California State Board of Pharmacy
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Business, Consumer Services and Housing Agency
Department of Consumer Affairs
Gavin Newsom, Governor

MEDICATION ERROR REDUCTION AND WORKFORCE CHAIR REPORT
January 27, 2022

Nicole Thibeau, Licensee Member, Chairperson
Seung Oh, Licensee Member, Vice-Chairperson
Lavanza Butler, Licensee Member
Kula Koenig, Public Member
Jignesh Patel, Licensee Member

I. Call to Order and Establishment of Quorum

II. Public Comment for Items Not on the Agenda, Matters for Future Meetings

*(Note: the committee may not discuss or take action on any matter raised during the public comment section that is not included on this agenda, except to decide to place the matter on the agenda of a future meeting. Government Code Sections 11125 and 11125.7(a).)

III. Discussion and Consideration of Results of Workforce Survey

Background:
As part of the Board's evaluation of medication errors, and in response to information at the national level, suggesting that workforce issues may be a contributing factor to these types of errors, the Board developed a workforce survey intended to focus on the community pharmacy setting. Board staff partnered with DCA to develop the survey. As part of the April 29-30, 2021 Board Meeting, members approved the workforce survey.

In partnership with DCA experts, the Board received a presentation as part of the December 2, 2021 meeting on the results of the survey.

During the meeting members will receive an abbreviated version of the presentation and discuss survey responses.

Attachment 1 includes of copy of the presentation slides from the December 2, 2021 meeting.

IV. Discussion and Consideration of the January 2022 Pharmacist Well-Being Index State report

In 2020, the Journal of the American Pharmacists Association published research, "Ability of the Well-Bing Index to Identify Pharmacists in Distress." Key findings included that burnout, extreme fatigue, and poor quality of life were comment among a diverse sample of U.S.

pharmacists. Further, the Well-Being Index effectively identified pharmacists at increased risk of distress, concern for having made a major medication error, and intent to leave a current job.

Use of the Well-Being Index is ongoing. Recently NABP, in collaboration with the American Pharmacists Association (APhA) is making monthly reports available to state boards of pharmacy in support of efforts to address the public health issue of pharmacy personnel well-being.

The Well-being Index is a research-validated on-line tool invented by the Mayo Clinic and consists of a 9-question assessment with additional optional questions. As included in the reported information, pharmacists identified as being at a risk of high distress are, among other things, at a 2-fold higher risk of medication errors.

During the meeting members will have the opportunity to discuss the report.

Attachment 2 includes a copy of the recently provided report and related research.

V. Discussion and Consideration of Institute for Safe Medication Practices, Including Resources Available

The Institute for Safe Medication Practices (ISMP) is a nonprofit organization devoted entirely to preventing medication errors. ISMP offers numerous resources that cover a variety of medication safety topics. Pharmacists can use these free materials to identify weaknesses in the medication-use process.

One such resource is the ISMP Medication Safety Self Assessment for Community/Ambulatory Pharmacy. ISMP notes that this tool is designed to help organizations assess the safety of current medication practices and proactively identify opportunities for improvement.

ISMP also provides an error reporting system that allows healthcare practitioners and consumers to report medication and vaccine errors to ISMP with the hope that future errors and patient harm will be prevented. As reported on its website, ISMP rely on the details provided in reports to identify the causes and contributing factors of the event. The information learned is then shared with the healthcare community through a variety of means with serious issues resulting in a National Alert Network (NAN) alert. The Board recently released information and posted a link to an NAN alert Age-Related COVID-19 Mix-Ups.

During the meeting members will receive a presentation from Dr. Rita K. Jew, President, and Dr. Michael J. Gaunt, Medication Safety Analyst, ISMP about the organization and resources it provides.

Attachment 3 includes a copy of the ISMP Medication Safety Self Assessment for Community/Ambulatory Pharmacy.

VI. Discussion and Consideration of Sample Case Investigations Involving Medication Errors

Medication errors complaints are among the most common consumer complaints received by the Board. In fiscal year 2020/21 the board initiated 521 investigations with allegation of a prescription error with 367 indicating patient harm. In the first six months of this fiscal year the board has initiated 282 prescription error investigations, with 190 indicating patient harm. Medication errors vary in severity including serious patient harm and death.

Investigations of medication error can result in a variety of outcomes depending of specific facts of each investigation. Medication error violations are the number one citation violation issued for pharmacies and pharmacists.

As part of the investigation process, the inspectors request information to determine if alleged violations occur. It is not uncommon for staff to review operational issues including system issues and staffing as part of the investigation. During the meeting members will receive information on sample case investigations involving medication errors. These sample case investigations may provide education to attendees about factors that could contribute to medication errors.

VII. Discussion and Consideration of Next Steps for the Committee

It is recommended that during the meeting members provide direction to staff on the next steps.

VIII. Future Committee Meeting Dates

- April 20, 2022
- July 13, 2022
- September 14, 2022

IX. Adjournment

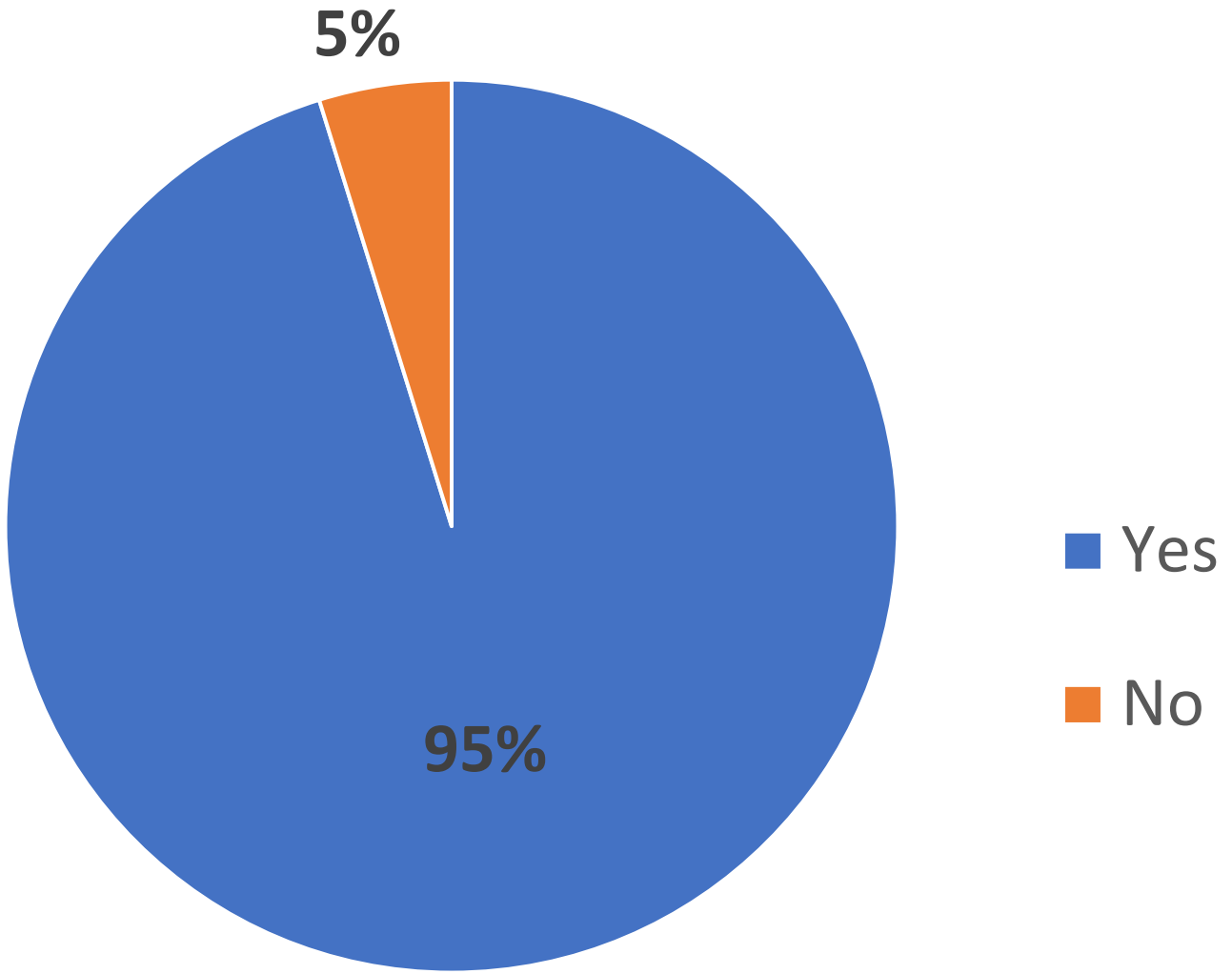
Attachment 1
Workforce Survey

Workforce Survey

CA Board of Pharmacy

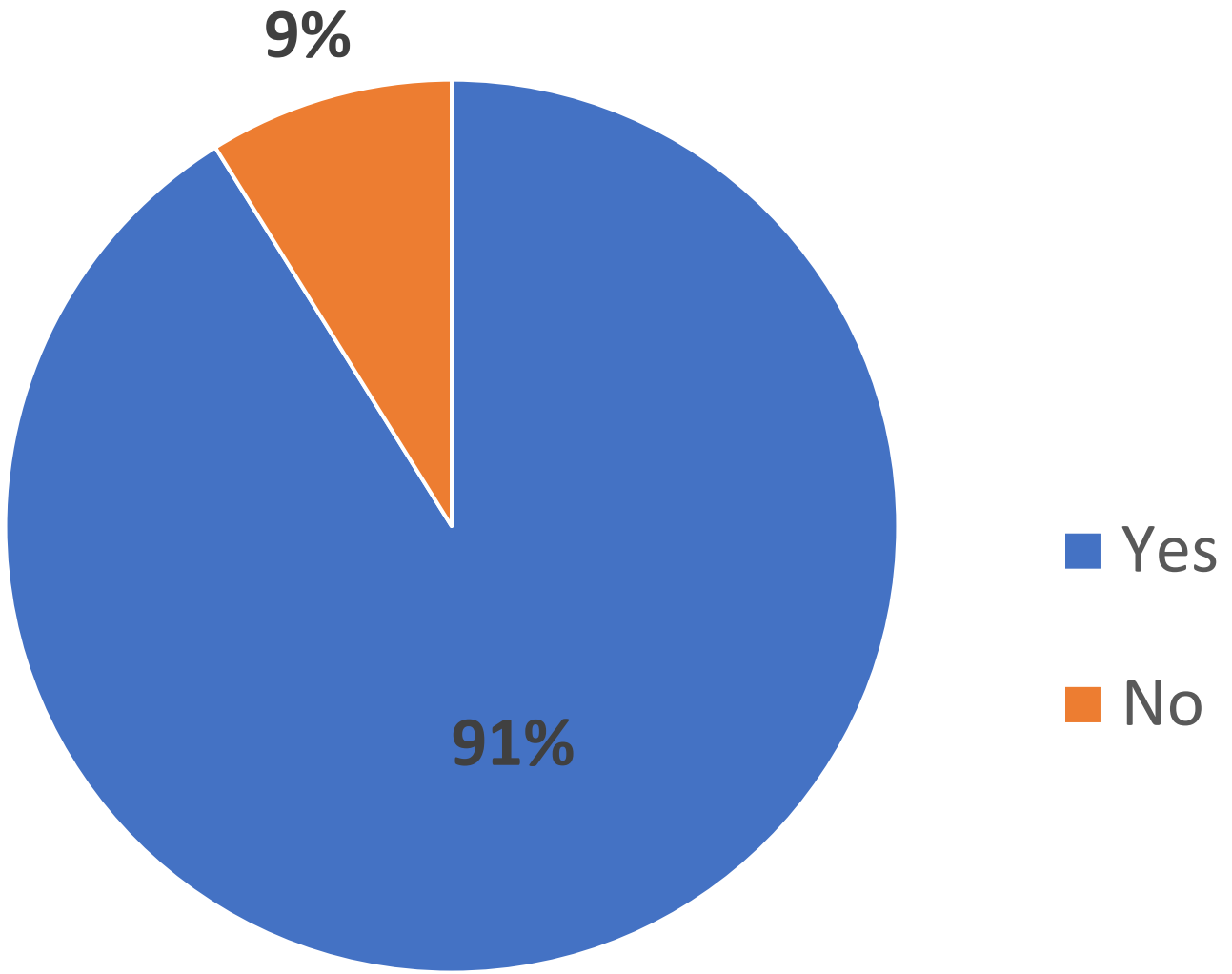
Department of Consumer Affairs

Q1 Are you currently licensed as a pharmacist in CA?



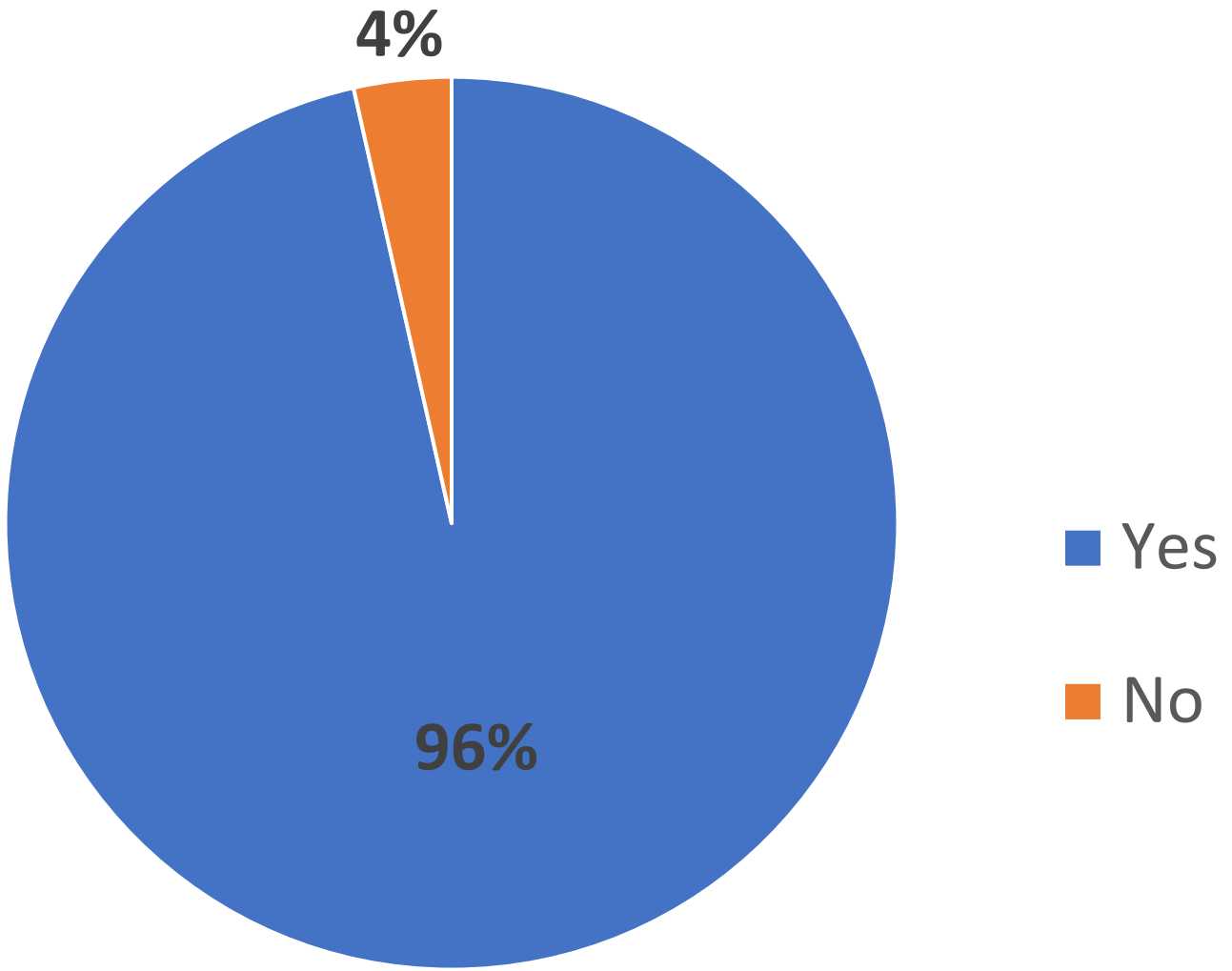
Total Respondents: 4,253/4,270

Q2 Are you actively practicing as a pharmacist in CA?



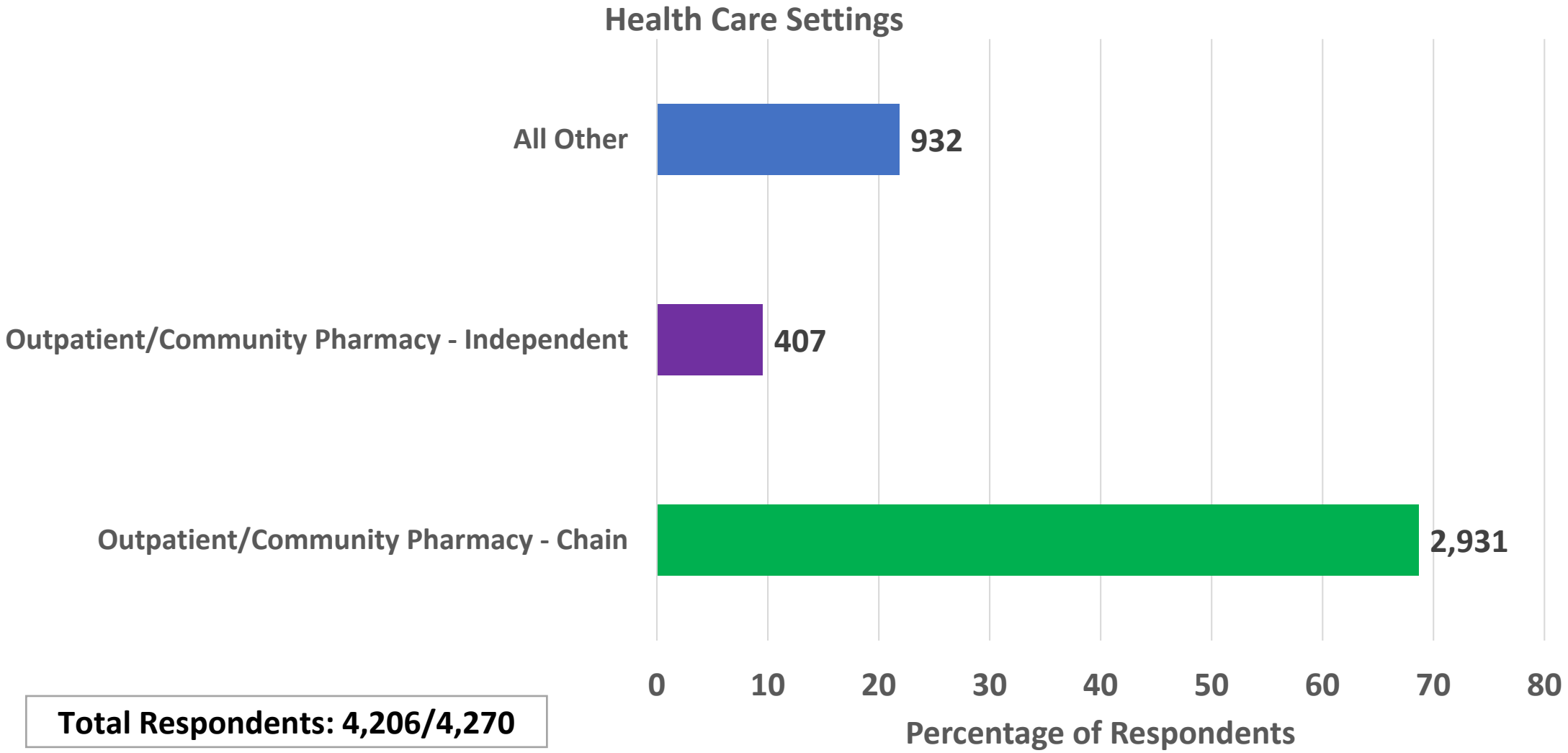
Total Respondents: 4,247/4,270

Q3 Is your primary practice setting located in CA?



Total Respondents: 4,245/4,270

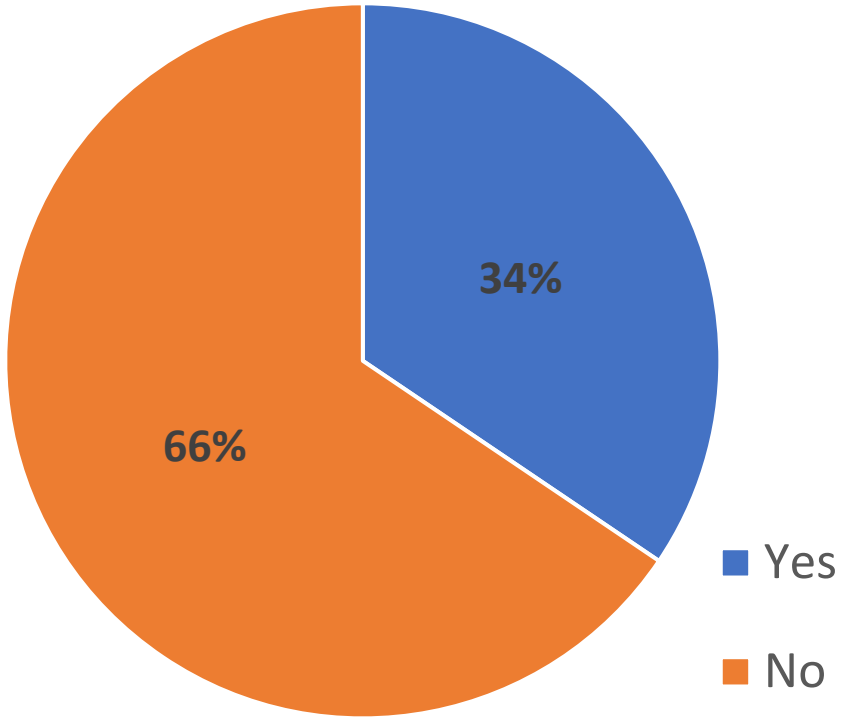
Q4 Which of the following best describes your primary practice setting?



Total Respondents: 4,206/4,270

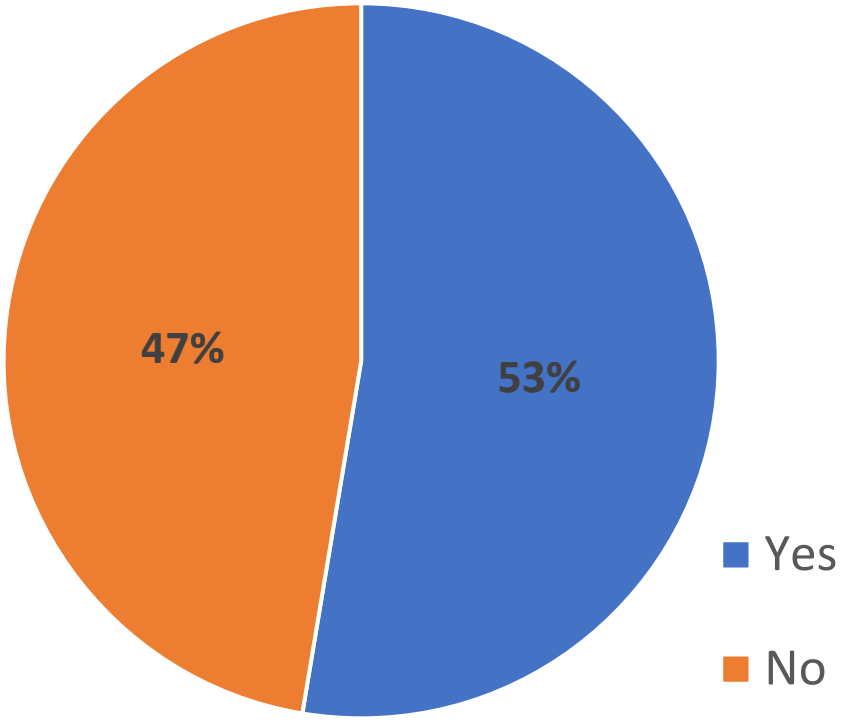
Q5 Are you the designated pharmacist-in-charge (PIC)?

Community Chain Pharmacy



Total Respondents: 2,699

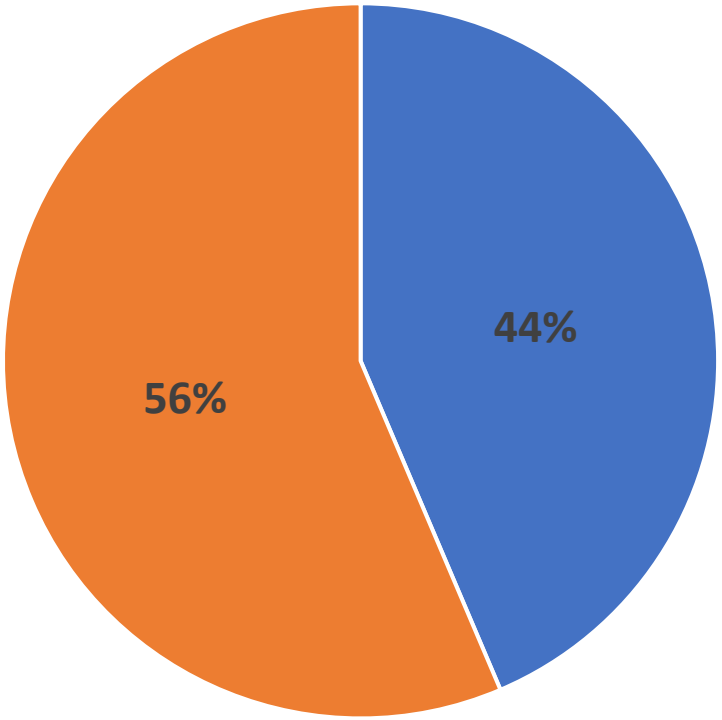
Community Independent Pharmacy



Total Respondents: 361

Q6 As the designated PIC, do you feel you have sufficient autonomy and power to fulfill the necessary requirements?

Community Chain Pharmacy

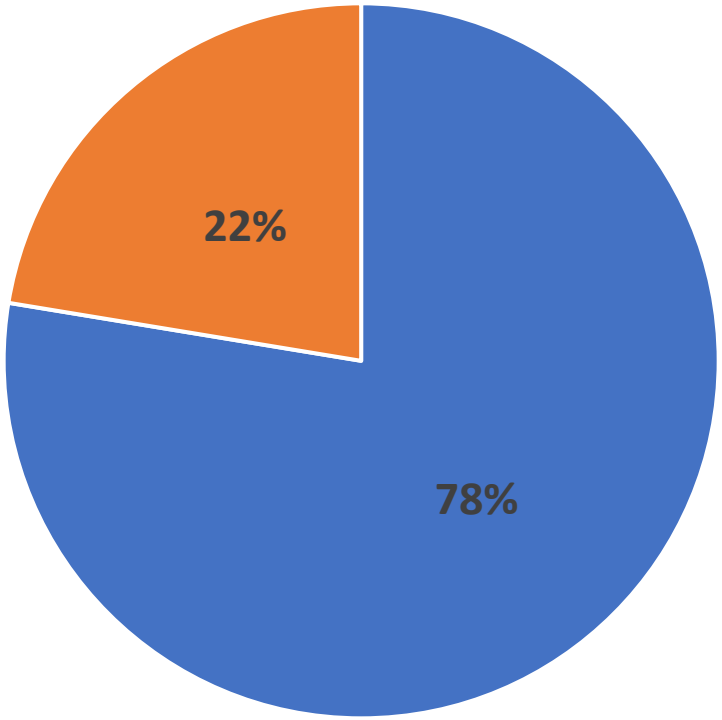


Total Respondents: 883

Yes

No

Community Independent Pharmacy

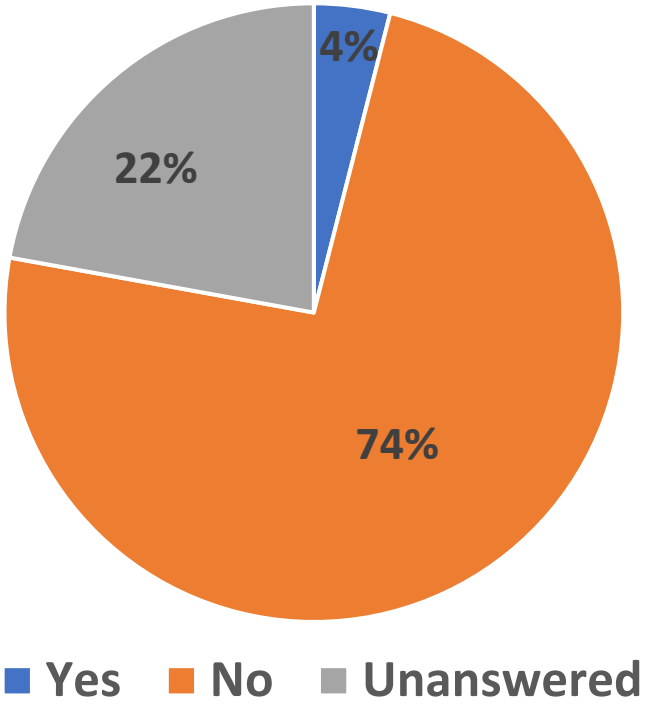


Total Respondents: 182

Q8 Do you work at multiple worksites for a single employer or through a relief agency?

Community Chain Pharmacy

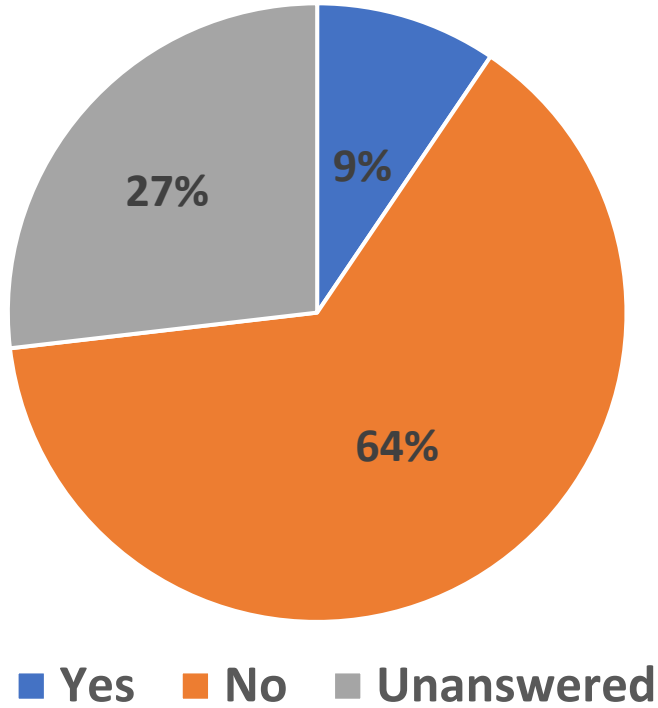
Only answers by PIC are shown



Total Respondents: 930

Community Independent Pharmacy

Only answers by PIC are shown

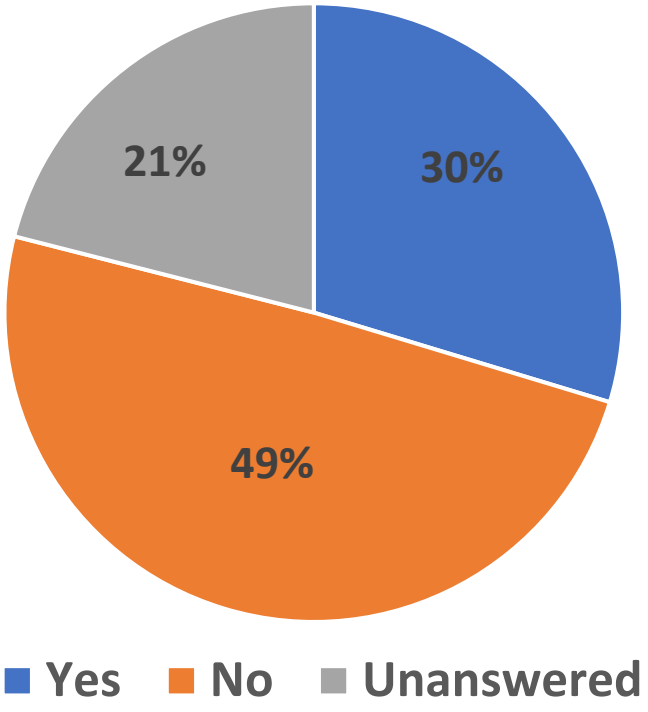


Total Respondents: 190

Q8 Do you work at multiple worksites for a single employer or through a relief agency?

Community Chain Pharmacy

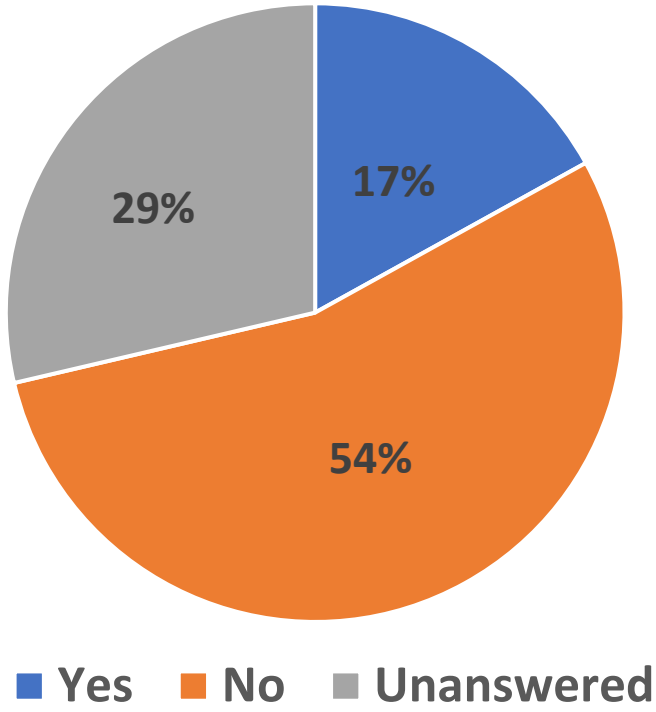
Only answers by non-PIC are shown



Total Respondents: 1,769

Community Independent Pharmacy

Only answers by non-PIC are shown



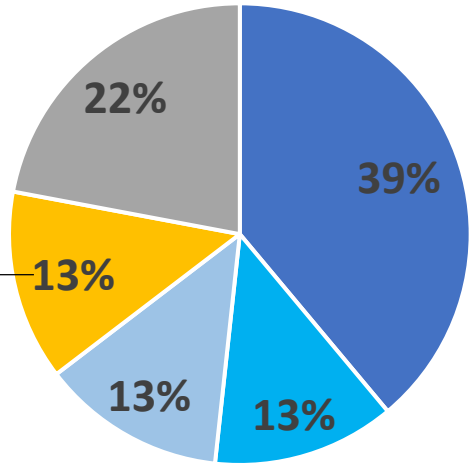
Total Respondents: 171

Q10 How long is a typical work shift at your primary work site?

