, those with more years of experience had the lowest scores, but these scores still were much higher than the theoretical midpoint of 36.



Work Environment Index Score = sum of 12 items (Table 3.1) rated from 1 = strongly agree to 5 = strongly disagree. Range is 12 to 60 (theoretical midpoint = 36). The higher the score, the stronger the disagreement with the survey items.

SECTION 4: EMPLOYEE ENGAGEMENT AND VALUE

There were 5 questions developed for this section of the survey that focused on "employee engagement and value," which are items associated with the potential for employee burnout. The items related to respect, support, and communication. Each item was rated from 1 = strongly agree to 5 = strongly disagree. The findings in Table 4.1 are reported as the proportion who answered "somewhat disagree" or "strongly disagree" (% Disagree) ranked from highest disagreement to lowest.

Table 4.1. Proportion of respondents who disagree with survey items about employee engagement and value. Out of the 6,973 respondents to the survey, 5,368 responded to this question. More than 50% of respondents who answered these questions disagreed with each statement. It is noteworthy that 64% disagreed with the statement "My employer actively seeks my opinion."

Survey Item	% Disagree
My employer actively seeks my opinion.	64%
My employer respects and values my input.	62%
My employer supports (financially or with time off) my professional engagement and education.	59%
Management is available for and open to discussing issues impacting patient care.	56%
Communication channels exist to enable me to voice ideas and suggestions for process improvement.	53%

Chi-square analysis showed significant associations between the responses to these questions and the following demographic variables:

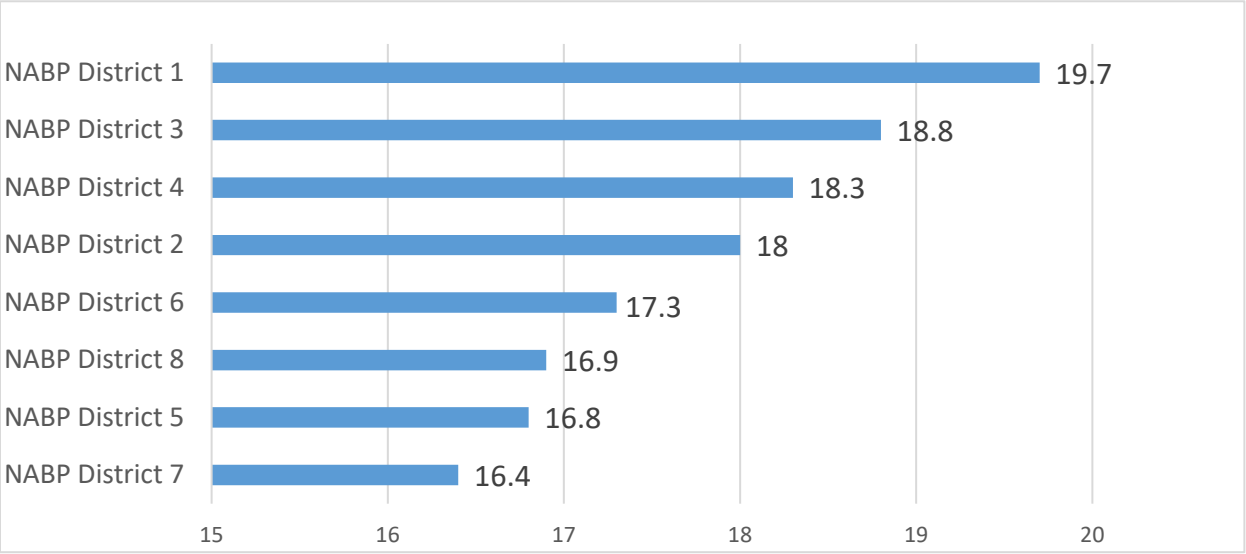
- NABP district
- Practice setting
- Primary role (position)
- Gender
- Ethnicity
- Years in practice (pharmacist)
- Years in practice (technician)

In order to present key findings, the scores for each of the 5 items listed in Table 4.1 were summed into an overall Employee Engagement and Value Index score. Respondents rated each item from 1 = strongly agree to 5 = strongly disagree. Therefore, the range for the Employee Engagement and Value Index score was from 5 to 25 (theoretical midpoint = 15). The figures presented next summarize the Employee Engagement and Value Index score for various categories of respondents. Higher scores reveal a higher level of disagreement with the items in Table 4.1.

It should be noted that univariate descriptions (cross-tabulations) are presented. When interpreting findings in the figures and tables, confounding among variables should be considered.

Figure 4.1. Employee Engagement and Value Index Scores for respondents categorized by NABP district[7]

Out of the 6,973 respondents to the survey, 5,252 (75%) responded to this question. This figure shows that each district's mean score was above the theoretical midpoint of 15. This suggests general disagreement with the 5 survey items listed in Table 4.1 (i.e., more stressful work environment). The strongest disagreement was found in NABP districts 1 to 4.



Employee Engagement and Value Index Score = sum of 5 items (Table 4.1) rated from 1 = strongly agree to 5 = strongly disagree. Range is 5 to 25 (theoretical midpoint = 15). The higher the score, the stronger the disagreement with the survey items.

[7] NABP districts: https://nabp.pharmacy/about/districts/

Only U.S. states, DC, and PR are included in this list. Note: actual NABP districts include Canadian provinces.

District 1: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont
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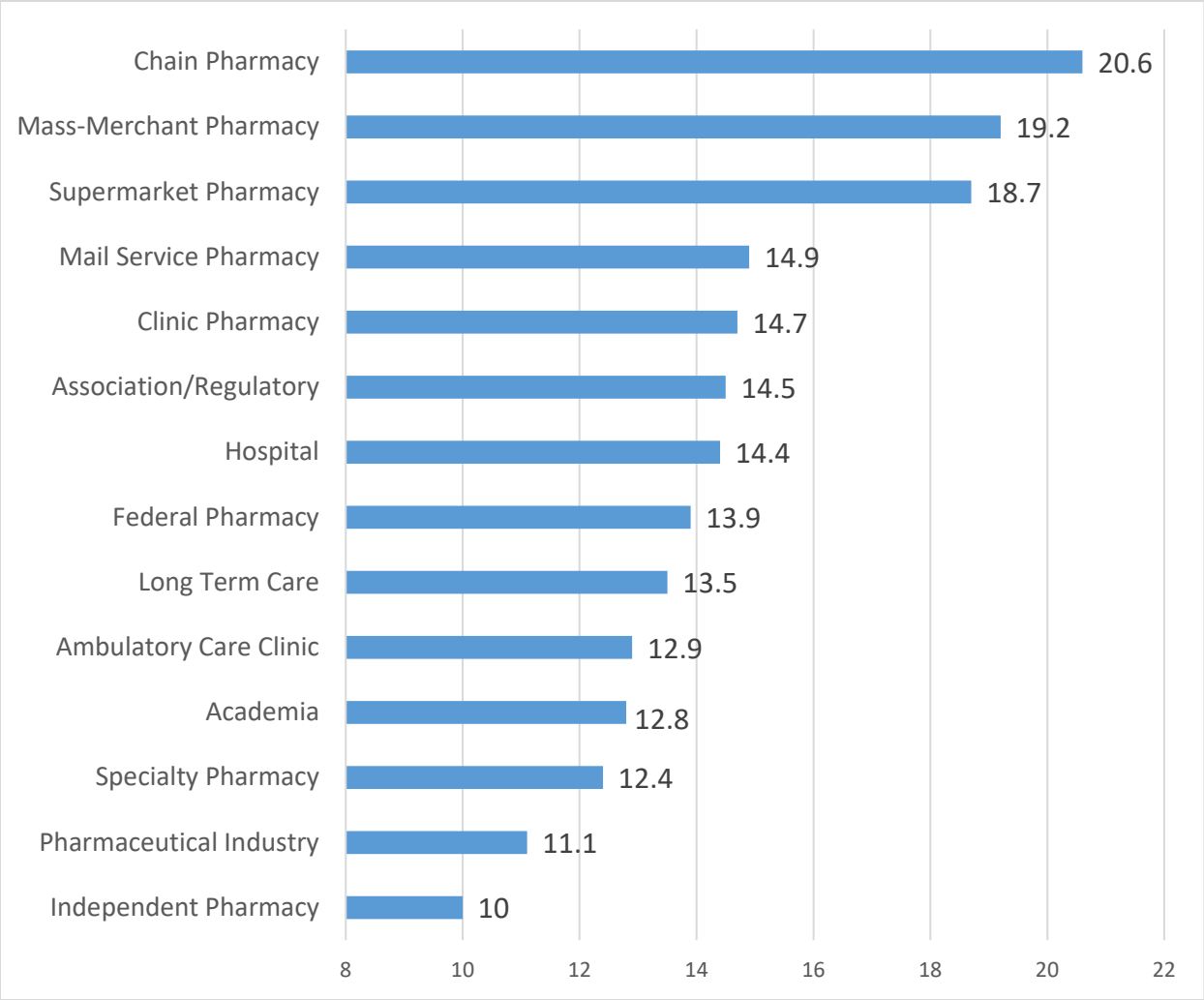
District 4: Illinois, Indiana, Michigan, Ohio, and Wisconsin
District 5: Iowa, Minnesota, Nebraska, North Dakota, and South Dakota
District 6: Arkansas, Kansas, Louisiana, Missouri, Oklahoma, and Texas
District 7: Alaska, Idaho, Montana, Oregon, Washington, and Wyoming
District 8: Arizona, California, Colorado, Hawaii, Nevada, New Mexico, and Utah

Figure 4.2. Employee Engagement and Value Index Scores for respondents categorized by practice type

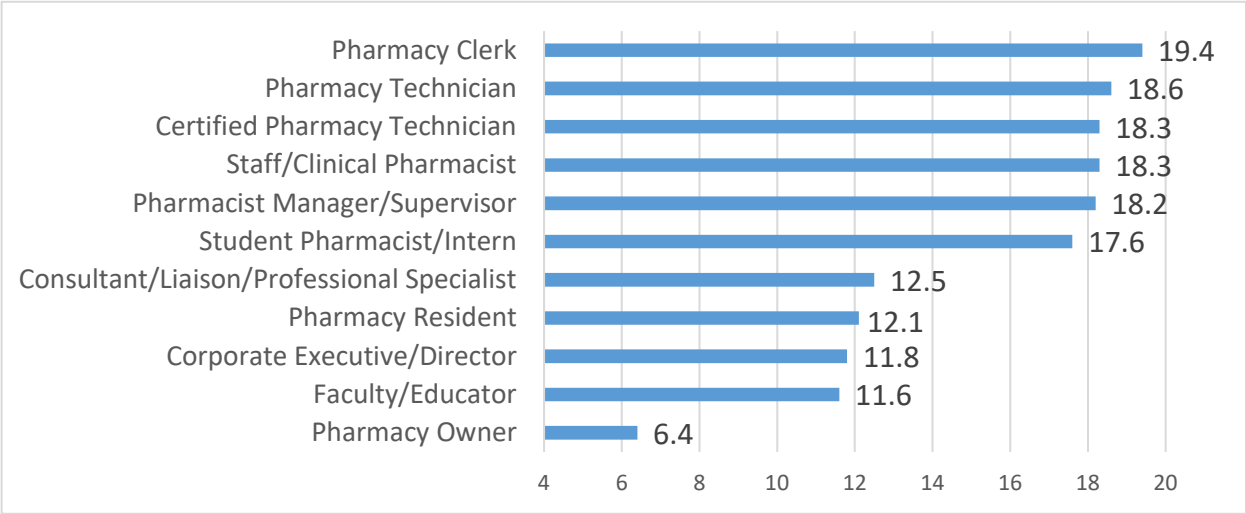
Out of the 6,973 respondents to the survey, 5,251 (75%) responded to this question. This figure shows relatively high scores (that is, disagreement with the 5 survey items listed in Table 4.1) for chain, supermarket, and mass-merchant pharmacy types. Independent pharmacy had the lowest average scores along with pharmaceutical industry and specialty pharmacy, with other practice types closer to the theoretical midpoint of 15.



Employee Engagement and Value Index Score = sum of 5 items (Table 4.1) rated from 1 = strongly agree to 5 = strongly disagree. Range is 5 to 25 (theoretical midpoint = 15). The higher the score, the stronger the disagreement with the survey items.

Figure 4.3. Employee Engagement and Value Index Scores for respondents categorized by primary role (position)

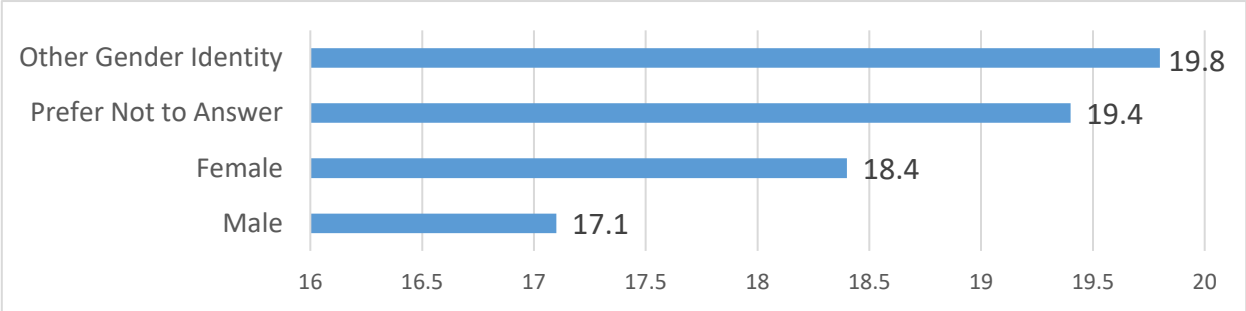
Out of the 6,973 respondents to the survey, 5,200 (75%) responded to this question. This figure shows relatively high scores (that is, disagreement with the 5 survey items listed in Table 4.1) for clerk, technician, staff/clinical pharmacist, manager/supervisor and student pharmacist/intern positions. Pharmacy owners had a relatively low score, with other position types being closer to the theoretical midpoint of 15.



Employee Engagement and Value Index Score = sum of 5 items (Table 4.1) rated from 1 = strongly agree to 5 = strongly disagree. Range is 5 to 25 (theoretical midpoint = 15). The higher the score, the stronger the disagreement with the survey items.

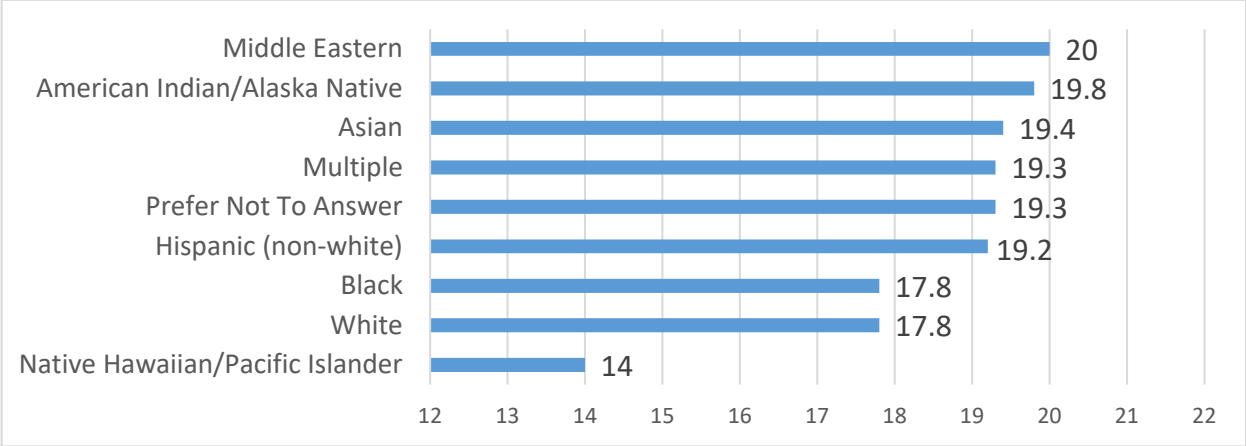
Figure 4.4. Employee Engagement and Value Index Score for respondents categorized by gender

Out of the 6,973 respondents to the survey, 4,167 (60%) responded to this question. This figure shows relatively high scores (that is, disagreement with the 5 survey items listed in Table 4.1). Respondents who identified as male had significantly lower scores than those who identified as female or other as well as those who preferred not to answer.



