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The Prescription of Trust
Pharmacists Transforming Patient Care

EVERNORTH

Express Scripts® Pharmacy

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Batya Elul, PhD, MSc, is an Associate Professor of Epidemiology at Columbia University's Mailman School of Public Health. She has 25 years of experience in the non-governmental and academic sectors where she has conducted health services and implementation research and evaluated large health programs. Her work is focused on HIV and reproductive health in resource-limited settings. She has particular expertise in the development and implementation of surveys using a variety of modalities, including face-to-face interviewing, phone interviewing and Audio Computer-Assisted Self-Interviewing (ACASI). She also teaches courses in epidemiology, program evaluation, and public health surveillance for graduate students at Columbia University and public health professionals around the world.

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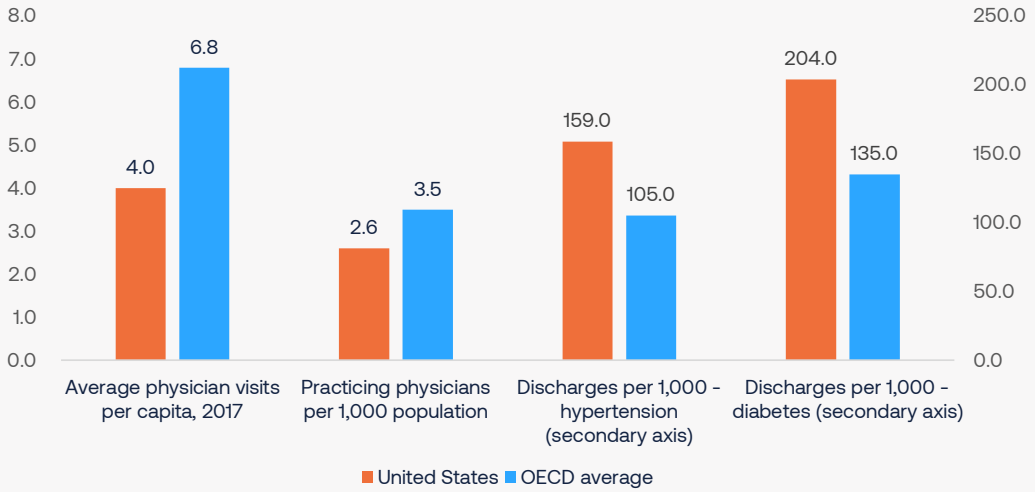
Pharmacists of the future: demand and innovation transforming patient care

The U.S. health care system is complicated, with varying delivery and reimbursement models, access to care challenges, as well as the complexity of diagnostic and treatment options, including some of the most technologically advanced procedures, devices, and medication therapies available. According to a 2020 Commonwealth Fund data brief, in comparison with the Organisation for Economic Co-operation and Development (OECD) countries, the United States has some of the highest hospitalization rates for ambulatory sensitive conditions such as hypertension and diabetes, has fewer doctor visits per capita, and has the lowest physicians per 1,000 population.[2] (Figure 1) In fact, the nation's shortage of doctors is expected to rise to between 54,000 and 139,000 by 2033 as the U.S. population grows and ages, and is even more of a critical issue in rural areas. In addition, the country is experiencing a critical nursing shortage that is expected to continue through 2030 and was exacerbated by the COVID-19 pandemic.[3]

Figure 1. Physician supply, physician visits and ASCS hospitalizations (from Commonwealth Fund)



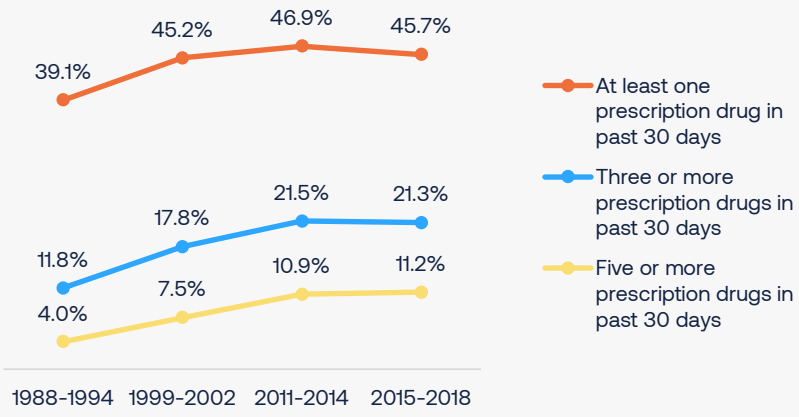
Source: OECD Health Statistics, Commonwealth Fund Data Brief (Jan 2020).

[2] https://www.commonwealthfund.org/sites/default/files/2020-01/Tikkanen_US_hlt_care_global_perspective_2019_OECD_db_v2.pdf
[3] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8251049/pdf/INR-68-12.pdf

With more than half of the U.S. population experiencing at least one chronic condition, **prescription drugs are often the first line of defense.**

With more than half (51.8%) of the U.S. population experiencing at least one chronic condition,[4] and one-quarter suffering from multiple chronic conditions, prescription medications are often the first line of defense to help patients manage these conditions. In the period 2015–2018, nearly one-half of the U.S. population was using at least one prescription drug, nearly one-quarter (21.4%) were using three or more, and over 10% (11.2) were using five or more prescription drugs.[5] (Figure 2)

Figure 2. Prescription drug use in the past 30 years



Source: Centers for Disease Control and Prevention.

The rise of chronic disease and increased medication use, shifts to value-based payment models and persistent primary care access challenges are changing how care is being implemented in many local and regional markets. The need for change has revealed an underutilized resource that could bridge the access gap, help attain cost and quality goals, and assist with chronic disease management – pharmacists.

[4] Prevalence of Multiple Chronic Conditions Among US Adults, 2018. Research Brief – Volume 17 – 9/17/20. https://www.cdc.gov/pcd/issues/2020/20_0130.htm
[5] Centers for Disease Control and Prevention. Therapeutic Drug Use – FastStats - 2019

To explore the role of pharmacists in the U.S. health care system, Express Scripts® Pharmacy, in partnership with Columbia University Mailman School of Public Health, analyzed the largest, most comprehensive data sources related to the topic, incorporating patients' voices for the first time. Survey data were collected from 1,000 pharmacists, 500 medical providers (physicians and nurse practitioners), and 3,000 patients. Emerging from this data were six driving themes.