Community Chain Pharmacy

Only answers by PIC are shown

119 of 124 respondents indicated their shifts vary between 4 and 12 hours.
5 of 124 respondents indicated they work more than 12-hour shifts and/or they work “off the clock” for multiple hours outside of their regular shift.



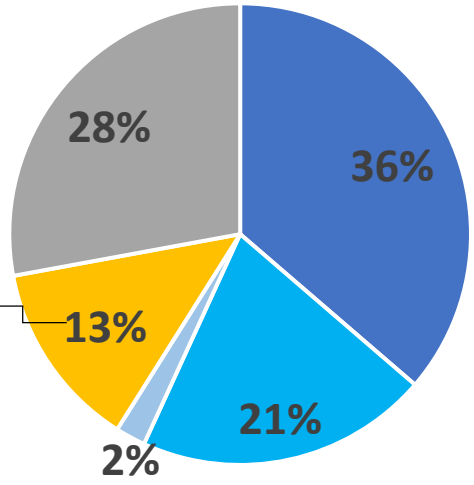
8 hours
10 hours
12 hours
Other
Unanswered

Total Respondents: 930

Community Independent Pharmacy

Only answers by PIC are shown

24 of 25 respondents indicated their shifts vary between 4 and 12 hours.
1 of 25 respondents declined to state.



8 hours
10 hours
12 hours
Other
Unanswered

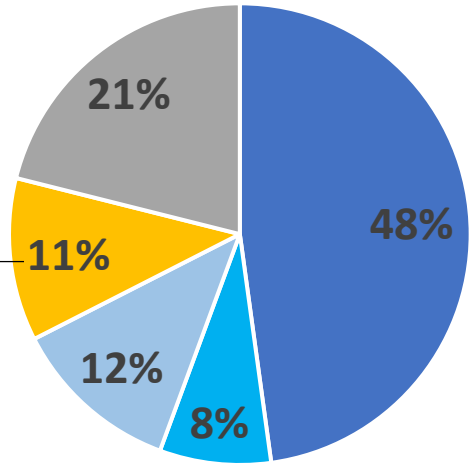
Total Respondents: 190

Q10 How long is a typical work shift at your primary work site?

Community Chain Pharmacy

Only answers by non-PIC are shown

198 of 202 respondents indicated their shifts vary between 4 and 12 hours. 4 of 202 respondents indicated they work more than 12-hour shifts and/or they work "off the clock" for multiple hours outside of their regular shift.



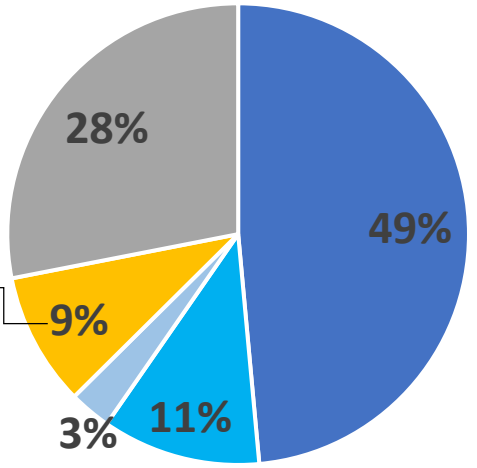
8 hours | 10 hours | 12 hours | Other | Unanswered

Total Respondents: 1,769

Community Independent Pharmacy

Only answers by non-PIC are shown

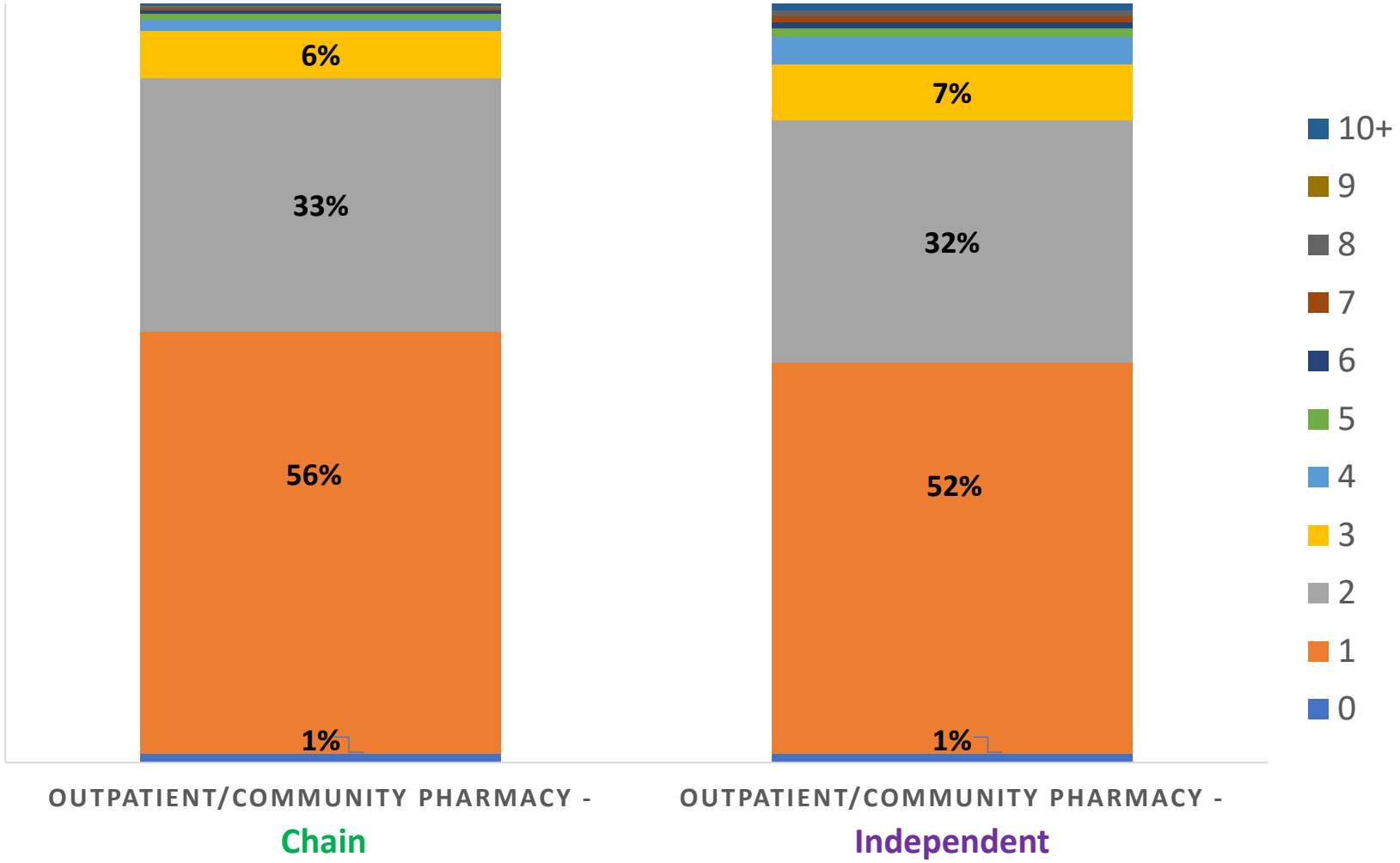
16 of 16 respondents indicated their shifts vary between 4 and 12 hours.



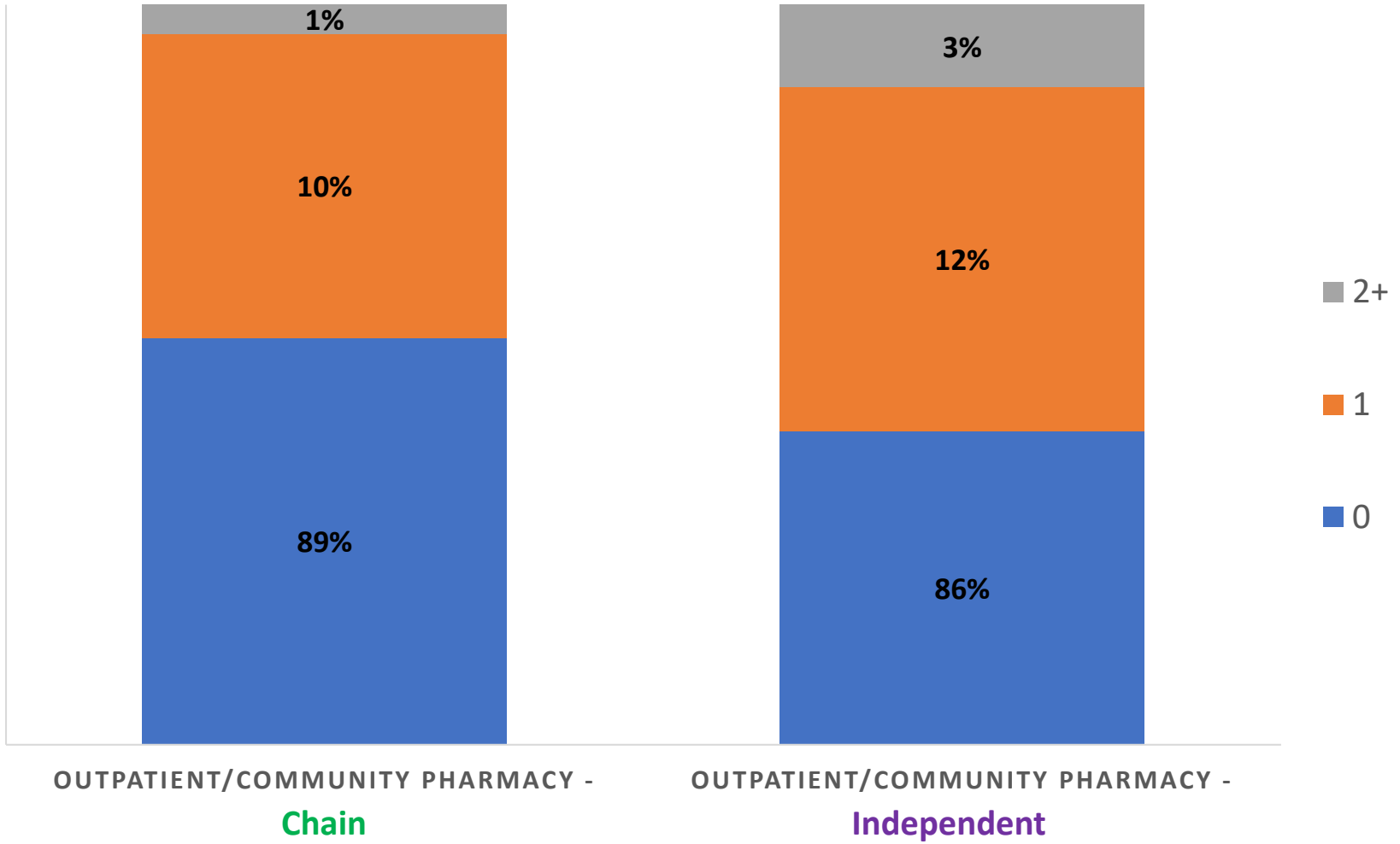
8 hours | 10 hours | 12 hours | Other | Unanswered

Total Respondents: 171

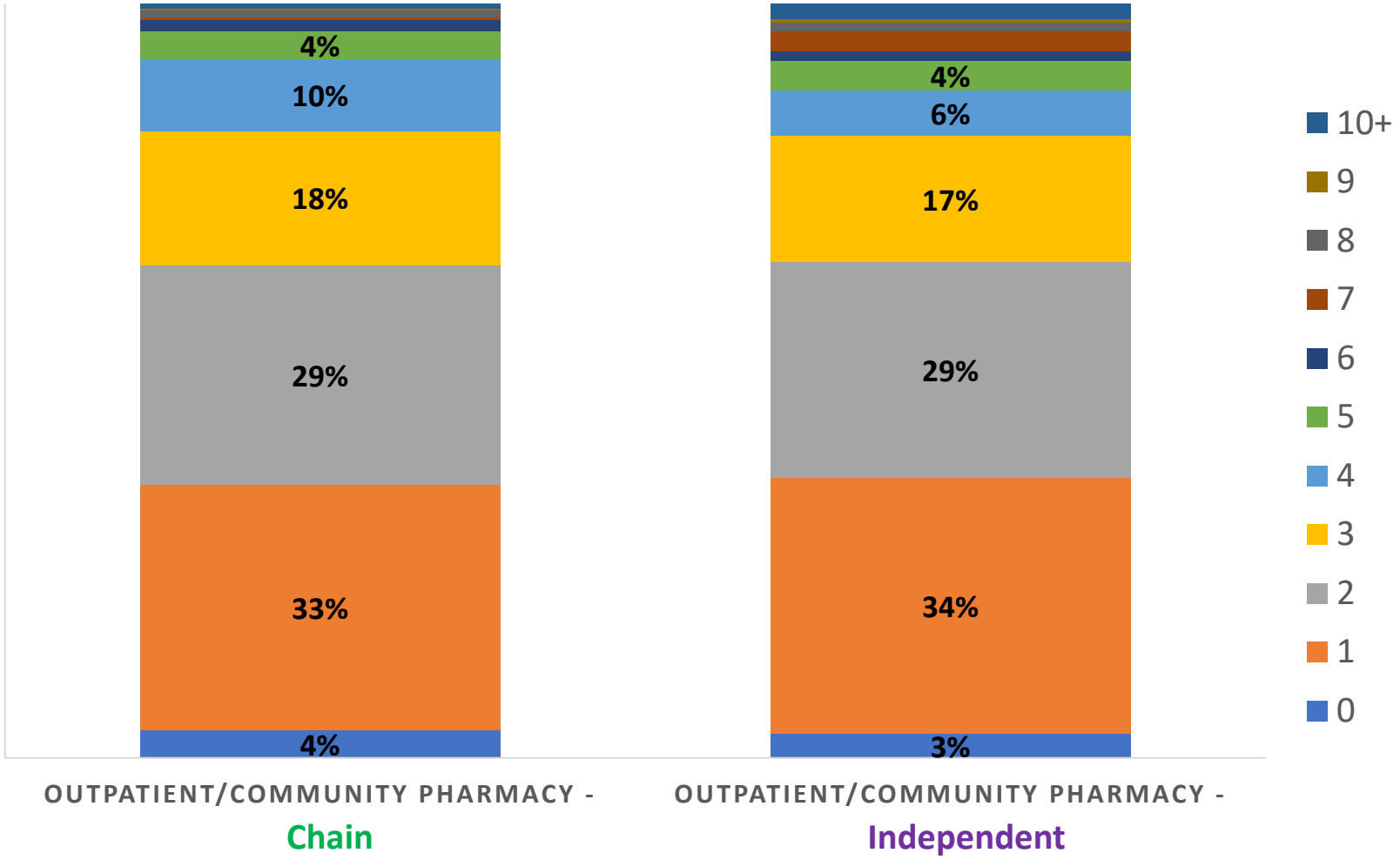
Q11 Provide the number of **pharmacists** that work during a typical shift.



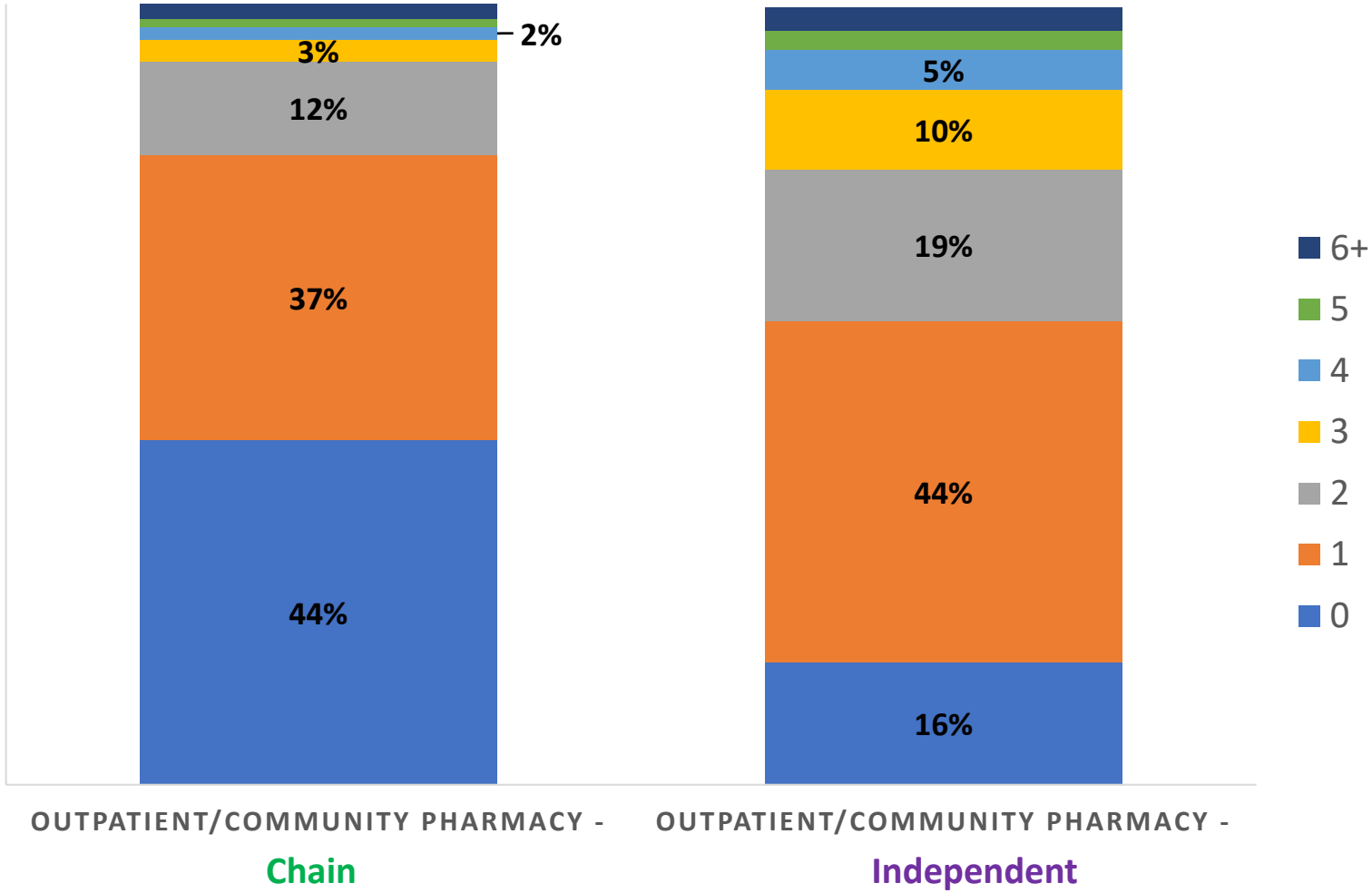
Q11 Provide the number of **interns** that work during a typical shift.



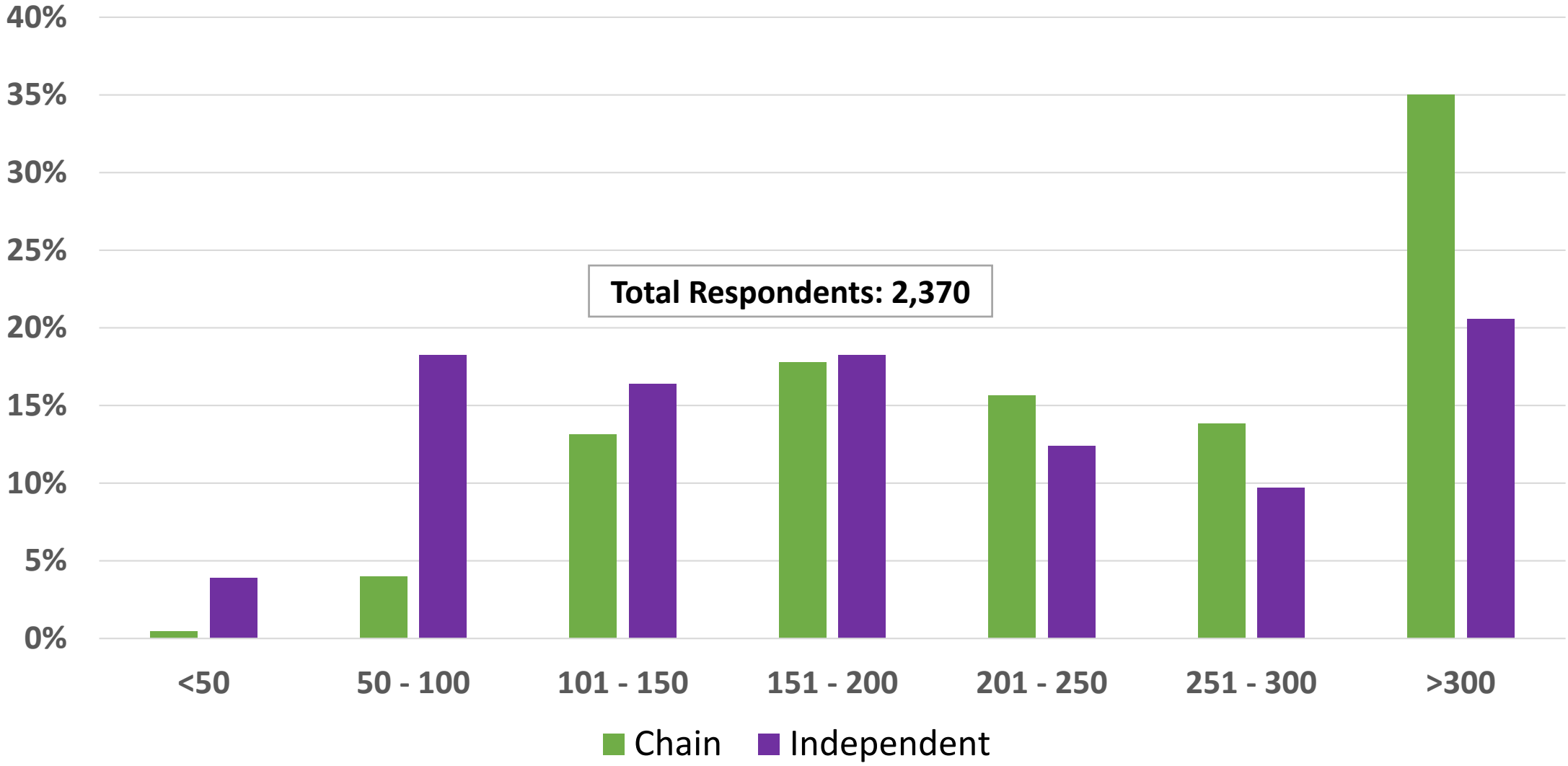
Q11 Provide the number of **pharmacy technicians** that work during a typical shift.



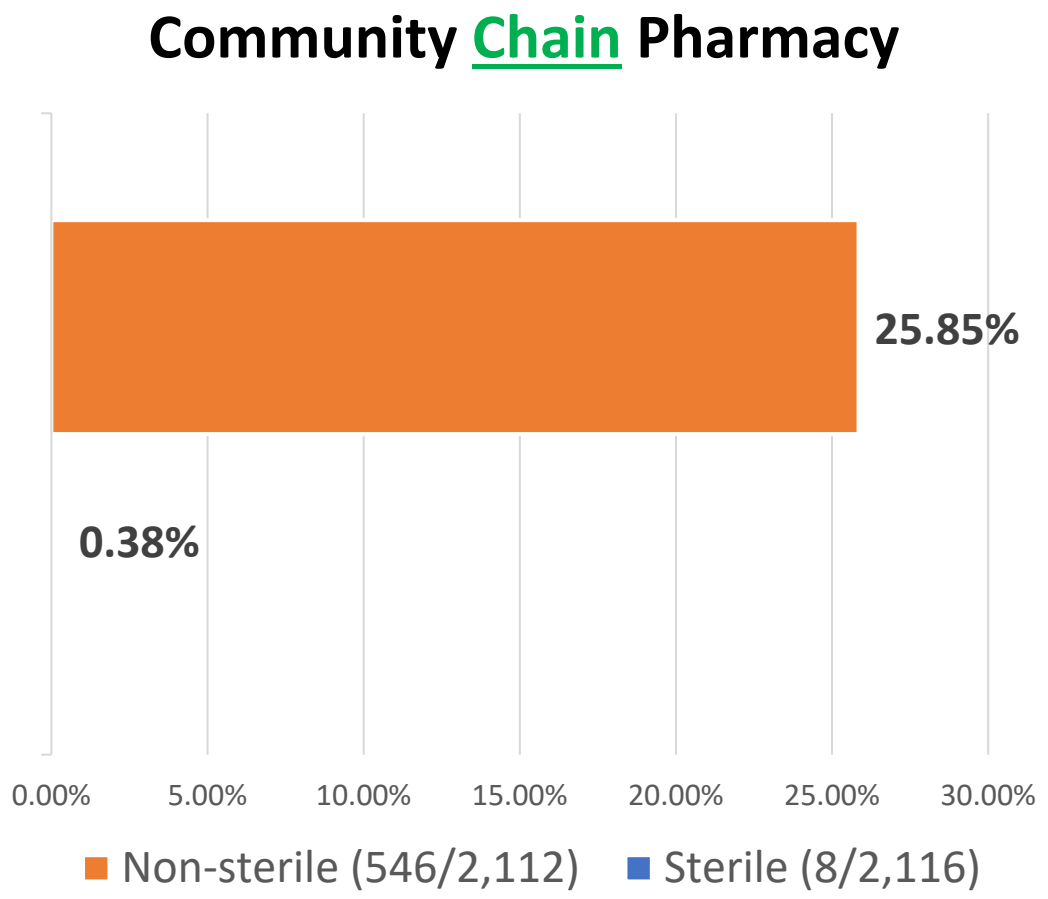
Q11 Provide the number of **unlicensed clerks/typists** that work during a typical shift.

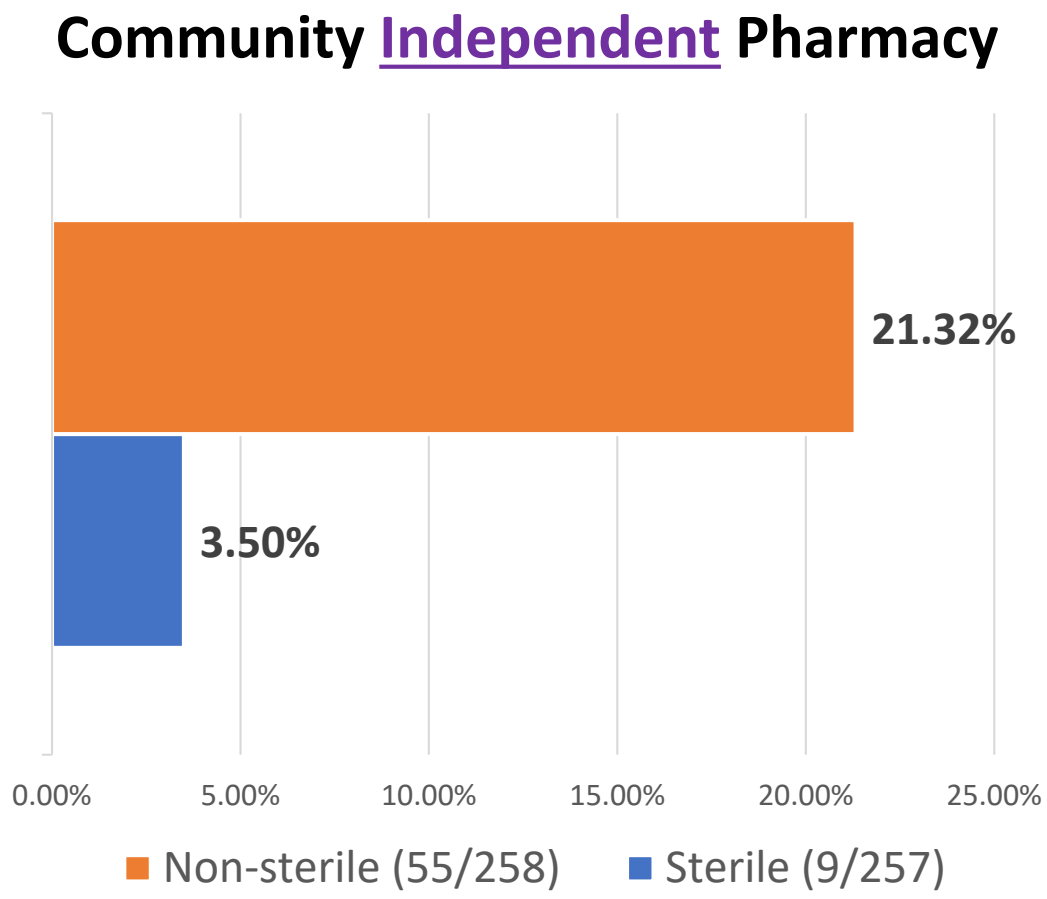


Q12 What is the average prescription volume during a typical shift?



Q13-14 Does your primary worksite perform sterile or non-sterile compounding?

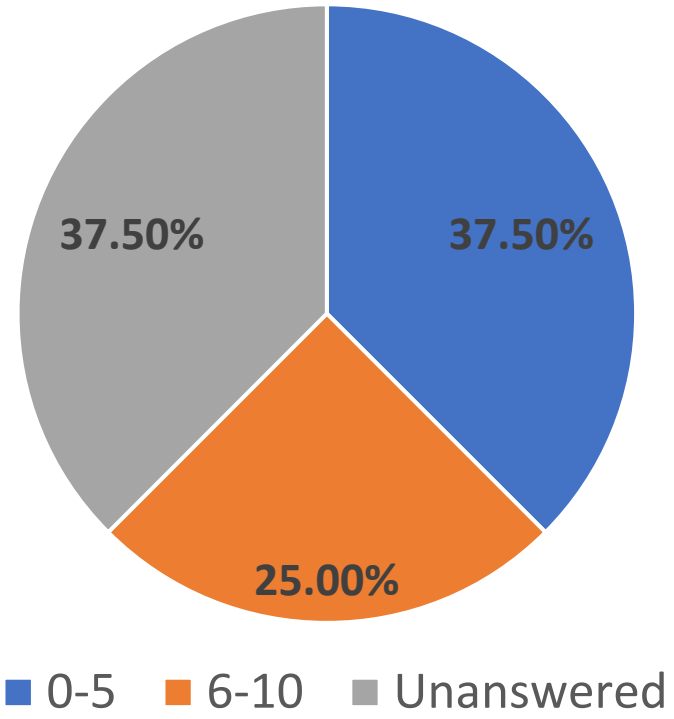




Q13-14 If yes, what is the average number prepared in a typical shift?

Community Chain Pharmacy

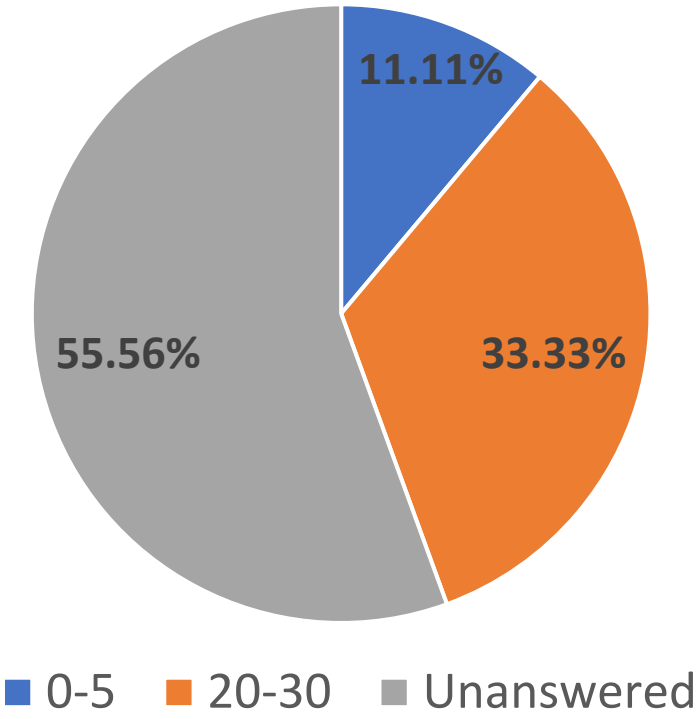
Sterile Compounding



Total Respondents: 8

Community Independent Pharmacy

Sterile Compounding

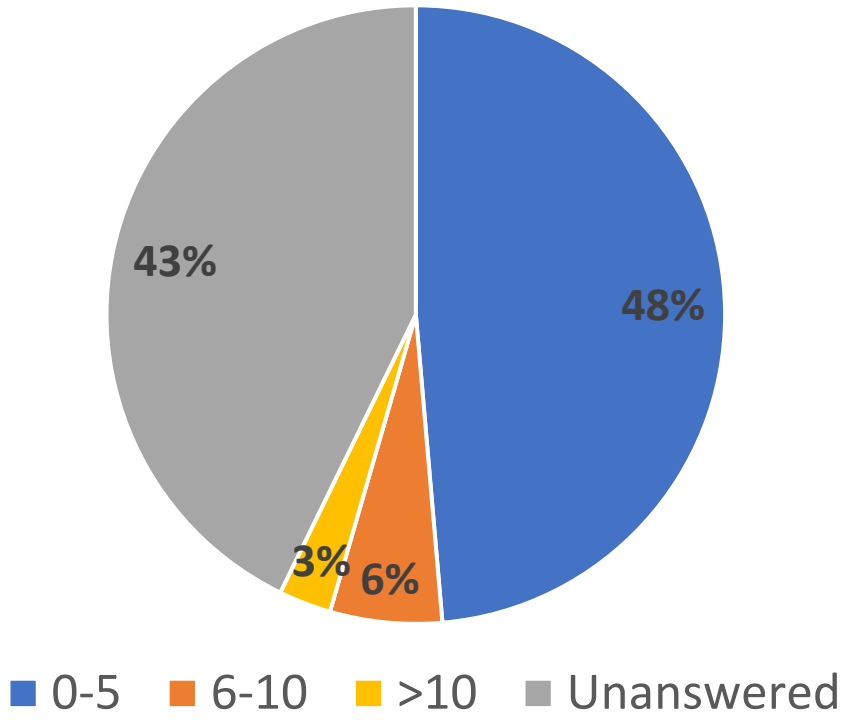


Total Respondents: 9

Q13-14 If yes, what is the average number prepared in a typical shift?