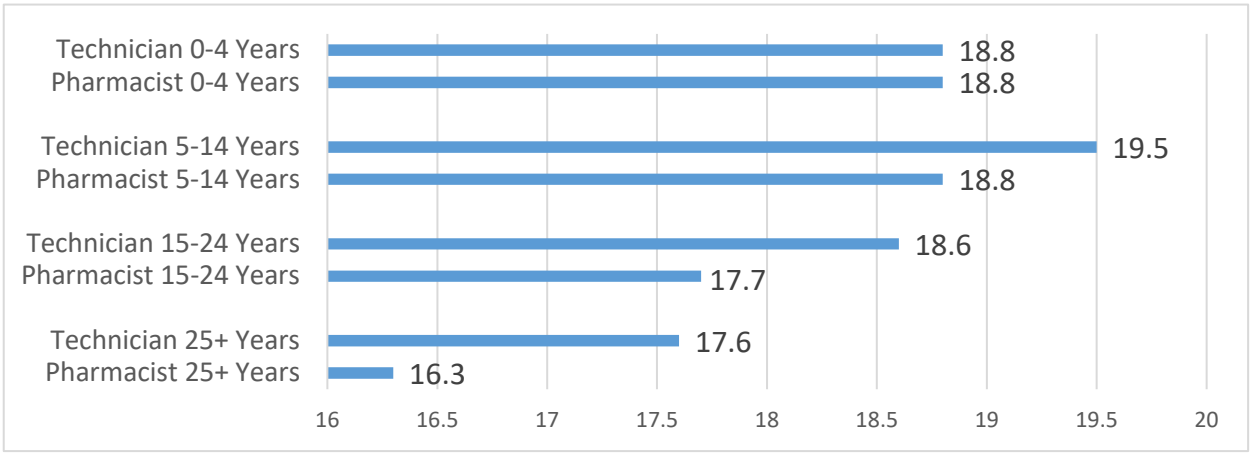
Employee Engagement and Value Index Score = sum of 5 items (Table 4.1) rated from 1 = strongly agree to 5 = strongly disagree. Range is 5 to 25 (theoretical midpoint = 15). The higher the score, the stronger the disagreement with the survey items.

Figure 4.5. Employee Engagement and Value Index Scores for respondents categorized by ethnicity
Out of the 6,973 respondents to the survey, 4,167 (60%) responded to this question. This figure shows relatively high scores (that is, disagreement with the 5 survey items listed in Table 4.1) for Middle Eastern, American Indian/Alaska Native, Asian, Multiple Ethnicity, Prefer Not to Answer, and Hispanic (nonwhite) categories. Native Hawaiian/Pacific Islanders had a relatively low score, with Black and white ethnicity types in between with scores of 17.8.



Employee Engagement and Value Index Score = sum of 5 items (Table 4.1) rated from 1 = strongly agree to 5 = strongly disagree. Range is 5 to 25 (theoretical midpoint = 15). The higher the score, the stronger the disagreement with the survey items.

Figure 4.6. Employee Engagement and Value Index Scores for respondents categorized by years in practice
Out of the 6,973 respondents to the survey, 3,555 (51%) pharmacists and 423 (6%) technicians responded to this question. This figure shows relatively high scores (that is, disagreement with the 5 survey items listed in Table 4.1). For both pharmacists and technicians, those with more years of experience had lower scores, but still higher than the theoretical midpoint of 15.



Employee Engagement and Value Index Score = sum of 5 items (Table 4.1) rated from 1 = strongly agree to 5 = strongly disagree. Range is 5 to 25 (theoretical midpoint = 15). The higher the score, the stronger the disagreement with the survey items.

SECTION 5: CULTURE OF SAFETY

For this section of the survey, the focus was on the extent to which respondents' practice sites developed and implemented a culture of safety.

First, respondents were asked to respond to the statement *"*My practice site utilizes a continuous quality improvement (CQI) program to identify and prevent errors or near misses from occurring.*"* (1= yes, 2 = no, 3 = unsure). Out of 5,396 responders to this question, 69% (3,723) replied "yes", 17% (894) were unsure, and 14% (779) replied "no."

For the 3,723 individuals who replied "yes," 3 additional questions were asked the items listed in Table 5.1. Each item was rated on a five-point scale: 1 = strongly agree, 2 = somewhat agree, 3 = neither agree nor disagree, 4 = somewhat disagree, 5 = strongly disagree. The findings in Table 5.1 are reported as the proportion who answered "somewhat agree" or "strongly agree" (% Agree), ranked from highest agreement to lowest.

Table 5.1. Proportion of respondents who agree with survey items about a culture of safety
Out of the 3,723 respondents who were aware of a CQI program in place, the majority of them reported that these programs resulted in improvements. However, only 42% reported that their employer shared aggregate reports with them in order to improve their practices.

Survey Item	% Agree
Pharmacy personnel are encouraged to voluntarily report errors or near misses without adverse, internal, or administrative action.	79%
Voluntary reporting of errors or near misses results in improvements in structure and/or processes in my practice.	60%
My employer shares aggregate report data with me so that we can improve our practices.	42%

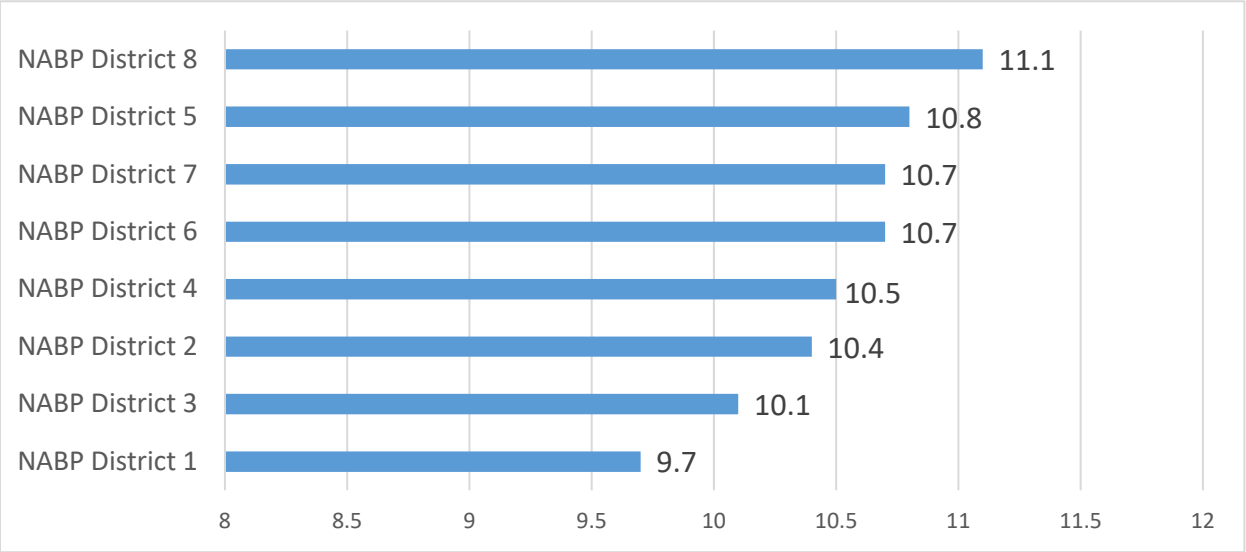
Chi-square analysis showed significant associations between the responses to these questions and the following demographic variables:

- NABP district
- Practice setting
- Primary role (position)

Gender, ethnicity, and years in practice were not significantly associated with responses to the 3 questions in Table 5.1.

In order to present key findings, the scores for each of the 3 items listed in Table 5.1 were summed into an overall Culture of Safety Index score. Respondents rated each item from 1 = strongly disagree to 5 = strongly agree. Therefore, the range for the Culture of Safety Index score was from 3 to 15 (theoretical midpoint = 9). The figures presented next summarize the Culture of Safety Index score for various categories of respondents. Higher scores reveal a higher level of agreement with the items in Table 5.1. It should be noted that univariate descriptions (cross-tabulations) are presented. When interpreting findings in the figures and tables, confounding among variables should be considered.

Figure 5.1: Culture of Safety Index Scores for respondents categorized by NABP district[8]
Out of the 3,723 respondents who were aware that they had a CQI program in place, 3,534 (95%) responded to this question. This figure shows that each district's mean score was above the theoretical midpoint of 9. This suggests general agreement with the 3 survey items listed in Table 5.1 (i.e., there is a culture of safety in their workplace. Highest agreement was in District 8 and lowest agreement was in District 1.



Culture of Safety Index Score = sum of 3 items (Table 5.1) rated from 1 = strongly disagree to 5 = strongly agree. Range is 3 to 15 (theoretical midpoint = 9). The higher the score, the stronger the agreement with the survey items.

[8] NABP districts: https://nabp.pharmacy/about/districts/
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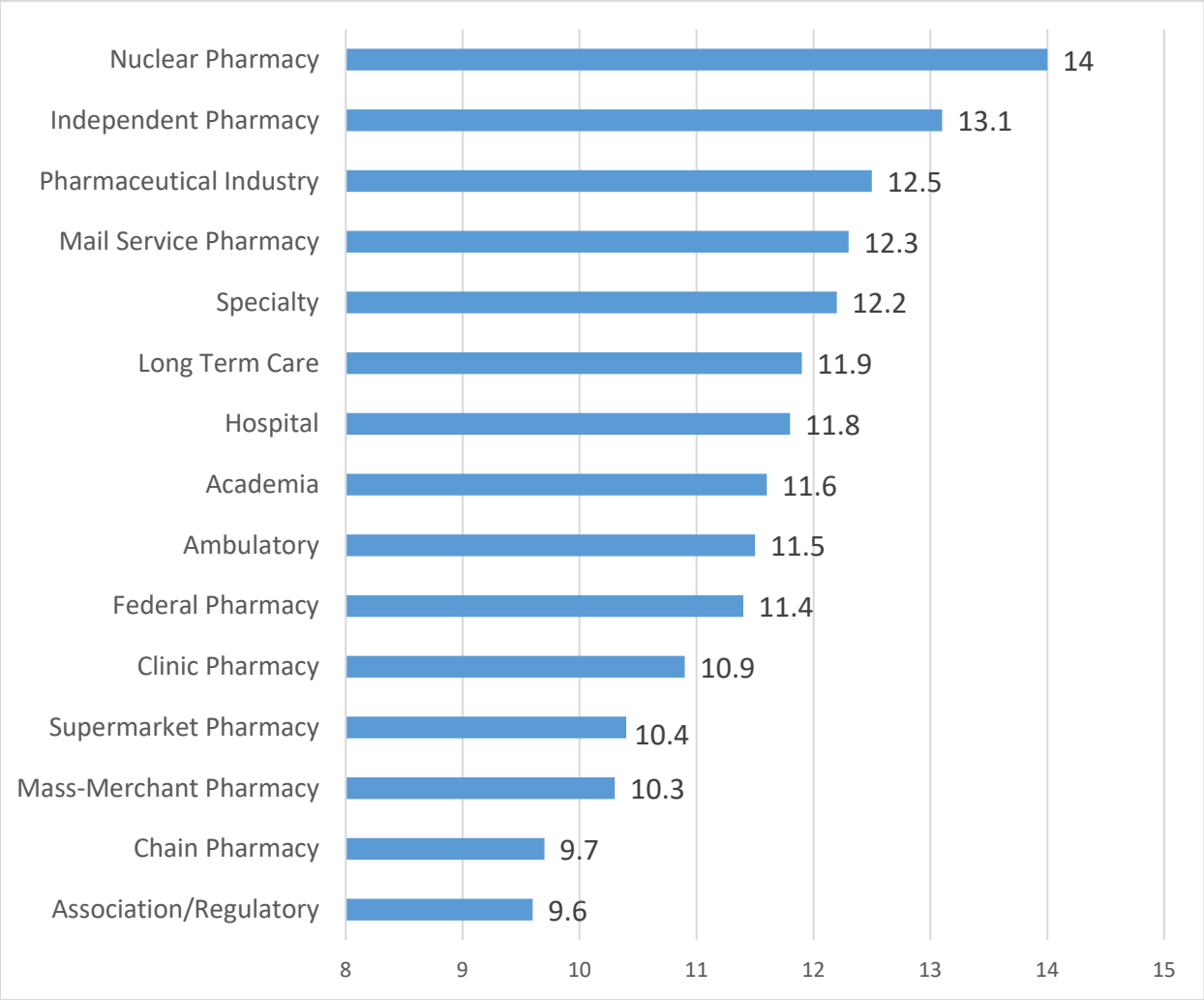
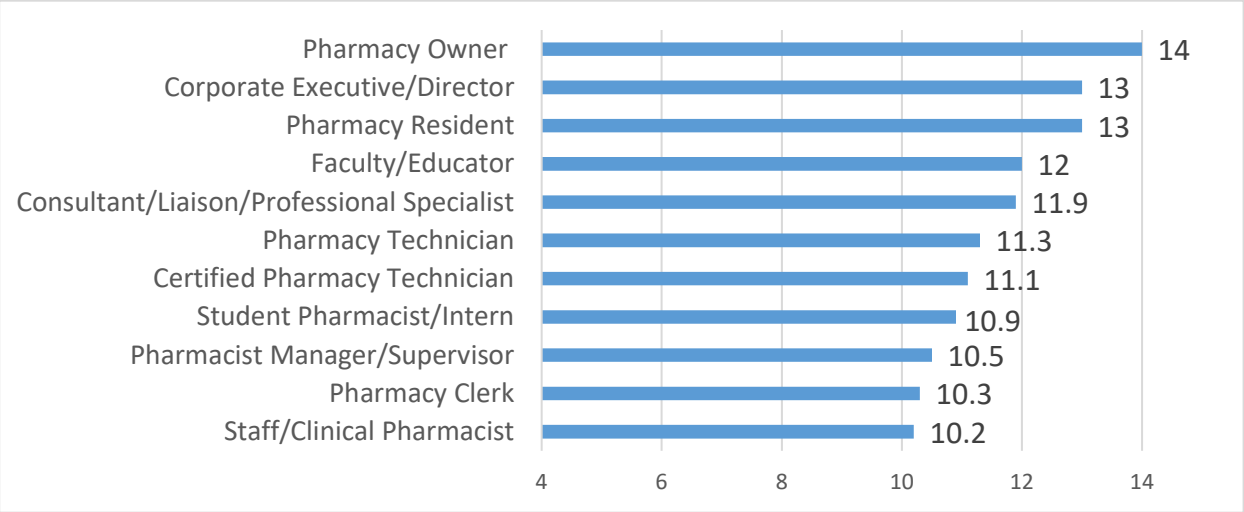
District 5: Iowa, Minnesota, Nebraska, North Dakota, and South Dakota
District 6: Arkansas, Kansas, Louisiana, Missouri, Oklahoma, and Texas
District 7: Alaska, Idaho, Montana, Oregon, Washington, and Wyoming
District 8: Arizona, California, Colorado, Hawaii, Nevada, New Mexico, and Utah

Figure 5.2. Culture of Safety Index Scores for respondents categorized by practice type
Out of the 3,723 respondents who were aware that they had a CQI program in place, 3,532 (94%) responded to this question. This figure shows scores above the theoretical midpoint of 9 (suggesting overall agreement with the 3 survey items listed in Table 5.1). Practice types with the highest scores were nuclear pharmacy, independent pharmacy, and pharmaceutical industry. Association/regulatory, chain pharmacy, mass merchant pharmacy, and supermarket pharmacy agreed less than other practice categories.



Culture of Safety Index Score = sum of 3 items (Table 5.1) rated from 1 = strongly agree to 5 = strongly disagree. Range is 3 to 15 (theoretical midpoint = 9). The higher the score, the stronger the agreement with the survey items.

Figure 5.3. Culture of Safety Index Scores for respondents categorized by primary role (position)
Out of the 3,723 respondents who were aware that they had a CQI program in place, 3,501 (94%) responded to this question. This figure shows scores above the theoretical midpoint of 9 (suggesting overall agreement with the 3 survey items listed in Table 5.1). Positions with the highest scores were pharmacy owner, corporate executive/director, and pharmacy resident categories. Lowest agreement was reported by staff/clinical pharmacist and pharmacy clerk categories.



Culture of Safety Index Score = sum of 3 items (Table 5.1) rated from 1 = strongly agree to 5 = strongly disagree. Range is 3 to 15 (theoretical midpoint = 9). The higher the score, the stronger the agreement with the survey items.

SECTION 6: PHARMACY PERSONNEL

There were 5 questions developed for this section of the survey that focused on pharmacy personnel. The items related to training, roles, responsibilities, engagement, and teamwork. Each item was rated from 1 = strongly agree to 5 = strongly disagree. The findings in Table 6.1 are reported as the proportion who answered "somewhat disagree" or "strongly disagree" (% Disagree), ranked from highest disagreement to lowest.

Table 6.1. Proportion of respondents who disagree with survey items about pharmacy personnel
Out of the 6,973 respondents to the survey, 5,148 (74%) responded to this question. More than 50% of respondents who answered these questions disagreed with the statement "I have the ability to make adjustments to personnel training, roles, and responsibilities based on the needs of my pharmacy." In addition, 43% disagreed with the statement "All members of the team are sufficiently educated and/or trained to perform the tasks required of them."