Exploring the role of pharmacists: Six driving themes

1. Value-based models

Pharmacists can help achieve cost and quality goals on the journey to value-based payment models

2. Primary care gaps

Primary care supply shortages and gaps can be filled with pharmacists

3. Patient care activities

The expanded role of the pharmacist will include more patient care activities

4. Training and education

To meet growing demand and fill gaps in care, pharmacist training will be a key focus

5. Trust

There is a high level of trust in pharmacists to expand their role

6. Supportive technology

Growth in use of technology will help free up pharmacist time to focus on patient care

Pharmacists can help achieve cost and quality goals on the journey to value-based payment models

40.9%

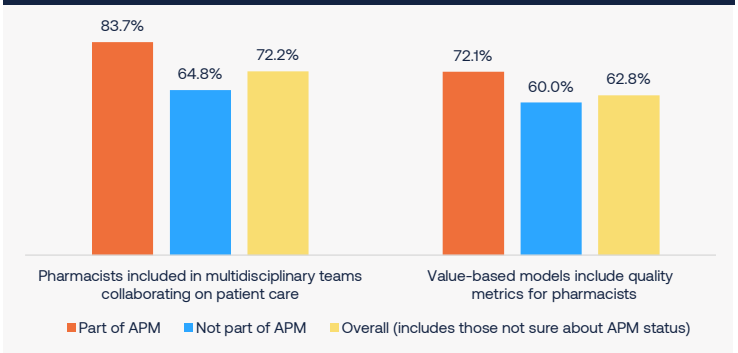
of health care payments were made as part of a value-based payment arrangement or an alternative payment model (APM).

A 2021 survey published by the Health Care Payment Learning & Action Network reported that 40.9% of health care payments were made as part of a value-based payment arrangement, or an alternative payment model (APM).[6] This model gives added incentive payments to provide high-quality and cost-efficient care. The penetration of APM payments ranged from 35% in commercial insurance plans to 58% in Medicare Advantage plans.[5] Many states are even trying to shift Medicaid dollars to APMs, sometimes modeling APM efforts on the already developed Medicare programs.[7]

As providers shift focus to more population health metrics, primary care providers that choose to participate in these models will most likely need to enhance their care teams to include expertise that allows them to improve access and continuity, care management, and coordination, among other goals. For example, the Primary Care First model, which started in 2021 and now has more than 3,000 practitioners participating, is "a voluntary alternative five-year payment model that rewards value and quality by offering an innovative payment structure to support the delivery of advanced primary care."[8] Two of the metrics included in the Primary Care First model include blood pressure and diabetes hemoglobin A1c control.[6] These are both metrics that could be aided by partnership with a pharmacist to help with medication management.

In total, 28.8% of provider respondents indicated their practice was part of a shared savings or value-based payment model. Of those that responded yes to being part of a shared savings model, 83.7% agreed or strongly agreed that pharmacists would be regularly included in multidisciplinary teams that collaborate on patient care, as compared to 72.2% overall. (Figure 3) Further, 72.1% of respondents that are part of a shared savings model agreed or strongly agreed that value-based payment models would include quality metrics for pharmacists, as compared with 62.8 overall. (Figure 3)

Figure 3. Provider respondents strongly agree or agree to multidisciplinary team of value-based model inclusion



[6] LAN survey - https://www.fiercehealthcare.com/payer/lan-survey-40-health-payments-tied-to-alternative-payment-models-2020
[7] https://www2.deloitte.com/content/dam/Deloitte/us/Documents/life-sciences-health-care/us-lshc-alternative-payment-models-in-Medicaid-MACRA.pdf
[8] CMS - https://innovation.cms.gov/innovation-models/primary-care-first

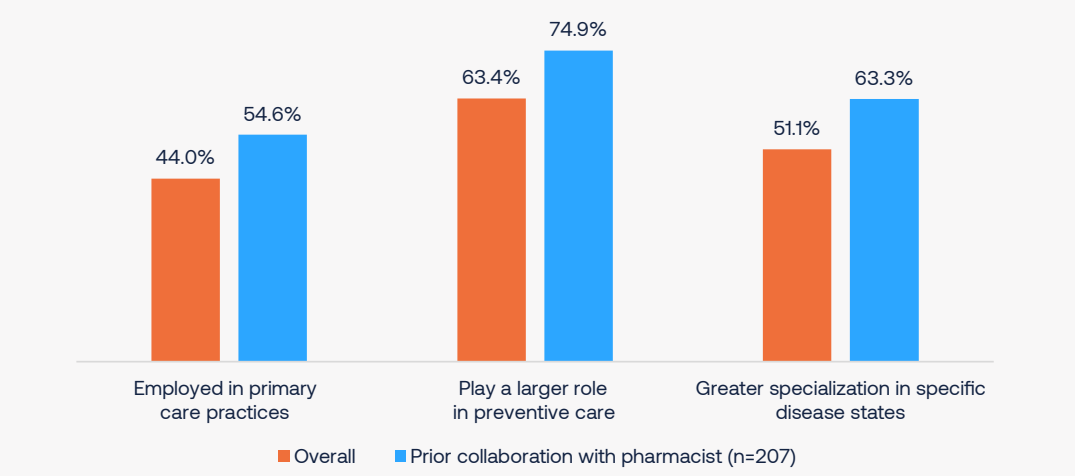
Primary care supply shortages and gaps can be filled with pharmacists

A 2020 report from the Association of American Medical Colleges showed a continued shortage of physicians in the United States. For primary care, the shortage was estimated to be between 21,400 and 55,200 physicians by 2032.[9] Trends contributing to the physician shortage include an increased demand with population growth and aging coupled with an aging physician workforce with many nearing retirement.

While nurse practitioners have closed some of the shortage gap, and there is a projected surplus of nurse practitioners, restrictive practice models continue to limit how much nurse practitioners can close the shortage gap.[10]

Providers do expect pharmacists to play a greater role in traditional primary care activities. For instance, 63.4% of provider respondents agree or strongly agree that pharmacists will play a greater role in preventive care activities and 51.1% agree or strongly agree pharmacists will have greater specialization in specific diseases. Of provider respondents, 44.0% agree or strongly agree that more pharmacists will be employed in primary care practices, allowing for more direct collaboration. Agreement with these statements increased when limiting to provider respondents that have collaborated with pharmacists on a multidisciplinary care team. (Figure 4)

Figure 4. Provider respondents strongly agree or agree to primary care employment, role in preventive care or disease specialization



[9] AAMC study - https://www.aamc.org/news-insights/us-physician-shortage-growing
[10] https://www.aanp.org/advocacy/state/state-practice-environment

The expanded role of the pharmacist will include more patient care activities

Pharmacist comments

"Less time filling and dispensing prescriptions and more time directly interacting with care teams, prescribers, and patients, especially via technology (video, text, phone, etc.)"
– *Ambulatory clinic pharmacist*

"I hope that pharmacists have the authority to prescribe drugs. We are highly trained and since we have direct info with the insurance formulary it would be a seamless process"
– *Retail pharmacist*

"I hope pharmacy will be more patient-specific and less diagnosis-specific. Each patient will be treated as a patient and not their disease-state"
– *Retail pharmacist*