Community Chain Pharmacy

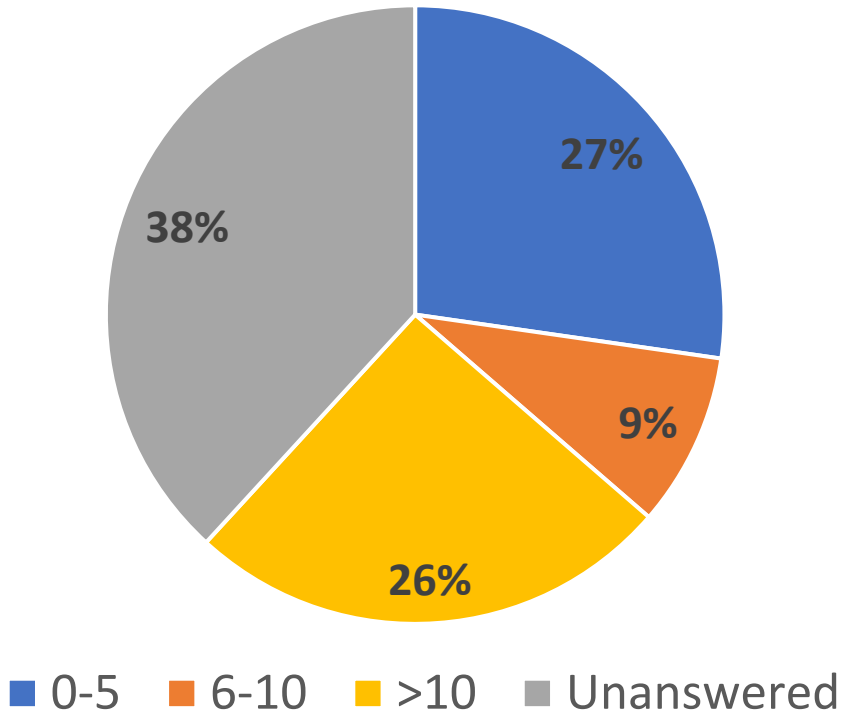
Non-sterile Compounding



Total Respondents: 546

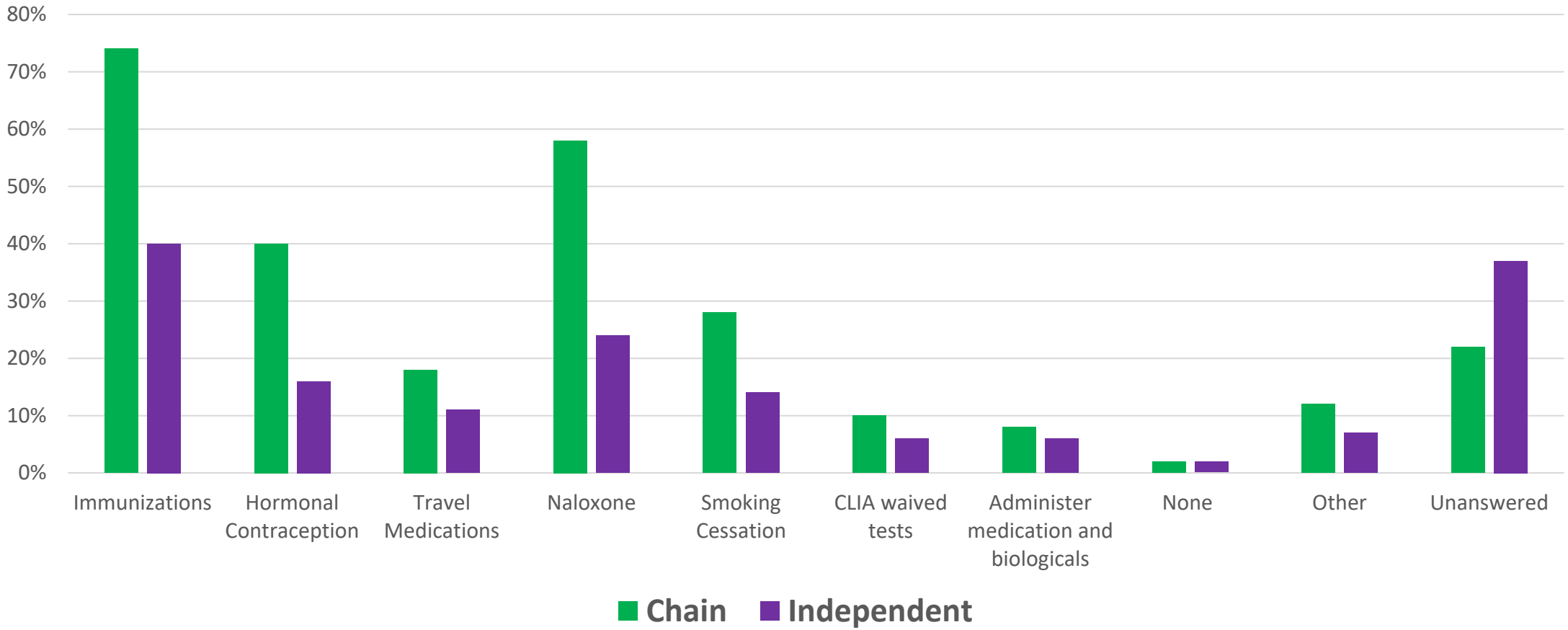
Community Independent Pharmacy

Non-sterile Compounding



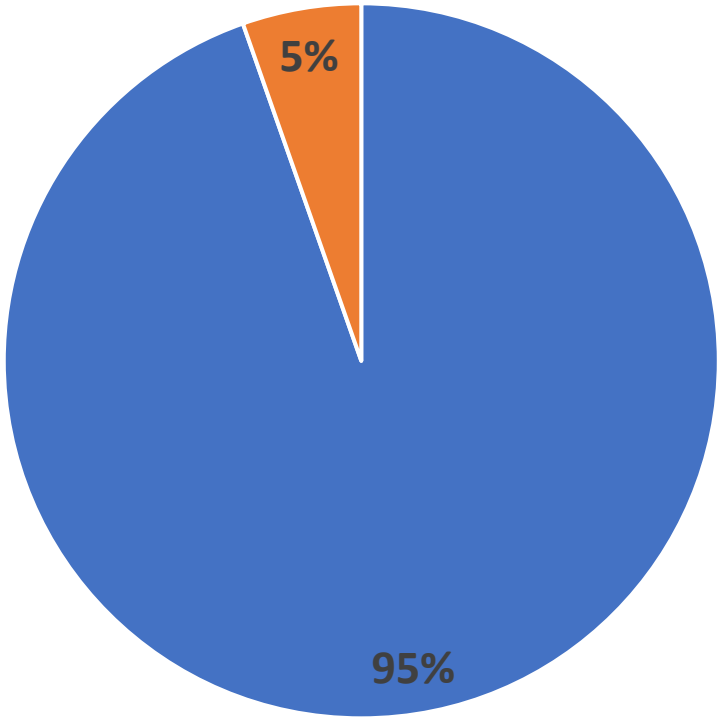
Total Respondents: 55

Q15 Which of the following services are provided at your primary worksite?



Q16 As a pharmacist, are you required to perform these services?

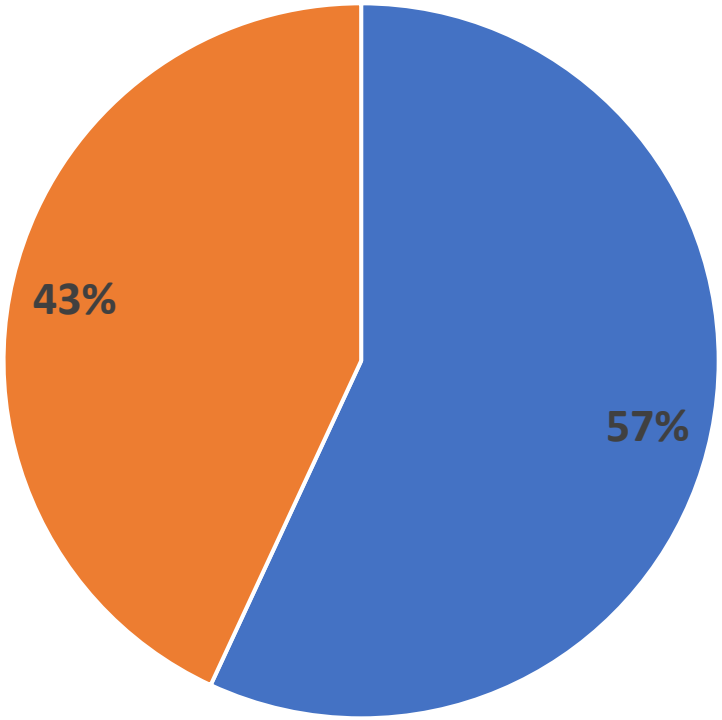
Community Chain Pharmacy



Total Respondents: 2,103

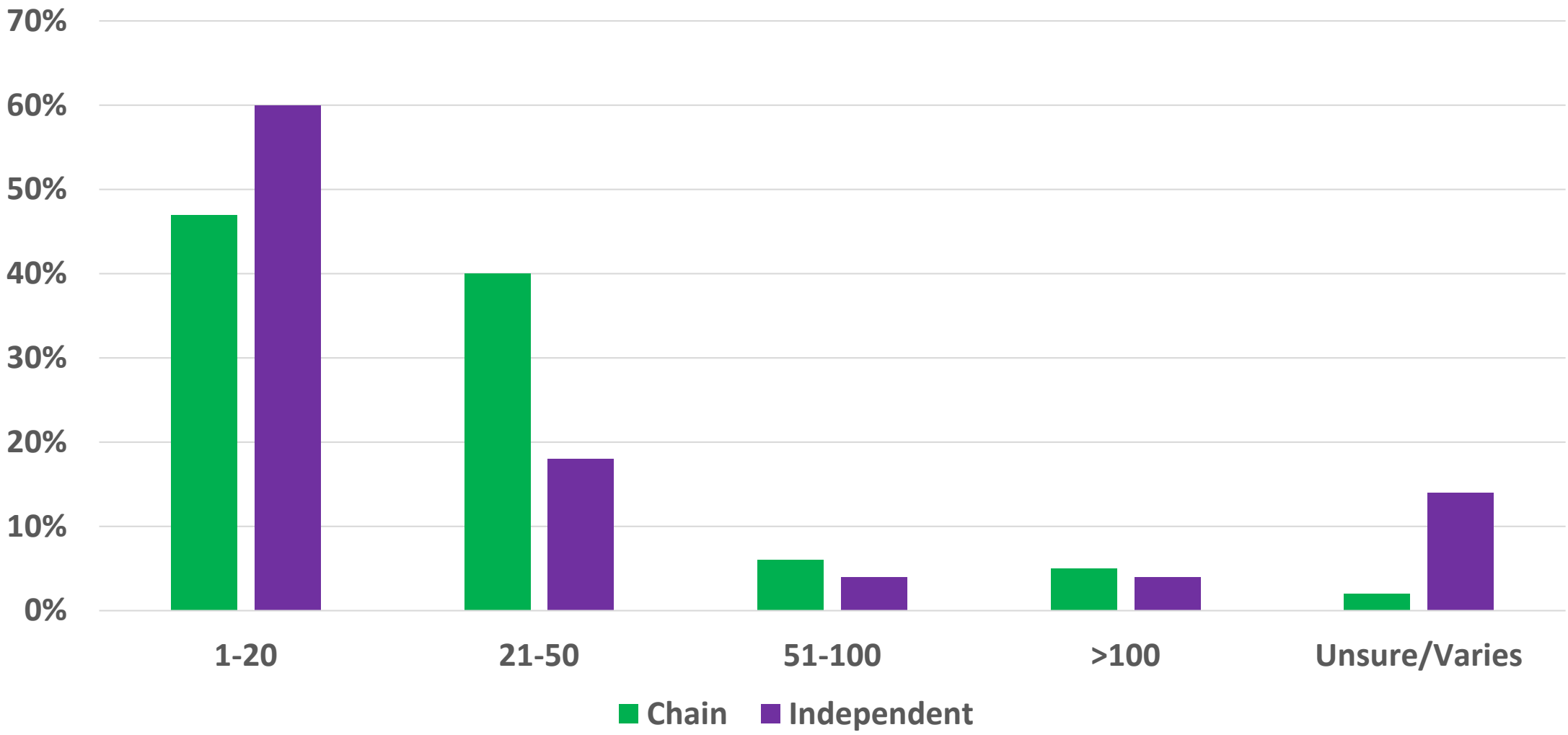
Yes
No

Community Independent Pharmacy



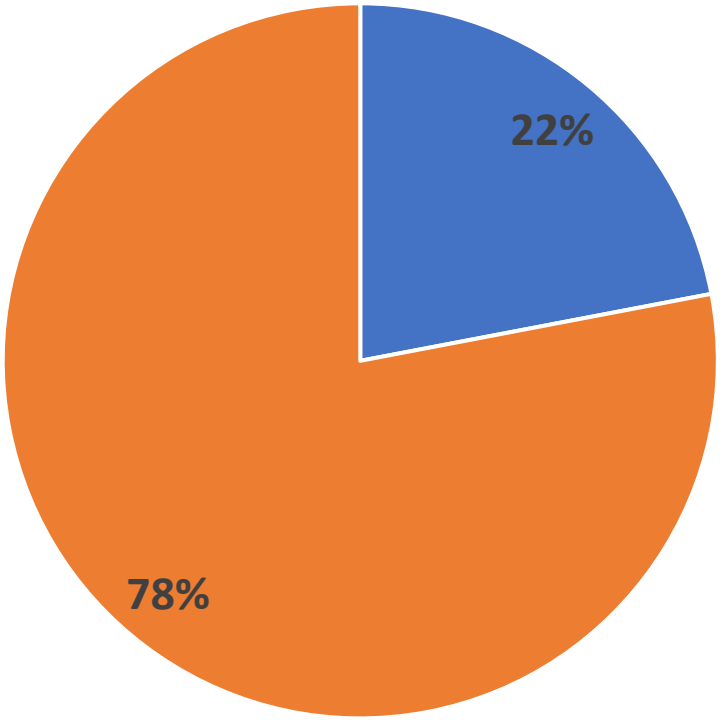
Total Respondents: 253

Q17 Indicate the average number of immunizations administered in a typical work shift.



Q18 Do you believe you have sufficient time to provide adequate screening prior to the administration of immunization?

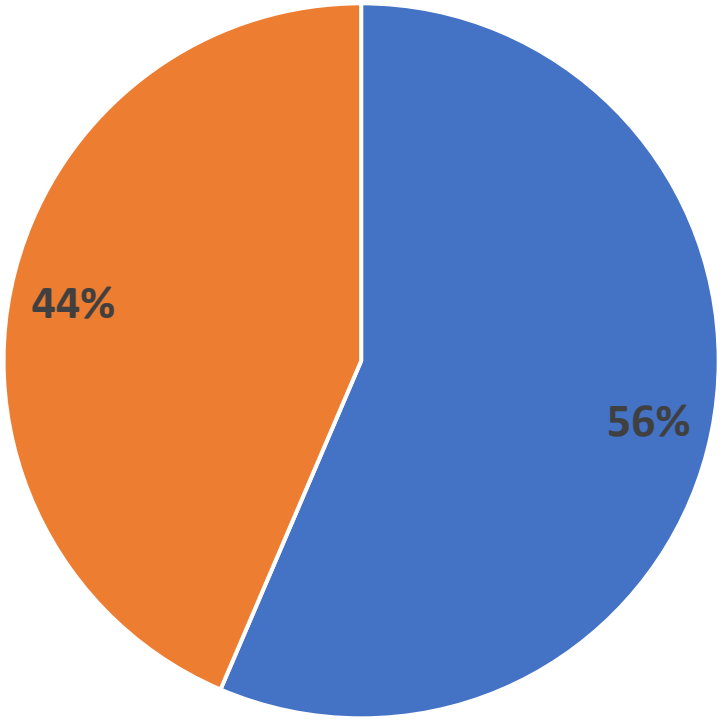
Community Chain Pharmacy



Total Respondents: 2,024

Yes
No

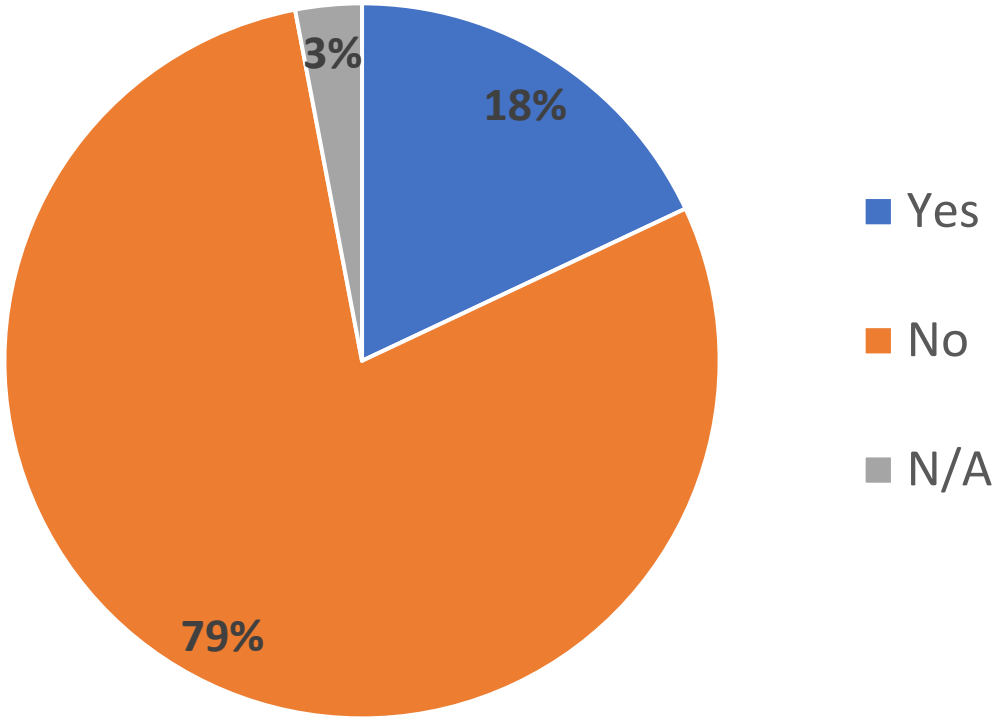
Community Independent Pharmacy



Total Respondents: 164

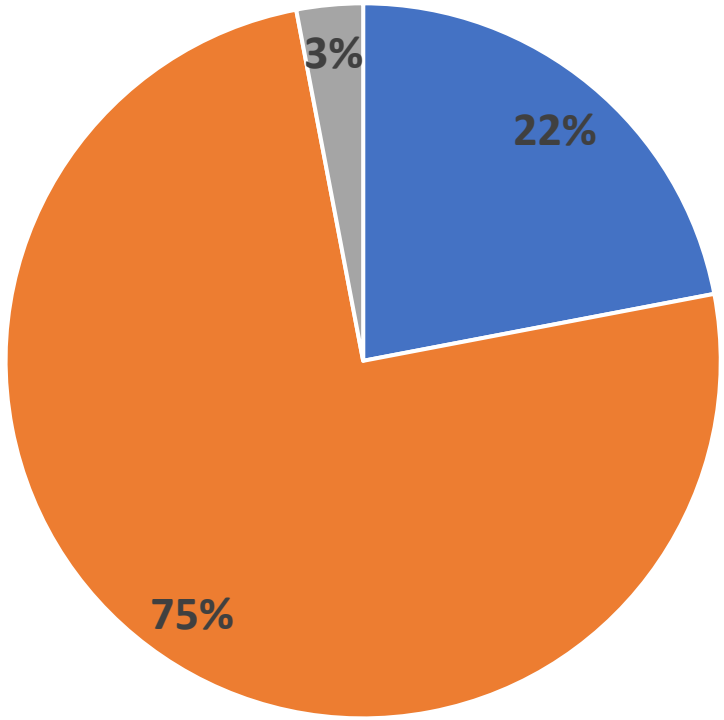
Q19 Does your primary worksite use an automated drug delivery system?

Community Chain Pharmacy



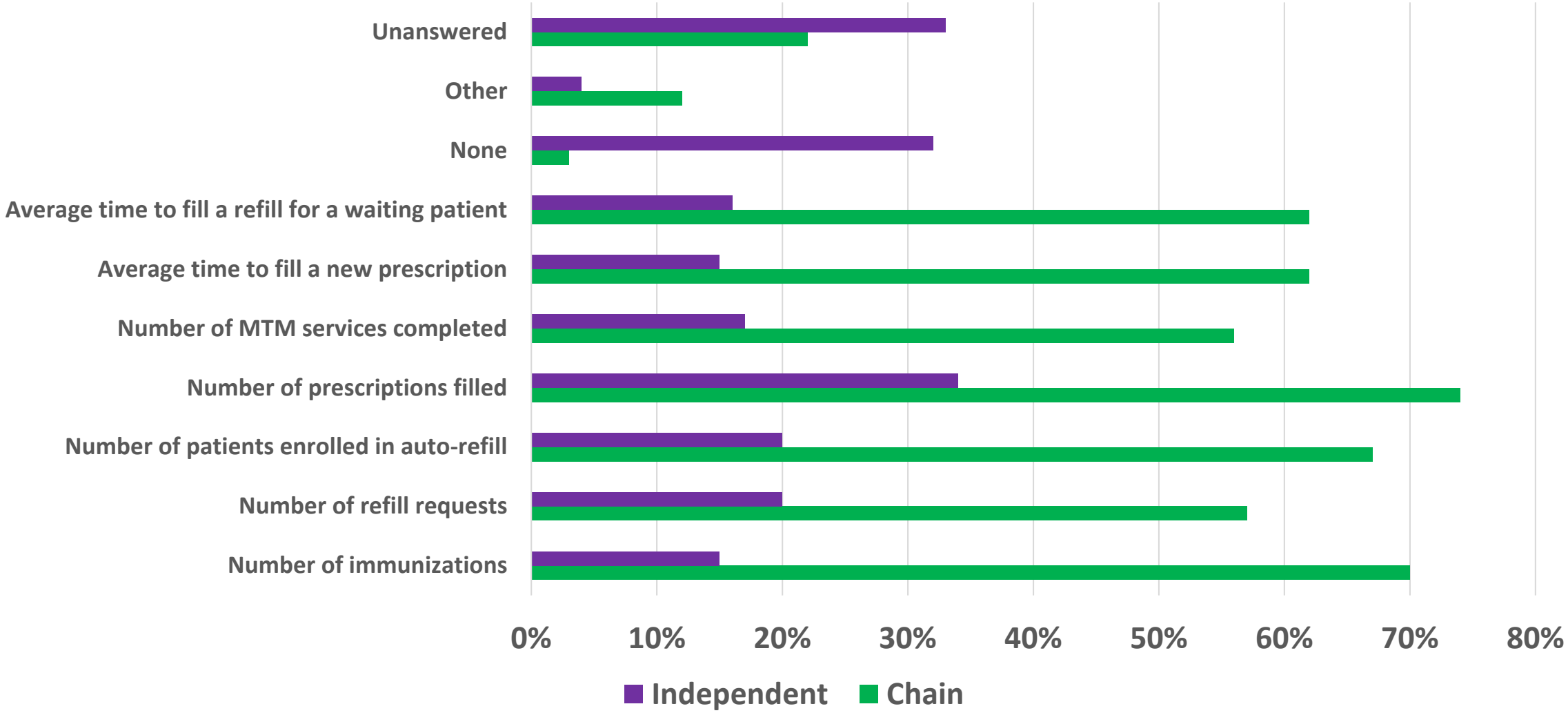
Total Respondents: 2,109

Community Independent Pharmacy



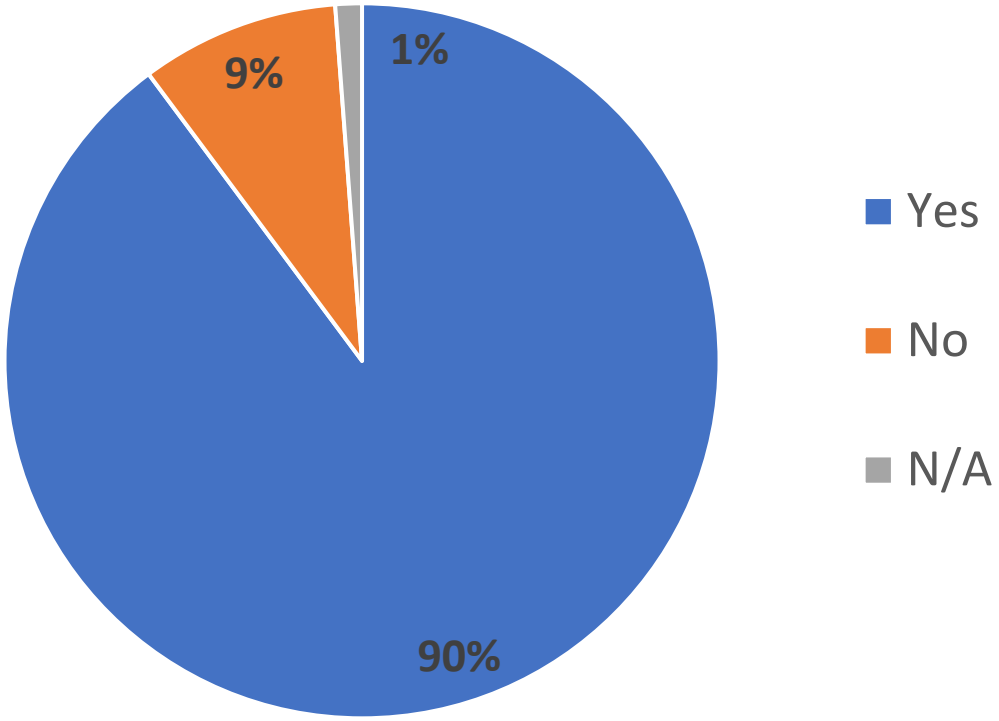
Total Respondents: 254

Q20 Does your primary worksite employer use workload metrics in the following areas?



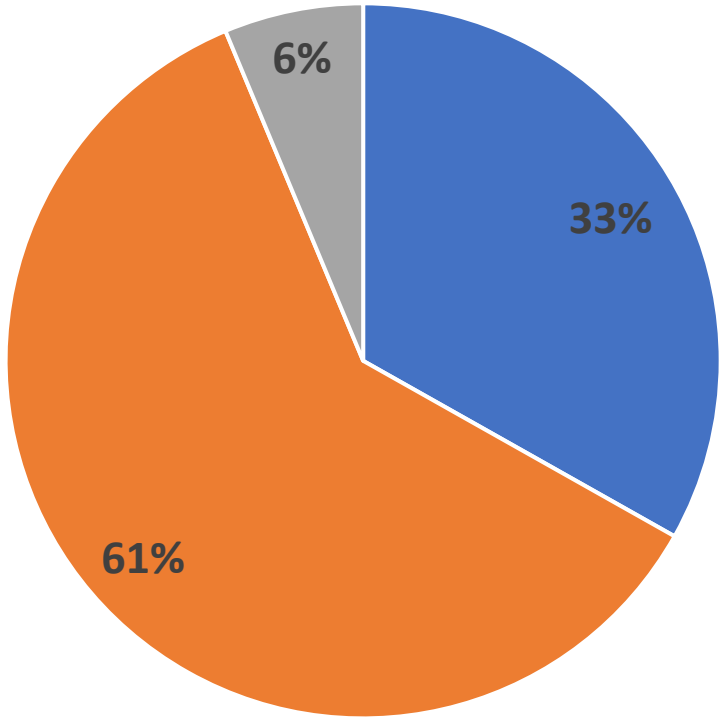
Q21 Does your primary worksite have a work queue that monitors the wait time for a prescription?

Community Chain Pharmacy



Total Respondents: 2,104

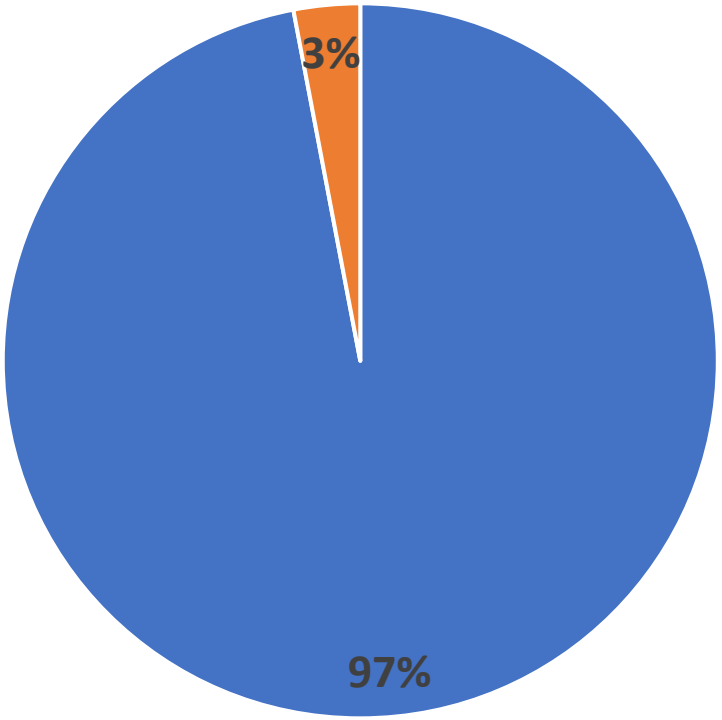
Community Independent Pharmacy



Total Respondents: 256

Q22 Does your employer require non-dispensing related duties?