Survey Item	% Disagree
I have the ability to make adjustments to personnel training, roles, and responsibilities based on the needs of my pharmacy.	53%
All members of the team are sufficiently educated and/or trained to perform the tasks required of them.	43%
All members of the team are engaged fully to the extent permitted by their scope.	39%
All members of the team clearly understand their roles and responsibilities.	28%
All members of the team work together to accomplish tasks.	21%

Chi-square analysis showed significant associations between the responses to these questions and the following demographic variables:

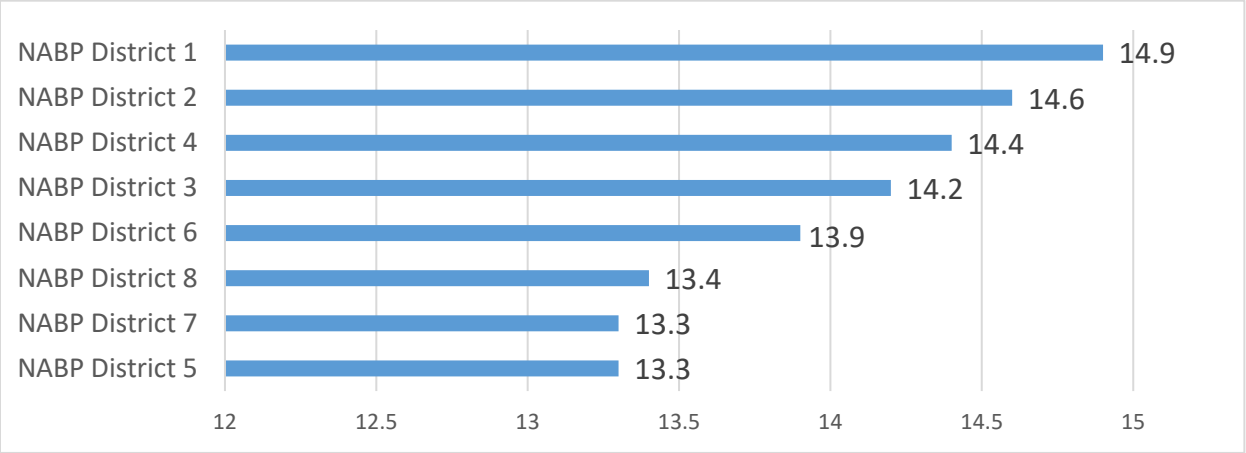
- NABP district
- Practice setting
- Primary role (position)
- Gender
- Years in practice (pharmacist)
- Years in practice (technician)

Ethnicity was not significantly association with the responses to these questions.

In order to present key findings, the scores for each of the 5 items listed in Table 6.1 were summed into an overall Pharmacy Personnel Index Score. Respondents rated each item from 1 = strongly agree to 5 = strongly disagree. Therefore, the range for the Pharmacy Personnel Index Score was from 5 to 25 (theoretical midpoint = 15). The figures presented next summarize the Pharmacy Personnel Index Score for various categories of respondents. Higher scores reveal a higher level of disagreement with the items in Table 6.1.

It should be noted that univariate descriptions (cross-tabulations) are presented. When interpreting findings in the figures and tables, confounding among variables should be considered.

Figure 6.1. Pharmacy Personnel Index Scores for respondents categorized by NABP district[9]
Out of the 6,973 survey respondents, 4,909 (70%) responded to this question. This figure shows that each district's mean score was slightly below the theoretical midpoint score of 15. Highest scores (disagreement) were in districts 1 to 4.



Pharmacy Personnel Index Score = sum of 5 items (Table 6.1) rated from 1 = strongly agree to 5 = strongly disagree. Range is 5 to 25 (theoretical midpoint = 15). The higher the score, the stronger the disagreement with the survey items.

[9] NABP districts: https://nabp.pharmacy/about/districts/
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District 6: Arkansas, Kansas, Louisiana, Missouri, Oklahoma, and Texas
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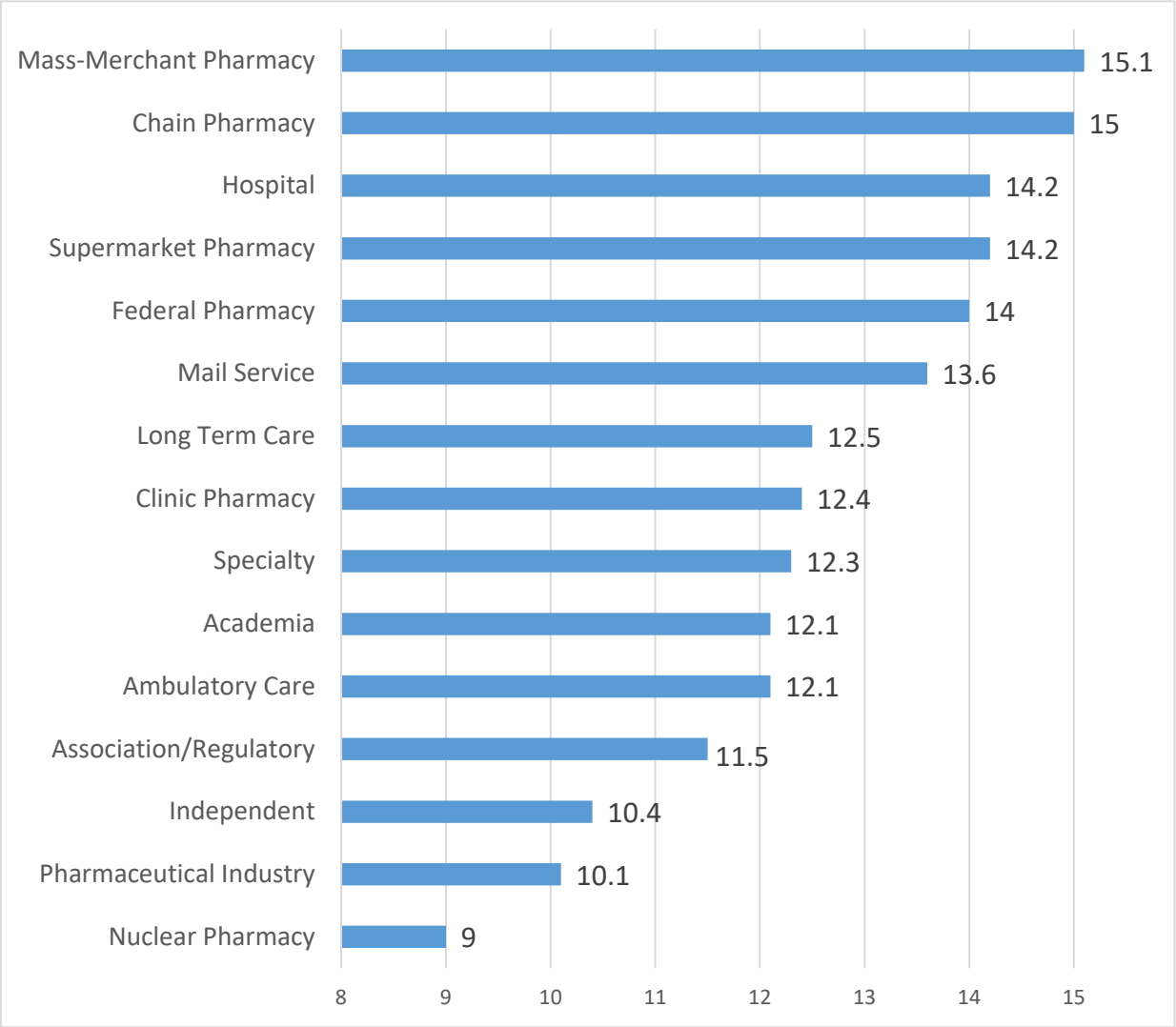
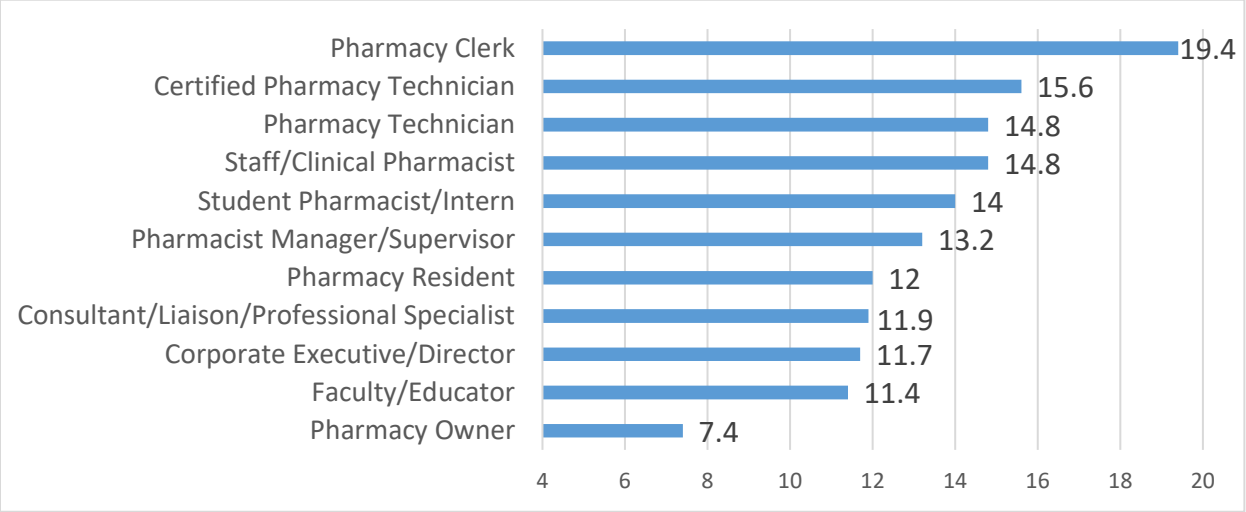
District 8: Arizona, California, Colorado, Hawaii, Nevada, New Mexico, and Utah

Figure 6.2. Pharmacy Personnel Index Scores for respondents categorized by practice type
Out of the 6,973 survey respondents, 4,908 (70%) responded to this question. Practice types with the highest scores (most disagreement) were mass-merchant pharmacy and chain pharmacy, with all other practice types falling below the theoretical midpoint of 15.



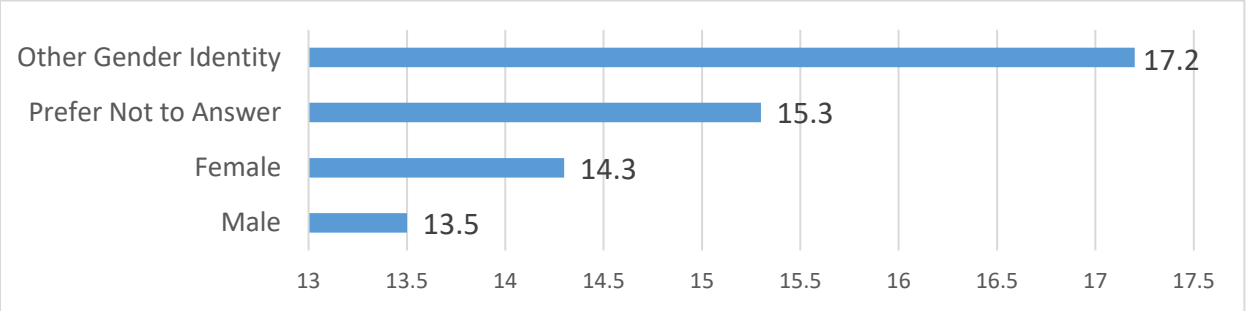
Pharmacy Personnel Index Score = sum of 5 items (Table 6.1) rated from 1 = strongly agree to 5 = strongly disagree. Range is 5 to 25 (theoretical midpoint = 15). The higher the score, the stronger the disagreement with the survey items.

Figure 6.3. Pharmacy Personnel Index Scores for respondents categorized by primary role (position)
Out of the 6,973 survey respondents, 4,908 (70%) responded to this question. Positions with the highest scores (disagreement) were pharmacy clerk, certified pharmacy technician, pharmacy technician, and staff/clinical pharmacist.



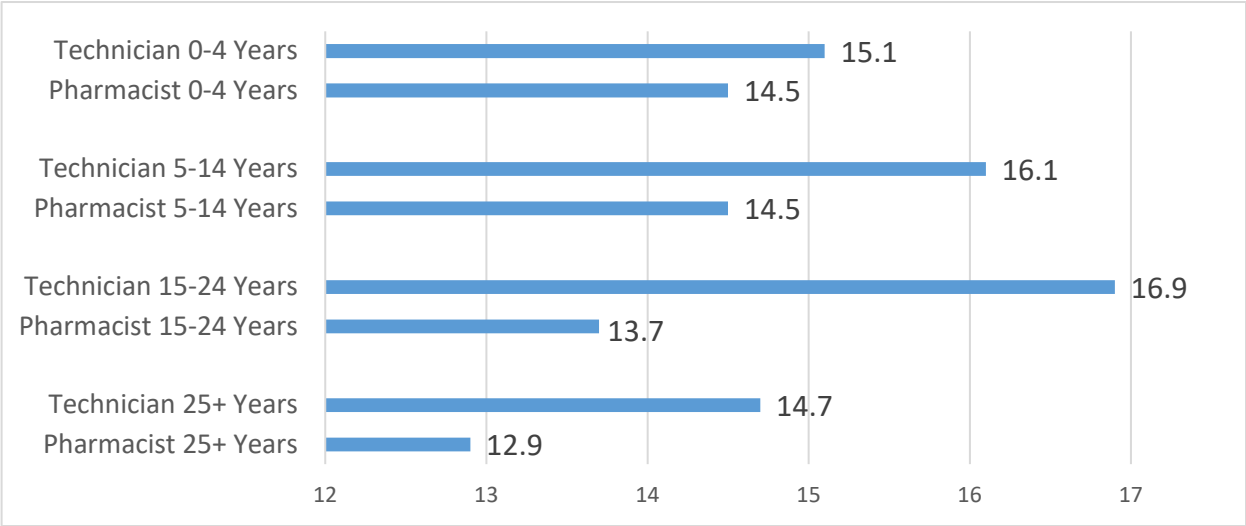
Pharmacy Personnel Index Score = sum of 5 items (Table 6.1) rated from 1 = strongly agree to 5 = strongly disagree. Range is 5 to 25 (theoretical midpoint = 15). The higher the score, the stronger the disagreement with the survey items.

Figure 6.4. Pharmacy Personnel Index Scores for respondents categorized by gender
Out of the 6,973 respondents to the survey, 4,079 (70%) responded to this question. Respondents who identified as other or preferred not to answer had mean scores above the theoretical midpoint of 15 (higher disagreement). Males reported the lowest average score.



Pharmacy Personnel Index Score = sum of 5 items (Table 6.1) rated from 1 = strongly agree to 5 = strongly disagree. Range is 5 to 25 (theoretical midpoint = 15). The higher the score, the stronger the disagreement with the survey items.

Figure 6.5. Pharmacy Personnel Index Scores for respondents categorized by years in practice
Out of the 6,973 respondents to the survey, 3,512 (50%) pharmacists and 397 (6%) technicians responded to this question. For both pharmacists and technicians, those with more years of experience had lower scores. It is noteworthy that the highest score was for technicians with between 15–24 years of experience.



Pharmacy Personnel Index Score = sum of 5 items (Table 6.1) rated from 1 = strongly agree to 5 = strongly disagree. Range is 5 to 25 (theoretical midpoint = 15). The higher the score, the stronger the disagreement with the survey items.

SECTION 7: CONTRIBUTORS TO STRESS

There were 13 questions developed for this section of the survey that focused on contributors to stress. The items related to time allocation, workflow, staffing, policies, payment, patient expectations/demands, safety, and harassment/bullying. Each item was rated in terms of how likely each situation contributes to medication errors or near-misses on a scale from 1 = very likely to 5 = very unlikely. Thus, the term "contributors to stress" in this survey represents respondents' views relating to how situations in their workplace contribute to the likelihood of making medication errors or near-misses in their work. It is an indicator that gives insights regarding threats to patient safety. The findings in Table 7.1 are reported as the proportion who answered "somewhat likely" or "very likely" (% Likely), ranked from highest to lowest.

Table 7.1 Proportion of respondents who reported that each of the following situations listed below was "likely" to contribute to medication errors or near-misses

Out of the 6,973 survey respondents, 4,931 (71%) responded to this question. The findings showed that 91% of respondents reported that it is likely that "interruptions from telephone calls" contributes to medication errors or near-misses. Also, 89% reported that it is likely that "inadequate staffing" contributes to medication errors or near-misses. It is noteworthy that "patient expectations or demands" and "harassment/bullying from patients/customers" reportedly are likely to contribute to medication errors or near-misses (reported by 81% and 72%, respectively).