Provider comments

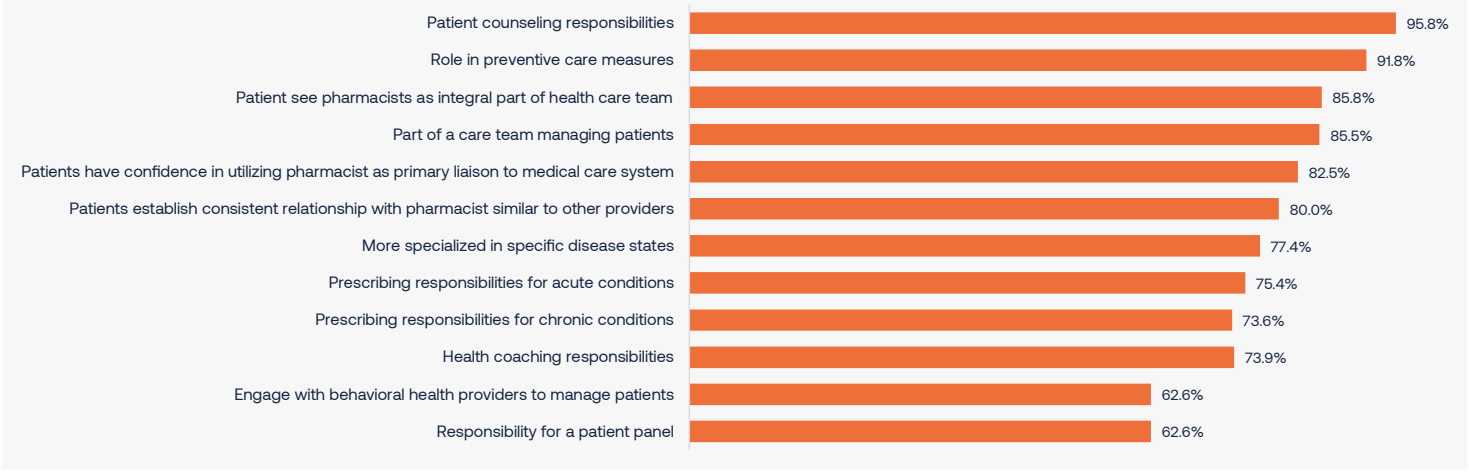
"I'm hoping that pharmacists will be more deeply involved in patient care especially in chronic illnesses and mental health conditions where patients need consistent support and reassurance with regard to medication"
– *Psychiatrist*

"With health care provider shortages, alternative knowledgeable health care professionals will have to take a more active role"
– *Internal Medicine physician*

"Engagement with pharmacists will increase due to the increasing complexity of health care with many new medications"
– *Nurse practitioner*

Pharmacists are positioned to fill more direct patient care gaps. As respondents to the pharmacist survey considered the field of pharmacy in 2030, there was significant agreement that the pharmacist would take on more direct patient care responsibilities. In fact, more than 80% of pharmacists agreed or strongly agreed they will increase patient counseling responsibilities, take on more of a role in preventive care measures, and be more integrated in a care management team structure. Similarly, 80% or more of pharmacists felt, that in the future, patients would see pharmacists as an integral part of the health care team, have confidence in utilizing their pharmacist as a primary liaison to the medical care system, and establish a consistent relationship with a pharmacist like other health care professionals. (Figure 5)

Figure 5. Pharmacist respondents strongly agree or agree to anticipated changes in pharmacy care

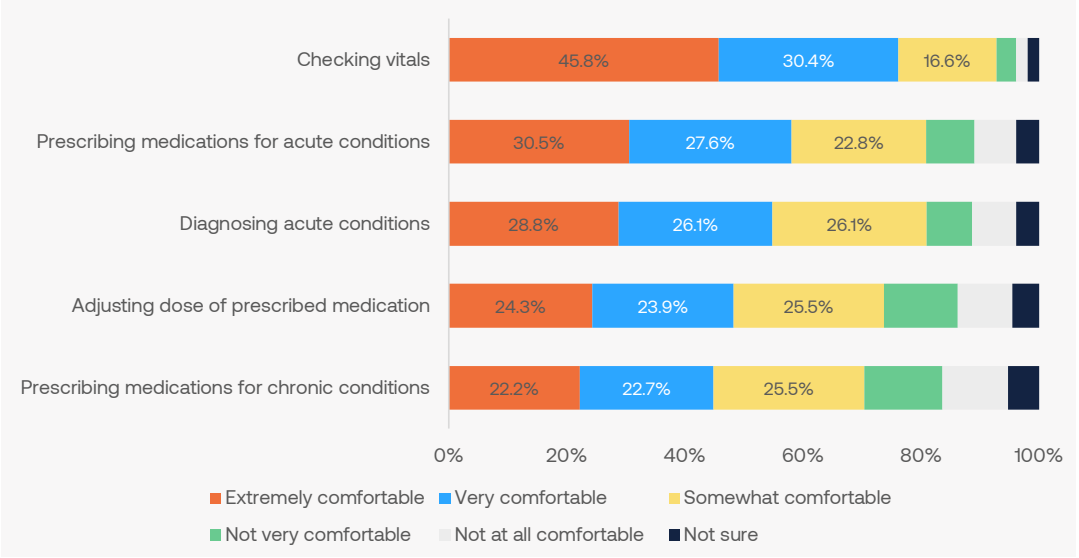


77.3%

of patient respondents agree or strongly agree that the pharmacist is an integral member of the care team.

Currently, patients also see the integral role that pharmacists play in the care process. 77.3% of patient respondents agree or strongly agree that the pharmacist is an integral member of the care team. Patients also have a relatively high level of comfort with pharmacists performing clinical activities. For instance, 76.2% of respondents would be extremely to very comfortable with pharmacists checking vitals and 54.9% of respondents would be extremely or very comfortable with pharmacists diagnosing acute conditions, with even more, 58.1% of respondents, comfortable with pharmacists prescribing medications for acute conditions. (Figure 6)

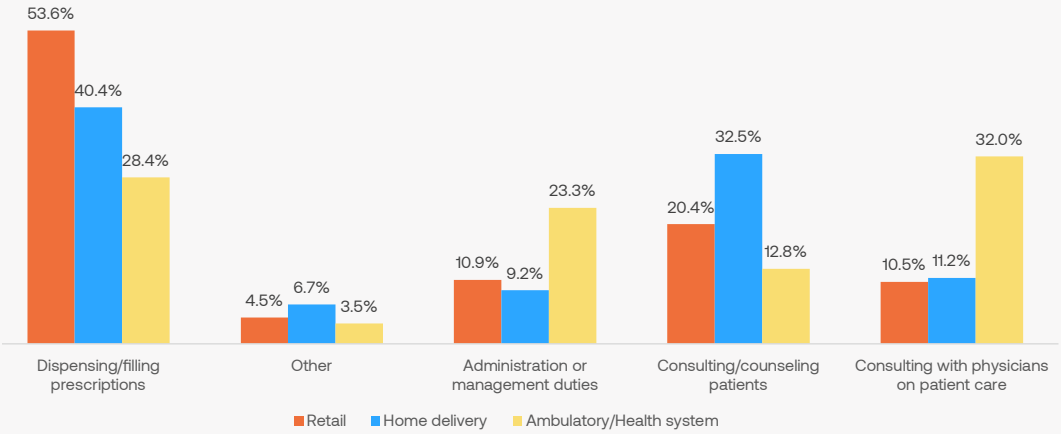
Figure 6. Consumer respondents' comfort with pharmacist performing clinical activities



Pharmacists in ambulatory clinic/ health system settings and home delivery settings **tend to provide more patient care activities** than those in retail settings.