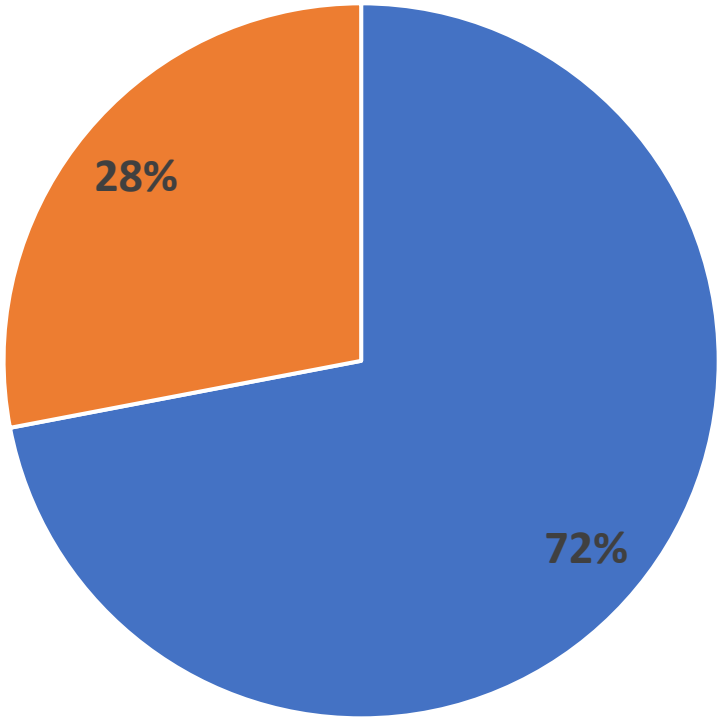
Community Chain Pharmacy



Total Respondents: 2,111

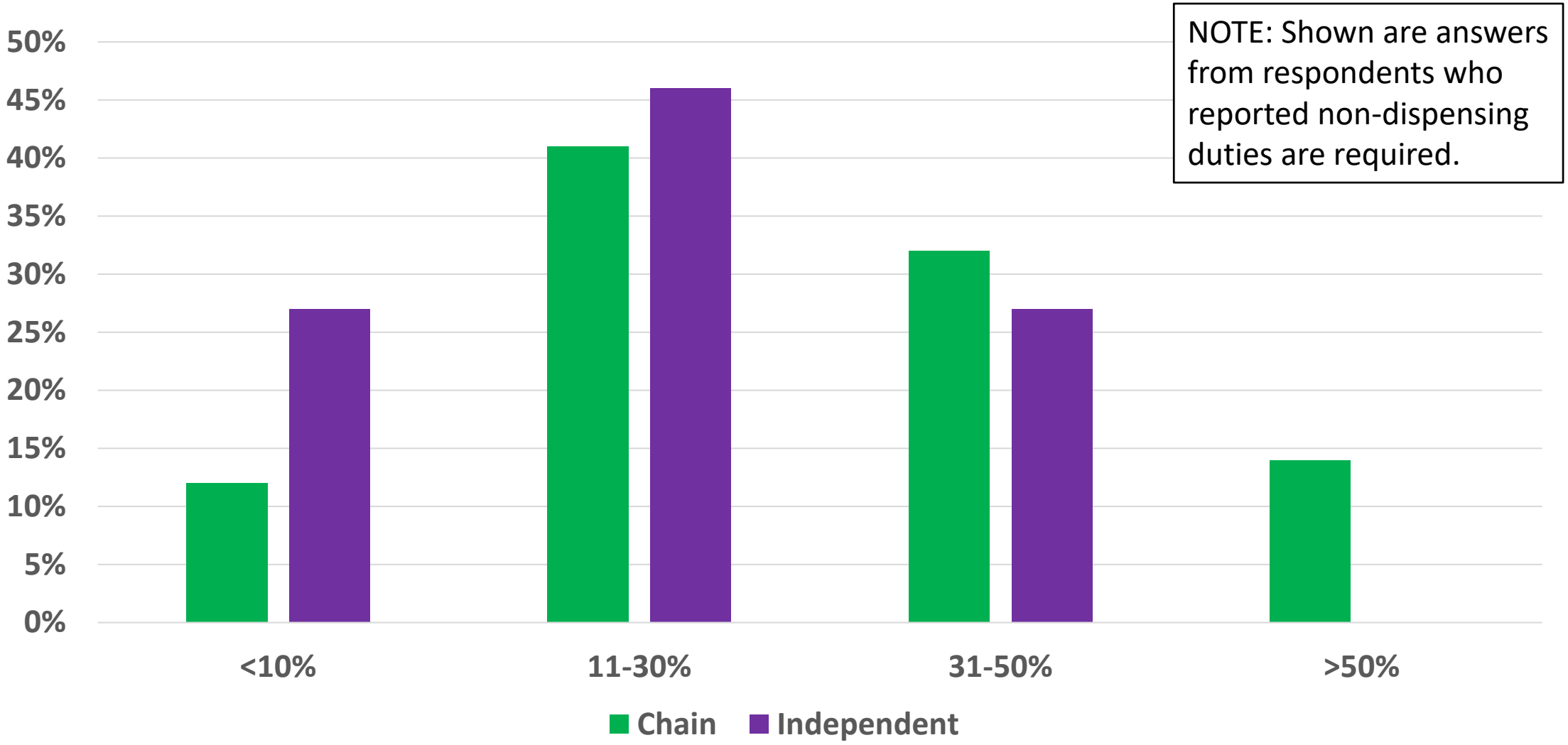
Yes
No

Community Independent Pharmacy



Total Respondents: 257

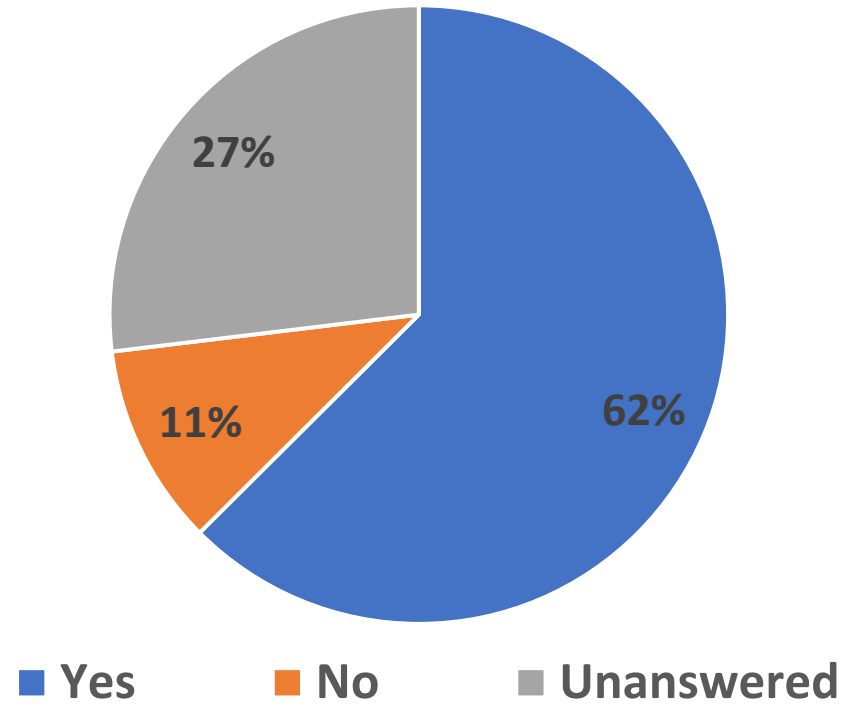
Q22 On average, what percentage of your time is spent on non-dispensing duties?



Q23 Are medication errors appropriately documented and evaluated consistently with the Board's quality assurance requirements?

Community Chain Pharmacy

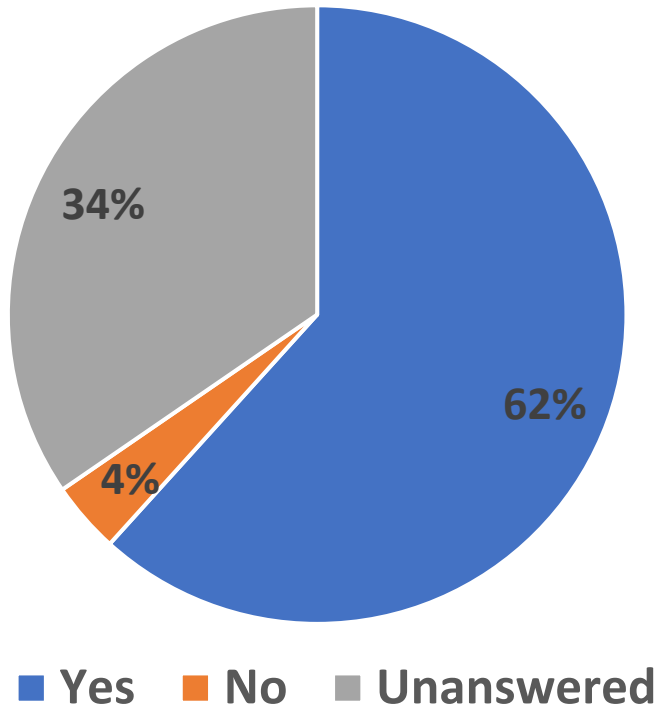
Only answers by PIC are shown



Total Respondents: 930

Community Independent Pharmacy

Only answers by PIC are shown

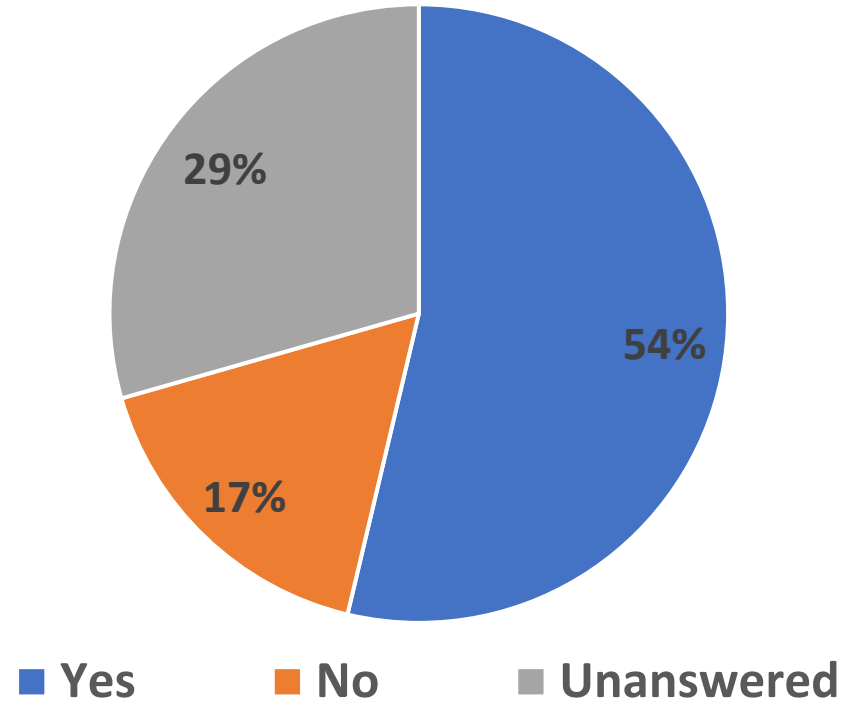


Total Respondents: 190

Q23 Are medication errors appropriately documented and evaluated consistently with the Board's quality assurance requirements?

Community Chain Pharmacy

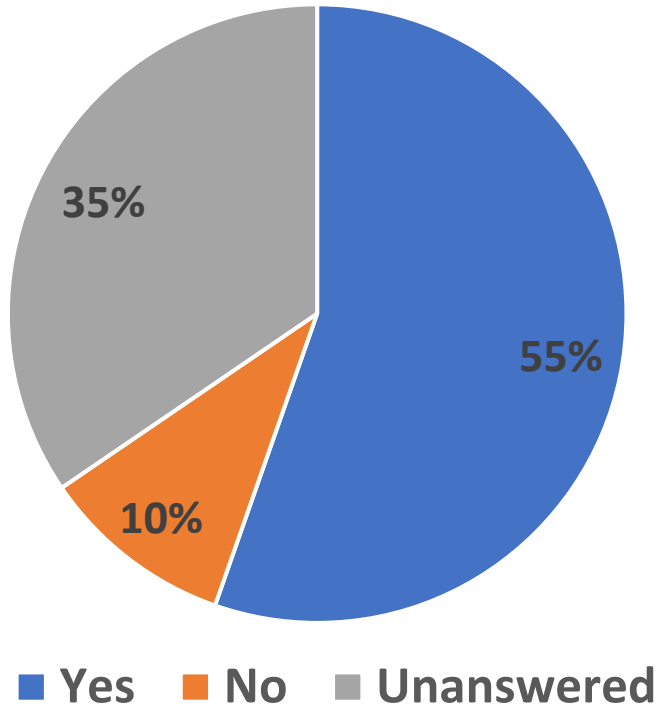
Only answers by non-PIC are shown



Total Respondents: 1,769

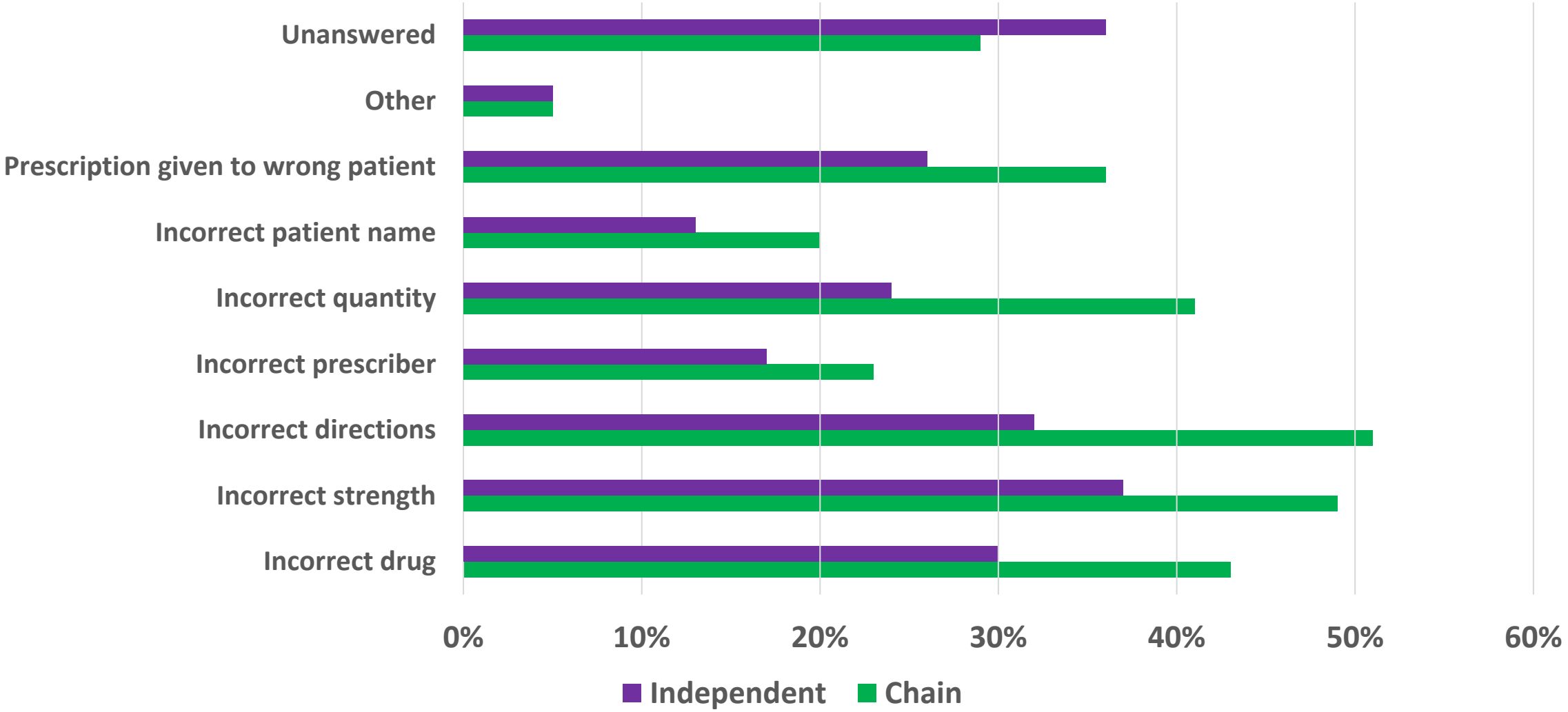
Community Independent Pharmacy

Only answers by non-PIC are shown

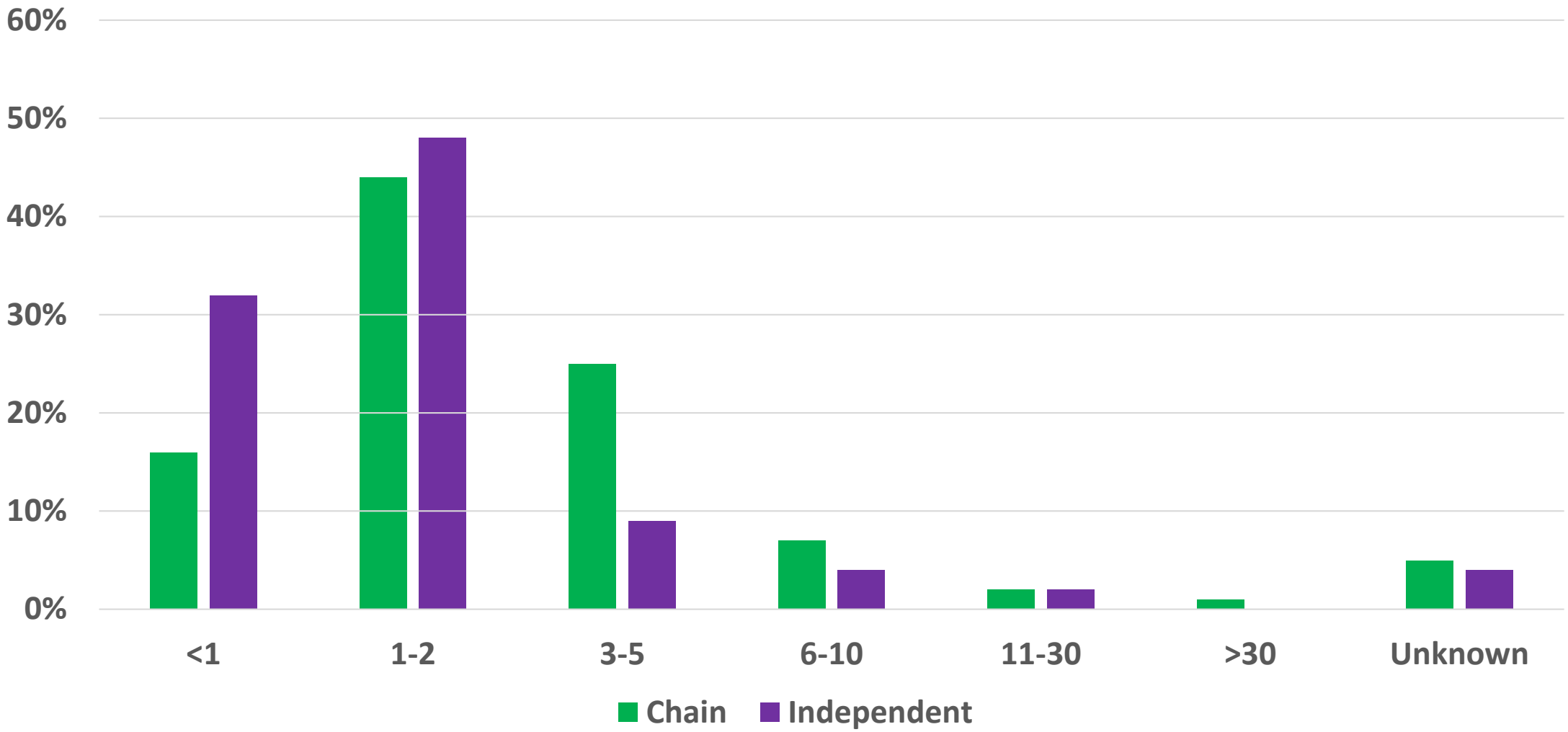


Total Respondents: 171

Q24 What was the cause for errors documented at your primary work site?

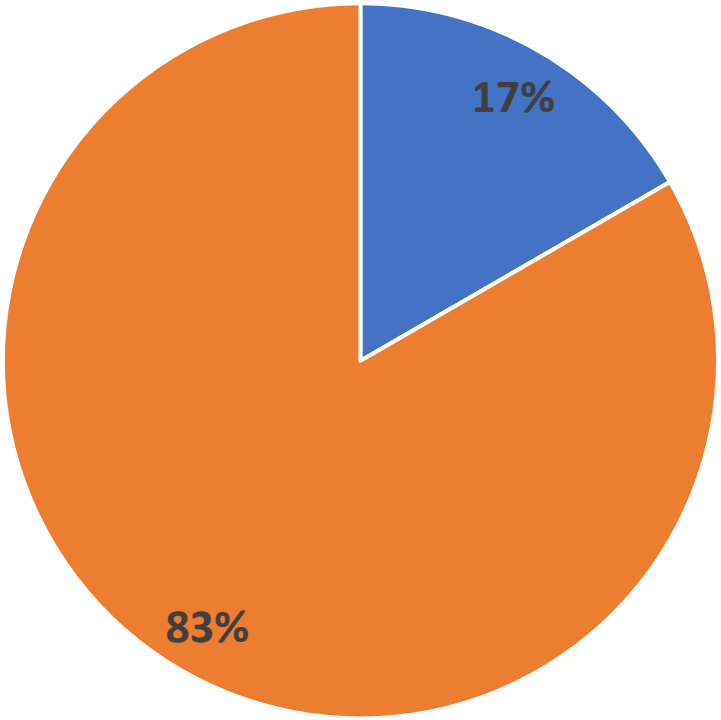


Q25 What is the average number of medication errors that occur in a month at your primary worksite?



Q26 Do you believe you have sufficient time to provide appropriate patient consultation?

Community Chain Pharmacy

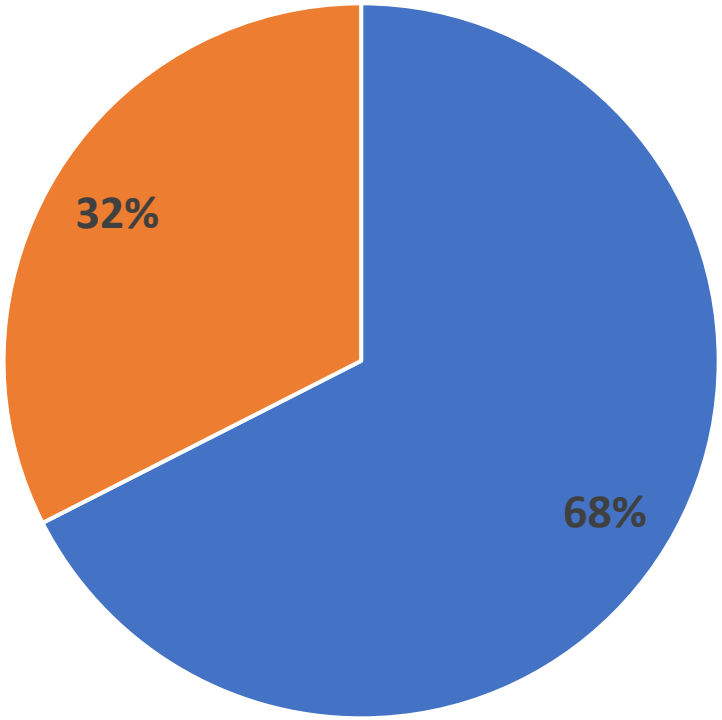


Total Respondents: 1,933

Yes

No

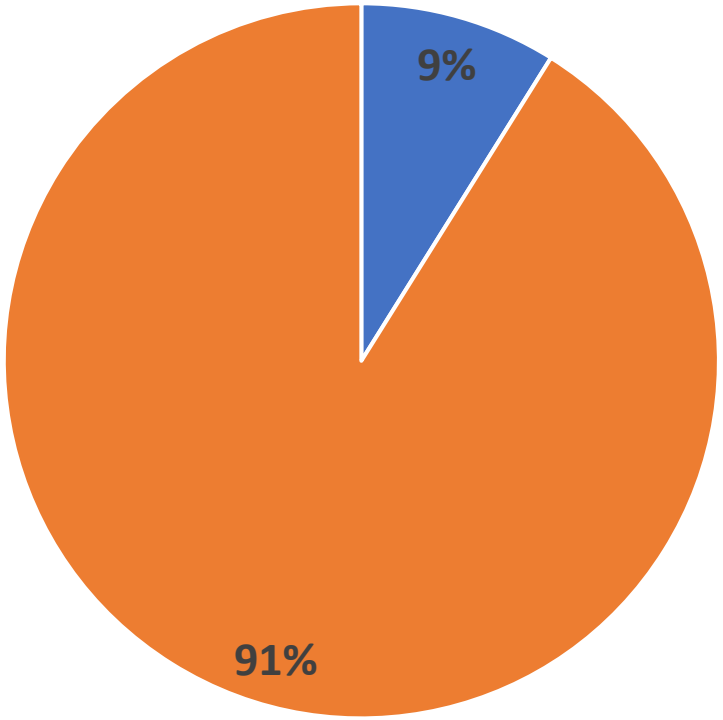
Community Independent Pharmacy



Total Respondents: 237

Q27 Do you believe the pharmacy staffing in your primary worksite is appropriate to ensure adequate patient care?

Community Chain Pharmacy

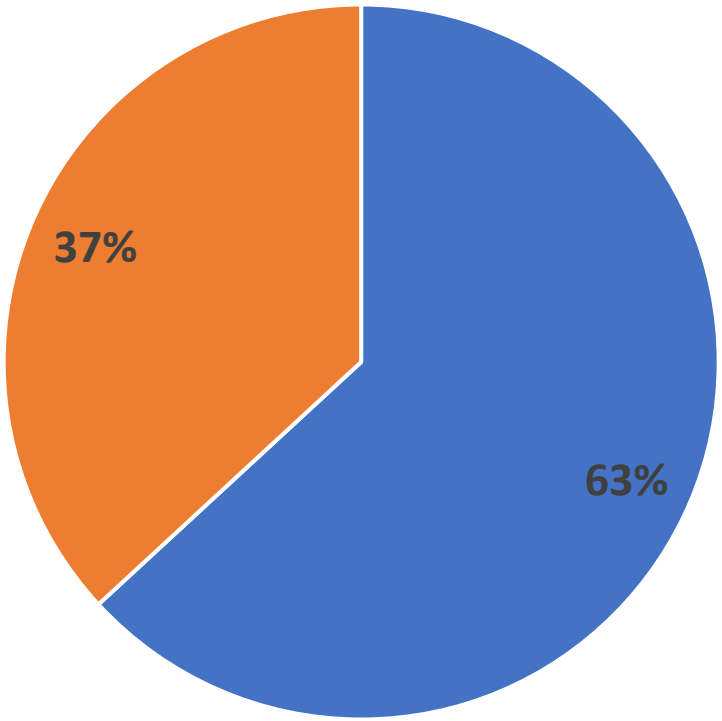


Total Respondents: 1,932

Yes

No

Community Independent Pharmacy



Total Respondents: 236

Attachment 2
Well-Being Report
and Research

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RESEARCH

Ability of the Well-Being Index to identify pharmacists in distress

Lee P. Skrupky*, Colin P. West, Tait Shanafelt, Daniel V. Satele, Liselotte N. Dyrbye

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ABSTRACT

Background: Well-being and distress are important issues in the pharmacist workforce; yet, there is limited evidence evaluating the validity of practical screening tools among pharmacists.

Objectives: To evaluate the ability of the Well-Being Index (WBI) to (1) identify the well-being and dimensions of distress in pharmacists, and (2) stratify pharmacists' likelihood of adverse professional consequences.

Methods: In July 2019, a national sample of pharmacists completed the Web-based version of the 9-item WBI (score range 2 to 9) and standardized instruments to assess quality of life (QOL), fatigue, burnout, concern for a recent major medication error, and intent to leave the current job. The Fisher exact test or chi-square test was used, as appropriate, to obtain the univariate odds ratio, posttest probabilities, and likelihood ratios associated with the WBI score for each outcome.

Results: A total of 2231 pharmacists completed the survey. The most common practice settings were community pharmacies—chain (36.7%) and independent (10.7%)—followed by hospitals or health systems (20.1%) and academia (11.7%). The mean overall WBI score was 3.3 ± 2.73 (mean ± SD). Low QOL, extreme fatigue, and burnout symptoms were present in 34.8%, 35.3%, and 59.1%, respectively, of the responders. As the WBI score increased, the odds for low QOL, fatigue, burnout, concern for a recent major medication error, and intent to leave the current position increased incrementally. The WBI score also stratified the odds of high QOL. Assuming a pretest burnout probability of 59.1% (prevalence of the overall sample), the WBI lowered the posttest probability to 2% or raised it to 98% with an area under the receiver operating characteristic curve of 0.87.

Conclusion: The WBI may serve as a useful tool to gauge well-being and to identify pharmacists who may be experiencing important dimensions of distress and have increased risk for adverse professional consequences.

Background

Pharmacists serve critical roles in a wide variety of health care settings and these roles have evolved considerably to meet changing patient and health care system needs over the past 2 decades. While maintaining responsibility for the safe preparation and dispensing of medications, pharmacists have taken on increasing responsibilities by providing direct patient care services such as medication management and preventive services, managing complex medication therapies through collaborative practice models, leading medication reconciliation processes, and providing oversight for medication use processes at all levels.[1-5] Along with rapid role progression,

Disclosure: Dr Shanafelt and Dr Dyrbye are coinventors of the Well-Being Index. Mayo Clinic holds the copyright for this instrument and has licensed it for use outside of Mayo Clinic. Dr Shanafelt and Dr Dyrbye receive a portion of any royalties paid to Mayo Clinic. The research results for this study were corroborated by Dr. West, a nonconflicted, nonsubordinate staff member with appropriate expertise. The authors declare no other relevant conflicts of interest or financial relationships.

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1544-3191/

Key Points

Background:

Recent changes to health care delivery and pharmacist roles have contributed to increased workload and job stress; yet, research exploring well-being and distress in pharmacists is limited.
Validity evidence for practical tools that can identify pharmacists in distress and stratify the likelihood of meaningful outcomes is needed.

Findings:

Burnout, extreme fatigue, and poor quality of life were common among a diverse sample of U.S. pharmacists.
The Well-Being Index effectively identified pharmacists at increased risk of distress, concern for having made a major medication error, and intent to leave the current job.

there have been many recent changes to health care delivery (e.g., extensive mergers, increased regulatory requirements, advancing technology, changes to reimbursement, and demands for greater access while reducing costs) and new challenges to the profession of pharmacy (e.g., increasing drug costs, drug shortages, education and training programs, documentation requirements, pharmacy technician turnover, and vacancies). Collectively, these changes are posing threats to professional and personal well-being.[1]

In a recent U.S. nationwide survey of 2446 pharmacists, approximately two-thirds reported their workload to be high or excessively high, nearly half indicated that their workload had negative effects on their mental or emotional health, and work-home conflict was common.[1] Burnout, a syndrome related to one's occupation in which chronic job stress leads to feelings of emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment, has been reported at high frequencies (53%-61%) in recent studies of U.S. hospital-based pharmacists.[6,7] High frequencies of burnout symptoms have also been reported in various practice settings among pharmacists in Australia, France, and Japan.[8-10] In a national, cross-sectional study of U.S. pharmacy practice faculty members, more than 40% reported high emotional exhaustion.[11] Among pharmacy residents, perceived stress levels are high, and a recent study found that 40% reported moderate-to-severe depressive symptoms.[12,13] Similarly, perceived stress levels in pharmacy students are higher than those for age-matched members of the general population, and increased measures of stress have been found to correlate with lower health-related quality of life (QOL) and negative-effect levels.[14] These findings of high stress levels and burnout in pharmacists and pharmacy trainees are striking and parallel reports in other health professionals, including physicians and nurses.[15,16] Among physicians and nurses, burnout has been associated with negative consequences for patient care (increased medication errors and poor job performance),[17-19] health care organizations (increased job turnover and increased costs),[20-24] and provider well-being (low QOL, extreme fatigue, and suicidal ideation).[19-21,25] Among pharmacists, relatively little is known about the professional sequelae of burnout as well as other important manifestations of distress such as anxiety, depression, fatigue, and suicidality.

Given these collective findings, a consortium of pharmacy organizations (American Pharmacists Association, Accreditation Council for Pharmacy Education, American Association of Colleges of Pharmacy, National Association of Boards of Pharmacy, and the National Alliance of State Pharmacy Associations) convened in July 2019 to identify strategies and recommendations to foster improvements in well-being and resilience.[26] Similarly, the National Academies of Sciences, Engineering, and Medicine recently published a consensus study report, "Taking action against clinician burnout: A systems approach to professional well-being," outlining the need for system-level improvements.[27] Key themes for action identified include creating positive working and learning environments, reducing administrative burdens, capitalizing on technology, supporting health professionals (HPs) and trainees, and investing in research. To achieve these goals, an important and fundamental first step is to establish effective and practical tools for identifying distress and measuring well-being across different HP groups. It has been demonstrated that experienced physicians have difficulty accurately assessing their own well-being and how it compares relative to their peers, often underestimating the degree of distress they are experiencing.[28] Furthermore, if a potential problem is identified, HPs are often reluctant to seek medical care.[29,30] Having a practical tool that could be used to provide a context-specific measure of well-being could meaningfully help HPs and organizations as they attempt to identify and address this emerging issue.

Various survey instruments exist for many important dimensions of professional well-being (e.g., burnout, fatigue, engagement, emotional health, QOL, and professional satisfaction). For example, the most commonly used instrument to measure burnout among HPs is the Maslach Burnout Inventory—Human Services Survey (MBI—HSS)[31,32]. The MBI—HSS consists of 22 items measuring 3 domains of burnout (emotional exhaustion, depersonalization, and low sense of personal accomplishment) and takes approximately 15 minutes to complete. Although the MBI—HSS is useful for identifying burnout in HPs, other important dimensions of distress are not identified with this individual tool, and using additional surveys focused on other constructs would increase responder burden and likely be impractical. For these reasons, brief survey instruments that provide a multidimensional measure of well-being (QOL, burnout, fatigue, stress, work-life integration, and meaning in work) and are able to identify multiple dimensions of distress represent an attractive and important advance. The other important characteristics to consider when selecting a survey instrument include cost, complexity of score analysis, relationships between score and important outcomes, sensitivity to change, validity evidence, and breadth of applicability.[32]

The Well-Being Index (WBI) represents 1 such composite instrument, capable of stratifying multiple dimensions of distress through the use of 9 items.[32] The WBI can be

completed in approximately 5 minutes, is easy to score, and has extensive validity evidence in HPs, including independent samples of physicians, medical students and residents, nurses, nurse practitioners, and physician assistants. For example, the WBI stratifies well-being and identifies those at increased risk for severe fatigue, burnout, recent suicidal ideation, making a medication error, and leaving their current job.[20,33-36] These findings suggest that the WBI may be a practical and effective tool for identifying distress and guiding toward actionable measures in HPs. For example, scores indicating a high likelihood of distress (e.g., low QOL, fatigue, or burnout) could prompt referral and evaluation by a qualified HP or guidance toward supportive resources, whereas scores indicating well-being could prompt encouragement to continue current approaches. However, the ability of the WBI to stratify well-being and identify distress in pharmacists has not been studied. To address this, we conducted a U.S. nationwide study of pharmacists to explore the relationships between WBI scores and measures of distress, as well as professional consequences, namely concern for major medication error in the last 3 months and intent to leave the current job.

Objectives

To evaluate the ability of the WBI to (1) identify well-being (high QOL) and dimensions of distress (low QOL, extreme fatigue, and burnout) in pharmacists, and (2) stratify pharmacists' likelihood of adverse professional consequences (concern for a recent major medication error and intent to leave the current job).

Methods

Participants

The participants included pharmacists who completed the anonymous, Web-based version of the WBI between July 2019 and August 2019. The American Pharmacists Association promoted the Web-based version of the WBI through several avenues, including a press release, e-mails to 3927 members, Facebook, Twitter, LinkedIn, and a member e-mail newsletter (Focus and Pharmacy Today Daily). Participation was voluntary and all responses were anonymous. The study was reviewed by the Mayo Clinic Institutional Review Board and deemed exempt.

Study measures

The participants were asked to provide basic demographics (gender and age) and professional data (practitioner type, years as a practitioner, current employment status, primary practice setting, and work hours) but no specific identifying information. In addition, the participants completed the 9-item WBI, along with items assessing burnout (2 items from the MBI), QOL (1-item linear analog scale assessment [LASA] of overall QOL), fatigue (1-item LASA of fatigue), intent to leave their current job, and perceived major medication error. The survey instrument is available in Appendix 1.