Survey Item	% Likely
Interruptions from telephone calls	91%
Inadequate staffing	89%
Patient expectations or demands	81%
Inability to practice pharmacy in a patient-focused manner	78%
Inadequately trained pharmacy personnel	77%
Harassment/bullying from patients/customers	72%
Insurance issues	66%
Nonpharmacy managers lack of understanding/knowledge of pharmacy practice regulations	65%
Completion of paperwork or reports	59%
Inconsistent enforcement of workplace policies	51%
Lack of workplace safety	48%
Lack of constructive performance feedback	46%
Harassment/bullying from manager or coworkers	36%

Chi-square analysis showed significant associations between the responses to these questions and the following demographic variables:

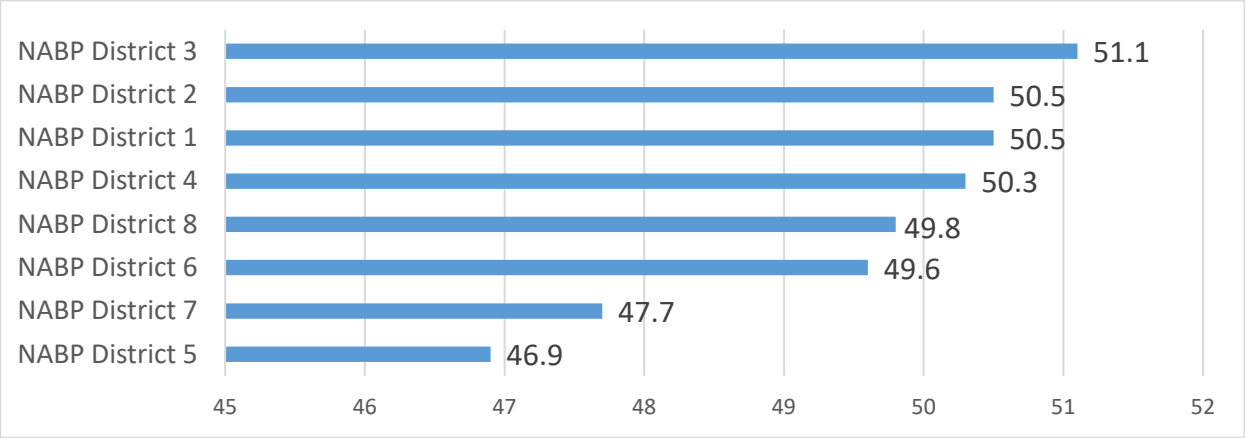
- NABP district
- Practice setting
- Primary role (position)
- Gender
- Ethnicity
- Years in practice (pharmacist)
- Years in practice (technician)

In order to present key findings, the scores for each of the 13 items listed in Table 7.1 were reverse-coded and then summed into an overall Stress Index Score. Therefore, the range for the Stress Index Score was from 13 to 65 (theoretical midpoint = 39). The figures presented next summarize the Stress Index Score for various categories of respondents. Higher scores reveal a higher likelihood of medication errors or near-misses.

It should be noted that univariate descriptions (cross-tabulations) are presented. When interpreting findings in the figures and tables, confounding among variables should be considered.

Figure 7.1 Stress Index Scores for respondents categorized by NABP district[10]

Out of the 6,973 respondents to the survey, 4,046 responded to this question. This figure shows that each district's mean score was above the theoretical midpoint of 39. This suggests the perception that the contributing factors had a relatively high contribution to the likelihood of medication errors or near-misses. The highest scores were found in NABP districts 1 to 4.



Stress Index Score = sum of 13 items (Table 7.1) recoded from 1 = very unlikely to 5 = very likely. Range is 13 to 65 (theoretical midpoint = 39). The higher the score, the stronger the perception that the contributing factors had a relatively high contribution to the likelihood of medication errors or near-misses.

[10] NABP districts: https://nabp.pharmacy/about/districts/

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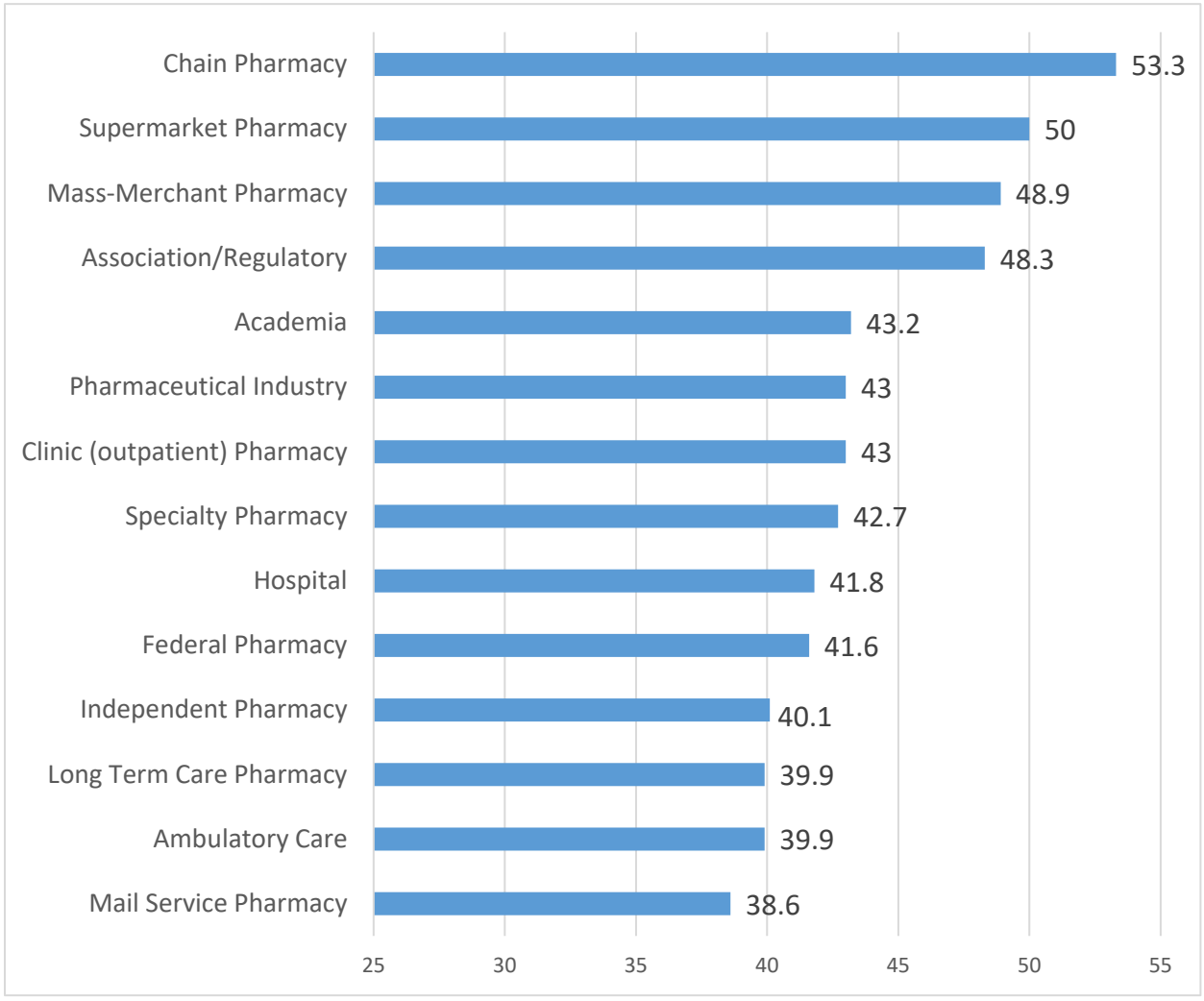
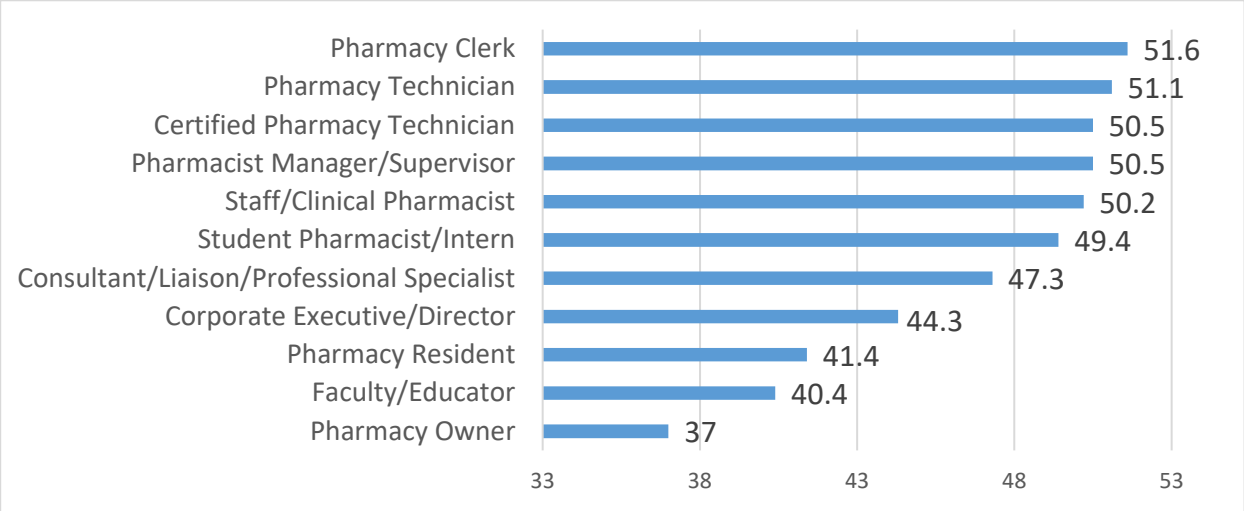
District 7: Alaska, Idaho, Montana, Oregon, Washington, and Wyoming
District 8: Arizona, California, Colorado, Hawaii, Nevada, New Mexico, and Utah

Figure 7.2. Stress Index Scores for respondents categorized by practice type
Out of the 6,973 respondents to the survey, 4,045 (58%) responded to this question. This figure shows relatively high scores (that is, high likelihood of medication errors or near-misses) for chain, supermarket, mass-merchant pharmacy, and association/regulatory practice types. Only mail service pharmacy was below the theoretical midpoint of 39.



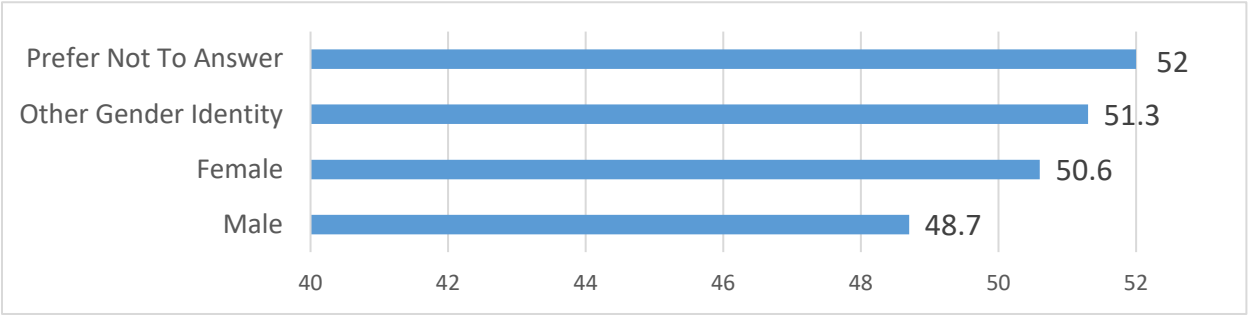
Stress Index Score = sum of 13 items (Table 7.1) recoded from 1 = very unlikely to 5 = very likely. Range is 13 to 65 (theoretical midpoint = 39). The higher the score, the stronger the perception that the contributing factors had a relatively high contribution to the likelihood of medication errors or near-misses.

Figure 7.3. Stress Index Scores for respondents categorized by primary role (position)
Out of the 6,973 respondents to the survey, 4,009 (58%) responded to this question. This figure shows relatively high scores (that is, high likelihood for medication errors or near-misses) for pharmacy clerk, pharmacy technician, certified pharmacy technician, pharmacist manager/supervisor, and staff/clinical pharmacist positions. All other primary roles were higher than the theoretical midpoint of 39 except pharmacy owner.



Stress Index Score = sum of 13 items (Table 7.1) recoded from 1 = very unlikely to 5 = very likely. Range is 13 to 65 (theoretical midpoint = 39). The higher the score, the stronger the perception that the contributing factors had a relatively high contribution to the likelihood of medication errors or near-misses.

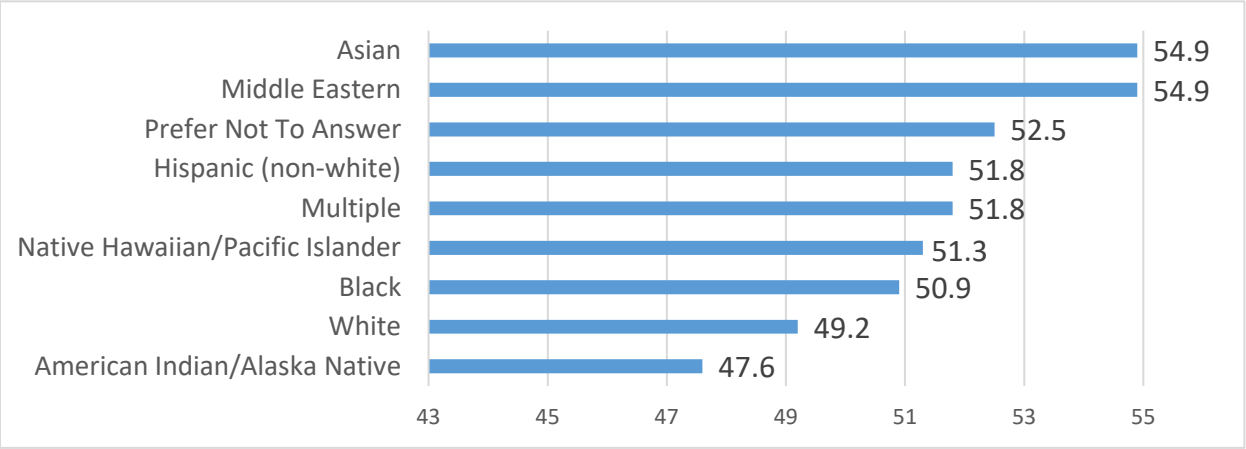
Figure 7.4. Stress Index Scores for respondents categorized by gender
Out of the 6,973 respondents to the survey, 3,477 (50%) responded to this question. Respondents who identified as male had significantly lower scores than those who identified as female or other or preferred not to answer. All scores were still higher than the theoretical midpoint of 39.



Stress Index Score = sum of 13 items (Table 7.1) recoded from 1 = very unlikely to 5 = very likely. Range is 13 to 65 (theoretical midpoint = 39). The higher the score, the stronger the perception that the contributing factors had a relatively high contribution to the likelihood of medication errors or near-misses.

Figure 7.5. Stress Index Scores for respondents categorized by ethnicity

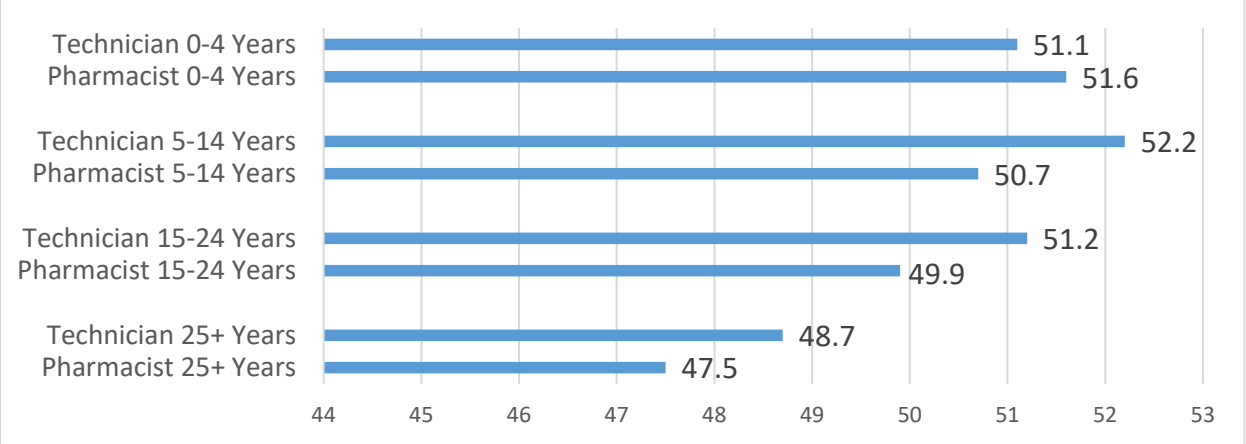
Out of the 6,973 respondents to the survey, 3,477 (50%) responded to this question. This figure shows relatively high scores (that is, high likelihood for medication errors or near-misses) for Asian, Middle Eastern, and Prefer Not to Answer categories.