In some ways, certain pharmacists are already shifting to being involved in more patient care activities. In examining how pharmacists spend their time, pharmacists in retail settings tend to be more transactional whereas pharmacists in ambulatory clinic/health system settings and, to some extent, home delivery settings are focused more on patient care activities. (Figure 7) Going deeper into specific patient care activities, pharmacists in ambulatory clinics/health systems are more likely to prescribe medication (20.2%), act as a disease specialist (39.9%) and interact with a larger health team about patient care (77.4%), while home delivery pharmacists are more likely to act as a disease specialist (20.4%) as compared with retail pharmacists (11.9%).

Figure 7. Continuum of pharmacist activities – work activities by work setting – average time spent



To meet growing demand and fill gaps in care, pharmacist training will be a key focus

Both pharmacists and physicians understand that for pharmacists to take on more direct patient care responsibilities, additional training is required. Only slightly more than half (53.3%) of pharmacist respondents agreed or strongly agreed that their current training and education was sufficient to manage patients. Further, the top challenge that physicians noted (49.3% of respondents) in greater pharmacist involvement in patient care was "insufficient pharmacist training." Specifically, pharmacists identified that to meet the patient needs of the future, more knowledge is needed in the following categories: chronic disease education (35.5%), diagnosing (17.4%) and prescribing (13.3%).

Pharmacists comments

"Physical exam training. Training in diagnostic techniques."
- *Ambulatory clinic/health system pharmacist*

"Education on specific disease states and monitoring parameters. Ability to interact more with the health care team and easier access to the medical team. There is a distinct boundary drawn by most physicians and they see pharmacists as not being as educated as we are. Instead of seeing us as an asset they disregard our opinions. Mutual respect will be needed in order for a new health care system to prosper."
- *Retail pharmacist*

"1. Direct patient care training for sure. Not all pharmacists are trained to conduct a 15 minutes or 30 minutes direct patient visit on their own.
2. More training on the chronic diseases for the elderly population.
3. Have some training on how to properly diagnosis common minor conditions such as UTI, sinus infection, etc."
- *Retail pharmacist*

"Training in prescribing for common disease states ie blood pressure and statins"
- *Retail pharmacist*

"Training for potential prescribing of medications for chronic conditions"
- *Home delivery pharmacist*

There is a high level of trust in pharmacists to expand their role

Health care provider comments

"A familiar, trusted source of information about: Medications, risks, side effects, interactions, regulations"
- *Family Medicine physician*

"Working on written down protocols and follow orders. Order basic labs for diabetes and renal monitoring in hypertension. Titrating the medications properly. Identifying and addressing polypharmacy. Helping with those reductions in patients who are dependent on opioids and benzodiazepines. Pharmacists are integral part of our team and help in the scenarios mentioned above. I fully trust them."
- *Internal Medicine physician*

"I often call my pharmacist for questions; they are trusted"
- *Internal Medicine physician*

Patient comments

"He is able to see all my meds and the possibility of side effects that may occur. I trust him"
- *California resident, Medicaid coverage*

"I don't use prescription medication often, but I when I do, I always go to the same pharmacist. I trust that she's knowledgeable, and as far as managing my overall health is concerned, I have faith that she would prevent me from taking combinations that may be harmful."
- *Florida resident, uninsured*

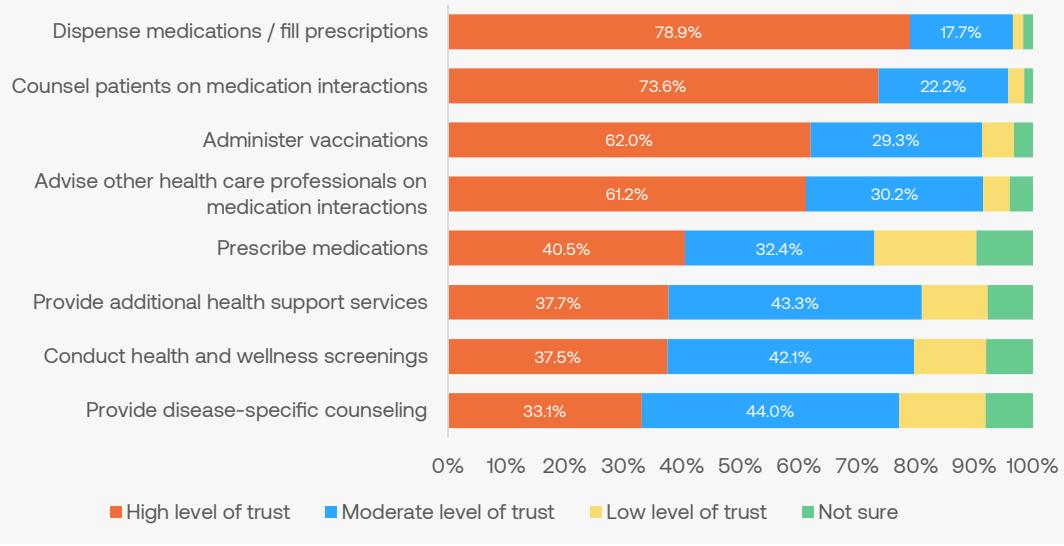
"The role of the pharmacist in managing my overall health is to advise me on how to take my medications properly and the dangers of taking medications when not following instructions. Pharmacists are very knowledgeable about their specialty which is medications and I trust them to tell me everything that has to do with the way I manage my medications and also even give me advice about my health."
- *Florida resident, employer-based insurance*

"I trust them a whole lot more and I feel confident when talking to them on the phone and in person. I know I can count on them for my prescriptions. I know they are there for me."
- *Kansas resident, employer-based insurance*

Pharmacists believe in their abilities to expand their role, while also recognizing the need for additional training.