Well-Being Index

The WBI was purposefully designed to measure multiple dimensions of distress, including anxiety, stress, depression, fatigue, and burnout. It was originally created as a 7-item instrument and later expanded to 9 items to incorporate the evaluation of meaning in work and work-life integration. To score the 9-item WBI, 1 point is assigned for each "yes" response to the original 7-item WBI. For the meaning-in-work item ("The work I do is meaningful to me"), adapted from the Empowerment at Work scale,[37] 1 point is added for unfavorable responses indicating less meaning in work (1 or 2 on the 7-item scale), 1 point is subtracted for favorable responses (6 or 7 on the 7-item scale), and no points are assigned for other responses (3, 4, or 5 on the 7-item scale). For the work-life integration item ("My work schedule leaves enough time for my personal/family life"), 1 point is added for unfavorable responses indicating lower satisfaction (disagree or strongly disagree), whereas 1 point is subtracted for favorable responses (agree or strongly agree). The total WBI score therefore yields a 12-point range from 2 to 9, with higher scores indicating a greater extent of distress.

Strong content validity evidence and evidence of relations to other variables for the WBI have been established through previously published studies performed in multiple independent samples of HPs and general U.S. workers, including more than 27,300 participants.[20,28,33-36,38,39] Among various HP groups, it has been demonstrated that increasing WBI scores are strongly associated with increased likelihoods of multiple measures of distress (burnout, fatigue, low QOL, and suicidality) and negative professional consequences (medical errors and job turnover). Area under the receiver operating characteristic (ROC) analyses have shown good discriminatory ability for low QOL, burnout, and suicidal ideation among physicians, advanced practice providers, and nurses.[20,33-36] In addition, low WBI scores are associated with high overall QOL.

Other measures

To measure burnout, 2 single items from the emotional exhaustion ("How often do you feel burned out from your work?") and depersonalization ("How often do you feel you've become more callous toward people since you took this job?") domains of the full MBI–HSS were used. As previously demonstrated by West et al.,[40,41] these 2 single items have sufficiently high area under the ROC curve compared with the full emotional exhaustion and depersonalization domains (0.94 and 0.93, respectively) of the MBI to serve as an alternative burnout assessment in HPs with the advantage of reduced responder burden. To maintain consistency with other studies, the responders were considered to have burnout if they scored high (indicated symptoms weekly or more often) on either of the emotional exhaustion or depersonalization items. To assess both overall QOL and fatigue, similar 1-item LASA questions ranging from 0 to 10 (e.g., for overall QOL, 0 = "As bad as it can be," and 10 = "As good as it can be") were used. The participants were also asked about the likelihood (none, slight, moderate, likely, and definite) of their leaving their current job in the next 24 months and concern for having made a major medication error (Yes or No) in the past 3 months, using questions from previous studies among HPs.

Relationship to other variables

Because distress can manifest in a variety of ways, and there is no single definition for "severe distress," we assessed the ability of the WBI to (1) identify pharmacists with well-being (high overall QOL) as defined by a score of 0.5 SD above the sex-matched mean for the group (a clinically meaningful effect size[42]); (2) identify pharmacists with dimensions of distress, including low overall QOL as defined by a score of 0.5 SD below the sex-matched mean for the group; extreme fatigue, as defined by having a fatigue score 0.5 SD worse than the sex-matched mean for the group; and burnout; and (3) stratify pharmacists' likelihood of adverse professional consequences, specifically concern for having made a major medication error within the past 3 months, and reporting an intent to leave their current job within the next 24 months for reasons other than retirement.

Statistical analysis

We calculated basic descriptive statistics and used the Fisher exact test or chi-square test, as appropriate, to analyze the univariate odds ratio, posttest probabilities, and likelihood ratios (LRs) associated with the WBI scores for each outcome. We used Wilcoxon, Kruskal-Wallis, or 2-sample *t* tests, as appropriate, to evaluate for differences between groups and generated ROC curves for the outcomes. We used a 5% type I error rate and a 2-sided alternative. All analyses were conducted using SAS version 9 (SAS Institute).

Results

The demographics and job-related characteristics of the 2231 responders are reported in Table 1. Most (69.3%) of the responders were aged below 45 years, 71.3% were women, and 81.8% worked full time. Community pharmacies—chain (36.7%) and independent (10.7%)—were the most commonly represented practice setting, followed by hospitals or health systems (20.1%) and academia (11.7%). Almost half (48.2%) of the respondents worked 40-49 hours per week, 22.2% worked 50 hours or more per week, whereas 20.4% and 9.2% worked 20-39 hours and less than 20 hours per week, respectively.

The mean overall QOL score was 6.5 ± 1.95 (mean ± SD), with 25.6% of the pharmacists reporting a low QOL (0.5 SD below the sex-matched mean) and 34.8% with high QOL (0.5 SD above the sex-matched mean). Extreme fatigue (0.5 SD above the sex-matched mean) was identified in more than one-third (35.3%) of the pharmacists, and symptoms of burnout were present in 59.1%, with both high emotional exhaustion (51.6%) and high depersonalization (44.8%) being common. A little more than one-quarter (25.9%) of the pharmacists reported concern for having made a major medication error within the last 3 months, and nearly half (48.1%) were at least moderately likely to leave their job for reasons other than retirement in the next 24 months.

WBI scores and ability to detect QOL

The mean overall WBI score was 3.3 ± 2.73, and the frequency of exact WBI scores is displayed in Figure 1. The mean WBI was significantly greater for pharmacists with low QOL than for those without low QOL (5.7 ± 1.9 vs. 2.5 ± 2.5; $P < 0.001$). As the WBI score increased, so did the odds for low QOL such that a WBI score of 5 or more was associated with significantly increased odds of low QOL (Table 2). Assuming a pretest probability of 25.6% for low QOL, the WBI lowered the posttest probability to 0.7% or raised it to 95.2% (Table 3). For example, without the WBI, an individual has a 25.6% probability of low QOL. If that individual takes the WBI and scores " 1," the probability of that individual having low QOL decreases to less than 1%. In contrast, if that individual takes the WBI and scores "9," the probability of that individual having low QOL increases to more than 95%. The area under the ROC curve of the WBI for low QOL was 0.84. The WBI score also stratified odds of high QOL (Table 2). With decreasing WBI scores, the odds for high overall QOL increased in a step-wise fashion. The area under the ROC curve of the WBI for high QOL was 0.85.

Table 1
Responder demographics and mean Well-Being Index scores

Variable	N (%)	WBI score, mean (± SD)
Total participants	2231	3.3 (2.73)
Sex		
Men	634 (28.7)	3.16 (2.99)
Women	1573 (71.3)	3.4 (2.61)
Missing	24	
Age, y		
< 35	996 (44.6)	3.52 (2.61)
35–44	551 (24.7)	3.77 (2.54)
45–54	326 (14.6)	3.41 (2.75)
55–64	238 (10.7)	2.69 (2.93)
65+	120 (5.4)	0.92 (2.59)
Years in current practice, y		
< 5	679 (30.4)	3.42 (2.71)
5–14	791 (35.5)	3.75 (2.49)
15–24	342 (15.3)	2.58 (2.70)
25+	419 (18.8)	2.23 (2.91)
Hours worked per week		
< 20	206 (9.2)	2.30 (3.09)
20–39	454 (20.4)	2.87 (2.62)
40–49	1076 (48.2)	3.48 (2.69)
50–59	337 (15.1)	3.75 (2.64)
60	158 (7.1)	4.18 (2.35)
Current employment status		
As needed (PRN)	86 (3.9)	1.38 (2.73)
Full time	1824 (81.8)	3.49 (2.67)
Part time	216 (9.7)	2.84 (2.64)
Unemployed	105 (4.7)	3.42 (3.19)
Current practice setting		
Academia	261 (11.7)	2.52 (2.42)
Ambulatory care	149 (6.7)	2.80 (2.55)
Community chain	818 (36.7)	4.54 (2.50)
Community independent	238 (10.7)	2.23 (2.70)
DOD/IHS pharmacy	19 (0.9)	2.63 (2.39)
Hospital/health system	448 (20.1)	2.85 (2.63)
Long-term care pharmacy	44 (2.0)	3.14 (2.91)
Nuclear	9 (0.4)	3.67 (2.18)
Other	179 (8.0)	2.49 (2.66)
Pharmaceutical industry	20 (0.9)	2.45 (2.72)
Public health	15 (0.7)	2.47 (2.56)
Specialty pharmacy	31 (1.4)	3.16 (2.71)

Abbreviations used: WBI, Well-Being Index; PRN, pro re nata (as needed); DOD, Department of Defense; IHS, Indian Health Service.

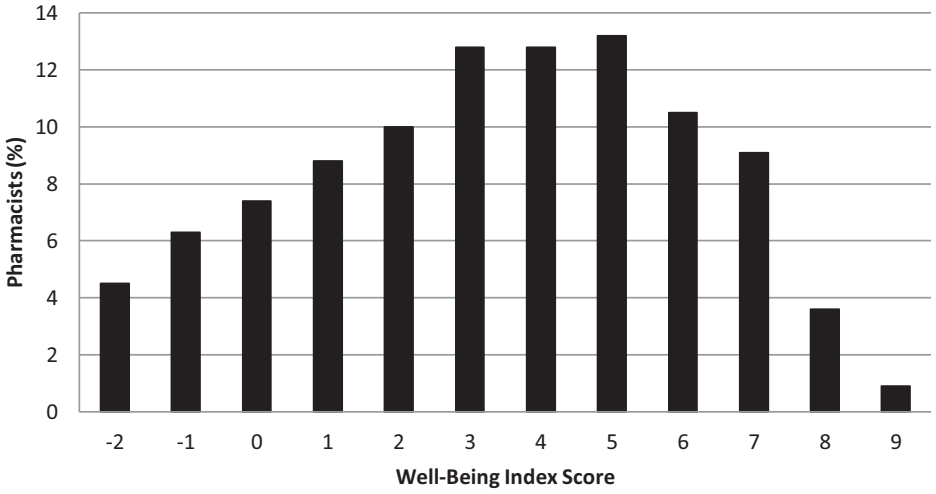

Figure 1. Well-Being Index scores among pharmacists.

Ability of the WBI to detect fatigue and burnout

Pharmacists with extreme fatigue or burnout had significantly higher mean WBI scores than those without extreme fatigue (4.9 ± 2.3 vs. 2.5 ± 2.6; $P < 0.001$) or burnout (4.8 ± 2.1 vs. 1.3 ± 2.1; $P < 0.001$). The odds of extreme fatigue and burnout increased as the WBI scores became more unfavorable. Using a pretest probability of 35.3% for extreme fatigue, the WBI lowered the posttest probability to 6% or raised it to 85.7% (Table 3). Similarly, assuming a pretest probability of 59.1% for burnout, the WBI lowered the posttest probability to 2% or raised it to 98%. The areas under the ROC curve of the WBI for extreme fatigue and burnout were 0.75 and 0.87, respectively.

Ability of the WBI to detect medication errors and intent to leave the current job

Pharmacists who self-reported concern for having made a major medication error in the last 3 months had significantly higher mean WBI scores than those who did not report this same concern (5.0 ± 2.3 vs. 2.8 ± 2.6; $P < 0.001$). Using a pretest probability of 25.9% for recent major medication error, the WBI lowered or raised the posttest probability to 6% or 76.2%, respectively (Table 4). Pharmacists who reported at least a moderate likelihood of intent to leave their current job in the next 24 months had significantly higher mean WBI scores than those who reported no such intent (4.5 ± 2.4 vs. 2.6 ± 2.6; $P < 0.001$). Using a pretest probability of 48.1% for intent to leave the current job, the WBI lowered the posttest probability to 16% or raised it to 90.5%. The areas under the ROC curve of the WBI for recent medication errors and intent to leave the current job were 0.74 and 0.74, respectively.

Threshold score

Pharmacists with a WBI score of 5 or more were found to have an increased likelihood of low QOL, burnout, extreme fatigue, concern for a recent major medication error, and intent to leave their current job, suggesting a score of 5 may serve as a meaningful threshold to identify pharmacists at increased risk of adverse outcomes. A WBI score of 5 or more was observed in 37.4% of the pharmacists surveyed, and their demographics are displayed in Appendix 2. The risks of burnout (LR 8.19 [95% CI 6.19–11.01]), low QOL (3.32 [2.9–3.78]), and extreme fatigue (2.59 [2.23–3.01]) were markedly higher among pharmacists with a score of 5 or more than among those with scores of 4 or less. Similarly, pharmacists with scores of 5 or more had a higher (2.54 [2.15–3.00]) risk of intent to leave their current job and a higher (2.24 [1.94–2.57]) risk of concern for a recent major medication error.

Discussion

In this large sample of more than 2000 pharmacists representing a broad range of practice settings, the WBI identified important dimensions of distress (low QOL, burnout, or fatigue) and well-being (high QOL). Furthermore, the WBI stratified the pharmacists' likelihood of adverse professional consequences (concern for a recent major medication error or job turnover). Because this is the largest study to date evaluating validity evidence for a composite measure of well-being in pharmacists, these findings suggest that the WBI may be an effective tool to identify multiple dimensions of distress and predict meaningful outcomes.

Consistent with findings from recent MBI-based studies evaluating burnout among U.S. pharmacists in hospital and academia settings,[6,7,11] the prevalence of burnout observed in this study was high. Although some factors contributing to burnout in these settings have been identified (e.g., too many nonclinical duties, inadequate administrative and teaching time, and lack of a mentor), additional research is needed to better understand the problem and to help design successful interventions.[6,7,11,43] Importantly, the WBI effectively identified pharmacists at increased risk of burnout and demonstrated good discriminatory ability for this dimension of distress. In addition, elevated WBI scores identified pharmacists with low overall QOL and extreme fatigue. Relatively little is known about these dimensions of distress in pharmacists,

Table 2
Well-Being Index scores for pharmacists with low and high overall quality of life

WBI score	Low QOL				High QOL			
	Low overall QOL n = 571 (%)	Without low overall QOL n = 1660 (%)	OR (95% CI)	*P*-value	High overall QOL n = 777 (%)	Without high overall QOL n = 1454 (%)	OR (95% CI)	*P*-value
2	0 (0.0)	100 (6.0)	NA	NA	91 (11.7)	9 (0.6)	21.30 (10.67–42.50)	< 0.001
1	1 (0.2)	139 (8.4)	0.02 (< 0.01–0.14)	< 0.001	115 (14.8)	25 (1.7)	9.93 (6.38–15.45)	< 0.001
0	4 (0.7)	160 (9.6)	0.07 (0.02–0.18)	< 0.001	118 (15.2)	46 (3.2)	5.48 (3.85–7.80)	< 0.001
1	17 (3.0)	179 (10.8)	0.25 (0.15–0.42)	< 0.001	113 (14.5)	83 (5.7)	2.81 (2.09–3.79)	< 0.001
2	15 (2.6)	209 (12.6)	0.19 (0.11–0.32)	< 0.001	104 (13.4)	120 (8.3)	1.72 (1.30–2.27)	0.001
3	34 (6.0)	252 (15.2)	0.35 (0.24–0.51)	< 0.001	117 (15.1)	169 (11.6)	1.35 (1.05–1.74)	0.021
4	55 (9.6)	231 (13.9)	0.66 (0.48–0.90)	0.0087	65 (8.4)	221 (15.2)	0.51 (0.38–0.68)	< 0.001
5	107 (18.7)	188 (11.3)	1.81 (1.39–2.34)	< 0.001	35 (4.5)	260 (17.9)	0.22 (0.15–0.31)	< 0.001
6	120 (21.0)	115 (6.9)	3.57 (2.71–4.71)	< 0.001	16 (2.1)	219 (15.1)	0.12 (0.07–0.20)	< 0.001
7	127 (22.2)	76 (4.6)	5.96 (4.40–8.07)	< 0.001	3 (0.4)	200 (13.8)	0.02 (< 0.01–0.08)	< 0.001
8	71 (12.4)	10 (0.6)	23.43 (11.99–45.76)	< 0.001	0 (0.0)	81 (5.6)	NA	NA
9	20 (3.5)	1 (0.1)	60.11 (8.06–448.16)	< 0.001	0 (0.0)	21 (1.4)	NA	NA
WBI score, mean (± SD)	5.7 (1.9)	2.5 (2.5)		< 0.001	1.2 (2.2)	4.5 (2.3)		< 0.001

Abbreviations used: QOL, quality of life; OR, odds ratio; WBI, Well-Being Index; NA, not applicable.
Note: Low overall QOL is defined by a score of 0.5 SD below the mean for the overall population; high overall QOL is defined by a score of 0.5 SD above the mean for the overall population.

although previous evaluations performed in various settings have identified important relationships between workload, work activities, job stress, job satisfaction, and work-home conflict.[44-47]

The WBI stratified the pharmacists' likelihood of concern for having made a recent major medication error, indicating that higher levels of distress may have adverse consequences for patient safety and outcomes. Previous work has similarly demonstrated that increased workload, external job demands, and work stress have all been associated with negative impacts on perceived medication safety and self-reported errors among pharmacists.[47-49] Routine measurement of distress and well-being in pharmacists, paired with effective interventions, may therefore represent an opportunity to reduce medication errors, a common occurrence with significant ramifications for patients and health care systems. In addition, in regard to potential adverse consequences of distress, pharmacists with at-risk scores were 2.5 times more likely to report intent to leave their current job. Nearly half of the pharmacists in the present study were at least moderately likely to leave their job in the next 2 years, which is similar to findings from a survey of U.S. community pharmacists in 2012,[50] and higher than rates reported in earlier studies.[51,52] Several investigators have identified job stress and job satisfaction to be associated with pharmacists' intent to leave their current job.[51-53] Because pharmacist turnover is associated with tremendous costs and

Table 3
Ability of the Well-Being Index to identify quality of life and distress among pharmacists

WBI score	High overall QOL (n = 571)		Low overall QOL (n = 571)		Extreme fatigue (n = 787)		Burnout (n = 1319)	
	LR[a] (95% CI)	Posttest probability,[b] %	LR (95% CI)	Posttest probability, %	LR (95% CI)	Posttest probability, %	LR (95% CI)	Posttest probability, %
2	18.92 (8.14–50.04)	91.0	NA	NA	0.12 (0.04–0.31)	6.0	0.01 (0–0.06)	2.0
1	8.61 (4.9–15.68)	82.1	0.02 (0–0.14)	0.7	0.19 (0.09–0.38)	9.3	0.1 (0.05–0.18)	12.1
0	4.8 (3.03–7.7)	72.0	0.07 (0.02–0.22)	2.4	0.33 (0.18–0.57)	15.2	0.15 (0.09–0.25)	17.7
1	2.55 (1.73–3.77)	57.7	0.28 (0.14–0.51)	8.7	0.36 (0.21–0.58)	16.3	0.3 (0.2–0.45)	30.1
2	1.62 (1.13–2.32)	46.4	0.21 (0.1–0.39)	6.7	0.53 (0.34–0.8)	22.3	0.39 (0.27–0.57)	36.2
3	1.3 (0.94–1.77)	40.9	0.39 (0.24–0.61)	11.9	0.61 (0.42–0.86)	24.8	0.9 (0.66–1.24)	56.6
4	0.55 (0.38–0.79)	22.7	0.69 (0.47–1.01)	19.2	1 (0.72–1.38)	35.3	1.58 (1.13–2.22)	69.6
5	0.25 (0.16–0.39)	11.9	1.65 (1.21–2.25)	36.3	1.75 (1.29–2.37)	48.8	4.68 (3.06–7.33)	87.1
6	0.14 (0.07–0.25)	6.8	3.03 (2.15–4.27)	51.1	2.02 (1.42–2.86)	52.3	6.37 (3.76–11.32)	90.2
7	0.03 (0.01–0.09)	1.5	4.86 (3.32–7.14)	62.6	3.98 (2.68–5.98)	68.5	34.4 (11.79–143.23)	98.0
8	NA	NA	20.64 (8.9–53.33)	87.7	7.45 (3.59–16.4)	80.2	NA	NA
9	NA	NA	58.14 (6.42–3512.98)	95.2	11.01 (2.25–83.77)	85.7	NA	NA

Abbreviations used: LR, likelihood ratio; QOL, quality of life; WBI, Well-Being Index; NA, not applicable.
Note: We defined (1) high or low overall QOL as having a standardized linear analog QOL score of more than 0.5 SD above, or 0.5 SD or less below, that of the sex-matched mean for the groups, respectively; (2) extreme fatigue as having a standardized linear analog score of 0.5 SD or more below that of the sex-matched mean for the group (high score is favorable); and (3) burnout as having high emotional exhaustion or high depersonalization on the Maslach Burnout Inventory items.[31]
[a] LR indicates the likelihood ratio associated with the WBI exact score.
[b] Posttest probability was calculated using an estimated prevalence of 34.8% for high overall QOL, 25.6% for low overall QOL, 35.3% for extreme fatigue, and 59.1% for burnout as the pretest probability.

Table 4
Ability of the Well-Being Index to identify recent medical errors and intent to leave the current job

WBI score	Medication error (n = 577)		Intent to leave the current job (n = 1074)	
	LR[a] (95% CI)	Posttest probability[b], %	LR (95% CI)	Posttest probability, %
2	0.18 (0.06–0.49)	6.0	0.21 (0.1–0.41)	16.0
1	0.17 (0.06–0.4)	5.7	0.25 (0.14–0.43)	18.6
0	0.17 (0.07–0.37)	5.5	0.25 (0.15–0.42)	18.9
1	0.4 (0.22–0.68)	12.2	0.48 (0.31–0.72)	30.6
2	0.66 (0.42–1.02)	18.7	0.55 (0.38–0.8)	33.9
3	0.62 (0.42–0.91)	17.8	0.75 (0.54–1.02)	40.9
4	0.95 (0.66–1.34)	24.8	1.41 (1.03–1.93)	56.6
5	1.28 (0.92–1.76)	30.8	2.01 (1.46–2.77)	65.1
6	1.91 (1.34–2.71)	40.0	2.01 (1.4–2.9)	65.1
7	3.26 (2.24–4.74)	53.2	3.39 (2.21–5.26)	75.9
8	6.81 (3.52–13.53)	70.4	5.64 (2.59–13.27)	84.0
9	9.17 (2.26–45.45)	76.2	10.23 (1.71–131.27)	90.5

Abbreviations used: LR, likelihood ratio; WBI, Well-Being Index.
Note: We defined (1) medication error as endorsing the item "Are you concerned you have made a major medication error in the past 3 months?" and (2) intent to leave as having a moderate or higher likelihood of leaving the current job within the next 24 months for reasons other than retirement.
[a] LR indicates the likelihood ratio associated with the exact WBI score.
[b] Posttest probability was calculated using an estimated prevalence of 25.9% for medication error and 48.1% for moderate or higher intent to leave the current practice for reasons other than retirement as the pretest probability.

resource strain, including greater work burden on the pharmacists who remain, being able to identify employees at increased risk provides value.

Although this study was not designed to explore the factors contributing to distress, 3 specific observations were notable. First, among pharmacists with at-risk scores, more than two-thirds were in practice for less than 15 years, and the mean WBI scores were highest among those with less than 15 years in practice. This suggests that early- to midcareer pharmacists may be at particular risk for distress, a finding that is consistent with previous studies evaluating burnout in pharmacists and other HPs.[6,7] Second, community chain pharmacists had the highest mean WBI scores of all practice settings, and more than half were at or above the threshold score. Because recent U.S. studies of burnout have been performed primarily in hospital-based settings, this suggests that contemporary research exploring well-being and distress among community-based pharmacists is warranted, particularly when considering that this represents the most common practice setting. Third, as the reported number of hours worked per week increased, so did the mean WBI scores, indicating that this may be an important objective and potentially modifiable factor.

Because the WBI can be quickly completed anonymously, is easily scored, and has validity data in pharmacists, it may serve as a practical and effective tool to measure pharmacists' well-being on an ongoing basis. Importantly, the WBI not only identified pharmacists at increased risk of distress, but favorable scores also correlated well with high overall QOL. Individual WBI scores could be provided to pharmacists alongside average national scores for the profession and individualized feedback as a means of improving self-awareness and providing just-in-time access to resources. This approach has been shown to promote behavior change in a sample of U.S. surgeons.[28] The aggregate findings may also prove useful for pharmacy organizations or departments at the institution or unit level as a means of measuring employee well-being and identifying groups that may warrant additional attention or resource allocation. The longitudinal tracking of well-being at the aggregate, organization level allows health care organizations to gain insight into potential ramifications of new organizational strategies on employee well-being. In a recent survey of hospital-based pharmacists, less than half felt comfortable communicating feelings about burnout with their supervisors, and almost three-quarters reported that they had not participated in a well-being or resilience program within or outside of their organization.[54] In addition, a recent study surveying hospital pharmacy directors found that less than one-quarter reported measuring aspects of burnout syndrome despite 70% indicating that they were trying to prevent or mitigate burnout.[55] Taken together, these findings support the need for practical assessment instruments that measure well-being in pharmacists.

There are several limitations to the current study. Although validated items for the measurement of multiple dimensions of distress (QOL, extreme fatigue, and burnout) were used, it should be noted that distress is based on self-reporting, other important dimensions exist, and no gold standard to assess all dimensions of distress is established. Furthermore, the WBI is not intended to diagnose or assess mental health conditions, although pharmacists with extreme elevation in WBI scores may benefit from an evaluation by the appropriate HP. Although the WBI was found to stratify QOL, signs of distress, and important adverse professional consequences, the study design used precludes the establishment of causality. Owing to the multiple avenues used for the promotion of survey completion, a survey response rate could not be determined. Finally, although this study represents the largest evaluation of a well-being instrument among pharmacists, not all practice settings or pharmacist roles were represented in large numbers, and the responders may not be representative of pharmacists nationally. The gender distribution of responders, however, was similar to recently published studies of U.S. pharmacists.[6,7,11] It is unknown if the responders were more or less likely to have distress than nonresponders. It is possible that individuals with distress may have been more interested in the topic and thus more likely to complete the WBI. Alternatively, individuals with distress may have been less likely to

complete the survey owing to disengagement. These issues may affect the generalizability of these results; however, the primary purpose of this study was to explore the relationships between the WBI scores and relevant professional outcomes to establish the construct and criterion validity of the WBI in pharmacists, and not to report on the prevalence of distress among pharmacists.

Conclusion

The WBI effectively stratified well-being and multiple dimensions of distress in pharmacists, including low QOL, extreme fatigue, and burnout. Pharmacists with at-risk scores were also found to have increased likelihood of adverse professional consequences. These findings suggest that the WBI can serve as a useful tool to measure well-being and identify distress in pharmacists. Further research exploring contributing factors and implications, as well as individual-, organization-, and system-level interventions to promote well-being among pharmacy professionals, is needed.

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Appendix 1. Survey Instrument Items[a,b]

Well-Being Index Questions [a]

1. Have you felt burned out from your work?
   a. Yes
   b. No
2. Have you worried your work is hardening you emotionally?
   a. Yes
   b. No
3. Have you often been bothered by feeling down, depressed, or hopeless?
   a. Yes
   b. No
4. Have you fallen asleep while sitting inactive in a public place?
   a. Yes
   b. No
5. Have you felt all things you had to do were piling up so high you could not overcome them?
   a. Yes
   b. No
6. Have you been bothered by emotional problems (such as feeling anxious, depressed, or irritable)?
   a. Yes
   b. No
7. Has your physical health interfered with your ability to do your daily work at home and/or away from home?
   a. Yes
   b. No

Please rate how much you agree with the following statements

8. The work I do is meaningful to me
   7-point Likert scale; anchor "very strongly disagree" at the "1" end of the scale and "very strongly agree" at the "7" end of the scale
9. My work schedule leaves me enough time for my personal/family life
   5-point Likert scale; strongly agree; agree; neutral; disagree; strongly disagree

Quality of Life Question

10. How would you describe your overall quality of life? (0 = As bad as it can be, 10 = As good as it can be)
    0 1 2 3 4 5 6 7 8 9 10

Level of Fatigue Question

11. How would you describe your level of fatigue on average (0 = As bad as it can be, 10 = As good as it can be)
    0 1 2 3 4 5 6 7 8 9 10

Adverse Professional Consequences Questions

12. Are you concerned you have made a major medication error in the last 3 months?
    a. Yes
    b. No
13. What is the likelihood that you will leave your current job situation within 2 years for reasons other than retirement?
    a. Slight
    b. Definite
    c. Moderate
    d. Likely
    e. None

[a] The Well-Being Index is copyrighted and permission for use must be obtained from MedEd Web solutions (https://www.mededwebs.com/well-being-index/irb-research).

[b] The Maslach Burnout Inventory items are copyrighted and therefore are not reproduced here.

Appendix 2. Demographics for responders with at-risk Well-Being Index scores

Variable	WBI score 5 N (row %[a])	WBI score 5 N (column %[b])
Participants	835 (37.4)	835 (100)
Sex		
Men	241 (38.0)	241 (28.9)
Women	581 (36.9)	581 (69.6)
Missing	13 (54.2)	13 (1.6)
Age, y		
< 35	379 (38.1)	379 (45.4)
35–44	236 (42.8)	236 (28.3)
45–54	127 (39.0)	127 (15.2)
55–64	80 (33.6)	80 (9.6)
65+	13 (10.8)	13 (1.6)
Years in current practice, y		
< 5	257 (37.8)	257 (30.8)
5–14	324 (41.0)	324 (38.8)
15–24	142 (41.5)	142 (17.0)
25+	112 (26.7)	112 (13.4)
Hours worked per week		
< 20	58 (28.2)	58 (6.9)
20–39	139 (30.6)	139 (16.7)
40–49	420 (39.0)	420 (50.3)
50–59	143 (42.4)	143 (17.1)
60	75 (47.5)	75 (9.0)
Current employment status		
As needed (PRN)	11 (12.8)	11 (1.3)
Full time	713 (39.1)	713 (85.4)
Part time	68 (31.5)	68 (8.1)
Unemployed	43 (41.0)	43 (5.1)
Current practice setting		
Academia	63 (24.1)	63 (7.5)
Ambulatory care	41 (27.5)	41 (4.9)
Community chain	465 (56.8)	465 (55.7)
Community independent	55 (23.1)	55 (6.6)
DOD/IHS pharmacy	6 (31.6)	6 (0.7)
Hospital/health system	126 (28.1)	126 (15.1)
Long-term care pharmacy	18 (40.9)	18 (2.2)
Nuclear	3 (33.3)	3 (0.4)
Other	41 (22.9)	41 (4.9)
Pharmaceutical industry	4 (20.0)	4 (0.5)
Public health	3 (20.0)	3 (0.4)
Specialty pharmacy	10 (32.3)	10 (1.2)

Abbreviations used: WBI, Well-Being Index; PRN, pharmacy recovery network; DOD, Department of Defense; IHS, Indian Health Service.

[a] Row percentage = number of participants within the variable category for the respective row that had an at-risk score divided by the total number of participants within the variable category for the respective row.

[b] Column percentage = number of participants within the variable category for the respective row that had an at-risk score divided by the total number of participants with an at-risk score (835).

WELL-BEING
index

Pharmacist Well-being Index

State Report for State Boards of Pharmacy

NABP District Eight States

JANUARY 2022

For Every Pharmacist. For All of Pharmacy.

pharmacist.com

PWWR
PHARMACY WORKPLACE & WELL-BEING REPORTING

Pharmacy Workplace and Well-being Reporting

~ What is PWWR?

~ December 2021 Report I - Focusing on the Positive

What is PWWR?

Why was it developed?

* Pharmacists and pharmacy personnel workplace factors and well-being continue to be a critical, complex issue for the profession and patient safety.
* What is lacking in the research is to critically examine workplace factors to determine how they affect pharmacy personnel well-being and patient safety.
* Pharmacists and pharmacy personnel have expressed a desire to discuss and address workplace factors and concerns and offer possible solutions but do not do so because they are fearful of employer retribution. Your voice is critical to enhance and safeguard the pharmacy workplace.

How does it work?

* Submit a confidential and anonymous report on positive or negative experiences
* Collected and analyzed by the Alliance for Patient Medication Safety (APMS), a recognized and listed Patient Safety Organization (PSO),
* The PSO extends the strong confidentiality and privilege protections under the federal Patient Safety and Quality Improvement Act of 2005.
* Individual reports and data will not be released. Only aggregated, non-identifiable data from all reports will be made available to qualified researchers for the purposes of education, and the development of best practices and recommendations to enhance the pharmacy workplace.

Goal?

PWRR reports will be aggregated to form a pool of data that will be used to influence and educate our pharmacy community and leaders on meaningful and actionable changes. The positive and negative experiences and situations provided via PWWR reports will help to tell a collective, powerful story that hopefully will spark change and improvement in well-being and patient safety.

PWWR Report I

DECEMBER 2021

Reports Submitted

- October 6 through December 14, 2021
- 440 Completed
- Over 1,000 incomplete/abandon

Report Type

- Positive Experiences – 9
- Negative Experiences – 431

PWWR Report I

DECEMBER 2021

Focus on the Positive –What were the Types of Positive Report?

- **Communication, feedback, and psychology safety (3)**
  - Received positive feedback from supervisor about an action taken to keep patients safe or improve quality of medication use.
  - Had a positive patient interaction that improved the patient's understanding of the medication and its use. (2)

- **Preventing errors and improving quality (2)**
  - Targeted safety practices prevented a potential error involving a high alert medication.
  - Used clinical skills, training, and expertise to prevent a potential medication error from reaching the patient.

- **Safety and quality by design (4)**
  - Supervisor created a learning opportunity for me to grow professionally and/or as a person. (3)
  - Supervisor asked for my input before implementing a new workflow, policy, or other change in the pharmacy.

PWWR Report I

DECEMBER 2021

Focus on the Positive – What Were the Positive Effects of Positive Experiences?

The trend from these reports indicate that positive experiences have a positive effect on an individual's engagement, energy, leadership, and well-being. Reporters indicated that because of the positive experience they would be more likely to:

- Take actions that help co-workers have a similar positive experience.
- Be more vigilant for opportunities to improve quality and safety in our pharmacy.
- Invest more emotional energy in improving the patient experience.
- Increase engagement with and awareness of the pharmacy's safety goals.

Focus on the Positive – What Did We Learn?