Stress Index Score = sum of 13 items (Table 7.1) recoded from 1 = very unlikely to 5 = very likely. Range is 13 to 65 (theoretical midpoint = 39). The higher the score, the stronger the perception that the contributing factors had a relatively high contribution to the likelihood of medication errors or near-misses.

Figure 7.6. Stress Index Scores for respondents categorized by years in practice

Out of the 6,973 respondents to the survey, 2,960 (42%) pharmacists and 355 (5%) technicians responded to this question. For both pharmacists and technicians, those with more years of experience had lower scores.



Stress Index Score = sum of 13 items (Table 7.1) recoded from 1 = very unlikely to 5 = very likely. Range is 13 to 65 (theoretical midpoint = 39). The higher the score, the stronger the perception that the contributing factors had a relatively high contribution to the likelihood of medication errors or near-misses.

SECTION 8: INSIGHTS REGARDING PATIENT SAFETY AND OPTIMAL PATIENT CARE

Respondents were asked 5 open-ended questions:

1. What factors have positively impacted your ability to ensure patient safety?
2. In what ways has your employer positively impacted your ability to perform the tasks necessary for optimal care for your patients?
3. What factors have negatively impacted your ability to ensure patient safety?
4. In what ways has your employer negatively impacted your ability to perform the tasks necessary for optimal care for your patients?
5. Any additional comments?

The following are examples of *verbatim* responses for each question.
Note: A qualitative analysis for the text generated from the written responses will be conducted in the future.

1. What factors have positively impacted your ability to ensure patient safety?

a. Workflow and Staffing

- I have the authority to control workflow, training, and scheduling. But I don't have the budget. This forces me to move work from pharmacists to techs and maximize the ratio even when I think more oversight is ideal. We believe in cross-training, but payroll constraints mean that order entry is also customer service, and that pharmacists are continually moving across areas, which increases the risk for errors. Managers put patients first, which means stepping into workflow and handling management tasks on our own, uncompensated time. 50–60 hours/week was my norm all of 2020.
- The ability to innovate creative solutions to problems that have resulted in errors
- Removal of nonclinical work in queues to be completed by pharmacists.
- Pharmacists are only to focus on checking prescriptions, do not answer phones or do data entry, billing, etc.
- I have been in the store location where I am for over five years. During that time, I have been able to get to know my patients very well. Knowing them and their medical needs means that I am able to take better care of them and keep them safe and healthy.
- Double-checks and redundancies built into current processes
- Employing a system of checks where NOTHING leaves the pharmacy without review by 2–3 different people. Maximizing technician responsibility to anything they can legally do, while minimizing
- Provided sufficient pharmacist overlap and supportive personnel.
- Having checkpoints and good computer programs have helped decrease errors
- Constant short staffing has led to some positive, creative changes in our workflow. Not perfect but are good improvements despite staffing issues.
- Daily safety huddle
- Seeing the patients smile when you give them extra time to answer all the questions they have.
- I am fortunate to work in a place that values patient safety and care. We have quality employees and adequate staff for our workload.

b. Autonomy of Pharmacy Personnel

- Having control over policies and able to make decisions quickly and implement them.
- Non punitive actions when make mistakes. Just fix them and figure out root analysis so don't repeat
- Having adequate time to get to know my patients

c. Coworkers Relationships; Employee/Employer Relationship; Relationship with other HC practitioners

- Pharmacy teamwork and communication is excellent at my workplace.
- Buy-in from physicians as to pharmacy's role in the hospital. They value our input.
- Good working relationship with store director and district leader

- Openness about defects and patient safety.
- My pharmacy support staff often goes above and beyond to reinforce the importance of requesting clarification to ensure patient safety. Knowing that they will have my back when customers are angry or frustrated that their prescriptions aren't ready now helps.
- My pharmacist in charge, pharmacy manager. Without her dedication and efforts, we would be so far behind. Her staying late and working back-to-back open to close shifts.
- The professionalism of colleagues (pharmacists and technicians) who work together daily to provide patients with the best care.

d. Personal Values

- My own desire to do the right and safe processes
- My own personal dedication
- My refusal to cut corners
- My efforts to educate myself as much as possible off the clock. My empathy and devotion for patient care and a type A personality.
- I am involved in my local, state, and national pharmacy associations, complete many hours of CE per year and try to keep up on all the emails coming out which I feel makes me a better pharmacist because I am current in my knowledge to prevent harm to patients.
- My experience in personal life and length of service have allowed me the mindset that overall I am responsible to make the judgement call on how much pressure to allow a patient to put on me to rush. Although communicating with patient's and haste is still significantly important but the rush and high "fast food" pharmacy that so many expect no longer drives me into mistakes. Taking that overreaching pressure off has significantly improved patient safety.

e. Educational/Professional Development Opportunities

- Excellent training and availability of resources and continuing education material.
- My work pays for CEs, Conferences, classes so we can be the best we can be designing our own workflow and streamlining tasks.
- Employer encourages pharmacists to always seek further education, and pays to have a good, educated team.

2. In what ways has your <u>employer positively impacted</u> your ability to perform the tasks necessary for optimal care for your patients?

a. Time and Staffing

- Adequate funding to be staffed, create patient care programs, and advocating for donations to our 340B FQHC.
- Each individual has time to focus on task at hand, each person is able to perform at one workflow area until task is completed.
- We have a central fill facility that helps fill scripts
- Dedicated immunizer for some shifts
- Not being forced by management to work faster
- Allowed unlimited tech and clerk hours
- One time when they cut vaccine and testing from a store to allow it to catch up.
- They have shut off the phones for 1 hour after opening for vaccines.
- Permission was given to limit vaccinations without an appointment (this was very delayed, but much needed and appreciated)
- Creation of a good online immunization scheduler, though it is vastly underutilized by elderly patients.
- My store manager has compensated me for the hours I work instead of the hours I am scheduled. I am salaried, but because of this, I get paid hourly. This has incentivized me to work later to clean things up daily.

- Allowed 2 hr. overlap every other week, helps the 3 pharmacists have time to communicate but need more time like this.
- My direct boss is very supportive of changes I make to my unit
- Created more mid-shift RPh's.
- They give me the staffing that I need, my team needs. They are always available to help with any questions. They have also fostered a true team environment to the point that I truly consider my teammates to be my friends. We rely on each other and, most importantly, we trust each other.
- Constant encouragement and realizing who is stressed so they can help out or have someone take over if needed
- New roles take busy-work off of the pharmacist allowing us to be more patient-focused.
- By allowing us to close the pharmacy at 7pm verses 9pm during 2020. It allowed more staff overlap to concentrate on prescriptions, drug orders, and pharmacy maintenance. This may seem odd but having more employees there at the same time instead of spread thin made a world of difference. We were more efficient and moral was better.
- My employer has split the care/customer focused team from the fulfillment team. The customer team can focus on service and contacting doctors, insurance, etc. while the fulfillment team can focus on filling, verifying, and packing prescriptions without interruption.
- We have 2–3 pharmacists on staff at all times. Workload is heavier on days we have more pharmacists. When we needed another technician to handle the work, we hired one. My employer will not sacrifice safety for any reason. If we feel overwhelmed we make a plan to get everything done. We have daily huddles to ensure good communication and we have tasks assigned to specific people to ensure that work gets done.

b. Autonomy/Communication

- Freedom to make my own decisions
- My pharmacy manager is kind enough to explain and work through problems instead of yelling and blaming.
- Listens to constructive feedback
- Certain members of management are willing to listen and advocate for us.
- My employer is always open to my feedback and has the luxury of making quick changes in the independently owned community setting.
- There is a strong foundation in organizational leadership strategy. We are focused on building a culture that is conducive to positive patient outcomes and I am very lucky to work where I do.
- My company does NOT enforce performance quotas to be met

c. Training and Development

- My employer has FINALLY provided training to technicians to assist with immunizations. Given the volume of COVID vaccines that pass through the pharmacy each day, having trained individuals who can carry the load is a blessing. When more folks are practicing at the top of their license, we can better care for patients.
- Lots of resources company wide to perform tasks and prepare for NAPLEX and MPJE, Desire to keep current staff onboard and engaged, Recent pay raise for techs and interns as well as pay restructure for pharmacists.
- My facility has a great deal of policies and clinical resources available to all pharmacy staff and providers. These resources are updated by clinical pharmacy staff.
- Provides an education stipend to spend on ce or certifications

3. What factors have <u>negatively impacted</u> your ability to ensure patient safety?

a. Patient/Customer Demands

- The demand for instant gratification from patients and pharmacy staff alike are a burden. Multiple requests from multiple people at the same time makes it difficult to focus on critical tasks.

- Rude and lacking empathy patients yelling and honking and huffing constantly not seeing that we fill up close to 700 prescriptions a day with Covid vaccines and Covid testing with a small staff because we can't keep hires because the stress in the beginning shifts ruins it for them

b. Metrics and Performance Policies

- The constant need to complete patient outreach calls to further improve metrics that increase scripts to budget, constantly understaffed and phone interruptions.
- There is a HUGE focus on pharmacy metrics (orders) that they are using to benchmark our productivity and it is preventing us from being able to hire pharmacists and implement new quality and safety services
- Unreasonable corporate metrics; punishment for doing the right thing, even when the patient isn't happy; rewarding those patients who bully us the most; thinking that patients and customers are the same thing; refusal to disallow weapons on premises.
- Having to rush through clinical decisions in order to meet metrics of having prescriptions verified on time.
- Increasing tasks and duties while on-boarding process of new staff delayed

c. Time and Staffing

- Inability to get quality tech staffing. RN and MF expectations regarding last minute med changes. Poor transition of care.
- I work in a chain pharmacy with 1 pharmacist and 1 tech with minimal tech overlap. We fill anywhere from 250 to 300+ prescriptions on a given weekday. The pharmacists can't take breaks or leave the pharmacy or more than 5 minutes, we don't have much help when we have customers are steadily dropping off new scripts, e-scripts are being sent, phones ringing off the hook, and lines in drive thru and in store. We can't go over hours, but we aren't adequately staffed to complete normal clinical/filling duties, and we're expected to administer vaccines and COVID antibody tests.
- Not enough time or overlap for pharmacist to safely do tasks
- Lack of sleep, breaks, and the ability to sit. We're constantly running around, working long and late hours just to turn around and repeat. It's very exhausting.
- COVID. It put us in a position where the entire pharmacy had to quarantine. Also down staff for multiple weeks in a row. Now we are expected to work the vaccines into our regular workflow with no additional help. I'm a tech supposed to give shots draw up the shots and hunt people down to fill appointment slots so we don't waste vaccine, I still have to type scripts, count scripts, answer the phone, and be the cashier. No extra help given to do this. My pharmacist is still running around trying to do the DUR checks, counsel, product verify, check my typing, give the other shots, answer all the otc questions, talk on the phone to clarify scripts, do the transfers, and give the other shots, 2 people CANNOT do all of this, but one day a week we have just 2. Other days a week only 3, that's not much better. Can't get 250–300 scripts filled, they just keep compiling

d. Insurance/Payment

- Only reimbursement for diabetes education is very limited do to being a pharmacist. I may have to discontinue this service. Hard to work and serve for no pay. Low reimbursements prevent my pharmacy from having extra moneys to pay for these few services, that insurance should pay for.
- Insurance denials and poor reimbursement; Increased demand of desktop audits and paperwork with less reimbursement

e. Impacting Patient Safety

- A cumbersome patient safety reporting tool that is only accessible to pharmacists, so technicians/assistants either have to fill out a manual form to give to us or (more likely) not report the error.

- Criminal understaffing and lack of support from Board of Pharmacy to effectively regulate the practice of pharmacy to ensure safe staffing for our patients.
- There has been a lack of care for employees' mental health which in turn trickles down and affects patient care. I used to love my job but now I find myself counting down the days til my next day off. This change did not happen overnight. We cannot blame this on COVID. This is 10 years in the making. We have to get back to a point where we are putting safety first. Where we are acting and thinking like clinicians. I think I speak for all pharmacists, we need help. Things have gotten really bad. I'm hopeful that something good will come of this survey. I still love the practice of pharmacy and I love helping people, that is why I'm still hopeful that things can change

f. Employee/Management Relationships

- Negative, abusive, and uncaring pharmacy supervisors
- Between COVID tests, COVID vaccines, managerial tasks and 500+ scripts per day with zero pharmacist overlap and short on technician help, the culture of our company right now has become to just "push though it", "it's almost over"

4. In what ways has your <u>employer negatively</u> impacted your ability to perform the tasks necessary for optimal care for your patients?

a. Workload and Staffing

- Imposing unrealistic workload by increasing Covid vaccines while we try to maintain good and safe service to our customers.
- Employers are solely focused on the bottom line. Eliminating technician hours and pushing salaried pharmacists to work 60–80 hours weekly without paying overtime. The money is not what matters, but the detriment to patient care and well-being of the pharmacist is evident for every pharmacy you walk into. Putting more of the compliance and regulatory risk on the employer rather than the individual pharmacist in order to change the system.
- Cutting support staff hours well below the minimum necessary to properly/safely staff the pharmacy
- Pharmacist often working alone with no technician leading to higher risk of errors with no one double checking their work/no second set of eyes on the prescriptions
- Adding additional tasks that need to be completed without adding additional labor hours.
- Adding more technicians than we have terminals. There is a limit to how much I can focus on and still think. Adding more techs and clerks is NOT the answer. We have to listen and watch everything they do and say.
- Understaffing, workplace retaliation, and metrics that do not have any reflection on work actually benefiting patient care.
- Always referring to metrics for everything and just not providing tangible help to all of us in the pharmacy workplace. Even my coworkers up in the front of the store are understaffed. Typically, on the weekend it is only 1 staff on register and 1 manager on the floor. When we call for help in the pharmacy they cannot help because they are short on people also. This is a safety hazard that promotes theft and lowers quality of patient's care and experience.
- NOT ENOUGH TECH SUPPORT HOURS. It is absurd that we are forced to run drive-thrus, etc. without adequate tech support.

b. Metrics

- Increased metrics forcing speed over quality/safety
- Placing more emphasis on numbers, quotas, busy work that does NOT affect patient care takes away from our primary goal, which should be to optimally BE THERE FOR OUR PATIENTS!
- Quotas always increase. This year our region's flu shot goal is 500% larger than last year's numbers. It's ridiculous.

c. Employer Policies/Employee Well-being

- Supervisors or District Managers who are NOT pharmacists placed in charge of evaluating our performance strictly based on numbers and quotas rather than seeing what we actually do and how we take care of and genuinely care for our patients.
- Not caring that employees are at their breaking points mentally and emotionally while still asking for us to do more.
- Conflicting messaging -- go as slow as you need to avoid errors/get the prescriptions done and out faster, you slow down the discharge process
- Insufficient training of new staff, selective enforcement of rules, bad communication
- Not addressing poor performing pharmacists and transferring their workload to other pharmacists who are capable. That leads to very poor workplace morale and lousy culture.
- Incomplete or erroneous task expectations not being corrected at corporate level but instead expected to be fixed be employees, thereby increasing workload yet again; "forced" to take lunch break, but in reality, unable to leave the pharmacy for said lunch break because no RPh overlap and the scheduling of covid vaccines 2 every 10 minutes with no break
- Turning a deaf ear to what the pharmacist regards as safe and adequate staffing. The DOP is totally unaware that periodic visits to the facilities is both a responsibility and possibly may result in having a better understanding of the unsafe staffing issue. Haven't seen my DOP in two years. She delegates staff concerns to the assistant DOP.
- Cynicism in program implementation such that anyone can technically be fired.