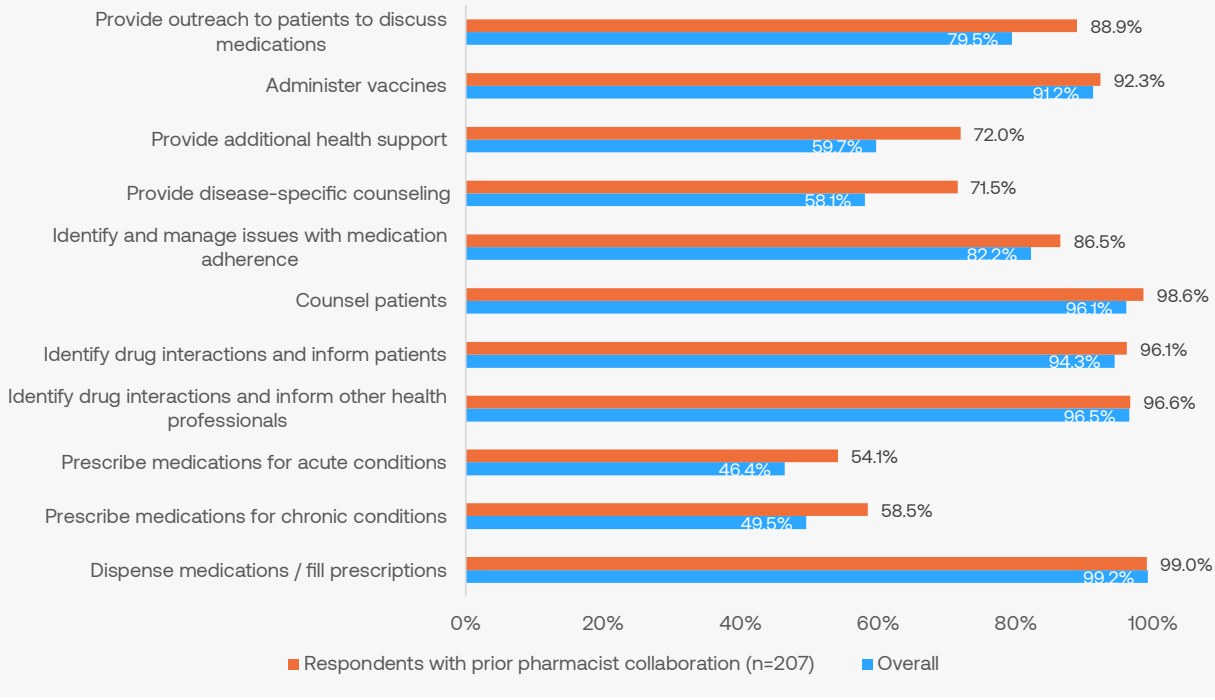
Pharmacists believe in their abilities to expand their role, though also recognize the need for additional training, as noted in the previous section. When pharmacists were asked if they had the interest and confidence to meet the needs of physicians and patients in the future of pharmacy, greater than 75% agree or strongly agree with the ability to be a resource for drug interactions, medication management, and pharmaceutical therapy. Patients have a high level of trust in pharmacists. Patient respondents have a high to moderate level of trust in pharmacists to complete most activities, including prescribing medications (40.5% high trust, 32.4% moderate trust), conducting health and wellness screenings (37.5% high trust, 42.1% moderate trust), and providing disease-specific counseling (33.1% high trust, 44.0% moderate trust). (Figure 8) 79.3% of patient respondents and 55.0% of provider respondents find pharmacists to be a reliable source of general health information beyond general medication questions.

Figure 8. Consumer level of trust in pharmacists to perform certain activities



When providers were asked whether they trusted pharmacists to perform specific activities for patients with chronic conditions, providers noted a high level of trust for traditional pharmacist tasks, with high to moderate trust often exceeding 90%. For more direct patient care tasks, providers' level of trust declined from slightly above to slightly below 50%. However, for those providers that have prior experience collaborating with pharmacists on multidisciplinary teams, the level of trust for providing additional health support and disease specific counseling or for prescribing medications (both acute and chronic) increased significantly. (Figure 9)

Figure 9. Provider respondents' high or moderate level of trust for pharmacists to perform listed activities for patients with chronic conditions



Growth in use of technology will help free up pharmacist time to focus on patient care

Telehealth utilization is at 38x the levels it was pre-pandemic *(compared with February 2020).*

Telehealth utilization exploded during the COVID-19 pandemic. A recent McKinsey report estimated that as telehealth volume has stabilized following the initial surge at the onset of the pandemic it remains at 38x pre-pandemic levels (compared with February 2020).[11] However, telehealth/telepharmacy adoption may be slower in some settings than others. 71.1% of patient respondents never engaged with a pharmacist via video in the past year and only 16% of pharmacists in total currently engage with patients via telehealth/telepharmacy all or most of the time. Home delivery pharmacists are found to engage more with patients via telehealth at 55.6%, whereas retail pharmacists engage with patients less via telehealth at 14.5%. For those who do engage with this technology, more than a third (35.2%) feel that it results in more time to interact with their patients. Despite the limited telehealth usage, 49.7% of patients did note they would find it extremely or very helpful to be able to conduct routine testing and medical visits from home and 56.4% of pharmacists expect to spend more time conducting telehealth appointments.

62.6% of provider respondents agree or strongly agree that pharmacists will have access to electronic medical records in the future. This level of interoperability is important, as 64.8% of patients would find it extremely or very helpful to have information and data seamlessly connected across settings. This level of access is not unprecedented for pharmacists. In considering the impact of technology on efficiency, 97.6% of pharmacists in an ambulatory clinic/health system setting found electronic medical record access to improve efficiency, whereas nearly 30% of pharmacists in the retail setting responded “not applicable” because they do not have access.

Other supportive technologies have the ability to have an impact on the pharmacy of the future, including the safety of patients. 70.8% of pharmacists agree or strongly agree that automation will lead to reductions in human error and 86.1% agree or strongly agree that technology advances will make the practice of pharmacy safer for patients. 68.5% of pharmacists that utilize the technology feel that barcode technology will result in more time to spend addressing patients’ needs and 83.9% note that it makes their work more efficient.

Finally, 64.2% of patient respondents would find it extremely or very helpful to have an easy way to compare pharmacy quality. Couple this with the high percentage of provider and pharmacist respondents that expect greater integration of pharmacists into value-based models, and the need for greater transparency and data interoperability is clear.

[11] https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/telehealth-a-quarter-trillion-dollar-post-covid-19-reality

Pharmacists at the center of patient care

By 2025, **164 million Americans will have a chronic disease,** amounting to $4 trillion in health care costs.

Chronic disease remains a significant concern among the American population, with greater than half of adults having at least one chronic condition.[12] By 2025, 164 million Americans will have a chronic disease, amounting to $4 trillion in health care costs.[13] Patients with chronic diseases account for 81% of hospitalizations.[13] They also have increasingly complex medication usage, and account for 91% of prescriptions filled.[13]

Despite some pharmacists being able to oversee the care of chronic diseases and engage in preventive clinical counseling around vaccination and screening, their potential has been underutilized when it comes to medication therapy management (MTM). MTM is a group of services that is primarily focused on managing and optimizing therapeutic outcomes for patients, typically through medication reviews, preventing adverse drug events, increasing medication adherence, decreasing misuse, and handling polypharmacy.

Data shows that pharmacist involvement in the MTM process can improve outcomes and reduce costs.[14] Pharmacists are better equipped to identify duplicate therapies in the form of polypharmacy and prevent medication-related hospitalization. Because patients often engage with a pharmacist more frequently than other care providers, pharmacists can aid in monitoring, behavior, and lifestyle changes to improve outcomes and reduce health care costs.