- Eight of the nine reporters indicated that these positive experiences would have a *lasting positive effect* on their well-being.
- The other indicated that it would have a temporary positive effect on their well-being.

What is the Well-being Index for Pharmacy Personnel?

Research-validated online tool invented by Mayo Clinic

*100% anonymous
*Free/Do not have to be an APhA member
*Assess as often as the individual wants and track progress over time
*Access through website or through mobile app
*APhA launched at the WBI for Pharmacy Personnel in July 2019

How

*9-question assessment
*Takes just 5 minutes to complete
*APhA has added 3 optional questions on engagement with profession, workplace support of patient care services, and what APhA could do to help.

Measures dimensions of distress and well-being

*Likelihood of Burnout
*Severe Fatigue
*Suicidal Ideation
*Quality of Life
*Meaning in Work
*Work-Life Integration
*Risk of Medical Error
*Risk of Leaving Job
*Overall Well-Being

https://app.mywellbeingindex.org/signup

Invitation Code: APhA

What is the WBI for Pharmacy Personnel's Distress Percent?

Distress Percent represents the percentage of individuals with a WBI score greater than or equal to 5 – the score, determined through a validation question process, indicates a risk of high distress.

Distress Percent is the percentage of those who completed the WBI who are at *risk of high distress*. It can not be generalized to the entire pharmacy personnel population.

Why is this Important?

Pharmacists identified as being at a *risk of high distress* are at a:

- 3-fold higher risk of low quality of life
- 8-fold higher risk of burnout
- 2.5-fold higher risk of high fatigue
- 2.5-fold higher risk of intent to leave their current
- ***2-fold higher risk of medication error***

WELL-BEING index
https://app.mywellbeingindex.org/signup
Invitation Code: APhA

Process Questions and Practice Distress Percent

January 2020

January 2021

January 2022

When asked to respond to the statement *My work environment is supportive of me fully performing patient care services,* how did those in District Eight respond?

WELL-BEING index
https://app.mywellbeingindex.org/signup
Invitation Code: APhA

	STRONGLY AGREE			AGREE			DISAGREE			STRONGLY DISAGREE			NOT APPLICABLE		
	Jan 2020	Jan 2021	Jan 2022	Jan 2020	Jan 2021	Jan 2022	Jan 2020	Jan 2021	Jan 2022	Jan 2020	Jan 2021	Jan 2022	Jan 2020	Jan 2021	Jan 2022
National	*17.6%*	*20.6%*	*21.3%*	*37.5%*	*38.9%*	*39.6%*	*20.1%*	*18.5%*	*17.9%*	*16.8%*	*14.1%*	*13.4%*	*8.0%*	*8.0%*	*7.8%*
Arizona	23.8%	21.1%	20.1%	21.8%	26.6%	27.3%	22.8%	21.9%	22.3%	20.8%	18.8%	18.0%	10.9%	11.7%	12.2%
California	20.2%	21.2%	23.0%	37.5%	40.5%	44.4%	19.1%	16.6%	15.3%	12.4%	12.3%	9.5%	10.9%	9.5%	7.9%
Colorado	16.7%	18.5%	18.4%	36.3%	37.1%	36.0%	23.5%	22.6%	22.8%	16.7%	14.5%	14.7%	6.9%	7.3%	8.1%
Hawaii	12.5%	10.5%	10.5%	43.8%	47.4%	47.4%	12.5%	10.5%	10.5%	31.3%	31.6%	31.6%	0.0%	0.0%	0.0%
Nevada	10.0%	5.6%	5.6%	50.0%	38.9%	38.9%	30.0%	44.4%	44.4%	10.0%	11.1%	11.1%	0.0%	0.0%	0.0%
New Mexico	13.6%	21.4%	20.7%	45.5%	39.3%	37.9%	22.7%	25.0%	24.1%	18.2%	14.3%	17.2%	0.0%	0.0%	0.0%
Utah	27.5%	28.6%	29.6%	32.5%	32.7%	35.2%	20.0%	18.4%	16.7%	17.5%	18.4%	16.7%	2.5%	2.0%	1.9%

When asked to respond to the statement *I am satisfied with my ability to regularly engage in my profession and establishing collegial relationships with pharmacists outside of my practice site,* how did those in District Eight respond?

WELL-BEING index
https://app.mywellbeingindex.org/signup
Invitation Code: APhA

	VERY SATISFIED			SATISFIED			DISSATISFIED			VERY DISSATISFIED		
	Jan 2020	Jan 2021	Jan 2022	Jan 2020	Jan 2021	Jan 2022	Jan 2020	Jan 2021	Jan 2022	Jan 2020	Jan 2021	Jan 2022
National	*14.3%*	*15.3%*	*15.7%*	*40.3%*	*42.9%*	*43.8%*	*34.8%*	*32.6%*	*31.4%*	*10.7%*	*9.2%*	*9.1%*
Arizona	12.9%	11.7%	12.2%	35.6%	35.9%	36.0%	39.6%	39.1%	38.1%	11.9%	13.3%	13.7%
California	19.9%	19.6%	19.6%	40.4%	42.9%	47.1%	33.0%	30.7%	27.9%	6.7%	6.7%	5.4%
Colorado	15.7%	15.3%	14.7%	37.3%	37.1%	36.8%	35.3%	37.1%	36.8%	11.8%	10.5%	11.8%
Hawaii	0.0%	5.3%	5.3%	25.0%	26.3%	26.3%	50.0%	47.4%	47.4%	25.0%	21.1%	21.1%
Nevada	10.0%	11.1%	11.1%	20.0%	22.2%	22.2%	60.0%	61.1%	61.1%	10.0%	5.6%	5.6%
New Mexico	13.6%	14.3%	13.8%	40.9%	39.3%	37.9%	36.4%	39.3%	37.9%	9.1%	7.1%	10.3%
Utah	12.5%	16.3%	16.7%	35.0%	34.7%	33.3%	45.0%	40.8%	40.7%	7.5%	8.2%	9.3%

Distress Percent by Practice Setting
District Eight

WELL-BEING index
https://app.mywellbeingindex.org/signup
Invitation Code: APhA

	Community Chain			Community Independent			Hospital/ Healthsystem			Academia		
	Jan 2020	Jan 2021	Jan 2022	Jan 2020	Jan 2021	Jan 2022	Jan 2020	Jan 2021	Jan 2022	Jan 2020	Jan 2021	Jan 2022
National	*51.61%*	*46.91%*	*46.61%*	*27.68%*	*26.71%*	*26.58%*	*29.02%*	*27.93%*	*27.95%*	*21.38%*	*21.27%*	*21.38%*
Arizona	50.00%	56.63%	58.41%	Sample too small	Sample too small	Sample too small	25.00%	34.48%	33.33%	8.33%	5.26%	4.55%
California	49.53%	40.78%	38.86%	27.27%	27.42%	26.47%	30.70%	25.65%	26.58%	17.14%	19.75%	18.95%
Colorado	63.16%	54.84%	51.96%	Sample too small	Sample too small	Sample too small	23.33%	31.25%	29.17%	21.43%	17.86%	15.79%
Hawaii	76.92%	65.22%	62.50%	Sample too small	Sample too small	Sample too small	Sample too small	Sample too small	Sample too small	Sample too small	Sample too small	Sample too small
Nevada	71.43%	80.00%	82.14%	Sample too small	Sample too small	Sample too small	Sample too small	Sample too small	Sample too small	Sample too small	Sample too small	Sample too small
New Mexico	18.18%	10.00%	10.00%	Sample too small	Sample too small	Sample too small	Sample too small	Sample too small	Sample too small	Sample too small	Sample too small	Sample too small
Utah	62.50%	50.00%	48.00%	41.67%	33.33%	33.33%	15.38%	18.18%	18.18%	Sample too small	Sample too small	Sample too small

DISTRESS PERCENT CHANGES

National and District

November 2021 versus December 2021

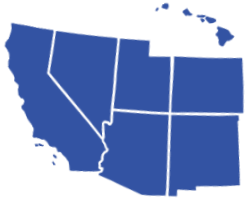
Changes in Distress Levels

As of January 2022

State	Change in Distress % December 2021 vs January 2022	Distress % January 2022	State Rank for Distress Level January 2022
Largest Increase in Distress Percent			
New Mexico	2.49%	31.58%	36
Vermont	1.62%	28.89%	43
Connecticut	0.81%	45.59%	4
Nevada	0.80%	56.36%	1
Georgia	0.46%	33.79%	24
Largest Decrease in Distress Percent			
Alabama	-0.86%	36.28%	17
Missouri	-0.53%	32.00%	33
Hawaii	-0.51%	42.17%	8
New York	-0.47%	30.74%	39
Tennessee	-0.38%	37.06%	16

Changes in Distress Levels – District Eight

As of January 2022



	Change in Distress % Dec 21 vs Jan 22	Distress % Jan 2022	Distress % State Rank Jan 2022	COVID 19 Vaccine Admin Jan 2022	Change in Distress % Nov 21 vs Dec 21	Distress % Dec 2021	Distress % State Rank Dec 2021	Distress % State Rank Nov 2021	Distress % State Rank Oct 2021	Distress % State Rank Sep 2021	Distress % State Rank Jul 2021	Distress % State Rank Jun 2021	Distress % State Rank Apr 2021	Distress % State Rank Feb 2021	Distress % State Rank May 2020	Distress % State Rank Apr 2020
Arizona	**0.20%**	**39.25%**	**13**	**12933400**	0.41%	39.05%	14	14	14	15	15	15	13	13	16	17
California	**-0.07%**	**29.92%**	**41**	**77883495**	-0.19%	29.99%	40	39	40	39	36	39	38	39	35	35
Colorado	**-0.29%**	**33.53%**	**27(t)**	**11089475**	-0.11%	33.82%	25	23 (T)	23	25	25	24	23	21	14	19
Hawaii	**-0.51%**	**42.17%**	**8**	**3033250**	-0.53%	42.68%	7	7	6	7	7	6	6	6	2	2
Nevada	**0.80%**	**56.36%**	**1**	**5216950**	0.84%	55.56%	1	1	1	1	1	1	1	1(t)	18	11
New Mexico	**2.49%**	**31.58%**	**36**	**3906275**	No Change	29.09%	42	43	44	44	44	44	44	43	39	39
Utah	**-0.26%**	**30.77%**	**38**	**5509820**	-0.27%	31.03%	37	38	31	31	33	33	32	30(t)	27	31

Note: Historic data from 2020/2021 has been removed to allow space for current month.
Refer to previous months' reports or contact ashaughnessy@aphanet.org for data.

DISTRESS PERCENT MONTHLY REPORTS
State-Specific
December 2021 versus January 2022

WELL-BEING index
https://app.mywellbeingindex.org/signup
Invitation Code: APhA

PHARMACISTS WELL-BEING INDEX

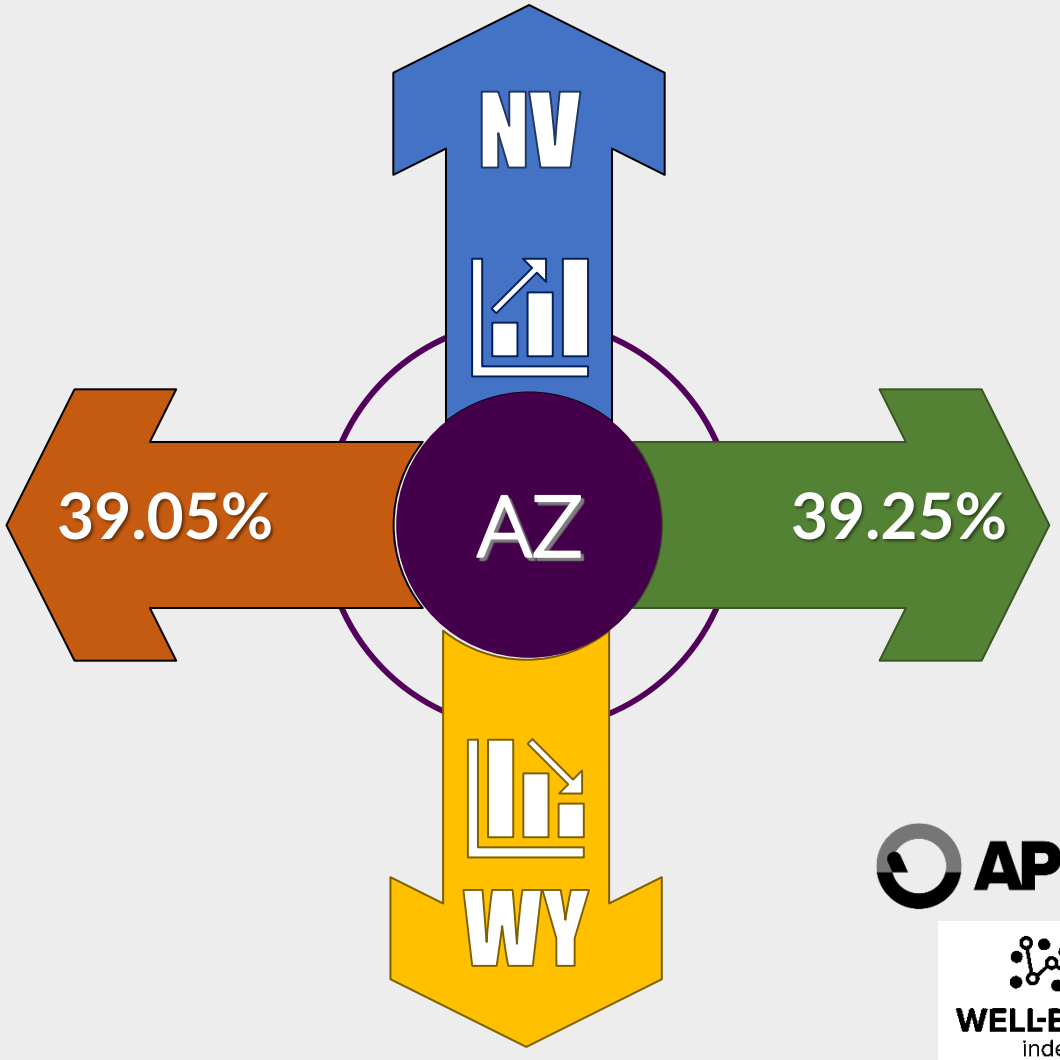
State Distress Percent*

January 2022

As of January 6, 2022, the Arizona distress percent was 39.25% (13th highest) with 180 assessors. On this same date, the CDC reported 12,933,400 COVID-19 vaccines administered and 1,419,562 cases in the state.

December 2021

As of December 6, 2021, the Arizona distress percent was 39.05% (14th highest) with 178 assessors. On this same date, the CDC reported 11,875,480 COVID-19 vaccines administered and 1,292,054 cases in the state.



State Comparison

As of January 6, 2022

Nevada is the highest at 56.36% (n=23)

Wyoming has the lowest 18.18% (n=15)

APhA

WELL-BEING index
https://app.mywellbeingindex.org/signup
Invitation Code: APhA

**Distress Percent* is the percentage of individuals with a Pharmacist Well-Being Index (WBI) score ≥5.It measures the percent of individuals that are at a high level of distress.

PHARMACISTS WELL-BEING INDEX

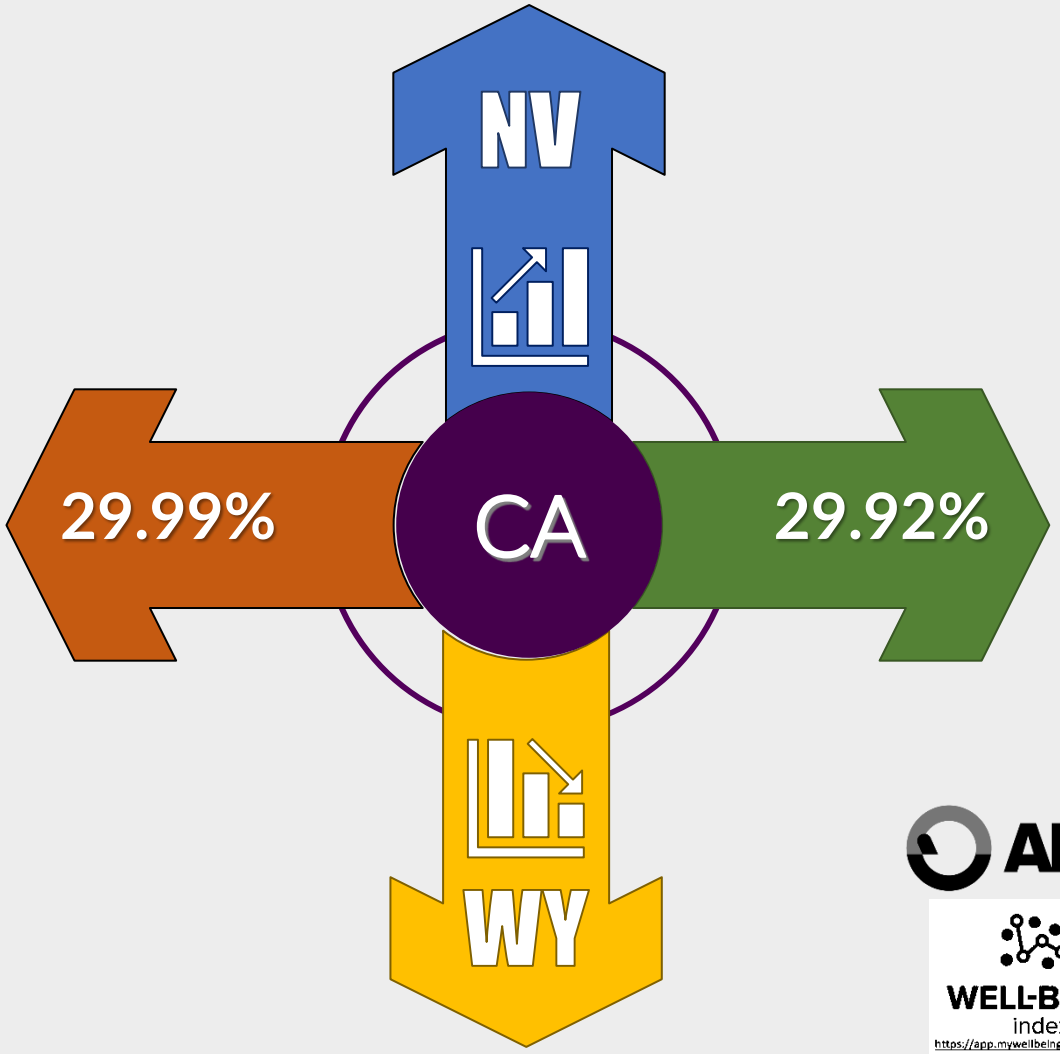
State Distress Percent*

January 2022

As of January 6, 2022, the California distress percent was 29.92% (41st highest) with 567 assessors. On this same date, the CDC reported 77,883,495 COVID-19 vaccines administered and 5,766,356 cases in the state.

December 2021

As of December 6, 2021, the California distress percent was 29.99% (40th highest) with 566 assessors. On this same date, the CDC reported 71,475,695 COVID-19 vaccines administered and 5,084,927 cases in the state.



State Comparison

As of January 6, 2022

Nevada is the highest at 56.36% (n=23)

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PHARMACISTS WELL-BEING INDEX

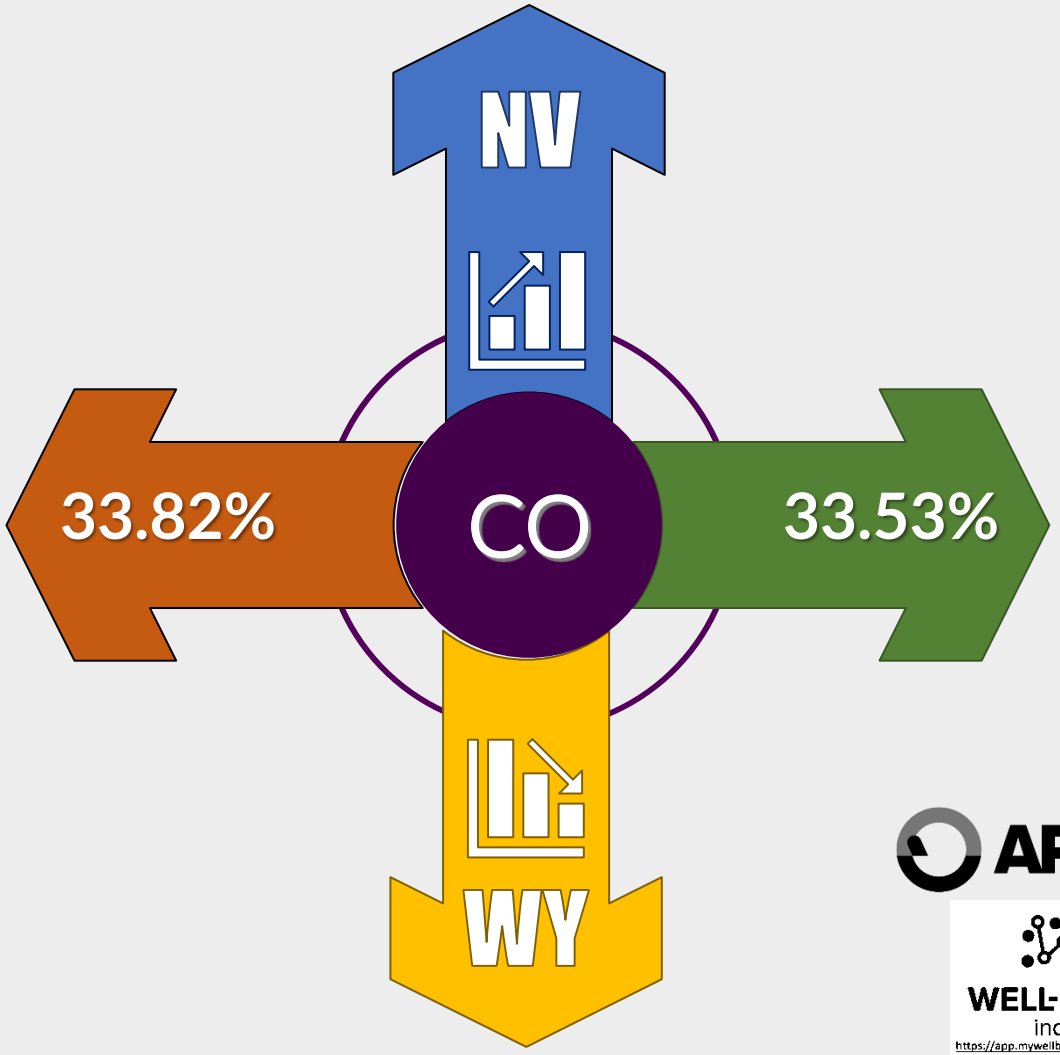
State Distress Percent*

January 2022

As of January 6, 2022, the Colorado distress percent was 33.53% (tied for 27th highest) with 169 assessors. On this same date, the CDC reported 11,089,475 COVID-19 vaccines administered and 971,525 cases in the state.

December 2021

As of December 6, 2021, the Colorado distress percent was 33.82% (tied for 25th highest) with 169 assessors. On this same date, the CDC reported 10,297,835 COVID-19 vaccines administered and 838,587 cases in the state.



State Comparison

As of January 6, 2022

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Wyoming has the lowest 18.18% (n=15)

APhA

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Distress Percent is the percentage of individuals with a Pharmacist Well-Being Index (WBI) score ≥5. It measures the percent of individuals that are at a high level of distress.

PHARMACISTS WELL-BEING INDEX

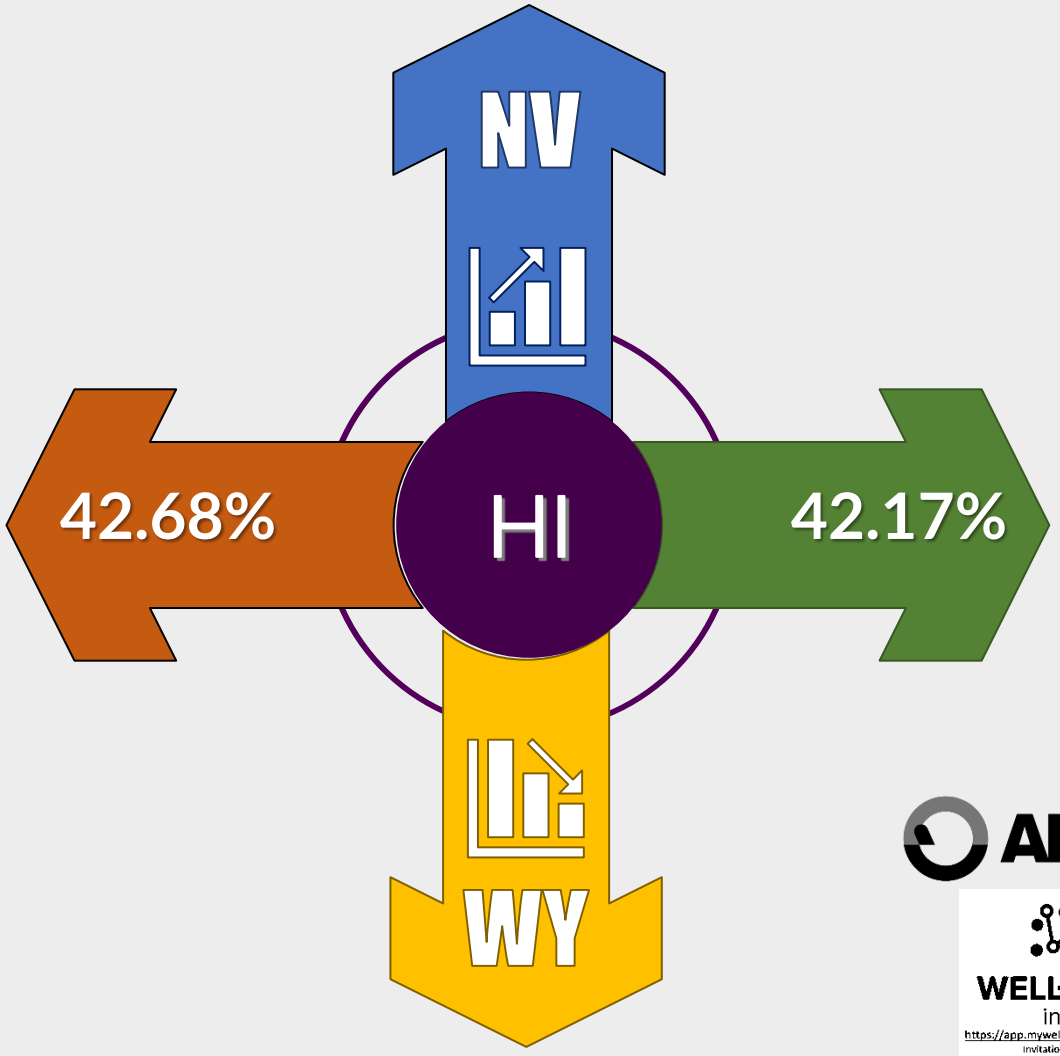
State Distress Percent*

January 2022

As of January 6, 2022, the Hawaii distress percent was 42.17% (8th highest) with 28 assessors. On this same date, the CDC reported 3,033,250 COVID-19 vaccines administered and 122,385 cases in the state.

December 2021

As of December 6, 2021, the Hawaii distress percent was 42.68% (7th highest) with 28 assessors. On this same date, the CDC reported 2,845,210 COVID-19 vaccines administered and 85,330 cases in the state.



State Comparison

As of January 6, 2022

Nevada is the highest at 56.36% (n=23)

Wyoming has the lowest 18.18% (n=15)

APhA

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Distress Percent is the percentage of individuals with a Pharmacist Well-Being Index (WBI) score ≥5. It measures the percent of individuals that are at a high level of distress.

PHARMACISTS WELL-BEING INDEX

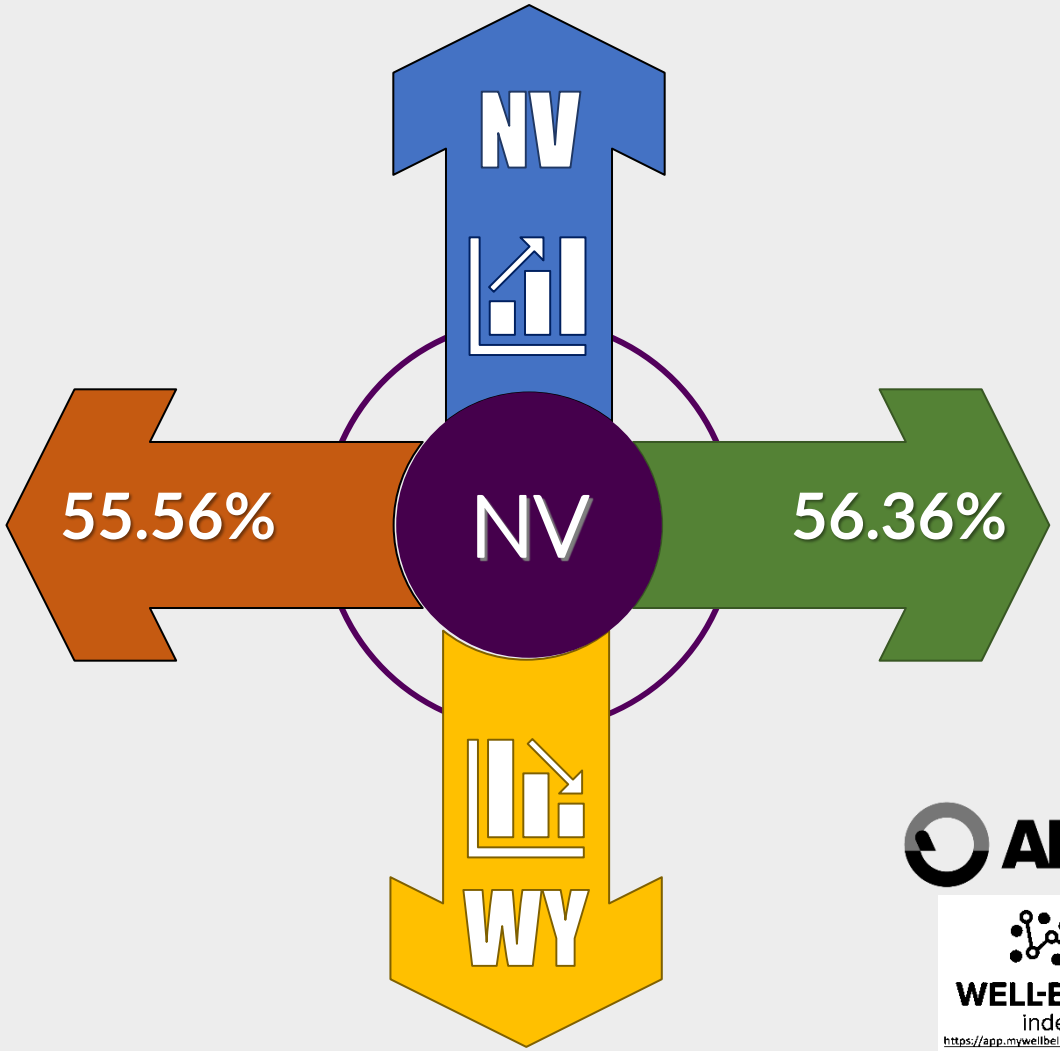
State Distress Percent*

January 2022

As of January 6, 2022, the Nevada distress percent was 56.36% (with the highest) with 23 assessors. On this same date, the CDC reported 5,216,950 COVID-19 vaccines administered and 520,948 cases in the state.

December 2021

As of December 6, 2021, the Nevada distress percent was 55.56% (with the highest) with 23 assessors. On this same date, the CDC reported 4,800,170 COVID-19 vaccines administered and 473,150 cases in the state.



State Comparison

As of January 6, 2022

Nevada is the highest at 56.36% (n=23)

Wyoming has the lowest 18.18% (n=15)

APhA

WELL-BEING index
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**Distress Percent* is the percentage of individuals with a Pharmacist Well-Being Index (WBI) score ≥5. It measures the percent of individuals that are at a high level of distress.

PHARMACISTS WELL-BEING INDEX

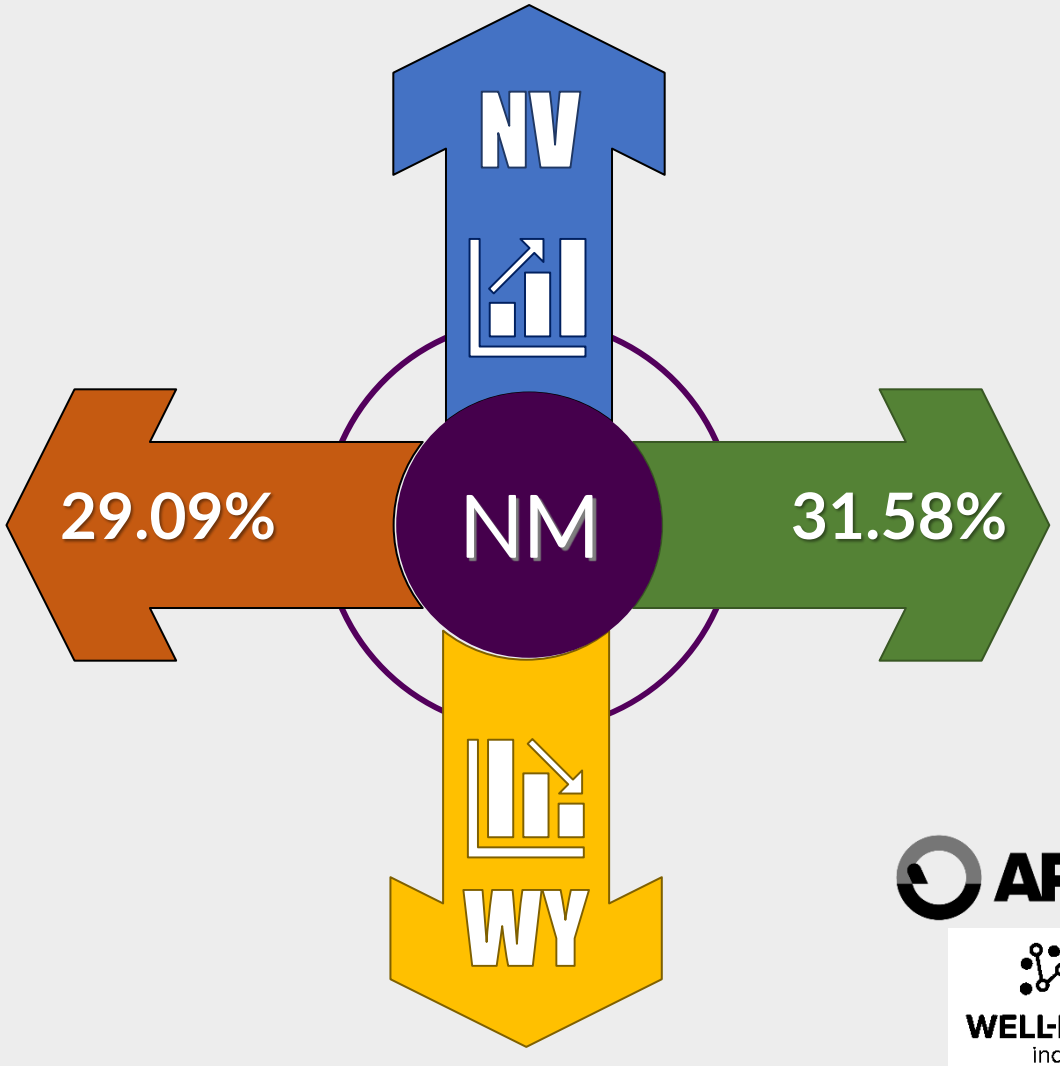
State Distress Percent*

January 2022

As of January 6. 2022, the New Mexico distress percent was 31.58% (36th highest) with 40 assessors. On this same date, the CDC reported 3,654,855 COVID-19 vaccines administered and 320,520 cases in the state.