5. Any additional comments?

a. Value of Pharmacy Personnel

- Our industry now has a "if you don't like it, you know where the door is" culture and providing excellent patient care is no longer the measure of a valued pharmacist.
- Management expects an assembly line and you aren't given time to hardly call a doctor or insurance because you're told to wait for the right time when it's not as busy, even if the patient is waiting. That's not right! It's also not right to be expected to stay late after your shifts without pay because you feel obligated to make the next day not as difficult because there's no one to help support you. We need to hire at a higher pay rate because it's a joke what we start new hires out at and then wonder why we don't get recruits.
- Pharmacist have turned from a patient centered profession to running a deli counter with a ticket machine...NEXT IN LINE!
- The profession is dying because we've been turned into a commodity…
- If something doesn't change pharmacy errors will probably go up 100%
- My employer does not have patient safety in mind. Any and all complaints I've ever made to my employer or the BOP have fallen on deaf ears.
- It's all about the dollars and patient care is not a concern to corporate unless they write a negative review online.
- Certified pharmacy techs are paid as cashier's but are expected to prevent errors, assist in MTM, prepare meds, troubleshoot, call Drs offices...all for just above minimum wage. It is a nightmare job.
- Community pharmacists are the public face of pharmacy with ordinary people. We need to give them the support of our profession. Most of us are front-facing on-demand public practitioners. We aren't supported by our employers because they aren't paid enough for us to do our job.
- The current model in retail pharmacy is unsustainable. Young pharmacists are burning out and older pharmacists are retiring early. It is most definitely a public safety issue.

b. Public Perception

- Lack of understanding of the patient population on what a pharmacy does, how insurance works, and expecting us to operate like a fast-food restaurant also contributes to even more stress. Possibly adding insurance/medical training to high school classes might help!
- Pharmacy has become equivalent to fast food service to many people. We do so much and yet get no recognition. We are expected to do so much with so little. I hope it changes soon. Please!

c. *Payment Issues*

- There must be accountability for insurance companies! Then there should be swift resolve and financial ramifications if the situation is not resolved. They are negatively impacting patient safety, their health, and their lives. The tables should turn and the government should force the situation. The pharmacy should always be reimbursed what they paid for medications based on that transaction not based off national averages. I have no idea where our state funded welfare programs get their pricing, but it typically is way below our actual cost! We shouldn't have to make money on only some of the prescriptions we fill each day nor should we have to painstakingly "shop around" the country to try to find the cheapest meds. This takes away from patient safety. Pharmacies should make money on each prescription they fill PERIOD. The cost of printer ink, PBM charges, Insurance company take backs, etc. No wonder so many privately owned pharmacies have gone out of business.
- The insurance companies are ruining healthcare in America! They dictate what will happen and how much they will pay for, fighting by repeatedly rejected claims until you give up and write off the costs
- There are many insurance issues and reimbursement issues within the pharmacy world, many directly caused by things like low or negative reimbursements from third parties. It's making it more difficult for independents to keep up and stay in business. We have adequate staffing for now, but that may change with how our reimbursements are going.

d. Survey Results

- I am grateful for this survey and the work of the board. I hope this small action of completing this can help shed light on the work conditions we face daily and ultimately result in change. We really need change. Thank you
- The results of this survey need to be highly visible to the public and law makers.
- I have been in pharmacy for almost 20 years, I do love patient care. I am so sad to see how poorly our profession has been reduced to. Here's to hoping surveys like these make a difference!
- Is this really going to help things change? Most surveys get looked at and then nothing really happens.

SECTION 9: MULTIVARIATE ANALYSIS OF THE DATA

The statistical associations between geographic location (NABP district), primary role (position), gender identity, ethnic identity, and years in practice are confounded by practice setting type. For example, NABP districts differ significantly in their composition of practice setting type. Thus, differences among NABP districts could be due to these differences in practice setting composition. Furthermore, primary role (position), gender, ethnicity, and years in practice are all significantly associated with practice setting type. For example, respondents who identified as staff/clinical pharmacist, female, Asian, or relatively fewer years in practice were more likely to work in chain pharmacy practice settings. It was these same groups that reported more stress and difficult work conditions in the survey (refer to Sections 3–7).

To help control for statistical confounding, this section describes logistic regression findings for specific practice setting types that had sample sizes sufficient for multivariate analysis. These included

- Chain pharmacy (n = 3,171)
- Supermarket pharmacy (n = 856)
- Independent pharmacy (n = 667)
- Hospital/institutional (inpatient) (n = 656)

Dependent variables of interest were

- **Work Environment Index Score** (1 = scores above theoretical midpoint of 36, 0 = all others)
- **Employee Engagement and Value Index Score**(1 = scores above theoretical midpoint of 15, 0 = all others)
- **Culture of Safety Index Score** (0 = scores above theoretical midpoint of 9, 1 = all others)
- **Pharmacy Personnel Index Score** (1 = scores above theoretical midpoint of 15, 0 = all others)
- **Stress Index Score** (1 = scores above theoretical midpoint of 39, 0 = all others)

For multivariate analysis, values equal to 1 for each dependent variable were considered “undesirable” and reflected challenging workplaces.

Independent variables were operationalized based on univariate statistical findings. Typically, reference group categories were based on “desirable scores” from univariate analysis or sample size availability.

- **Geographic location (NAPB district)** (Reference = District 8 compared with Districts 1, 2, 3, 4, 5, 6, and 7)
- **Primary role (position)** (Reference = Manager compared with staff, resident, student, certified technician, noncertified technician, owner, all other)
- **Gender** (Reference = male, compared with female, other, prefer not to answer)
- **Race/ethnicity** (Reference = white, compared with prefer not to answer, Asian, Hispanic, multiple, Black, all other)
- **Years in practice** (Reference = 25 or more years, compared with 0–4, 5–14, 15–24)

IBM SPSS Statistics Version 27 software was used for logistic regression modeling, with goodness of fit evaluated by change in -2 log-likelihood, chi-square model improvements, and parsimony judgments.

Table 9.1. Multivariate Analysis findings for chain pharmacy (n = 3,171)

	Work Environment	Stress	Employee Engagement	Culture of Safety	Personnel
% with an undesirable score	96%	94%	84%	46%	45%
NABP district (reference group = District 8)	-	○	-	-	-
Position (reference group = Manager)	○	○	●	●	●
Gender (reference group = Male)	-	●	-	-	-
Race/ethnicity (reference group = White)	-	-	-	-	-
Years in practice (reference group = 25+ Years)	●	●	-	-	-

● = Variable that had categories that were more likely to report an undesirable score compared with the reference category.
◒ = Variable that had categories that were both more and less likely to report an undesirable score compared with reference.
○ = Variable that had categories that were less likely to report an undesirable score compared with reference category.

For respondents from chain pharmacies, 96% reported an undesirable score for their work environment. They tended to disagree with statements relating to having adequate time allocation, staffing, policies, payment for services, and workflow design to be able to meet their clinical and nonclinical duties. Multivariate analysis showed that NAPB district, gender, and race/ethnicity did not significantly affect responses. However, controlling for other variables in Table 9.1, pharmacy students and residents were less likely (○) to report undesirable scores. Also, years in practice had a significant effect on responses with those in practice for fewer than 15 years being 2.3 times more likely (●) to report an undesirable scored (compared with the reference category, which were those working 25 or more years).

For the variable of stress, 94% of respondents reported an undesirable score. They tended to report that time allocation, workflow, staffing, policies, payment, patient expectations/demands, harassment, and bullying were contributors to the likelihood of medication errors or near-misses in their work. Multivariate analysis showed that race/ethnicity did not significantly affect the pattern of responses. However, controlling for other variables in Table 9.1, respondents from Districts 5, 6, and 7 were less likely (○) to report undesirable stress scores (reference category = District 8). Also, noncertified technicians also were less likely (○) to report undesirable stress scores compared with other categories (managers, staff, residents, students, certified technicians). Females were over twice more likely (●) than males to report undesirable scores. Finally, years in practice had a significant effect on responses with those in practice for fewer than 15 years being more than two times more likely (●) to report an undesirable scored (compared with the reference category of those working 25 or more years).

For employee engagement, 84% reported an undesirable score. These respondents tended to disagree with statements relating to having respect, support, and communication from their employer. Findings from multivariate analysis showed just one significant independent variable: Position. Staff pharmacists were 1.7 times more likely (●) than the reference category (management) to report an undesirable score. No other position categories were significantly different from the reference category.
For a culture of safety, 46% reported an undesirable score. Of the respondents who were aware of a CQI program at their workplace, these respondents did not agree that the programs were active, informative, or resulted in improvements. Findings from multivariate analysis showed just one significant independent variable: Position. Staff pharmacists were 1.4 times more likely (●) than the reference category (management) to report an undesirable score. No other position categories were significantly different from the reference category.

For personnel, 45% reported an undesirable score. These respondents tended to disagree with statements relating to having training, roles, responsibilities, engagement, and teamwork that are needed in their workplace. Multivariate analysis showed that NABP district, gender, race/ethnicity, and years in practice did not significantly affect the pattern of responses. However, controlling for other variables in Table 9.1, staff pharmacists certified technicians, and noncertified technicians were significantly more likely (●) to report an undesirable score.

Table 9.2. Multivariate Analysis findings for supermarket pharmacy (n = 856)

	Work Environment	Stress	Employee Engagement	Culture of Safety	Personnel
% with an undesirable score	90%	90%	73%	39%	38%
NABP district (reference group = District 8)	○	-	-	-	○
Position (reference group = Manager)	-	-	-	-	●
Gender (reference group = Male)	-	-	-	-	-
Race/ethnicity (reference group = White)	-	-	○	○	-
Years in practice (reference group = 25+ Years)	-	-	-	-	-

● = Variable that had categories that were more likely to report an undesirable score compared with the reference category.
◒ = Variable that had categories that were both more and less likely to report an undesirable score compared with reference.
○ = Variable that had categories that were less likely to report an undesirable score compared with reference category.

For respondents from supermarket pharmacies, 90% reported an undesirable score for their work environment. They tended to disagree with statements relating to having adequate time allocation, staffing, policies, payment for services, and workflow design to be able to meet their clinical and nonclinical duties. Multivariate analysis showed that position, gender, race/ethnicity, and years in practice did not significantly affect responses. However, controlling for other variables in Table 9.2, respondents from NAPB District 5 were significantly less likely to report undesirable scores (reference category = District 8).

For the variable of stress, 90% of respondents reported an undesirable score. They tended to report that time allocation, workflow, staffing, policies, payment, patient expectations/demands, harassment, and bullying were contributors to the likelihood of medication errors or near-misses in their work. Multivariate analysis showed that none of the independent variables significantly affected the pattern of responses.

For employee engagement, 73% reported an undesirable score. These respondents tended to disagree with statements relating to having respect, support, and communication from their employer. Findings from multivariate analysis showed just one significant independent variable: race/ethnicity. Respondents who were Hispanic were about one half as likely (logistic regression odds ratio = 0.41) than the reference category (white) to report an undesirable score. No other race/ethnicity categories were significantly different from the reference category.

For a culture of safety, 39% reported an undesirable score. Of the respondents who were aware of a CQI program at their workplace, these respondents did not agree that the programs were active, informative, or resulted in improvements. Findings from multivariate analysis showed just one significant independent variable: race/ethnicity. Respondents who were Asian were significantly less likely (logistic regression odds ratio = 0.20; 95% C.I. 0.06–0.72) than the reference category (white) to report an undesirable score. No other race/ethnicity categories were significantly different from the reference category.

For personnel, 38% reported an undesirable score. These respondents tended to disagree with statements relating to having training, roles, responsibilities, engagement, and teamwork that are needed in their workplace. Multivariate analysis showed that gender, race/ethnicity, and years in practice did not significantly affect the pattern of responses. However, controlling for other variables in Table 9.2, respondents from NAPB District 5 were significantly less likely to report undesirable scores (reference category = District 8). Also, staff pharmacists and certified technicians were significantly more likely to report an undesirable score.

Table 9.3. Multivariate Analysis findings for independent pharmacy (n = 667)

	Work Environment	Stress	Employee Engagement	Culture of Safety	Personnel
% with an undesirable score	26%	56%	19%	8%	18%
NABP district (reference group = District 8)	-	●	-	-	-
Position (reference group = Manager)	○	○	●	-	◒
Gender (reference group = Male)	-	-	-	-	-
Race/ethnicity (reference group = White)	-	-	-	-	-
Years in practice (reference group = 25+ Years)	-	-	-	-	-

● = Variable that had categories that were more likely to report an undesirable score compared with the reference category.
◒ = Variable that had categories that were both more and less likely to report an undesirable score compared with reference.
○ = Variable that had categories that were less likely to report an undesirable score compared with reference category.

For respondents from independent pharmacies, 26% reported an undesirable score for their work environment. These respondents tended to disagree with statements relating to having adequate time allocation, staffing, policies, payment for services, and workflow design to be able to meet their clinical and nonclinical duties. Multivariate analysis showed that NAPB district, gender, race/ethnicity, and years in practice did not significantly affect responses. However, controlling for other variables in Table 9.3, respondents in owner positions were significantly less likely to report undesirable scores (reference category = Manager).

For the variable of stress, 56% of respondents reported an undesirable score. They tended to report that time allocation, workflow, staffing, policies, payment, patient expectations/demands, harassment, and bullying were contributors to the likelihood of medication errors or near-misses in their work. Multivariate analysis showed that gender, race/ethnicity, and years in practice did not significantly affect responses. However, controlling for other variables in Table 9.3, respondents from NAPB district 5 were more likely to report undesirable scores (reference category = district 8). No other NABP district categories were significantly different from the reference category. Respondents in owner positions were significantly less likely to report undesirable scores (reference category = Manager).

For employee engagement, 19% reported an undesirable score. These respondents tended to disagree with statements relating to having respect, support and communication from their employer. Findings from multivariate analysis showed just one significant independent variable: position. Respondents who were staff pharmacists were twice as likely (logistic regression odds ratio = 2.0) than the reference category (manager) to report an undesirable score. No other position categories were significantly different from the reference category.

For a culture of safety, only 8% reported an undesirable score. Of the respondents who were aware of a CQI program at their workplace, these respondents did not agree that the programs were active, informative, or resulted in improvements. Multivariate analysis showed that none of the independent variables significantly affected the pattern of responses.

For personnel, 18% reported an undesirable score. These respondents tended to disagree with statements relating to having training, roles, responsibilities, engagement, and teamwork that are needed in their workplace. Findings from multivariate analysis showed just one significant independent variable: position. Staff pharmacists were significantly more likely and owners were significantly less likely to report an undesirable score (reference category = manager).

Table 9.4, Multivariate Analysis findings for hospital/institutional inpatient pharmacy (n = 656)

	Work Environment	Stress	Employee Engagement	Culture of Safety	Personnel
% with an undesirable Score	64%	59%	44%	20%	40%
NABP district (reference group = District 8)	●	-	-	-	-
Position (reference group = Manager)	-	●	●	●	●
Gender (reference group = Male)	-	-	-	-	-
Race/ethnicity (reference group = White)	-	-	●	-	-
Years in practice (reference group = 25+ Years)	-	-	-	●	-

● = Variable that had categories that were more likely to report an undesirable score compared with the reference category.
◒ = Variable that had categories that were both more and less likely to report an undesirable score compared with reference.
○ = Variable that had categories that were less likely to report an undesirable score compared with reference category.

For respondents from hospital/institutional inpatient pharmacies, 64% reported an undesirable score for their work environment. These respondents tended to disagree with statements relating to having adequate time allocation, staffing, policies, payment for services, and workflow design to be able to meet their clinical and nonclinical duties. Multivariate analysis showed that position, gender, race/ethnicity, and years in practice did not significantly affect responses. However, controlling for other variables in Table 9.4, respondents from NABP District 6 were significantly more likely to report undesirable scores (reference category = District 8). No other NABP district categories were significantly different from the reference category.

For the variable of stress, 59% of respondents reported an undesirable score. They tended to report that time allocation, workflow, staffing, policies, payment, patient expectations/demands, harassment, and bullying were contributors to the likelihood of medication errors or near-misses in their work. Multivariate analysis showed that NABP district, gender, race/ethnicity, and years in practice did not significantly affect responses. However, controlling for other variables in Table 9.4, respondents in "staff" positions were significantly more likely to report undesirable scores (reference category = manager).

For employee engagement, 44% reported an undesirable score. These respondents tended to disagree with statements relating to having respect, support and communication from their employer. Findings from multivariate analysis showed two significant independent variables: position and race/ethnicity. Respondents who were staff pharmacists and certified technicians were more likely to report an undesirable score than the reference category (manager). Also, Asian respondents were more likely to report an undesirable score than the reference category (white). No other race/ethnicity categories were significantly different from the reference category.

For a culture of safety, 20% reported an undesirable score. Of the respondents who were aware of a CQI program at their workplace, these respondents did not agree that the programs were active, informative, or resulted in improvements. Respondents who were staff pharmacists and certified technicians were more likely to report an undesirable score than the reference category (Manager). Also, respondents with fewer than 5 years of experience were more likely to report an undesirable score than the reference category (25 or more years). No other years in practice categories were significantly different from the reference category.

For personnel, 40% reported an undesirable score. These respondents tended to disagree with statements relating to having training, roles, responsibilities, engagement, and teamwork that are needed in their workplace. Findings from multivariate analysis showed just one significant independent variable: position. Staff pharmacists and certified technicians were significantly more likely to report an undesirable score (reference category = manager).

SECTION 10: LIMITATIONS, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Limitations

The survey was promoted to potential responders via email, periodicals, and social media. Therefore, a limitation of the results is that it did not use a random sample of individuals. The total number of individuals contacted is unknown, so a response rate cannot be calculated. As such, the findings should be used for gaining insights and *not be* used for making estimates for—or to generalize to—pharmacies and pharmacy personnel overall.