For more acute situations, the integration of pharmacists can help reinforce continuity of care as patients transition providers or health care settings. Pharmacists can oversee the transition from acute care settings to the home or other post-acute care options through discharge counseling, medication history overview, and reducing readmission.

[12] https://www.cdc.gov/pcd/issues/2020/20_0130.htm
[13] https://www.fightchronicdisease.org/sites/default/files/docs/GrowingCrisisofChronicDiseaseintheUSfactsheet_81009.pdf
[14] https://www.jmcp.org/doi/10.18553/jmcp.2017.23.5.541?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%200pubmed

As the U.S. health care system continues to evolve, pharmacists can play a pivotal role by serving as the connection point between primary care gaps, medication management complexities, and value-based model goal attainment. This expanded role will be accelerated by technologies that shift focus to the patient, such as telehealth visits, dispensing automation, and electronic medical records allowing greater data connection and interoperability. Trust is high that pharmacists will be an integral part in patient care, particularly among patients and to a growing degree among providers. Pharmacists are embracing this new definition of their role with 70.1% saying they are excited about the evolving role of the pharmacist in the next decade.

Pharmacist at the center of patient care

As health care continues to evolve, pharmacists will take on a larger role in managing patients' health.

Primary care

- Pharmacist serves increasingly clinical role
- First-contact provider
- Mid-level provider status
- Pharmacist patient counseling

Medication

- Medication Therapy Management goal attainment
- Medication adherence
- Drug cost optimization
- Pharmacist monitoring for drug interactions, including OTC

Value-based models

- Pharmacist helps to improve continuity of care
- Medication management and reconciliation

1. Report Introduction and Background

This final report includes a full accounting of the research findings from an Express Scripts® Pharmacy funded study that was designed to identify themes and perceptions from pharmacists, providers and patients related to the evolving role of pharmacy care in the United States health care system. We also conducted a rapid review of the current research and literature to help inform the survey design and our final conclusions (not included in this report). The project aimed to fulfill three (3) primary objectives:

1. Provide novel insights as to how the role of the pharmacist in the US can evolve over the next 10 years
2. Examine how greater engagement with the pharmacist may address disparities in health outcomes among underserved and vulnerable populations defined by insurance status, race/ethnicity, age and pre-existing health conditions
3. Identify training and messaging opportunities for both patients and pharmacists to support the evolving and expanded role of pharmacists as an empathetic health care coach and important member of a patient's health care team

1.1 Issue Context

The US Health Care System is burdened with a complicated landscape of providers and insurers, high costs, and inequitable access to high quality care. With the rising burden of chronic diseases, and the growing prevalence within the population, changes to how care is being delivered need to be considered. The need for change has revealed a resource of unrealized potential, one that could bridge the gap in access to care and management of chronic diseases – ***pharmacists***.

1.1.1 Fragmented Health Care System

The modern US health care system has high costs, issues in access to quality care, and overall care fragmentation. The issue of fragmentation, where there are too many providers trying to coordinate multiple levels of care, leads to poor patient outcomes, increased costs, and a waste of resources via duplicated efforts.[1] This fragmentation is largely due to the plethora of payors and players in the system, which in turn creates potentially competing entities with their own organizational structures.[2]

Fragmentation can cause miscommunication, improper transition of care between various services, increased risk of medication errors, and decreased follow-up appointment attendance.[3] Ultimately, this can lead to otherwise avoidable hospitalizations and complications, increased cost, and increased burden to the system.

The insurance landscape and the hospital system both contribute to this fragmentation. More specifically, high rates of turnover regarding employer-based insurance and the complication of attaining government-based insurance, coupled with physicians being a resource independent from hospital management, are important to note.

[1] https://www.ajmc.com/view/care-fragmentation-quality-costs-among-chronically-ill-patients
[2] https://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.22.4.93
[3] https://www.jmcp.org/doi/10.18553/jmcp.2017.23.5.541?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%200pubmed

The system at large has pushed for alternative care delivery models, such as Accountable Care Organizations (ACOs), the Primary Care First model, and patient-centered medical homes (PCMHs), among others.[4] ACOs prioritize value-based primary care, which includes complicated medical management for chronic diseases.

1.1.2 Historic Shift of the Pharmacist Profession – Integration into Clinical Care

Though the pharmacist role was initially delineated to be product-based, since the 1960s, the role has been slowly shifting.[5] The patient-centered approach was first introduced to navigate and achieve reductions in medication-related morbidity and mortality. Now, the role of the pharmacist in patient care continues to evolve, to include ambulatory care and manage complex diseases like chronic obstructive pulmonary disease (COPD), diabetes, chronic heart failure, hypertension, and asthma.

Previous projects of note that have implemented pharmacists broadly in patient care include the 1996 Asheville project, which saw significant improvements in diabetic patient outcomes after implementing care from pharmacists.[6] Chronic disease remains a significant concern within the American population, with more than half (51.8%) of the U.S. population experiencing at least one chronic condition, and one-quarter suffering from multiple chronic conditions.[7] Data projections show that by 2025, 164 million individuals will have a chronic disease, amounting to as much as $4 trillion in health care costs.[8] Patients with chronic diseases account for 81% of hospitalizations and drive medication usage, which has become increasingly complex.[8] 91% of prescriptions are filled by individuals with a chronic disease.[8]

Despite pharmacists being able to oversee the care of chronic diseases and engage in preventive clinical care in the form of counseling decisions around vaccination and screening, their potential has been largely unexplored when it comes to medication therapy management (MTM).[8] MTM is a group of services that is primarily focused on managing and optimizing therapeutic outcomes for patients, typically through medication reviews, preventing adverse drug events, increasing medication adherence, and decreasing misuse, and handling polypharmacy.

Data shows that pharmacist involvement in the MTM process can improve outcomes and reduce costs alike. Pharmacists are better equipped to handle and identify duplicate therapies in the form of polypharmacy and prevent medication-related hospitalization. Additionally, pharmacists due to their proximity to patients can aid in outcome monitoring and behavior and lifestyle changes would significantly reduce health care costs.

Additionally, integration of pharmacists can help reinforce continuity of care via transition of care (TOC) practices. Pharmacists can oversee the transition from acute care settings to the home or other post-acute care options through discharge counseling, medication history overview, and reducing readmission.

As the US health care system continues to evolve, pharmacists can play a pivotal role in the transition to the future and in the future by serving as the connection point between primary care gaps, medication management complexities, and value-based model goal attainment.