December 2021

As of December 6, 2021, the New Mexico distress percent was 29.09% (42nd highest) with 39 assessors. On this same date, the CDC reported 3,654,855 COVID-19 vaccines administered and 320,520 cases in the state.



State Comparison

As of January 6, 2022

Nevada is the highest at 56.36% (n=23)

Wyoming has the lowest 18.18% (n=15)

APhA

WELL-BEING index
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Distress Percent is the percentage of individuals with a Pharmacist Well-Being Index (WBI) score ≥5. It measures the percent of individuals that are at a high level of distress.

PHARMACISTS WELL-BEING INDEX

State Distress Percent*

January 2022

As of January 6, 2022, the Utah distress percent was 30.77% (38th highest) with 63 assessors. On this same date, the CDC reported 5,509,820 COVID-19 vaccines administered and 663,654 cases in the state.

December 2021

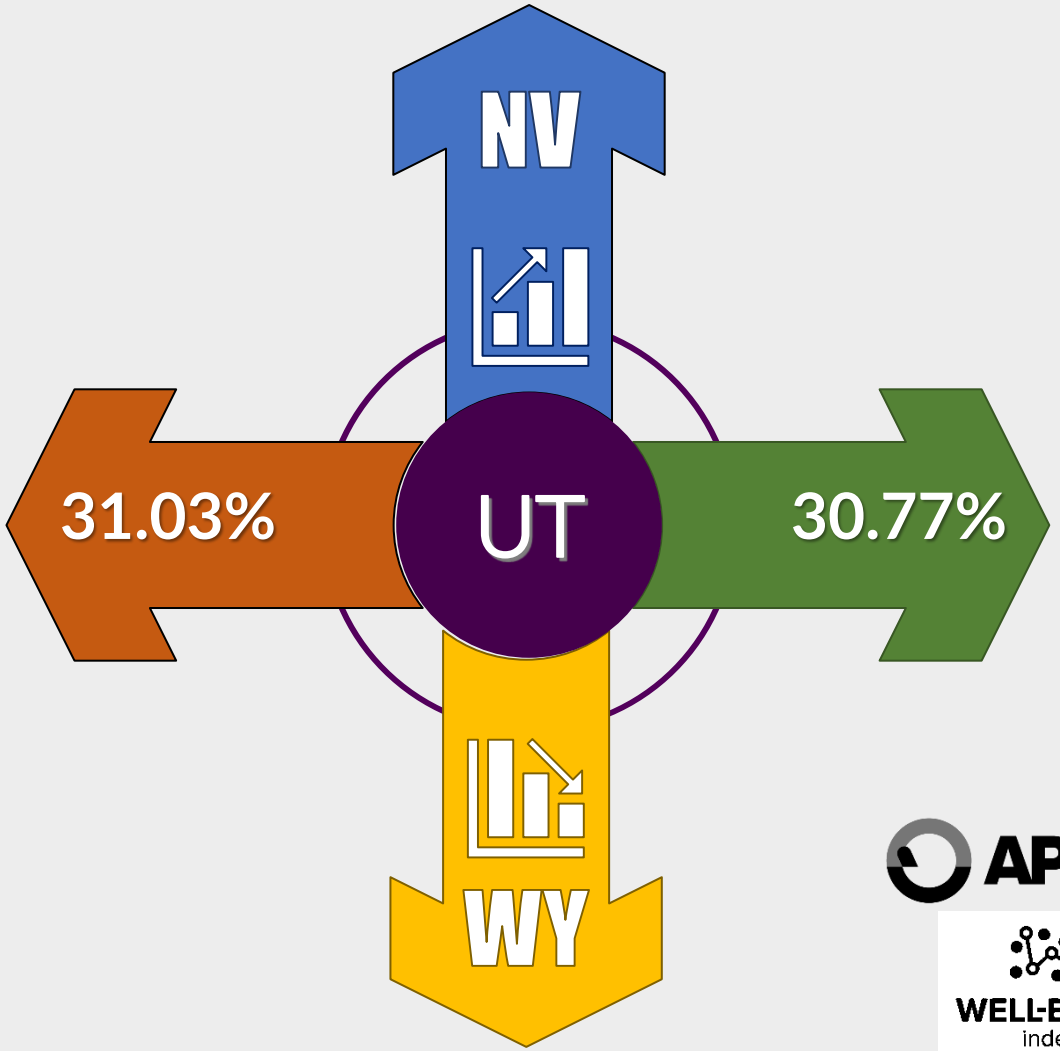
As of December 6, 2021, the Utah distress percent was 31.03% (37th highest) with 62 assessors. On this same date, the CDC reported 5,062,460 COVID-19 vaccines administered and 601,952 cases in the state.

State Comparison

As of January 6, 2022

Nevada is the highest at 56.36% (n=23)

Wyoming has the lowest 18.18% (n=15)



APhA

WELL-BEING index
https://app.mywellbeingindex.org/signup
Invitation Code: APhA

Distress Percent is the percentage of individuals with a Pharmacist Well-Being Index (WBI) score ≥5. It measures the percent of individuals that are at a high level of distress.

Well-being Resources Promo Slides*

For Your Use in State Social Media and Periodicals

**Please do not change the content of these promotional slides*

PHARMACY WORKPLACE & WELL-BEING REPORTING

Your experiences – positive and negative – tell a powerful story!

Your experience can be the spark that helps change and enhance the pharmacy workplace, pharmacy personnel well-being, and patient safety.

Submit your experience report to
Pharmacy Workplace and Well-being Reporting.
www.pharmacist.com/pwwr

Your report is confidential, anonymous, and protected by the Alliance for Patient Medication Safety - a recognized national patient safety organization.

Share the PWWR link with your colleagues!

WELL-BEING index

Burnout is real.

**Take advantage of APhA's online screening tool, invented by the Mayo Clinic,
to evaluate your fatigue, depression, burnout, anxiety, and stress and assess your well-being.
It takes less than 5 minutes to answer 9 short questions.
It's 100% anonymous, free, and you do not need to be an APhA member.
Resources are available once you submit your assessment.**

Well-being Index for Pharmacists, Student Pharmacists, & Pharmacy Technicians
https://app.mywellbeingindex.org/signup
Invitation Code: APhA

Or Scan

APhA

You're committed to pharmacy.
We're committed to your well-being.
www.pharmacist.com/wellbeing

Attachment 3

ISMP Medication Safety Self Assessment Community/Ambulatory

2017

ISMP Medication Safety Self Assessment® for Community/Ambulatory Pharmacy

ISMP
INSTITUTE FOR SAFE MEDICATION PRACTICES

Dear Pharmacist, Pharmacy Technician, Manager, Owner, Executive:

The Institute for Safe Medication Practices (ISMP) is pleased to provide the nation's community pharmacies with a newly updated version of the ISMP Medication Safety Self Assessment® for Community/Ambulatory Pharmacy. This 2017 tool is designed to help organizations assess the safety of current medication practices and proactively identify opportunities for improvement.

In preparation for the release of this assessment tool, we selected and updated many items from the 2001 self assessment and added additional items as well. These changes represent new practices and processes that have evolved over the last 15 years that are known to impact medication safety, including new research findings about error prevention, as well as new technologies not widely adopted in 2001 when the previous self assessment was published. To incorporate these new items into the 2017 assessment, while keeping the assessment a manageable size, we have eliminated several items from the 2001 assessment that the majority of pharmacies previously indicated had been fully implemented either in some or all areas of their organization.

We encourage you to complete this self assessment as part of your ongoing quality improvement activities. Because medication use is a complex, multidisciplinary process, many characteristics of your pharmacy system are best assessed from the perspective of varying practitioners. Therefore, to accurately evaluate your system and maximize the value of the self assessment, we strongly encourage you to follow the process outlined on page 6.

We welcome the opportunity to work with you as you assess medication safety in your organization. While there is still much work to do, we are confident of success as we continue to work together to make America's community pharmacies even safer and more efficient.

Warm regards,

Michael R. Cohen, RPh, MS, ScD (hon.), DPS (hon.), FASHP
President
Institute for Safe Medication Practices

About the Institute for Safe Medication Practices (ISMP)

The Institute for Safe Medication Practices (ISMP) is the nation's only nonprofit, charitable organization devoted entirely to medication error prevention and safe medication use. ISMP is known and respected worldwide as the leading resource for independent and effective medication safety recommendations.

The Institute's recommended strategies for error prevention and risk identification are based on up-to-the minute information gained from analysis of reports to the voluntary ISMP National Medication Errors Reporting Program, onsite visits to individual healthcare organizations, and advice from outside advisory experts.

ISMP's initiatives, which are built upon system-based solutions, include: five medication safety newsletters for healthcare professionals and consumers that reach more than three million total readers; educational programs, including conferences on medication use issues; confidential consultation services to healthcare systems to proactively evaluate medication systems or analyze medication related sentinel events; advocacy for the adoption of safe medication standards by accrediting bodies, manufacturers, policy makers, and regulatory agencies; independent research to identify and describe evidence-based safe medication practices; and a consumer website (www.consumermedsafety.org) that provides patients with access to free medication safety information and alerts.

ISMP works with healthcare practitioners and institutions, regulatory and accrediting agencies, consumers, professional organizations, the pharmaceutical industry, and others to accomplish its mission. It is a federally certified patient safety organization (PSO), providing legal protection and confidentiality for patient safety data and error reports it receives.

As an independent nonprofit organization, ISMP receives no advertising revenue and depends entirely on charitable donations, educational grants, newsletter subscriptions, and volunteer efforts to pursue its lifesaving work. For more information that will make a difference to patient safety, please visit ISMP online at: www.ismp.org.

ISMP
INSTITUTE FOR SAFE MEDICATION PRACTICES
www.ismp.org

Acknowledgements

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ISMP would like to gratefully acknowledge the Cardinal Health Foundation for its continued support of our efforts to improve medication safety in America's pharmacies.

Advisory Panel

ISMP would like to thank the following members of our volunteer Advisory Panel, who helped inform the content of the 2017 ISMP Medication Safety Self Assessment® for Community/Ambulatory Pharmacy.

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Clinton, IA

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We would also like to acknowledge the ISMP staff and fellows whose tireless efforts supported the completion of this assessment tool.

ISMP Medication Safety Self Assessment® for Community/Ambulatory Pharmacy

The 2017 ISMP Medication Safety Self Assessment® for Community/Ambulatory Pharmacy is designed to heighten awareness of the distinguishing characteristics of safe pharmacy systems.

The self assessment is divided into ten key elements that most significantly influence safe medication use. Each element is defined by one or more core characteristics of a safe pharmacy system that further define a safe medication use system. Each core characteristic contains individual self-assessment items to help you evaluate your success with achieving each core characteristic.

ISMP is not a regulatory or standards setting organization. As such, the self-assessment characteristics represent ideal practices and are not purported to represent a minimum standard of practice. Some of the self-assessment criteria represent innovative practices and system enhancements that are not widely available in pharmacies today. However, the value of these practices in reducing errors is grounded in expert analysis of medication errors, scientific research, or strong evidence of their ability to reduce errors.

Instructions for Conducting the Self Assessment

1. **Establish a team.** Establish a team of owners/managers, staff pharmacists, pharmacy technicians, and pharmacy students to collaboratively assess your pharmacy system by thoroughly investigating the level of implementation for each self-assessment item.

   Because medication use is a complex, interdisciplinary process, the value and accuracy of the self assessment is reduced if a single person involved in medication use completes the assessment.

   IMPORTANT! The self assessment should be completed in its entirety by staff and managers who work within the pharmacy, not by off-site managers on behalf of the pharmacy.

2. **Read and review the self assessment in its entirety before beginning the assessment process.** The team leader should provide each team member with either a hardcopy or electronic version of the self assessment (including the definitions) and the Frequently Asked Questions (FAQs), which can be accessed at: http://www.ismp.org/selfassessments/Community/2017. Staff should be encouraged to read the assessment prior to the first meeting.

   If a self-assessment item has an FAQ associated with it, "FAQ" will be noted next to the item. Defined terms are designated throughout the text in **BOLD, CAPITAL LETTERS** and can be found on pages 34-35.

3. **Convene the team.** Ensure that each team member can view either a hardcopy or electronic version of the self assessment during the evaluation process. There are two options for completing the assessment.

   - ***Option 1:*** Print a hard copy of the self assessment, fill in your choice (A through E, or Not Applicable) for each self-assessment item, and enter your responses into the online self-assessment form. (See ***Step 5*** for how to access the online form.)
   - ***Option 2:*** Use the online self-assessment form to view at team meetings and enter your choice (A through E, or Not Applicable) for each self-assessment item, while saving your entered information between meetings. (See ***Step 5*** for how to access the online form.)

     NOTE: By entering your pharmacy's responses into the online self-assessment form, you will receive a score for each Key Element and Core Characteristic and for the entire self assessment.

   Teams should be provided with sufficient time to complete the self assessment and be charged with the responsibility to evaluate, accurately and honestly, the current status of practices in your pharmacy.

   Based on participant feedback from our prior self assessments, we anticipate that it may take three team meetings of approximately 1 to 2 hours each to complete this self assessment. The purpose of the initial meeting is to allow discussion of the self-assessment items and identification of items that require some further research or input. The purpose of the subsequent meetings is to allow the team to reconvene to complete the assessment.

4. **Discuss each Core Characteristic and evaluate the pharmacy's current success with implementing the self-assessment items within that Core.** As necessary, investigate and verify the level of implementation with others. When a consensus on the level of implementation for each self-assessment item has been reached, select the appropriate column using a 5-point letter scale with:

   A. There has been no activity to implement this item in the pharmacy for any patient, prescription, drug, or staff.
   B. This item has been discussed for possible implementation in the pharmacy, but is not implemented at this time.
   C. This item has been partially implemented in the pharmacy for some or all patients, prescriptions, drugs, or staff.
   D. This item has been fully implemented in the pharmacy for some patients, prescriptions, drugs, or staff.
   E. This item has been fully implemented in the pharmacy for all patients, prescriptions, drugs, or staff.

For self-assessment items with multiple components, full implementation is evidenced only if all components are present.

A few self-assessment items may require evaluation using only column A (no activity) or column E (fully implemented), as partial implementation is not applicable.

Some of the self-assessment items offer the option of "Not Applicable." For these items, "Not Applicable" can only be selected if your pharmacy meets the listed scoring guideline. For example, if your pharmacy does not provide immunization services, then you can answer "Not Applicable" to item number 17.

Pharmacies may want to consider assigning an individual to record any discussion generated around each self-assessment item and the rationale behind the selected choice. This information, meant for internal use only, can assist the team when reviewing their responses to individual items or reassessing their pharmacy at a later date. This will provide insight into why the choice selected for each self-assessment item had been chosen at that point in time.

5. **Enter your responses in the online self-assessment form.** This step will be done simultaneously with ***Step 4*** if ***Option 2*** is used by the team to complete the assessment. To access the online form, go to: https://surveys.ismp.org/s3/Community-Self-Assessment. ***PLEASE NOTE: ISMP will not be collecting or aggregating data received through the online form.***

   - **If you do NOT enter all of your responses during the same session** and need to return to your entered information at a later time: Immediately prior to closing out of your session, save your entered information by clicking the "Save and continue later" link (located on the red bar at the top of each webpage), entering your email address, and pressing "Save." An email (from SurveyGizmo) will then be sent to the provided email address with a link that can be used to return to your saved information. If you do not receive an email, please check your spam, junk, or clutter email folder or quarantined messages.

     IMPORTANT! Only save your information once per session. This should be done immediately prior to exiting out of the online assessment. Your entered information is only saved when you are prompted to enter your email address and to press "Save."

   - **If you DO enter all of your pharmacy's responses during the same session**, but want the ability to return to your pharmacy's results at a later time: Prior to completing Key Element X (Quality Processes and Risk Management), click on the "Save and continue later" link (located on the red bar at the top of the webpage), enter your email address, and press "Save." An email (from SurveyGizmo) will then be sent to the provided email address with a link that can be used to view your pharmacy's results. If you do not receive an email, please check your spam, junk, or clutter email folder or quarantined messages.

     IMPORTANT! This must occur prior to clicking "Next" on the Key Element Ten (X) webpage.

6. **Obtain your pharmacy's results.** To receive your results, click "Next" on the Key Element Ten (X) webpage if you have finished answering all of the assessment items. You will then be prompted to print two reports. The first report is how your pharmacy answered each self-assessment item. The second report contains your pharmacy's score, the maximum score, and your pharmacy's score as a percentage of the maximum score for each Key Element and Core Characteristic and for the entire self assessment.

   IMPORTANT! If you did not save your pharmacy's assessment by providing an email address as described in ***Step 5***, this will be your last opportunity to print these two reports. If you did save your pharmacy's assessment by providing an email address, you can use the link that was emailed to the provided address at any point to retrieve your pharmacy's reports.

IF YOU HAVE QUESTIONS, please refer to the FAQs available on our website: **http://www.ismp.org/selfassessments/Community/2017**. Contact ISMP at **selfassess@ismp.org** or call **(215) 947-7797** during usual business hours (Eastern Time) if you need additional assistance.

Identifying and Prioritizing Opportunities for Improvement

1. **Identify areas of weakness.** Identify the Key Elements and Core Characteristics with the greatest opportunities for improvement (those with the lowest scores as a percentage of the maximum score), as well as the individual self-assessment items with a response of A-D.

2. **Prioritize your work.** Prioritize the above identified opportunities for improvement.

   - Start with items that you know you can achieve without considerable delay. Including these types of items at the top of your prioritized list can help ensure early success and establish momentum for ongoing improvements.
   - An item that scored C or D suggests that the risk-reduction strategy has been implemented in part with some success or in full in the pharmacy for some patients, prescriptions, drugs, or staff. Building upon these early successes is a natural progression of effort.
   - Do not hesitate to include a resource-intensive strategy high on your priority list. Items that require extensive time and financial outlays to implement also require extensive planning. Making a resource-intensive strategy a priority helps to ensure that the planning work begins immediately, even if implementation is a year or more away.
   - Successful change begins with acquiring staffs' buy-in to the change process. Strategies that incite enthusiasm strengthen the commitment to achieving a shared goal.

3. **Develop an action plan.** Develop your medication safety action plan with the goal of obtaining an E (full implementation) for each of your identified priorities.

4. **Monitor progress.** Monitor your pharmacy's progress with implementing the self-assessment items and continue to work toward the goals that your pharmacy outlined in its action plan. Plan to perform the self assessment again at a later date to track your pharmacy's improvement in medication safety.

A	No activity to implement
B	Discussed, but not implemented
C	Partially implemented for some or all patients, prescriptions, drugs, or staff
D	Fully implemented for some patients, prescriptions, drugs, or staff
E	Fully implemented for all patients, prescriptions, drugs, or staff

I. PATIENT INFORMATION

Core Characteristic #1

Essential patient information is obtained, readily available in useful form, and considered when dispensing, administering, and monitoring the effects of medications.

		A	B	C	D	E
1	Patient information (patient's full name [including suffix], address, home telephone number, alternate means of contact [e.g., email address or cell phone number], gender, date of birth, and allergies) is obtained and entered into the pharmacy computer system before dispensing prescriptions, and is updated at each encounter.					
FAQ 2	The pharmacy has implemented policies and procedures and system enhancements to ensure that only one profile per person exists in its system.					
3	The pharmacy assesses and documents patients' preferred language for communication, health literacy, cultural influences relevant to medication therapy, and any hearing and/or visual impairments that may affect compliance with medication therapy.					
4	A current medication list, including prescription and over-the-counter (OTC) medications (with dose, frequency, and route) and immunizations (with vaccination dates), is obtained, entered into the pharmacy computer system, and updated at each encounter.					
5	A list of vitamins, herbal products, dietary supplements, homeopathic medications, and alternative medicines currently used by the patient is obtained, entered into the pharmacy computer system, and updated at each encounter.					
6	Basic information about comorbid and/or chronic conditions (e.g., diabetes, hypertension, renal or liver impairment, pregnancy, lactation) is obtained, entered into the pharmacy computer system, and updated at each encounter.					
7	The pharmacy takes steps to obtain patient weight when dispensing weight-based drugs, such as those used in chemotherapy treatment or pediatrics.					
8	When taking orders over the telephone, the prescriber (or authorized agent) is specifically queried about comorbid conditions, allergies, date of birth, patient weight (if applicable), and indication.					
9	Recent clinical data such as blood glucose levels, liver enzymes, renal function, blood pressure, and cholesterol levels are available to pharmacists to support clinical drug monitoring of patient-specific drug regimens.					

A	No activity to implement
B	Discussed, but not implemented
C	Partially implemented for some or all patients, prescriptions, drugs, or staff
D	Fully implemented for some patients, prescriptions, drugs, or staff
E	Fully implemented for all patients, prescriptions, drugs, or staff

I. PATIENT INFORMATION (continued)

		A	B	C	D	E
10	Pharmacists verify any critical clinical information about the patient that is necessary to confirm the appropriateness of the medication and dose (e.g., allergies and reactions, weight, opioid tolerance, laboratory values, indication for drug).					
11	Prescription orders cannot be entered into the pharmacy computer system until the patient's allergies (or "no known allergies") have been properly entered and coded (patient allergies is a required field).					
12	Allergy information (including reaction information) is clearly visible on pharmacy computer system screens and accessible during order entry.					
13	There is a defined process that specifies how to modify patient allergies and reactions in the pharmacy computer system and who is permitted to make such changes.					
14	The pharmacy system incorporates special prompts for selected **HIGH-ALERT MEDICATIONS** to obtain or verify critical information about the patient (e.g., past opioid use for patients receiving transdermal fenta**NYL** patches, concentrated morphine solutions, long-acting opioids) necessary to confirm the appropriateness of the prescribed medication, dose, dosage form, and directions for use.					
15	Pharmacists consider the need for dose adjustments for medications based upon specific recent clinical data available (e.g., patient with renal impairment is identified when prescribed a potentially toxic drug that is excreted by the kidney).					
16	At the point of sale, pharmacy staff ask the patient (or person picking up the prescription) to state the patient's name and date of birth, and these two identifiers are verified against the patient's profile to help ensure that medications are being dispensed for the proper patient.					
17	All administered vaccines are fully documented in the patient's profile including: vaccine name, dose, national drug code (NDC) number, date of administration, vaccine manufacturer, vaccine lot number, the name and title of the person who administered the vaccine, and the address of the facility where the permanent record will reside. *Scoring guideline: Choose NOT APPLICABLE if immunization services are not provided at the pharmacy.*					
		NOT APPLICABLE				
18	Vaccine registries are checked before vaccines are administered to avoid duplication. *Scoring guideline: Choose NOT APPLICABLE if immunization services are not provided at the pharmacy.*					
		NOT APPLICABLE				

A	No activity to implement
B	Discussed, but not implemented
C	Partially implemented for some or all patients, prescriptions, drugs, or staff
D	Fully implemented for some patients, prescriptions, drugs, or staff
E	Fully implemented for all patients, prescriptions, drugs, or staff

II. DRUG INFORMATION

Core Characteristic #2

Essential drug information is readily available in useful form and considered when dispensing, administering, and monitoring the effects of medications.

		A	B	C	D	E
19	Online drug information references are easily accessible in all dispensing areas and include user-friendly, up-to-date information on prescription, OTC, herbal, and alternative medicines.					
20	Online or other current veterinary references are easily accessible and used as needed when dispensing to nonhumans.					
21	The pharmacy computer system is periodically evaluated for clinically insignificant and false positive alerts, and action is taken to minimize alert fatigue.					
22	The pharmacy computer system performs dose range checks and warns pharmacy staff about overdoses and under-doses for narrow therapeutic index and **HIGH-ALERT MEDICATIONS**.					
23	The pharmacy computer system is tested and updated at least twice annually to ensure that critical alerts are present for narrow therapeutic index and **HIGH-ALERT MEDICATIONS**.					
24	The pharmacy computer system requires pharmacists to document rationale when overriding a serious alert (e.g., exceeding a **MAXIMUM DOSE**, a serious drug interaction).					
25	The pharmacy computer system defaults to a weekly dosage regimen for oral methotrexate, and if overridden to daily dosing, a **HARD STOP** verification of an appropriate oncologic indication is required.					
26	The pharmacy computer system automatically screens and detects medications to which patients may be allergic (including cross allergies), provides a clear warning to staff during order entry, and requires pharmacists to enter an explanation to override the warning.					
27	Pharmacists review all clinically significant pharmacy computer system warnings, even when a pharmacy technician initially enters prescriptions into the pharmacy computer system.					
28	The pharmacist ascertains the clinical purpose of each prescription before the medication is dispensed to ensure that the prescribed therapy is appropriate for the patient's condition.					

A	No activity to implement
B	Discussed, but not implemented
C	Partially implemented for some or all patients, prescriptions, drugs, or staff
D	Fully implemented for some patients, prescriptions, drugs, or staff
E	Fully implemented for all patients, prescriptions, drugs, or staff

II. DRUG INFORMATION (continued)

		A	B	C	D	E
29	At least weekly, an updated interactive database, supplied by a drug database provider for the pharmacy computer system, is loaded into the system.					
FAQ 30	The pharmacy computer system alerts staff when safety screening does not occur due to data not being available.					
31	A designated pharmacist routinely reviews, for quality improvement purposes, reports of the documented rationale for selected pharmacy computer system warnings (e.g., **MAXIMUM DOSE** alerts, serious drug interactions, allergy alerts) that have been overridden to ensure justification and appropriateness.					

Core Characteristic #3

Medications added to the inventory are reviewed for their error potential, and strategies are undertaken to minimize the possibility of errors.

32	If sig codes are used by pharmacy staff during order entry, the codes are standardized within the pharmacy (and throughout a chain with multiple stores) and reviewed regularly to evaluate error potential.					
FAQ 33	A defined process exists for **PHARMACY LEADERSHIP** to create standardized **MNEMONICS**, sig codes, and speed codes.					
34	When a new item is added to the pharmacy inventory, the potential for error with that medication (e.g., sound-alike names, look-alike packaging, complex instructions for patients, confusing dosing parameters, clinical monitoring requirements) is evaluated.					
35	Before a new product is added to the pharmacy inventory, an evaluation assessing the potential for error includes a review of the literature for published errors related to that product.					
36	When new medications with heightened error potential are identified, the pharmacy establishes safety enhancement(s) (e.g., check systems, alert labels, reminders, limitations on use, sequestered storage and location) before initial use.					
37	After a medication has been on the market for several months, a staff or corporate level pharmacist is assigned responsibility to determine if medication errors or adverse reactions have been reported internally or externally since product launch, and safety enhancements are established in the pharmacy as necessary.					

A	No activity to implement
B	Discussed, but not implemented
C	Partially implemented for some or all patients, prescriptions, drugs, or staff
D	Fully implemented for some patients, prescriptions, drugs, or staff
E	Fully implemented for all patients, prescriptions, drugs, or staff

III. COMMUNICATION OF DRUG ORDERS AND OTHER DRUG INFORMATION

Core Characteristic #4

Methods of communicating prescription orders and other drug information are standardized and automated to minimize the risk for error.

		A	B	C	D	E
38	The pharmacy computer system is able to receive electronic prescriptions with minimal data entry/transcription required.					
39	If the prescription is received on paper, prescription scanning is used to show an image of the original prescription on the pharmacy computer screen.					
FAQ 40	A process is in place to verify that the scanned image accurately represents the original prescription. *Scoring guideline: Choose NOT APPLICABLE if scanning is not utilized at the pharmacy.*					
		NOT APPLICABLE				
41	A list of **ERROR-PRONE ABBREVIATIONS** (e.g., "U" for units) and dose designations (e.g., using trailing zeros for whole number doses, lack of using a leading zero for doses less than one) is established and used for internal communication and documentation of drug information on prescription orders, pharmacy labels, and in pharmacy computer systems.					
42	Feedback is provided to prescribers about quality and/or safety issues of electronic prescriptions generated by their prescribing systems (e.g., missing or mismatched quantities [1 for 10 mL insulin vial], mismatches between drug dosage form ordered and dosage units ordered [solution ordered, dose indicated in tablets], wrong drug selected, sig field contradicts instructions in the notes field).					
43	The pharmacy does not accept telephone orders for chemotherapeutic agents.					
44	Telephone or voice mail prescription orders received by a pharmacist, pharmacy intern, or certified technician (where allowed by regulation) are written down immediately on a pharmacy prescription blank.					
45	For telephone prescription orders, the pharmacy uses prescription pads that prompt the receiver to ask the caller for indication, allergies, date of birth, and, if needed, comorbid conditions and patient weight.					
FAQ 46	When telephone orders must be taken, the order is **READ BACK** to the prescriber or authorized agent for confirmation.					
47	The pharmacy uses an integrated voice response (IVR) system that includes prompts that require the prescriber or agent to stop and spell all names (prescriber, patient, and drug) and sound out numbers (e.g., 60 is emphasized as "six zero," 15 as "one five") when leaving a spoken prescription order.					

A	No activity to implement
B	Discussed, but not implemented
C	Partially implemented for some or all patients, prescriptions, drugs, or staff
D	Fully implemented for some patients, prescriptions, drugs, or staff
E	Fully implemented for all patients, prescriptions, drugs, or staff

III. COMMUNICATION OF DRUG ORDERS AND OTHER DRUG INFORMATION (continued)

		A	B	C	D	E
48	The pharmacy has a formal policy to assess and clarify any unusual doses or uses of medications before dispensing.					
49	Pharmacists have a written policy to follow, to easily and effectively resolve conflicts when prescribers do not agree with their expressed concerns about the safety of an order.					
50	The pharmacist who clarifies an atypical order documents the problem identified, actions taken, and result or outcome through pharmacy computer systemized notes in the patient's profile or as an annotated note on the scanned prescription.					

A	No activity to implement
B	Discussed, but not implemented
C	Partially implemented for some or all patients, prescriptions, drugs, or staff
D	Fully implemented for some patients, prescriptions, drugs, or staff
E	Fully implemented for all patients, prescriptions, drugs, or staff

IV. DRUG LABELING, PACKAGING, AND NOMENCLATURE

Core Characteristic #5

Strategies are undertaken to minimize the possibility of errors with drug products that have similar or confusing manufacturer labeling/packaging and/or drug names that look and/or sound alike.

		A	B	C	D	E
51	The *ISMP Medication Safety Alert!*® and/or other current literature is regularly reviewed to identify drug labeling, packaging, and nomenclature problems, and action is taken to prevent errors with these drugs.					
52	Different manufacturers are sought for products with labels/packages that look similar to other products to help differentiate the labels/packages.					
53	Alerts are built into the pharmacy computer system to remind practitioners about problematic drug names, including drugs with multiple suffixes such as XL, SR, ER, CD, and LA.					
54	Shelf tags or label enhancements (e.g., **TALL MAN LETTERS**) are used on packages and storage bins of drugs with problematic names, packages, and labels.					
55	Products with look-alike drug names and packaging that are known by the staff to be problematic are segregated and not stored next to one another, and a system clearly redirects staff to where the products have been relocated.					
56	Look-alike drug names do not appear on the same pharmacy computer system screen when selecting a drug during order entry, or look-alike drug names are clearly distinguished in a way that differentiates them (e.g., use of **TALL MAN LETTERS**) if they appear sequentially on the same pharmacy computer system screen.					

Core Characteristic #6

Prescription labels clearly identify the patient, product, directions for use, the dispensing pharmacy, and any other important information that the patient may need to take the medication accurately and safely.

		A	B	C	D	E
FAQ 57	Pharmacy prescription labels are easy for patients to read, have adequate "white" space, have a font size that is legible (i.e., 12-point font for patient name, drug name, strength, directions for use, and indication, if known), and contain the proper information for safe self-administration.					
FAQ 58	When appropriate and within regulatory boundaries, the pharmacy provides directions on the patient's label using the Universal Medication Schedule and simplified language (e.g., "for blood pressure" instead of "for hypertension").					