In addition, confounding among variables for the univariate statistics (cross-tabulations) should be considered when interpreting the findings. For example, NABP districts differ significantly in their composition of practice setting type; thus, differences among NABP districts could be due to these differences in practice setting composition. Furthermore, primary role (position), gender, race/ethnicity, and years in practice are all associated with practice setting type. For example, respondents who identified as staff/clinical pharmacist, female, Asian, or with relatively fewer years in practice were more likely to work in chain pharmacy practice settings. Such confounding should be kept in mind when interpreting the findings. However, the univariate findings are instructive for thinking about how various groups of individuals are being affected by their work environments in terms of their ability to meet both clinical and nonclinical duties and in terms of the likelihood of making medication errors or near misses in their work. These descriptions can provide insights for deeper evaluations through in-depth interviews, focus groups, and discussions.

Discussion

Overall, the findings affirmed anecdotal pharmacy workplace comments heard by state and national pharmacy associations or posted on social media that have been highlighting pharmacy workplace challenges relating to how time allocation, staffing, policies, payment, workflow design, job stress, and patient demands affect the ability to meet work expectations as well as the ability to sustain standards of patient safety.

The findings also are complementary with previously reported research that provides context for discussing the results from this survey. Our previous research has documented the transformation of work systems and processes of care for the next generation of pharmacy and the uncertainty and stress that has been emerging from this transition. Some examples from our stream of related work include

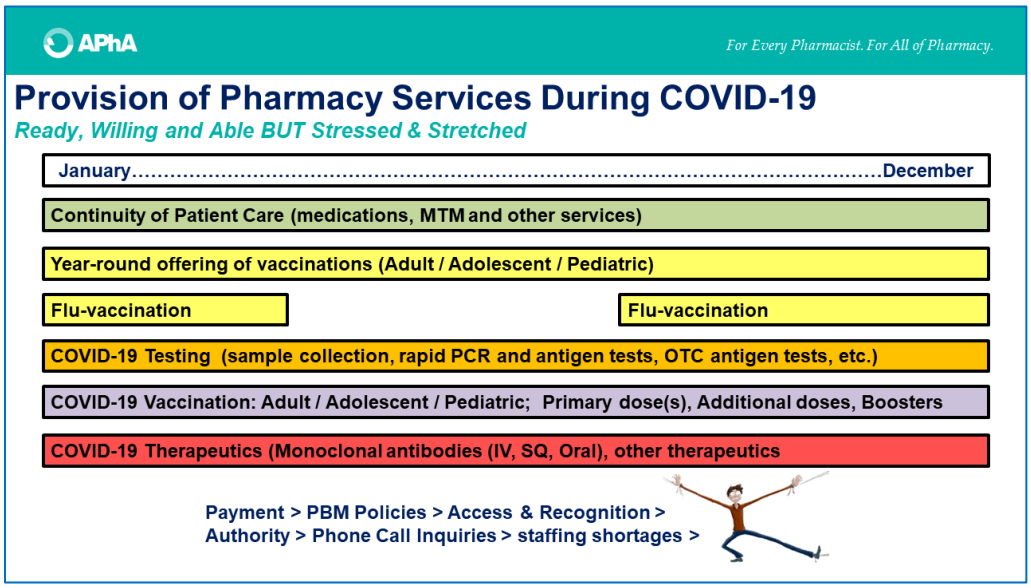
- Pharmacy technicians report their willingness to perform emerging tasks but need sufficient staffing, sufficient time, sufficient training, recognition of specialized skills, and less work stress.[J]
- Consumers (patients) report value in pharmacy services as a way to fill gaps in their health care and welcome receiving new services from pharmacists that improve the coordination and continuity of their care.[K]
- Community pharmacies are changing from traditional retail models into health care models in which they are organized by their capacity to operate as health care access points that provide, and are reimbursed for, patient care and public health services like medication therapy management, immunizations, and more.[L]
- Comprehensive integrated care models are being created through horizontal integration with clinics, medical centers, and places of employment so that medication and medical costs can be combined in risk portfolios and meet pay-for-performance goals. Vertical integration among insurance companies, wholesalers, manufacturers, integrated delivery networks, pharmacy benefit management companies, pharmacies, clinics, and medical centers aim to provide coordinated services at lower cost, improve access to services, leverage data, and bear financial risk for health outcomes of patient populations.[M]
- According to the 2019 National Pharmacist Workforce, 52% of U.S. pharmacists contribute a significant portion of their time to patient care provision (compared with 40% in 2014). Only 34% of pharmacists in 2019 devoted their time primarily to providing medications.[N]

- Such shifts in work activities were associated with higher “responsibility stress” and had negative impacts on “home life in harmony with work.”[O]
- The 2019 National Pharmacist Workforce Survey found that overall, 71% of pharmacists rated their workload as high or extremely high and job satisfaction was at the lowest point in 20 years.[E]
- The 2019 National Pharmacist Workforce Survey also revealed that pharmacist burnout (work exhaustion and interpersonal disengagement) was associated with younger age, being female, working more hours, and working in a community pharmacy.[P]
- In 2018, APhA sponsored a qualitative research study using open-ended questions to examine the personal and professional well-being of pharmacists and student pharmacists. While this project found that pharmacists' and students' basic human needs were being met, there were internal (fear of failure/pressure to succeed) and external (employer polices, low reimbursement rates, patient demands) factors negatively influencing their well-being.[D]

All of this was being documented before 2020. Pharmacy already was at a breaking point with so much dynamism in the profession. The onset of the COVID-19 global pandemic stretched the health care workforce, including pharmacists, beyond the breaking point.[F] While pharmacists answered the call from providing access to medications throughout even the most daunting of the pandemic surges to providing COVID testing, vaccination and treatment, workplace issues have intensified.[G,Q] Pharmacists’ and pharmacy personnel’s workload has been linked to patient safety concerns regarding medication errors.[H] In addition, student pharmacists' once-positive views of the profession of pharmacy have declined in recent years.[I] Pharmacies would like to hire pharmacists to meet the demand for new services during this time of the pandemic, but this has not been feasible under current economic pressures.[R]

A summary of the provision of pharmacy services during COVID-19 is presented below. In addition to medication optimization services that have been a traditional part of pharmacy (medication preparation, dispensing, medication therapy management and other services), pharmacies already were a valued access point for flu and other vaccinations. COVID-19 added testing, vaccination, new therapeutics, mask distribution, coverage for provider shortages, and patient counseling services to pharmacy locations. It is within this context that we discuss the findings from this survey which collected responses from April 23, 2021, to January 7, 2022.

Figure 10.1 Provision of pharmacy services during COVID-19: Ready, willing and able, but stressed and stretched



Source: Mitchel C. Rothholz, RPh, MBA, Chief of Governance & State Affiliates and Executive Director, APhA Foundation, American Pharmacists Association, 2215 Constitution Ave, NW, Washington, DC 20037. February 2022. mrothholz@aphanet.org

Work Environment (Section 3)

During 2021, pharmacy workplaces suffered from challenges relating to time allocation, staffing, policies, payment, and workflow design. The majority of respondents reported that stressful work environments limited them in sufficiently meeting both clinical and nonclinical duties (refer to Table 3.1).

The most challenging practice types were chain, supermarket and mass-merchant pharmacies with both pharmacist and technician staff members reporting high levels of challenges (Refer to Figures 3.2 and 3.3). This is not surprising, since these pharmacy types already were stressed with practice transformations before the pandemic. Then—during the COVID-19 pandemic, when they engaged in providing extra care relating to vaccinations, testing, treatment, counseling, and access to other care—the stress became overwhelming. Changes in work system design and processes of care that were in place to accommodate shifts in vertical integration, horizontal integration, service offerings, efficiencies, technology, use of technicians, and payment systems were interrupted by the necessity to make additional changes in work system design and processes of care during the COVID pandemic. It was disruptive and simply too much to bear without great sacrifice.

It is noteworthy that gender identity, racial/ethnic identity, and years in practice were associated with the extent to which work environment stress was reported as challenge. While associations for these variables are confounded by practice type, more research into these associations is warranted.

Employee Engagement and Value (Section 4

This section had 5 questions that focused on employee engagement and value, which are items associated with the potential for employee burnout. The findings showed that over 50% of respondents disagreed with each item (refer to Table 4.1) and suggests the potential for burnout. The highest potential for burnout was for chain, mass-merchant, and supermarket pharmacy types. These are the most challenging work environments as described in Section 3. There is a need for active communication, respect, support, and openness as these practice settings go through dynamic change and stress. Attention to employee well-being and resilience is critical to overcome work exhaustion and interpersonal disengagement.[P]

Culture of Safety (Section 5)

With stressful work environments and risk of employee burnout, the question of patient safety arises. That is, are pharmacy personnel able to meet the standards of patient safety? The findings from this section showed that 69% of respondents knew that their practice site utilized a CQI program to identify and prevent errors or near-misses from occurring.

Of those who knew about their CQI program, 79% reported that personnel are encouraged to voluntarily report errors without adverse consequences to them. Also, 60% agreed that such reporting results in improvements in their practice. However, only 42% reported that their employer shares aggregate report data with them so that they can improve their practices. It appears that pharmacies have a culture of safety but can do better in communicating these programs to staff members, encouraging participation, and providing useful feedback. We propose that intensifying a focus on a culture of safety is important in light of the stressful work environments and potential for employee burnout.

Figure 5.2 shows that all practice types have favorable "cultures of safety" with the highest scores being associated with nuclear pharmacy, independent pharmacy, pharmaceutical industry, mail service, and specialty pharmacy.

Pharmacy Personnel (Section 6)

With stressful work environments and risk of employee burnout, the question of how to support personnel arises. That is, is there support for training, role clarity, responsibility, engagement, and teamwork? The findings from this section showed that while 53% do not have the ability to make adjustments to team training, roles and responsibilities, most respondents reported that team members are sufficiently educated, engaged, clearly understand their roles and responsibilities, and work together as a team. It appears that pharmacy workplaces provide support for personnel but can do better in terms of empowering individuals to make adjustments in training, roles, and responsibilities based on the needs of the pharmacy. This is consistent with comments made in Section 8 that reveal more autonomy to make decisions quickly and implement them has a positive impact for patient safety and patient care. We propose that there are good teams of people in place at pharmacy workplaces. Even stronger support of personnel is important in light of the stressful work environments and potential for employee burnout.

Contributors to Stress (Section 7)

This section had 13 questions that focused on contributors to stress. The items related to time allocation, workflow, staffing, policies, payment, patient expectations/demands, safety, and harassment/bullying. Thus, the term "contributors to stress" in this survey represents respondents' views relating to how situations in their workplace contribute to the likelihood of making medication errors or near-misses in their work. It is an indicator that gives insights regarding threats to patient safety.

We find the findings presented in Table 7.1 of great concern. It shows that 91% of respondents reported that it is likely that "interruptions from telephone calls" contributes to medication errors or near-misses. Also, 89% reported that it is likely that "inadequate staffing" contributes to medication errors or near-misses. It is noteworthy that "patient expectations or demands" and "harassment/bullying from patients/customers" reportedly are likely to contribute to medication errors or near-misses (reported by 81% and 72%, respectively). It is clear that work systems and processes of care need to be updated so that individuals working in pharmacy workplaces do not experience barriers to upholding standards of patient safety.

The most stressful practice types were chain, supermarket and mass-merchant pharmacies with both pharmacist and technician staff members reporting high levels of challenges (refer to Figures 7.2 and 7.3). The pattern of findings is parallel to those reported in Section 3 (Work Environment). The findings from Section 3 (Work Environment) and Section 7 (Contributors to Stress) show that chain, supermarket,

and mass-merchant pharmacies are not only experiencing high stress (a personnel burnout concern), but also that this stress is viewed as having the potential to result in medication errors and near-misses (a patient safety concern).

As mentioned in the discussion for Section 3, these pharmacy types already were stressed with practice transformations before the pandemic. Then—during the COVID-19 pandemic, when they engaged in providing extra care relating to vaccinations, testing, treatment, counseling, and access to other care—the stress became overwhelming. Changes in work system design and processes of care that were in place to accommodate shifts in vertical integration, horizontal integration, service offerings, efficiencies, technology, use of technicians, and payment systems were interrupted by the necessity to make additional changes in work system design and processes of care during COVID. It was disruptive and is raising both personnel burnout and patient safety concerns.

It is noteworthy that gender identity, ethnic identity, and years in practice were associated with the extent to which stress was seen as increasing the likelihood of medication errors or near-misses. While associations for these variables are confounded by practice type, more research into these associations is warranted.

Insights Regarding Patient Safety and Optimal Patient Care (Section 8)

Respondents provided thousands of written responses to 5 open-ended questions:

1. What factors have positively impacted your ability to ensure patient safety?
2. In what ways has your employer positively impacted your ability to perform the tasks necessary for optimal care for your patients?
3. What factors have negatively impacted your ability to ensure patient safety?
4. In what ways has your employer negatively impacted your ability to perform the tasks necessary for optimal care for your patients?
5. Any additional comments?

Reponses to these questions provide insights regarding things that positively impact patient safety and optimal patient care. Based on the selected comments presented in Section 8, the importance of work systems and processes of care that match the desired outcomes for the organization were emphasized. Site specific autonomy was stressed as an important way to meet 1) standards of patient safety, 2) patients' needs, and 3) the need for adjustments as situations arise. Employee training, support, and development were highlighted as key contributors for patient safety and optimal patient care goals.

Using creativity, inserting redundancy into work systems, and using their own value system are ways in which pharmacy personnel positively ensure patients safety. Having control over policies and procedures, good working relationships with coworkers and management, and support from employers by providing adequate staff and time to perform their jobs are also important. By developing creative and innovative solutions, removing nonclinical work from the workflow, getting to know patient extremely well, adding redundancy to the system, and having quality employees positively impact respondents' ability to ensure patient safety. Having control over policies and procedures; good working relationships with staff, management, and physicians; and respondents' desire to do what is right also positively impact patient safety. Employers' actions that positively impact the respondents' ability to perform the tasks necessary for optimal care for patients include having enough time to focus on the task at hand until completed, providing a dedicated person to immunize, compensating for all hours worked, scheduling vaccines by appointment, overlapping staff, and distributing work across different teams. Listening to employee feedback, not enforcing quotas, having the desire to retain current staff, and implementing pay raises are important as well.

Reponses to these questions also provided insights regarding things that negatively impact patient safety and optimal patient care. As found in previous sections, patient and customer demands, performance policies, insurance/payment, cumbersome CQI policies, negative or abusive employee/management relationships, and lack of care for employees' mental health negatively impacts

pharmacy personnel's ability to ensure patient safely and provide optimal patient care. Respondents also mentioned unrealistic workloads without adequate support; the exclusive focus on the bottom line that leads to inadequate staffing, unrelenting quotas, and metrics used to evaluate performance; and relying on pharmacy personnel to complete tasks that should be done at a corporate level are other negative contributors. Additional comments included a culture of not caring if staff are retained by management, paying certified pharmacy technicians just above minimum wage, and inadequate drug product reimbursement from insurance providers show these are additional issues.

The written comments provide credibility for the findings presented in Sections 3–7. Also, the comments provide insights about next steps and solutions to meet the current challenges. The plan is to complete qualitative analysis of the text generated by the thousands of written comments. At this time, the methodological strategy is to conduct a reflexive thematic analysis to identify main themes and also use a phenomenological inceptual process to uncover meaning within workplace experiences as described by the respondents.[S,T,U]

Multivariate Analysis of the Data (Section 9)

There were 4 practice setting types that had sample sizes large enough for logistic regression analysis. They were chain pharmacy (n = 3,171), supermarket pharmacy (n = 856), independent pharmacy (n = 667), and hospital/institutional (inpatient) pharmacy (n = 656). Multivariate analysis showed that geographic location (NABP district), gender, and race/ethnicity were not significantly associated with 5 dependent variables we studied when controlling statistically for practice setting, position, and years in practice. Tables 9.1 to 9.4 show a limited number of significant findings, but these might be statistical artifacts and suffer from relatively small sample sizes for some categories.

The multivariate analysis showed some consistent patterns for the association between position and the dependent variables related to employee engagement and personnel. The findings showed that staff pharmacists and certified technicians were more likely to report undesirable scores relating to employee engagement (i.e., having respect, support, and communication from their employer) and to personnel (i.e., having training, roles, responsibilities, engagement, and teamwork that are needed in their workplace). These positions in pharmacies tend to require 1) multi-tasking, 2) being in the “front lines” of patient care, 3) unrealistic workloads, and 4) metric-driven performance assessment.

For hospital pharmacy practice settings, position was associated with 4 out of the 5 dependent variables we studied. Staff pharmacists were more likely to report undesirable scores for stress, employee engagement, culture of safety, and personnel. Certified pharmacy technicians had the same pattern for 4 of these (not stress).

For chain pharmacy practice settings, position was associated with employee engagement, culture of safety, and personnel dependent variables. As before, staff pharmacists and certified pharmacy technicians were more likely to report undesirable scores. In addition to this pattern, chain pharmacy practice settings showed significant associations between years in practice and two dependent variables (work environment and stress). Those in practice for fewer than 15 years were more than twice as likely to report undesirable scores.