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4 https://pubmed.ncbi.nlm.nih.gov/28448780/
5 https://www.ncmedicaljournal.com/content/76/4/247.long
6 https://www.aphafoundation.org/sites/default/files/ckeditor/files/Our%20Work/TheAshevilleProject-Diabetes-JAPhA-2003-43-173-84.pdf
7 Prevalence of Multiple Chronic Conditions Among US Adults, 2018. Research Brief – Volume 17 – 9/17/20. DOI: http://dx.doi.org/10.5888/pcd17.200130external
8 https://www.jmcp.org/doi/10.18553/jmcp.2017.23.5.541?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%200pubmed

1.2 Key Themes

There are several key themes that emerged from the completed pharmacist, provider, and patient surveys, including:

1. **Value-based Models.** Pharmacists can help achieve cost and quality goals on the journey to value-based payment models
2. **Primary Care Gaps.** Primary care supply shortages and gaps can be filled with pharmacists
3. **Patient Care Activities.** The expanded role of the pharmacist will include more patient care activities
4. **Training and Education.** To meet growing demand and fill gaps in care, pharmacist training will be a key focus
5. **Trust.** There is a high level of trust in pharmacists to expand their role
6. **Supportive Technology.** Growth in several areas will help to support the expanded pharmacist role

The practice of pharmacy is changing, and the overall health care system is evolving. The pharmacist is poised to connect patients across a fragmented system and to fill existing gaps in access and care coordination. As payment models evolve to recognize the contribution of the pharmacist to improving cost and quality metrics, we can begin to further realize the value that the U.S. health care system can attain.

This report provides a summary of the most comprehensive survey related to the future of pharmacy care, as it integrates the perspectives of 1,000 pharmacists, 500 providers (physicians and nurse practitioners), and 3,000 patients. Surveys were administered by Dynata. Upon survey completion, de-identified data were analyzed by the Columbia University Mailman School of Public Health research team using Microsoft Excel and Stata v14.2. Descriptive analyses were conducted by respondent type, and in each case, stratified by pre-determined variables as shown in Table 3.3-1. Tests of significance were conducted using chi-square analysis. A full description of the survey development, administration and analysis are included in Section 3.

2. Summary of Project Findings

2.1 Pharmacist Survey Results

Pharmacists are mostly excited about the evolving role of their work. Pharmacists expect to spend less time dispensing medications and more time focused on direct patient care, with prescribing expected to have the greatest impact on pharmacy care by 2030. The pharmacist survey revealed the following key points:

- Ambulatory clinic / health system pharmacists are more likely to engage with medical providers as part of a care team, spend more time with patients and providers and appear slightly happier in their role than retail pharmacists – their allocation of time may provide a glimpse at the future of pharmacy
- Home delivery pharmacists spend the most time counseling patients and, in general, spend more time with patient care activities than retail pharmacists
- COVID-19 led to a wave of vaccination certifications, with vaccine administration continuing to be a growing responsibility for pharmacists
- Payment systems remain a barrier to change and may inhibit pharmacists' ability to reach their potential to fill patient care gaps
- Pharmacists are poised and confident in their ability to take on more patient care responsibility, but also recognize gaps in their training; specifically, diagnosing and prescribing
- Telehealth is an underutilized technology in the pharmacy industry, though there are expectations for increased utilization
- Supportive technologies have made the practice of pharmacy safer and more efficient and have led to more time to spend with patients

"Provider status was just granted in the state of Wisconsin, so I expect more autonomy and services developed to utilize our unique skillsets as pharmacists."
- Ambulatory Clinic pharmacist, Wisconsin

2.1.1 Respondent Demographics

The average age of the pharmacist survey respondents was 46.2 and 51.5% identified as female. 70.8% of respondents were white, and 15.6% were Asian or Pacific Islander. When asked how long respondents have been working as a pharmacist since obtaining their degree, 55.9% have been working for 16 years or more and 31.2% have been in their current role for 16 years or more. 78.4% of respondents work in a retail setting such as an independent pharmacy (28.5), national chain (28.6), general merchandise store such as Walmart (9.7) or a grocery store chain (11.7). The highest percentage of respondents work in a southern state (38.3) and the fewest respondents were from a northeast state (17.4). Distribution across geographic settings was 30.1% in urban core areas, 48.1 in suburban locations and 21.8 in rural areas. Table 2.1-1 shows respondent characteristics overall and by geographic setting (urban, suburban, rural).