A	No activity to implement
B	Discussed, but not implemented
C	Partially implemented for some or all patients, prescriptions, drugs, or staff
D	Fully implemented for some patients, prescriptions, drugs, or staff
E	Fully implemented for all patients, prescriptions, drugs, or staff

IV. DRUG LABELING, PACKAGING, AND NOMENCLATURE (continued)

		A	B	C	D	E
59	The pharmacy computer system produces clear and distinguishable prescription container labels that are free of **ERROR-PRONE ABBREVIATIONS** (e.g., "U" for units) or dose designations.					
60	When dispensing unit-of-use packaging to patients, staff avoid placing the pharmacy label on top of pertinent information on the manufacturer's label (e.g., drug name, strength, NDC).					
61	The pharmacy uses appropriate foreign language labels for patients who need them.					
FAQ 62	Appropriate labels are used for the visually impaired (e.g., larger font, Braille, talking).					
63A	The pharmacy computer system automatically prints appropriate auxiliary labels (e.g., for the ear, for the eye, take with food) when prescription labels are generated.					
OR	**OR** *(Respond to #63A or #63B only)*					
63B	During prescription order entry, the pharmacy computer system suggests appropriate auxiliary labels to be affixed manually prior to dispensing.					
64	If the prescriber provides the purpose of the medication on the prescription, the indication is included on the patient's prescription container label unless inclusion on the label is not desired by the patient.					
65	A description of the product (e.g., shape, imprints, color, scent) appears on the pharmacy label.					

A	No activity to implement
B	Discussed, but not implemented
C	Partially implemented for some or all patients, prescriptions, drugs, or staff
D	Fully implemented for some patients, prescriptions, drugs, or staff
E	Fully implemented for all patients, prescriptions, drugs, or staff

V. DRUG STANDARDIZATION, STORAGE, AND DISTRIBUTION

Core Characteristic #7

Prescribed medications are accessible to patients and dispensed in a safe and secure manner.

		A	B	C	D	E
66	When patients have a legitimate need for prescription medications, but have exhausted their supply while traveling, lost their medications, or there is a statewide emergency, all pharmacists are empowered, as state law permits, to take appropriate action to ensure that critical doses are not missed.					
67	There is an efficient and timely process in place to obtain critically needed medications or notify providers when they are not immediately available (e.g., due to a drug shortage).					
68	A mechanism exists to identify the reasons that prescriptions have not been picked up after being prepared.					
69	A timely and efficient process is in place to identify medications that have been recalled by manufacturers and notify patients as appropriate.					

Core Characteristic #8

Medications and other necessary medication supplies are stored, dispensed, and returned to stock in a manner that reduces the likelihood of an error.

		A	B	C	D	E
70	Electronic systems that document temperature ranges around the clock and provide problem notification are used for refrigerators and freezers that store temperature-sensitive medications, and written procedures regarding how to handle any breach of a safe temperature range have been developed and are followed.					
71	Refrigerators of sufficient size or alternatively, separate refrigerators, are used for stock and prepared prescriptions waiting to be picked up, to ensure refrigerated medications are stored in an organized manner.					
72	The pharmacy has adequate space to safely organize and separate the storage of medications and drug supplies, and utilizes dividers on stock shelves, in narcotic cabinets, and in refrigerators, as needed.					
FAQ 73	There is a process in place to keep two-component (i.e., two vial) vaccines together and to keep diluents and their corresponding vaccines together if storage requirements do not differ. *Scoring guideline: Choose NOT APPLICABLE if vaccines are never stored in the pharmacy.*					**NOT APPLICABLE**
74	The pharmacy separates pediatric and adult vaccine formulations. *Scoring guideline: Choose NOT APPLICABLE if vaccines are never stored in the pharmacy.*					**NOT APPLICABLE**

A	No activity to implement
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D	Fully implemented for some patients, prescriptions, drugs, or staff
E	Fully implemented for all patients, prescriptions, drugs, or staff

V. DRUG STANDARDIZATION, STORAGE, AND DISTRIBUTION (continued)

		A	B	C	D	E
75	The pharmacy does not stock sound-alike or look-alike drugs in the "fast mover" section (unless automation is employed).					
76	When stocking shelves, staff ensure that stickers (e.g., wholesale price labels) or cross-out lines do not obliterate key information on any part of the stock bottle label.					
77	To verify proper selection, the pharmacy system has implemented tablet/product imaging (or description) on the final verification screen.					
78	If completed prescriptions are not ultimately dispensed to patients, the return-to-stock (RTS) vials are labeled with the medication name, strength, expiration date, and NDC number or barcode (RTS medications are not returned to stock bottles).					

Core Characteristic #9

Hazardous drugs and chemicals are safely sequestered and not accessible in drug preparation areas.

79	An appropriately segregated and secured area of the pharmacy has been established to temporarily place returned, outdated, and recalled medications until they are destroyed or removed from the pharmacy.					
80	Active pharmaceutical ingredients and bulk chemicals used in the pharmacy for compounding are assessed at least quarterly, and those that are not regularly used are eliminated from stock.					
81	Active pharmaceutical ingredients and bulk chemicals used in the pharmacy for compounding are clearly labeled with their contents, the date the product was first opened, and the manufacturer's expiration date (if applicable). (If an expiration date is unavailable from the manufacturer, a 1-year expiration date from the date the product was first opened is assigned.)					
82	The pharmacy stores chemicals used in compounding in a separate area according to current USP <795> and <797> standards.					
83	The pharmacy does not store chemical substances (e.g., formalin, methanol) for distribution to a laboratory, doctor's office, or hospital.					
84	All caustic or hazardous chemicals and other non-drug substances are clearly labeled and stored on low shelves separate from all other medications and supplies in the pharmacy's drug inventory.					
85	Pharmacy prescription bottles and labels are not used to re-package non-drug substances (e.g., liquid chemicals, cleaning compounds, insecticides, soaps).					

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VI. USE OF DEVICES

Core Characteristic #10

Sanitary practices are followed when using devices and equipment to store and prepare medications.

		A	B	C	D	E
86	Staff members use gloves and proper hand washing when handling individual loose oral solid products.					
87	All pharmacists follow standards for hand washing, wearing gloves, and equipment disposal to minimize the risks of disease transmission during the administration of vaccines. *Scoring guideline: Choose NOT APPLICABLE if immunization services are not provided at the pharmacy.*					
		NOT APPLICABLE				
88	Staff members follow appropriate hand washing procedures prior to compounding any prescription product.					
89	Dispensing devices (e.g., counting trays, Fillmaster®) are appropriately cleaned after being used to prepare chemotherapy, penicillin, sulfonamides, opioids, and medications that may leave a residue.					

Core Characteristic #11

The potential for **HUMAN ERROR** is mitigated through careful procurement, maintenance, use, and standardization of devices used to prepare prescription medications.

		A	B	C	D	E
90	The pharmacy performs maintenance, calibration, and cleaning on all counting devices, automated dispensing devices, and compounding equipment according to compendia or manufacturers' standards.					
91	The pharmacy performs manufacturers' suggested maintenance and cleaning schedules for all fax machines, scanners, and printers.					
92	Privileges to make modifications, adjustments, or changes in the bin contents of automated dispensing systems (e.g., robotics) are restricted to staff members who are well-trained in both the theory and the mechanics of the software system.					
93	Barcode scanning or a checklist/sign-off sheet is used to verify the drug name, strength, NDC, lot number, and expiration date of each stock bottle before the contents are added to an automated dispensing system (e.g., robotics).					
94	When adding new products, making changes in strength or dosage form, or when making other modifications to automated dispensing systems (e.g., robotics), two individuals independently verify the change with the use of a checklist/sign-off sheet.					
95	Barcoding is used to verify drug selection.					

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VII. ENVIRONMENTAL FACTORS, WORKFLOW, AND STAFFING PATTERNS

Core Characteristic #12

Medications are transcribed, prepared, dispensed, and administered within an efficient and safe workflow, and in a physical environment that offers adequate space and lighting and allows pharmacy staff to remain focused on medication use without distractions.

		A	B	C	D	E
96	Lighting is adequate (i.e., illumination levels at least 100 foot-candles) to clearly read labels and other important drug and patient information.					
97	A lighted magnifying lens is in a fixed location and is used to facilitate readability of prescriptions and labels.					
98	The temperature and humidity in the pharmacy conform to drug storage requirements.					
99	The pharmacy has implemented integrated voice response (IVR) systems that are integrated with the pharmacy computer system, to triage incoming calls.					
100	Areas where medication orders are transcribed and/or entered into the pharmacy computer system are isolated and free of distractions and interruptions.					
101	Areas where medication orders are verified are isolated and free of distractions and interruptions.					
102	Areas where point-of-care testing and/or immunization services are provided are private and free of distractions and interruptions. *Scoring guideline: Choose NOT APPLICABLE if point-of-care testing and immunization services are not provided.*					
		NOT APPLICABLE				
FAQ 103	The pharmacy has a dedicated, exclusive area for general, nonsterile compounding that meets current USP <795> standards.					
104	The pharmacy has an area for aseptic compounding of sterile preparations that meets current USP <797> standards. *Scoring guideline: Choose NOT APPLICABLE if sterile compounding is not offered.*					
		NOT APPLICABLE				
105	The pharmacy avoids using storage space that requires staff to reach over their heads or to climb to retrieve products.					
106	Workspaces where medications are prepared are clean, orderly, and free of clutter.					
107	Baskets, bins, or other containers are used during preparation and verification to separate different patients' orders.					

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VII. ENVIRONMENTAL FACTORS, WORKFLOW, AND STAFFING PATTERNS (continued)

		A	B	C	D	E
108	The pharmacy maintains a prescription pick-up/will-call area that is free from clutter and contains enough space to prevent "spillage" into the next basket or bin.					
109	Plans for new and/or expanded services are well communicated to all affected personnel, and appropriate consideration of resources is addressed prior to implementation.					
110	The pharmacy uses an automated, off-site, centralized dispensing operation to help reduce workload in the pharmacy.					
111	When preparing prescriptions, pharmacy staff work with one drug product at a time and affix the label to the patient's prescription container before working on the next prescription.					
112	All prescription orders (either the hard copy or a scanned image) are displayed at eye level during order entry.					

Core Characteristic #13

The complement of qualified, well-rested pharmacy staff matches the workload without compromising patient safety.

113	An employee assistance program is available, and participation is encouraged to help staff who are experiencing stress or issues that may affect work performance.					
114	Pharmacy staff undergo an annual physical examination, including vision and hearing screenings.					
115	Pharmacy staff work no more than 12 consecutive hours. Exception: isolated situations outside of usual operations.					
116	Pharmacy staff have at least 8 hours of rest between shifts worked. Exception: isolated situations outside of usual operations.					
117	Schedules and workload permit pharmacy staff to take at least one 15-minute break and one 30-minute break (for a meal) per 8 hours of work each day. Exception: isolated situations outside of usual operations.					
118	An effective back-up plan has been established for days when staffing is short due to illness, vacation, educational absences, and fluctuations in workload.					

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VII. ENVIRONMENTAL FACTORS, WORKFLOW, AND STAFFING PATTERNS (continued)

		A	B	C	D	E
119	Staffing patterns in the pharmacy are adequate to provide safe patient care services, including during times of anticipated higher workload (e.g., beginning of the month, prior to or immediately following holidays).					
120	When temporary agency staff are used, they have been properly oriented and trained in the particular pharmacy environment in which they will be working.					
121	When creating the work schedule, consideration is given to the use of supportive automated dispensing technology, prescription volume, and pharmacist/technician ratios.					
122	Prescription volume data is examined periodically to determine appropriate staffing levels, even during peak times when demand is highest.					
123	Metrics used to ascertain staff productivity and turnaround time are reasonable and do not impede the quality or safety of patient care services.					
124	The pharmacy does not ask pharmacists to meet a specific quota for prescription dispensing, including vaccine administrations if provided.					

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VIII. STAFF COMPETENCY AND EDUCATION

Core Characteristic #14

Pharmacy staff receive sufficient orientation to medication use and undergo baseline and annual proficiency evaluation of knowledge and skills related to safe medication practices.

		A	B	C	D	E
125	All new staff, including agency staff, undergo a baseline proficiency evaluation before working independently.					
126	All pharmacy staff, including float and agency staff, are educated about the specific pharmacy equipment available at each site (e.g., barcode scanner, automated dispensing equipment) and associated protocols/guidelines, and competency with equipment use is verified before staff are permitted to operate the equipment.					
127	All pharmacists, including float and agency staff, are educated about the specific patient self-administration and monitoring devices available at each site (e.g., glucose monitors, inhalation devices, pen devices, home diagnostic tests), and competency is verified before staff are permitted to educate a patient about the device.					
128	All compounding personnel receive ongoing education and competency assessment, including knowledge and training on standard operating procedures (SOP) in accordance with current USP <795> and <797> standards.					
129	Staff who administer immunizations are educated about the potential adverse effects of vaccines (e.g., anaphylaxis, syncope) and are prepared to respond appropriately. *Scoring guideline: Choose NOT APPLICABLE if immunization services are not provided at the pharmacy.*					
		NOT APPLICABLE				
130	Protocols are available and reviewed with staff on how to treat an emergency during patient care services, emergency supplies are on-hand, and staff know where to find the protocols and supplies.					
131	Those who train new staff have a reduced workload to accomplish the goals of orientation safely and thoroughly.					
132	The length of time for orienting new pharmacists, technicians, and management staff is individualized and based on an ongoing assessment of their needs.					
133	During orientation, pharmacy staff receive information about the pharmacy's actual error experiences, as well as published errors that occurred in other facilities.					

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VIII. STAFF COMPETENCY AND EDUCATION (continued)

		A	B	C	D	E
134	Pharmacy preceptors review key medication-related policies and procedures, and specific error-prone conditions, at the start of each pharmacy student's rotation. *Scoring guideline: Choose NOT APPLICABLE if your organization does not serve as a site for pharmacy students.*					
		NOT APPLICABLE				
135	Pharmacy staff are educated about system-based strategies to reduce the risk of errors.					
136	Current policies and procedures are readily available, updated on a regular basis, and followed by pharmacy staff.					
137	As part of the overall performance evaluation process, a supervisor assesses each pharmacy staff member's skills and knowledge related to safe medication practices.					

Core Characteristic #15

Pharmacy staff are provided with ongoing education about medication error prevention and the safe use of drugs and devices that have the greatest potential to cause harm if misused.

138	Pharmacy staff are educated about new drugs added to the pharmacy inventory, including OTC medications, and any associated guidelines, restrictions, or special precautions are understood before the medications are dispensed or administered (e.g., vaccines).					
139	Medication errors and ways to avoid them are routinely discussed at staff meetings and in conversations between pharmacists, technicians, and managers.					
140	**HUMAN FACTORS** and the principles of error reduction (e.g., standardization, use of constraints, and redundancy for critical functions) are introduced during staff orientation.					
FAQ 141	Management and frontline staff receive training in identifying risk within the system and in incorporating high-leverage, error-reduction strategies to help eliminate the risk.					
142	Management and frontline staff are trained and skilled in the principles and applications of **CONTINUOUS QUALITY IMPROVEMENT (CQI)**.					
143	At least annually, pharmacy staff must complete an educational program on ways to avoid errors with **HIGH-ALERT MEDICATIONS**, narrow therapeutic index medications, and other error-prone medications or devices.					

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VIII. STAFF COMPETENCY AND EDUCATION (continued)

		A	B	C	D	E
144	When errors occur, educational efforts are widespread among all pharmacy staff rather than remedial and directed at only those who were involved in an error.					
145	Pharmacy staff are provided with the necessary support and time to attend internal and external educational programs related to new medications and/or important medication safety issues.					

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IX. PATIENT EDUCATION

Core Characteristic #16

Patients are included as active partners in their care through education about their medications and ways to avert errors.

		A	B	C	D	E
146	Pharmacists are allotted time by management for patient education activities.					
147	Confidential areas for patient counseling and medication therapy management (MTM) services are provided and are free of distractions and interruptions.					
148	Patients are encouraged to ask questions about the medications they are receiving.					
149	Patients are offered an opportunity for counseling. The offer includes a clear explanation of what counseling consists of (e.g., how to take and store the medication, possible side effects, interactions with other medications) and how it would benefit them.					
150	Criteria have been established for selected **HIGH-ALERT MEDICATIONS** or high-risk patient populations to trigger required medication counseling, and a system is in place to alert the pharmacist of this need when the patient comes in to pick up the prescription (e.g., bold alert on the bag, pharmacy computer system alert).					
151	Electronic **HARD STOPS** are in place at the point of sale to restrict completion of the sale until patient education has occurred for selected **HIGH-ALERT MEDICATIONS** or high-risk patient populations.					
FAQ 152	The pharmacist discusses important safety concerns (e.g., those found in Medication Guides, ISMP High-Alert Medication Safety Leaflets for consumers) during patient counseling with the patient/caregiver.					
153	The patient's prescription container is opened with the patient/caregiver to verify the medication.					
154	Pharmacists fully investigate all patient/caregiver concerns and questions about a medication (e.g., affordability, inability to swallow, difficulty adhering to directions, change in product appearance) prior to dispensing.					
155	Cultural issues that may affect compliance with prescribed therapy are identified and considered when counseling patients about their medications.					
156	The pharmacy takes steps to effectively communicate with patients who are visually or hearing impaired.					
157	Patients are instructed to call the pharmacy for any concerns or questions about their medication therapy.					

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IX. PATIENT EDUCATION (continued)

		A	B	C	D	E
158	Patients are provided with a telephone number at which a pharmacist can be reached 24 hours a day for any concerns or questions about their medication therapy.					
FAQ 159	When dispensing oral liquid medications, a proper metric-only measuring device is provided or suggested (e.g., oral syringe), and patients'/caregivers' ability to correctly measure the dose is verified by using the teach-back method.					
160	The patient or caregiver is asked to verify that the vaccine vial and syringe or the prefilled syringe is what is intended prior to vaccine administration. *Scoring guideline: Choose NOT APPLICABLE if immunization services are not provided at the pharmacy.*					
		NOT APPLICABLE				
161	Doses that require splitting tablets are dispensed only to patients who have demonstrated their ability to manipulate the dose properly, and devices for tablet splitting are available from the pharmacy.					
162	Patients are instructed on the proper use and maintenance of any devices dispensed from the pharmacy (e.g., glucose monitors, injectable pens, spacers used with inhalers).					
163	The pharmacy obtains sample devices from manufacturers to be used for patient education/demonstration.					
164	If someone other than the patient or caregiver picks up the prescription, a reasonable effort is made to contact the patient directly to provide medication counseling (e.g., call the patient at home, written suggestion placed in or on the bag for the patient to call the pharmacy for counseling).					
165	Patients are provided with up-to-date, useful, written information in their primary language about the medications that they are receiving, or a trained translator or language line is utilized to provide important oral and/or written information.					
166	The pharmacy provides an updated medication list when therapy changes and reviews it with the patient/caregiver.					
FAQ 167	The pharmacy provides a comprehensive appointment-based medication synchronization (ABMS) program that includes a complete medication review and monthly contact from a pharmacist to the patient, to discuss their medication therapy and any changes before dispensing to optimize medication use.					
168	The pharmacy provides consumers with information about proper disposal of medications and refers them to available community take-back programs.					

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IX. PATIENT EDUCATION (continued)

Core Characteristic #17

Pharmacists establish and participate in community-based disease prevention and monitoring programs to promote health and ensure appropriate therapy and outcomes of medication use.

		A	B	C	D	E
169	The pharmacy offers MTM services, delivered by a pharmacist, focused on improving patients' therapeutic outcomes.					
170	The pharmacy provides clinical disease management programs for conditions such as asthma, hypertension, diabetes, or hypercholesterolemia.					
171	In the past year, the pharmacy has provided at least one screening clinic to promote early detection of disease.					
172	The pharmacy develops and conducts at least one annual educational program or other proactive public health effort designed to improve safe use of medications in the community.					
173	The pharmacy transmits patient immunization administration records to the state or local immunization registry. *Scoring guideline: Choose NOT APPLICABLE if immunization services are not provided or if there is no state or local immunization registry.*					
						NOT APPLICABLE

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B	Discussed, but not implemented
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X. QUALITY PROCESSES AND RISK MANAGEMENT

Core Characteristic #18

A safety-supportive **JUST CULTURE** and model of shared accountability for safe **SYSTEM DESIGN** and making safe **BEHAVIORAL CHOICES** is in place and supported by **PHARMACY LEADERSHIP** and immediate supervisors.

		A	B	C	D	E
174	Error-prevention strategies in the pharmacy target **SYSTEM DESIGN** and the management of safe **BEHAVIORAL CHOICES** of all staff.					
175	Pharmacy staff openly discuss errors without embarrassment or fear of reprisal from **PHARMACY LEADERSHIP** or immediate supervisors.					
176	Pharmacy staff are trained in clinical and administrative procedures for responding to medication errors.					
177	All medication errors that reach the patient, regardless of the level of harm that results, are honestly disclosed to patients/caregivers/families in a timely manner.					
178	If a medication error occurs and the patient takes the medication, regardless of the resulting level of harm, the error is honestly disclosed to the prescriber in a timely manner.					
179	**PHARMACY LEADERSHIP** and immediate supervisors have received formal education on establishing and/or maintaining a fair and just safety culture (e.g., **JUST CULTURE**).					
180	No disciplinary action is taken against pharmacy staff for making a **HUMAN ERROR**.					
181	**PHARMACY LEADERSHIP** and immediate supervisors receive formal training on ways to effectively evaluate pharmacy staff competency and performance, supervise and mentor staff on clinical skills, **COACH AT-RISK BEHAVIORS**, and handle difficult pharmacy staff behavior without allowing the presence or absence of medication errors to be a factor.					
182	Job descriptions and performance evaluations include specific accountability standards related to patient/medication safety (e.g., accountability for **BEHAVIORAL CHOICES** in response to the risks seen; willingness to speak up about safety issues and ask for help when needed; to follow the safety literature) that do not include the absence of errors or a numeric error threshold.					
183	The organization anticipates **AT-RISK BEHAVIORS** and proactively takes steps to encourage safe **BEHAVIORAL CHOICES** and discourage **AT-RISK BEHAVIORS**.					

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X. QUALITY PROCESSES AND RISK MANAGEMENT (continued)

		A	B	C	D	E
184	Immediate supervisors **COACH** staff who engage in **AT-RISK BEHAVIORS** involving patient safety, to assist them in making safer **BEHAVIORAL CHOICES** in the future.					
185	Error rates are not determined or calculated from error reports and are not used for internal (pharmacist-to-pharmacist) or external (pharmacy-to-pharmacy) comparisons.					
186	During event investigation (e.g., **ROOT CAUSE ANALYSIS [RCA]**), once risks have been identified, the focus of the initial analysis of the event is widened to analyze the same or similar risks throughout the organization and among other processes, and interventions extend beyond addressing the immediate risks involved in the event.					
187	When an event involves staff who cut corners, breached a policy, and/or did not follow a procedure, the conditions that led to these **AT-RISK BEHAVIORS** are investigated to uncover system-based incentives that encourage the behavior and/or system-based disincentives that discourage safe behaviors.					
188	When an event involves **HUMAN ERROR**, an investigation is undertaken to uncover any preexisting performance shaping factors (e.g., task complexity, workflow, time availability/urgency, experience, training, fatigue, stress) and other environmental conditions, **SYSTEM DESIGN** attributes, **BEHAVIORAL CHOICES**, or equipment design flaws that allowed the error to happen and reach the patient.					
FAQ 189	**PHARMACY LEADERSHIP** and immediate supervisors provide positive incentives for individuals to report errors.					
190	Pharmacy staff are anonymously surveyed at least annually to assess the organization's safety culture.					
191	Pharmacy staff involved in serious errors that cause patient harm are emotionally supported by **PHARMACY LEADERSHIP**, immediate supervisors, and colleagues, and are provided with ongoing support through an employee assistance program or other crisis intervention strategies.					
192	**PHARMACY LEADERSHIP** actively demonstrates its commitment to patient safety (and safe medication practices) by approving a safety plan, encouraging pharmacy staff to report errors, and approving **SYSTEM DESIGN** enhancements, including technology, that are likely to reduce errors.					

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X. QUALITY PROCESSES AND RISK MANAGEMENT (continued)

		A	B	C	D	E
193	Specific medication safety objectives (e.g., reduce harm from errors with **HIGH-ALERT MEDICATIONS**; improve medication error detection, reporting, and use of the information) are included in the organization's strategic plans, directly communicated to all staff, and celebrated (acknowledged in a positive manner) when met.					
194	Patient safety is articulated in the organization's mission and/or vision statements.					

Core Characteristic #19

Pharmacy staff are expected to detect and report adverse events, errors (including **CLOSE CALLS**), hazards, and observed **AT-RISK BEHAVIORS**, and to regularly analyze these reports, as well as reports of errors that have occurred in other organizations, to mitigate future risks.

195	A clear definition and examples of medication errors and hazardous situations that should be reported have been established and disseminated to staff.					
196	A formal process has been established to report both hazardous situations that could lead to an error and actual errors, including **CLOSE CALLS**.					
197	One or more pharmacists in an individual pharmacy are assigned the responsibility of enhancing detection of medication errors, overseeing analysis of their causes, and coordinating an effective error-reduction plan (with corporate support as applicable).					
198	The pharmacy staff utilize a tool (e.g., Assess-ERR™) to document and analyze errors.					
199	A trusted pharmacist or manager facilitates periodic, announced focus groups for "off the record" discussions to learn about perceived problems with the dispensing system.					
200	The pharmacy operates a **CONTINUOUS QUALITY IMPROVEMENT (CQI)** program to enhance patient safety.					
201	The pharmacy periodically conducts patient satisfaction surveys regarding patient care services, with the intent of improving services and outcomes of care.					
202	The dispensing process is proactively analyzed at least annually (e.g., using a **PROACTIVE RISK ASSESSMENT** tool) to identify potential risk factors for medication errors.					

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X. QUALITY PROCESSES AND RISK MANAGEMENT (continued)

		A	B	C	D	E
203	Practitioners who have been directly involved in a serious or potentially serious medication error participate in a **RCA** analyzing those failures in the system that allowed the error to happen, and assist with the development of **SYSTEM DESIGN** enhancements to reduce the potential for future errors.					
204	**CLOSE CALLS** and hazardous situations that have the potential to cause patient harm are given the same high priority for analysis and error-prevention strategies as errors that actually cause patient harm.					
205	Management and pharmacy staff routinely read and use published error experiences from other organizations to proactively target improvements in the dispensing process.					
206	Management routinely evaluates the literature for new technologies and successful evidence-based practices that have been effective in reducing errors in other organizations, to determine if the new technology and/or practice should be implemented in their organization.					
207	Pharmacy staff are provided with regular feedback about errors reported in the pharmacy, hazardous situations, and error-reduction strategies that are being implemented.					
208	**PHARMACY LEADERSHIP** and immediate supervisors support practitioner reporting to external error reporting programs such as the ISMP National Medication Errors Reporting Program and the ISMP National Vaccine Errors Reporting Program.					

Core Characteristic #20

Redundancies that support a system of **INDEPENDENT DOUBLE CHECKS** or an automated verification process are used for vulnerable parts of the medication system, to detect and correct serious errors before they reach patients.

209	For selected patient groups (e.g., pediatric patients and patients receiving medications dosed according to age or weight), a double check of the prescriber's calculated dose is made before preparing and dispensing the medication.					
210	The original prescription (or image of the original prescription) is used by the pharmacist while conducting data entry verification and when performing medication utilization review.					
FAQ 211	Both the medication base product and the mixing solution/diluent used for reconstituted products are **INDEPENDENTLY DOUBLE CHECKED** by a pharmacist. *Scoring guideline: Pharmacists who work alone should answer A or B.*					

A	No activity to implement
B	Discussed, but not implemented
C	Partially implemented for some or all patients, prescriptions, drugs, or staff
D	Fully implemented for some patients, prescriptions, drugs, or staff
E	Fully implemented for all patients, prescriptions, drugs, or staff

X. QUALITY PROCESSES AND RISK MANAGEMENT (continued)

		A	B	C	D	E
212	A pharmacist verifies the formulation of all OTC insulin with the patient/caregiver before the product is dispensed.					
213	Pharmacists periodically perform quality control checks by reviewing completed prescriptions in the will-call area, examining pharmacy labels, computer entries, and the location of stock bottles replaced in inventory, and conducting other forms of random checks that promote detection of errors.					
214	Medication selection, preparation, and labeling errors identified during routine checking processes are reported and collected for the purpose of identifying **SYSTEM DESIGN** issues and developing error-prevention strategies.					
215	Pharmacists who administer vaccines prepare and/or select one patient's vaccine at a time. *Scoring guideline: Choose NOT APPLICABLE if immunization services are not provided at the pharmacy.*					
		NOT APPLICABLE				
216	The pharmacy has established a process to include an **INDEPENDENT DOUBLE CHECK** of prescriptions for selected **HIGH-ALERT MEDICATIONS** before they are dispensed.					

Definitions *(For purposes of this self assessment)*

Defined terms in this document are designated throughout the text in **BOLD CAPITAL LETTERS**.

AT-RISK BEHAVIOR
A **BEHAVIORAL CHOICE** that increases risk where risk is not recognized or is mistakenly believed to be justified. Examples of common **AT-RISK BEHAVIORS** include: bypassing a duplicate therapy alert during order entry without due consideration; technology work-arounds such as bypassing barcoding during product selection.

BEHAVIORAL CHOICE
Refers to intentional acts that are undertaken by the free exercise of one's judgment. Unlike **HUMAN ERROR**, which is unintentional behavior, **BEHAVIORAL CHOICE** represents the purposeful behavior we intentionally employ while engaging in our day-to-day activities.

CLOSE CALL
An error that took place but was captured before reaching the patient. For example, penicillin was ordered for a patient allergic to the drug; however, the pharmacist was alerted to the allergy during computer order entry, the prescriber was called, and the penicillin was not dispensed to the patient.

COACH
A supportive discussion among staff (peer-to-peer or manager-to-workers) intended to: 1) help staff see the risks associated with their **BEHAVIORAL CHOICES** that were not seen or were misread as being insignificant or justifiable, 2) learn the incentives that encourage these **AT-RISK BEHAVIORS**, and 3) help staff make safer **BEHAVIORAL CHOICES** in the future.

CONTINUOUS QUALITY IMPROVEMENT
A system of standards and procedures to identify and evaluate quality-related events, and to constantly enhance the efficiency and effectiveness of the structures and processes of a pharmacy system that determine the outcomes of medication use. All information, communications, or data maintained as a component of such a system shall be privileged and confidential, and not subject to discovery in civil litigation.

ERROR-PRONE ABBREVIATIONS
Certain medical abbreviations, symbols, and dose designations that are considered "dangerous" and have often contributed to serious medication errors.

A complete list can be found at: www.ismp.org/Tools/errorproneabbreviations.pdf.

HARD STOP
An alert that halts the progress of prescribing, dispensing, or administering a medication that would likely be dangerous to a patient. The alert cannot be overridden until appropriate action occurs.

HIGH-ALERT MEDICATIONS
Medications that bear a heightened risk of causing significant patient harm when they are used in error. Although mistakes may or may not be more common with these drugs, the consequences of an error are more devastating to patients. Examples of **HIGH-ALERT MEDICATIONS** include heparin, warfarin, insulin, and opioids. A complete list can be found at: http://www.ismp.org/communityRx/tools/ambulatoryhighalert.asp.

HUMAN ERROR
Inadvertently doing other than what should have been done; a mental slip, lapse, or mistake such as miscalculating a dose, forgetting to add water to an antibiotic powder for suspension, or transposing the labels on two prescription vials during production. **HUMAN ERRORS** are unintentional acts, not a **BEHAVIORAL CHOICE**.

HUMAN FACTORS
The study of the interrelationships between humans, the tools they use, and the environment in which they work and live.

INDEPENDENT DOUBLE CHECK
A procedure in which two individuals separately check each component of the work process. An example would be one person calculating a medication dose for a specific patient and a second individual independently performing the same calculation (not just verifying the calculation) and matching results.

JUST CULTURE
Refers to a safety-supportive model of shared accountability where healthcare institutions are accountable for the systems they design, for supporting the safe behavior choices of patients and staff, and for responding to staff behaviors in a fair and just manner. In turn, staff are accountable for the quality of their **BEHAVIORAL CHOICES (HUMAN ERROR** is not a **BEHAVIORAL CHOICE**) and for reporting their errors and system vulnerabilities.

For more information on **JUST CULTURE**, go to: http://www.ismp.org/NEWSLETTERS/ACUTECARE/articles/20060921.asp

MAXIMUM DOSE
The dose of a medication that represents the upper limit that is normally found in the literature and/or manufacturer recommendations. **MAXIMUM DOSES** may vary according to age, weight, or diagnosis.

MNEMONICS
A limited number of letters and/or numbers that are used typically in electronic systems as a shortcut to represent a specific medication (e.g., AMO250 may represent amoxicillin 250 mg capsules).

PHARMACY LEADERSHIP
Store owners or regional/corporate administrators.

PROACTIVE RISK ASSESSMENT
The process of identifying and systematically analyzing the risk and hazards embedded in the process and structure of care to prevent adverse events from occurring. Knowing the risk and hazards helps to inform the design, planning, and development of appropriate interventions that will eliminate or minimize risk and hazards before patient injury can occur.

READ BACK
A redundant safeguard in which an oral (verbal) prescription is transcribed (e.g., onto a pharmacy prescription pad) and then read back to the prescriber or prescriber's agent to verify accuracy of the prescription, including the patient's date of birth and the indication for the prescribed medication. **READ BACK** differs from repeat back or echoing the prescription from memory.

ROOT CAUSE ANALYSIS (RCA)
A retrospective process for identifying the most basic or causal factor(s) that underlies the occurrence or possible occurrence of an adverse event.

SYSTEM DESIGN
Refers to the design/redesign of processes, procedures, equipment, interfaces, overall structure, and the environment or conditions under which staff work, for the purpose of satisfying specific requirements, such as patient safety. The design of a system dictates how reliable it is in terms of satisfying specific requirements.

TALL MAN LETTERS
Refers to the use of mixed case bolded letters to help draw attention to the dissimilarities of certain look-alike drug name pairs. A list of look-alike drug names with recommended **TALL MAN LETTERS** can be found at: http://www.ismp.org/Tools/tallmanletters.pdf.

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