Findings for independent pharmacies (Table 9.3) show much better scores for the 5 dependent variables. These practice settings might have employees that have more control, autonomy, and personal relationships than other settings that typically are larger organizational entities. Even so, staff pharmacists in independent pharmacies also were more likely to report undesirable scores for two dependent variables: employee engagement and personnel.

The multivariate findings provide insights for the 4 practice setting types (chain, supermarket, independent, hospital) that had sufficient sample sizes for such analysis. It appears that practice setting type and position are the most important characteristics associated with the 5 dependent variables we studied. To a lesser extent, it appears that years in practice as a variable is associated with the work

environment and stress variables. These findings are consistent with the univariate findings presented in Sections 3–7 and the written comments summarized in Section 8 of this report. The study suggests that the most important areas of concern relate to work systems and processes of care, which are under the direct control of the employer and management.

Conclusions

This report described that during 2019, the pharmacy profession was in the midst of dynamic, uncertain, and stressful changes in work system design and processes of care to accommodate shifts in vertical integration, horizontal integration, service offerings, efficiencies, technology, use of technicians, and payment systems. In 2019, 71% of pharmacists already rated their workload as high or extremely high and job satisfaction was at the lowest point in 20 years.[E] In 2019, pharmacy was "uncertain, dynamic, and stressful." To make matters worse, the COVID-19 pandemic in 2020 interrupted these transformations and required additional changes in work system design and processes of care. Pharmacy workplaces adjusted to serving patients under conditions of quarantine, social distancing, and ongoing spread of COVID-19. Emergency accommodations were allowed by boards of pharmacy and legislatures to help meet the challenge and these experiences have provided lessons for future change.

In 2021, pharmacy workplaces responded to the exceptional societal needs that arose during the COVID-19 pandemic by providing extra care relating to vaccinations, testing, mask distribution, counseling, and access to other care. This increased workloads, anxiety, and burnout for not only pharmacy personnel, but for patients as well. In addition to the added interruptions and inadequate staffing that increased the likelihood of medication errors, patient expectations, demands, harassment, and bullying were leading contributors to stress in pharmacy workplaces. Pharmacy personnel are at a breaking point at which adjustments to team training, roles, and responsibilities cannot able to be made quickly enough to adapt to change.

Most of the factors of concern that were identified by this survey relate to work systems and processes of care, which are under the direct control of the employer and management. For the profession, the stress and workplace conditions explored in the survey findings are likely to have a negative impact on the ability to recruit, train, and retain pharmacy personnel. There are opportunities to address issues in an expedient manner that would use communication channels with pharmacy personnel and revise policies to support pharmacists and pharmacy personnel when encountering patients/customers who are perceived to be threatening or harassing and when pharmacists utilize professional judgment in addressing clinical and workflow issues at hand. Employers need support from insurers, lawmakers, educators, and the public to address patient safety issues, reduce stress and increase satisfaction of pharmacy personnel now and in the future.

Recommendations

Many lessons have been learned that will help pharmacy continue its transformation going forward. The recommendations listed next are for consideration and discussion. Most of them have been proposed for years, but the urgency of this moment might help push them into reality. As Herb Brooks (head coach of the gold medal–winning U.S. Olympic team known as the "Miracle on Ice") has said, "Great moments are born from great opportunities." Furthermore, as automobile executive Lee Iacocca said, "We are continually faced by great opportunities disguised as insoluble problems."

Concrete action plans will likely vary for various pharmacy practice types. We propose that pharmacists, employers, policy makers, and others need to be engaged for making progress. It is in this spirit that we submit the following recommendations.

- Change work systems and processes of care to minimize interruptions; maximize concentration time; improve training and support; allow autonomy; provide access to needed data/resources; and improve alignment with personnel well-being/resilience, patient safety, and optimal care.

- Create business models to better align incentives and build relationships among organizations so that patient care and personnel well-being are improved.
- Update practice acts and legislation to accommodate bold changes to allow personnel the ability to exercise clinical and professional judgment. This includes pharmacy licensure requirements and scope of practice for pharmacists and technicians.
- Update pharmacy education to support changes in expertise and credentials. This should include discussion regarding advanced training, multiple tiered degrees, and development of pharmacist assistant training.
- Enhance pharmacy personnel well-being and resilience initiatives that improve dialogue, autonomy, support, and inclusion. Respondent comments suggested that simple things such as communication, follow-up, and a culture of caring mean a lot.
- Attend to the high stress reported by respondents with relatively low practice experience along with the fact that these less-experienced pharmacists and technicians now comprise the majority of the pharmacy workforce. Building support systems—including connections, mentoring, and coaching—are needed. Linking experienced and newer personnel could be of help.
- Build community engagement and outreach so that pharmacies can build better access, responsiveness, communication, customization, and value cocreation with the patients and consumers who are served.

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APPENDIX
SURVEY CODE BOOK

APhA/NASPA National State-based Pharmacy Workplace Survey

- *Survey Developed by APhA/NASPA*
- *State-Level Sample Selection and Invitation to Pharmacists, Staff, Students*
- *Internet-Based Qualtrics^{XM} Survey*
- *Data Collection – March 22, 2021 to January 7, 2022*
- *Number of Responses – 6,973*
- *Data Repository - University of Minnesota, Jon Schommer*
- *Statistical Analysis – IBM SPSS Statistics 27*
- *Analysis Team: Jon Schommer, Caroline Gaither, SuHak Lee, Nancy Alvarez, April Shaughnessy*
- *Oversight Team: April Shaughnessy, Mitch Rothholz, Joni Cover, Rebecca Snead*

Section One – Practice Place, Role, and Setting

1. Select the **State** of Your *Primary* Practice or Workplace **[Q3] → [STATE]**
[drop down menu of 50 states, DC, and Puerto Rico, and Other **[Q4]**with fill-in] → **OtherLocDesc**

[STATE] recoded into **[NABP_District]**
NABP Districts - https://nabp.pharmacy/about/districts/

Only States, DC, and PR are included in this list. Note: actual NABP Districts include Canadian provinces.

District 1	Connecticut (7); Maine (20); Massachusetts (22); New Hampshire (30); Rhode Island (41); and Vermont (47)
District 2	Delaware (8); District of Columbia (9); Maryland (21); New Jersey (31); New York (33); Pennsylvania (39); Virginia (48); and West Virginia (50)
District 3	Alabama (1); Florida (10); Georgia (11); Kentucky (18); Mississippi (25); North Carolina (34); Puerto Rico (40); South Carolina (42); and Tennessee (44)
District 4	Illinois (14); Indiana (15); Michigan (23); Ohio (36); and Wisconsin (51)
District 5	Iowa (16); Minnesota (24); Nebraska (28); North Dakota (35); and South Dakota (43)
District 6	Arkansas (4); Kansas (17); Louisiana (19); Missouri (26); Oklahoma (37); and Texas (45)
District 7	Alaska (2); Idaho (13); Montana (27); Oregon (38); Washington (49); and Wyoming (52)
District 8	Arizona (3); California (5); Colorado (6); Hawaii (12); Nevada (29); New Mexico (32); and Utah (46)

2. Select Your *Primary* **Practice Setting [Q5] → PracSetting**
<Instruct students to select their primary pharmacy workplace outside of their IPPE/APPE. If they do not work outside of required school APPE/IPPE then they should select Academia>

1 = Chain pharmacy (4+ units)
2 = Supermarket pharmacy
3 = Mass-merchant pharmacy
4 = Independent pharmacy (1–3 units)
5 = Hospital/Institutional (inpatient) pharmacy
6 = Clinic (outpatient) pharmacy
7 = Ambulatory care clinic
8 = Mail service pharmacy
9 = Nuclear pharmacy
10 = Long-term care pharmacy
11 = Pharmaceutical industry (manufacture, wholesale, PBM, managed care, insurance)
12 = Specialty pharmacy
13 = Academia (College/School of Pharmacy)
14 = Association/Regulatory
15 = Federal/Military/Department of Defense pharmacy
16 = Currently not working
17 = Other (specify) _____[specify fill-in is mandatory] **[Q5_17_text] → PracSetDesc**
18 = I am a student pharmacist

3. Select Your *Primary* **Role (Position) [Q6] → PrimaryRole**

1 = Pharmacist Manager/PIC
2 = Staff Pharmacist
3 = Resident
4 = Student Pharmacist/Intern
5 = Certified Pharmacy Technician
6 = Pharmacy Technician
7 = Pharmacy Clerk
8 = Other (specify) _____ [specify] **[Q6_8_TEXT] → RoleDesc**
9 = Pharmacy Owner
10 = Faculty/Educator
11 = Consultant/Liaison/Professional Specialist
12 = Corporate Executive/Director

Section Two - Work environment

1 - Strongly agree
2 - Somewhat agree
3 - Neither agree nor disagree
4 - Somewhat disagree
5 - Strongly disagree

1. Sufficient number of pharmacists are available during shifts to meet administrative/nonclinical duties. **[Q7_1] → TWO1**
2. Sufficient non-pharmacist staff personnel are available during shifts to meet administrative/nonclinical duties. **[Q7_2] → TWO2**
3. Sufficient pharmacists are available during shifts to meet patient care/clinical duties. **[Q7_3] → TWO3**
4. Non-pharmacist staff personnel are available for shifts sufficiently to meet clinical duties. **[Q7_4] → TWO4**
5. Sufficient pharmacists overlap and procedures exist to ensure transfer of information and status. **[Q7_5] → TWO5**
6. Sufficient time is allocated for me to safely perform administrative/nonclinical duties. **[Q7_6] → TWO6**
7. Sufficient time is allocated for me to safely perform patient care/clinical duties. **[Q7_7] → TWO7**
8. Employer policies facilitate my ability to safely perform administrative/nonclinical duties. **[Q7_8] → TWO8**
9. Employer policies facilitate my ability to safely perform patient care/clinical duties. **[Q7_9] → TWO9**
10. Payment for pharmacy services supports our ability to meet clinical and nonclinical duties. **[Q7_10] → TWO10**
11. Workflow design facilitates my ability to meet clinical duties. **[Q7_11] → TWO11**
12. Workflow design facilitates my ability to meet nonclinical duties. **[Q7_12] → TWO12**

[TWO1Code] to [TWO12Code] recoded as:

0 = Strongly agree; Somewhat agree; Neither agree nor disagree
1 = Somewhat disagree; Strongly disagree

Section Three - Employee Engagement and Value (related to burnout)

1 - Strongly agree
2 - Somewhat agree
3 - Neither agree nor disagree
4 - Somewhat disagree
5 - Strongly disagree

1. Communication channel(s) exist to enable me to voice ideas and suggestions for process improvement. **[Q8_1] → THREE1**
2. My employer actively seeks my opinion. **[Q8_2] → THREE2**
3. My employer respects and values my input. **[Q8_3] → THREE3**
4. Management is available for and open to discussing issues impacting patient care. **[Q8_4] → THREE4**
5. My employer supports (financially or with time off) my professional engagement and education. **[Q8_5] → THREE5**

[THREE1Code] to [THREE5Code] recoded as:

0 = Strongly agree; Somewhat agree; Neither agree nor disagree
1 = Somewhat disagree; Strongly disagree

Section Four - Culture of Safety

1. My practice site utilizes a continuous quality improvement (CQI) program to identify and prevent errors or near misses from occurring. **[Q9] → USECQI**

1= Yes
2 = No *[if no, survey should skip the next three questions]*
3 = Unsure *[if unsure, survey should skip the next three questions]*

1 - Strongly agree
2 - Somewhat agree
3 - Neither agree nor disagree
4 - Somewhat disagree
5 - Strongly disagree

2. Pharmacy personnel are encouraged to voluntarily report errors or near misses without adverse, internal, or administrative action. **[Q10_1] → FOUR1**
3. Voluntary reporting of errors or near misses results in improvements in structure and/or processes in my practice. **[Q10_2] → FOUR2**
4. My employer shares aggregate report data with me so that we can improve our practices. **[Q10_3] → FOUR3**

[FOUR1Code] to [FOUR3Code] recoded as:
1 = Strongly agree; Somewhat agree
0 = Neither agree nor disagree; Somewhat disagree; Strongly disagree

Section Five - Pharmacy Personnel

1 - Strongly agree
2 - Somewhat agree
3 - Neither agree nor disagree
4 - Somewhat disagree
5 - Strongly disagree

1. All members of the team clearly understand their roles and responsibilities. **[Q11_1] → FIVE1**
2. All members of the team work together to accomplish tasks. **[Q11_2] →FIVE2**
3. All members of the team are sufficiently educated and/or trained to perform the tasks required of them. **[Q11_3] → FIVE3**
4. All members of the team are engaged fully to the extent permitted by their scope. **[Q11_4] → FIVE4**
5. I have the ability to make adjustments to personnel training, roles, and responsibilities based on the needs of my pharmacy. **[Q11_5] → FIVE5**

[FIVE1Code] to [FIVE5Code] recoded as:
0 = Strongly agree; Somewhat agree; Neither agree nor disagree
1 = Somewhat disagree; Strongly disagree

Section Six – Contributors to Stress

Based on your primary practice site (work environment) how likely is each of the following situations listed below to contribute to medication errors or near misses.

1 = Very Likely
2 = Somewhat Likely
3 = Neither
4 = Somewhat Unlikely
5 = Very Unlikely

1. Interruptions from telephone calls **[Q12_1] → SIX1**
2. Inadequate staffing **[Q12_2] → SIX2**
3. Inadequately trained pharmacy personnel **[Q12_3] → SIX3**
4. Completion of paperwork or reports **[Q12_4] → SIX4**
5. Inability to practice pharmacy in a patient-focused manner **[Q12_5] → SIX5**

6. Lack of constructive performance feedback **[Q12_6] → SIX6**
7. Inconsistent enforcement of workplace policies **[Q12_7] → SIX7**
8. Insurance issues **[Q12_8] → SIX8**
9. Patient expectations or demands **[Q12_9] → SIX9**
10. Non-pharmacy managers lack of understanding/knowledge of pharmacy practice regulations **[Q12_10] → SIX10**
11. Harassment/bullying from manager or co-workers **[Q12_11] → SIX11**
12. Harassment/bullying from patients/customers **[Q12_12] → SIX12**
13. Lack of workplace safety **[Q12_13] → SIX13**

[SIX1Code] **to** **[SIX13Code]** recoded as:
0 = Neither, Somewhat Unlikely, Very Unlikely
1 = Very Likely, Somewhat Likely

Section Seven – Your Opinions

<each question is open-ended> [TEXT]

1. In addition to factors listed in Section Five, what other factors have positively impacted your ability to ensure patient safety? **[Q13] → PositiveSafety**
2. In what ways has your employer positively impacted your ability to perform the tasks necessary for optimal care for your patients? **[Q14] → PositiveCare**
3. What other factors have negatively impacted your ability to ensure patient safety? **[Q15] → NegativeSafety**
4. In what ways has your employer negatively impacted your ability to perform the tasks necessary for optimal care for your patients? **[Q16] → NegativeCare**
5. Any additional comments? **[Q17] → OtherComments**

Section Eight – Demographics

1. Gender **[Q18] → Gender**
   1 = Male
   2 = Female
   3 = Other
   4 = Prefer not to answer

2. Ethnicity **[Q19] → Ethnicity**
   1 = American Indian / Alaska Native
   18 = Middle Eastern
   19 = Asian
   20 = Black / Afro-Caribbean / African American
   21 = Native Hawaiian / Pacific Islander
   22 = Hispanic (non-white)
   23 = White / Caucasian
   24 = Multiple Races / Ethnicity
   25 = Other (Specify) **[Q19_25_TEXT] → EthnicityDesc**
   26 = Prefer Not to Answer

3. Graduation Year of **First** Pharmacy Degree **[Q20] → YearGraduation**
   <4 digit year> (Written In) Recoded into **YearsSinceGraduation = [2021 – YearGraduation]**

   Categorize **YearsSinceGraduation** into Approximate Quartiles:
   YrSinceGradCat **1 = 5 or less**
   2 = 6 to 10
   3 = 11 to 20
   4 = more than 20
   Categorize **YearsSinceGraduation** into same categories as HowLongTech (see below)
   HowLongPharm 1 = 0–4 years
   2 = 5–14years
   3 = 15–24 years
   4 = 25+ years

Alternate Question 3a – for those that Answer Student Pharmacist to Q3
What is your anticipated year of graduation for your entry-level pharmacy degree?
[Q21] → AnticipatedGraduation

1 = 2021
2 = 2022
3 = 2023
4 = 2024
5 = 2025
6 = 2026
7 = Other (specify) _____ **[Q21_7_TEXT] → AnticipatedGradText**

Alternate Question 3b Available only to those who selected pharmacy technician or certified pharmacy technician in Q6]
How long have you been a Certified Pharmacy Technician/Pharmacy Technician/Clerk **[Q22] → HowLongTech**

1 = 0–4 years
2 = 5–14years
3 = 15–24 years
4 = 25+ years

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