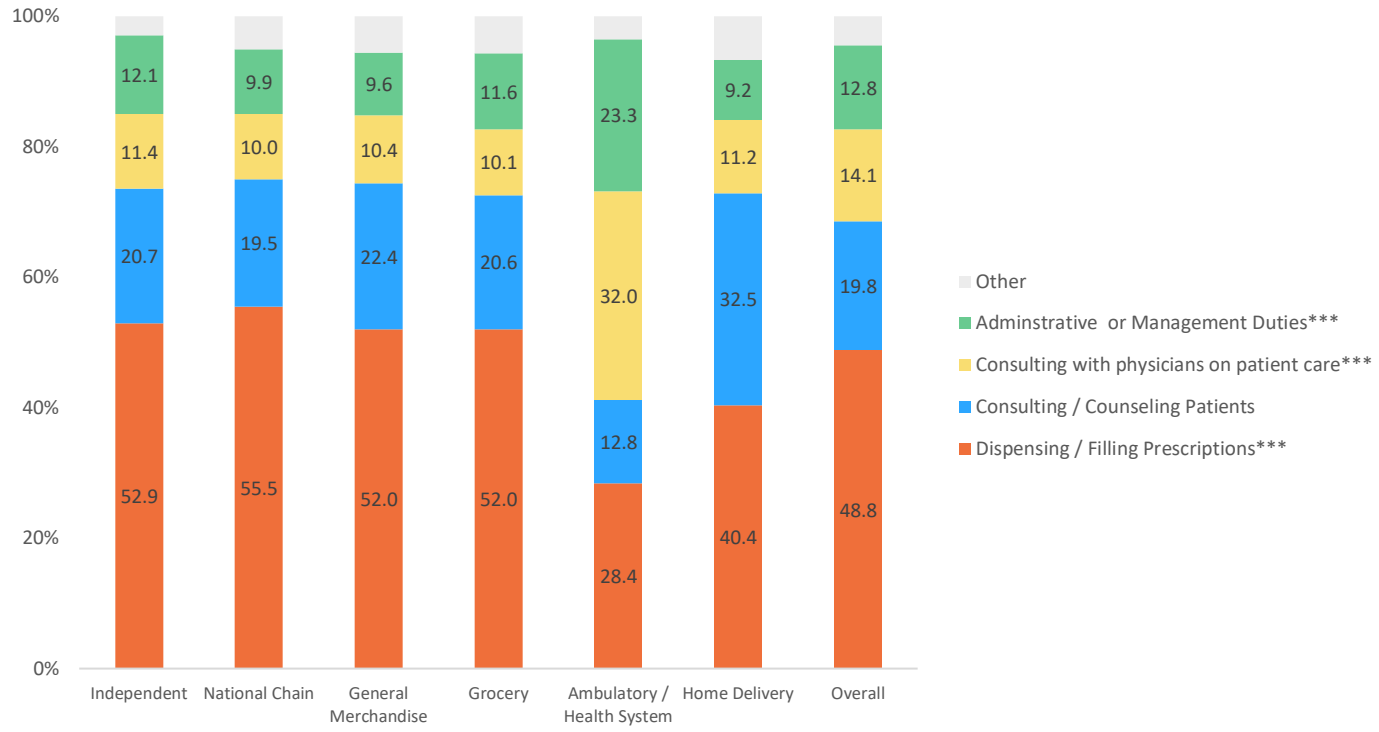
Table 2.1-1 Respondent Characteristics

	Overall (n=1,053)	Urban (n=317)	Suburban (n=506)	Rural (n=230)
Age (sd)	46.2 (11.6)	45.6 (12.1)	47.0 (11.4)	46.0 (11.4)
Gender Identity (%)				
Female	51.5	53.0	50.6	51.3
Male	44.8	43.2	45.9	44.8
Non-binary	0.1	0.0	0.2	0.0
Prefer not to say	3.6	3.8	3.4	3.9
Race (%)				
Asian or Pacific Islander	15.6	19.6	17.6	5.7
Black or African American	2.7	5.4	1.8	0.9
Hispanic or Latino	2.3	2.2	3.4	0.0
Native American or Alaskan Native	0.3	0.3	0.2	0.4
White or Caucasian	70.8	60.9	69.6	87.0
Multiracial or Biracial	1.1	1.6	1.4	0.0
A race/ethnicity not listed here	0.6	1.6	0.2	0.0
Prefer not to say	6.7	8.5	5.9	6.1
Years since obtaining degree (%)				
Two years or less	1.3	1.9	1.2	0.9
Three to four years	3.8	4.7	2.8	4.8
Five to nine years	17.0	17.7	15.4	19.6
Ten to fifteen years	21.8	26.5	20.8	17.8
Sixteen years or more	55.9	49.2	59.7	57.0
Not sure/don’t know	0.1	0.0	0.2	0.0
Years in current role (%)				
Two years or less	9.8	9.8	8.9	11.7
Three to four years	11.7	13.3	9.3	14.8
Five to nine years	25.2	26.2	23.3	27.8
Ten to fifteen years	22.1	21.1	23.5	20.4
Sixteen years or more	31.2	29.7	34.8	25.2
Not sure/don’t know	0.1	0.0	0.2	0.0
Work location (%)				
Independent pharmacy	28.5	24.3	19.2	54.8
National chain	28.6	27.1	36.8	12.6
General merchandise	9.7	9.2	9.5	10.9
Grocery store	11.7	12.0	13.2	7.8
Ambulatory clinic/health system	16.0	22.7	13.2	12.6
Specialty pharmacy	0.5	1.3	0.2	0.0
Mail order	5.1	3.5	7.9	1.3
Geographic region (%)				
Northeast	17.4	17.4	20.4	10.9
Midwest	22.5	18.0	22.5	28.7
South	38.3	35.0	37.8	43.9
West	21.8	29.7	19.4	16.5

2.1.2 Ambulatory Clinic / Health System Pharmacists Spend More Time Consulting / Counseling

On average, pharmacists spend about 50% of their time dispensing and filling prescriptions. Patient consults account for about 20% of a pharmacist's time and physician consults another 14% of time. However, when assessing time spent on various tasks throughout the day, there are significant differences between retail-based pharmacists and ambulatory clinic / health system-based pharmacists. In the retail setting, time spent dispensing and filling prescriptions is 52% and higher whereas ambulatory clinic / health system-based pharmacists only spend 28% of their time filling prescriptions or dispensing. Nearly 50% of an ambulatory clinic / health system pharmacist's time is spent consulting with patients or physicians about patient care. Mail order pharmacists spend the most time consulting or counseling patients. (Figure 2.1-1)

Figure 2.1-1 Pharmacist Typical Allocation of Time, by Work Setting



*** p-value<.01, ** p-value<.05, * p-value<0.1

2.1.3 Technology Has Improved Pharmacy Safety and Resulted in More Time with Patients

Several technological advances in the pharmacy industry have improved efficiency and safety, often resulting in more time spent with patients. Specifically, more than 83% of respondents noted e-prescribing / clinical interoperability (88.4), integrated electronic drug utilization review (84.8), and barcode technology / assisted dispensing (83.9) have all made the practice of pharmacy more efficient. (Figure 2.1-2) Each of the technological advances above have also led to more time to engage with patients to address their needs. (Figure 2.1-3) When asked to choose the top two advances that have made the practice of pharmacy safer, respondents chose barcode technology (67.2%) and e-prescribing / clinical interoperability (55.6%) most frequently. (Figure 2.1-4)

Figure 2.1-2 Technology Impact on Efficiency

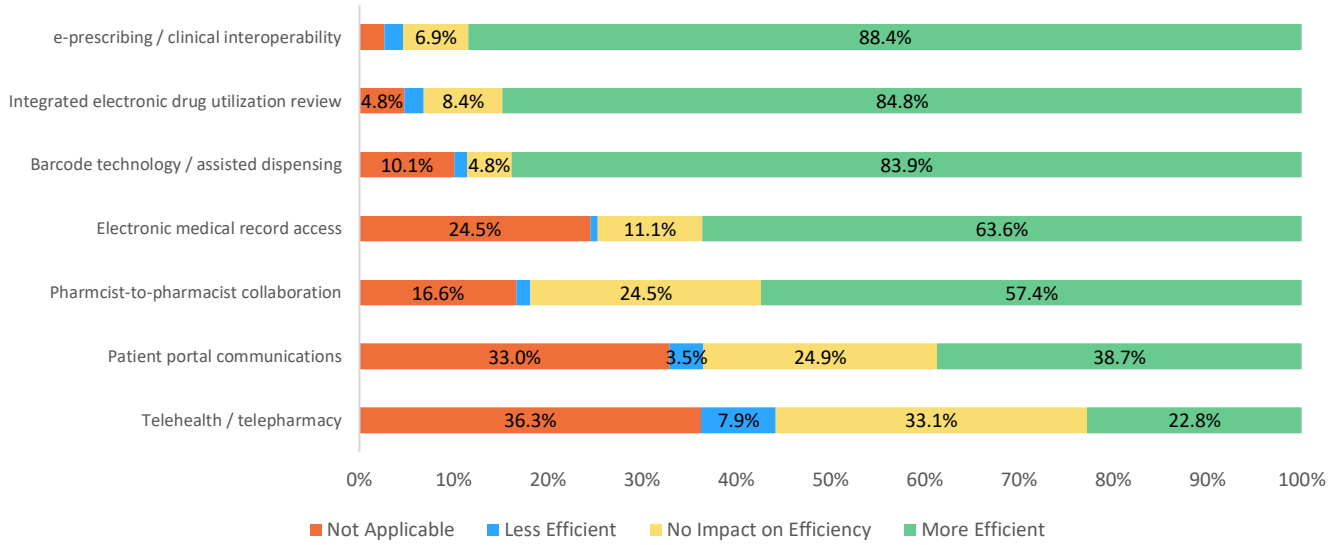


Figure 2.1-3 Technology Impact on Time with Patients

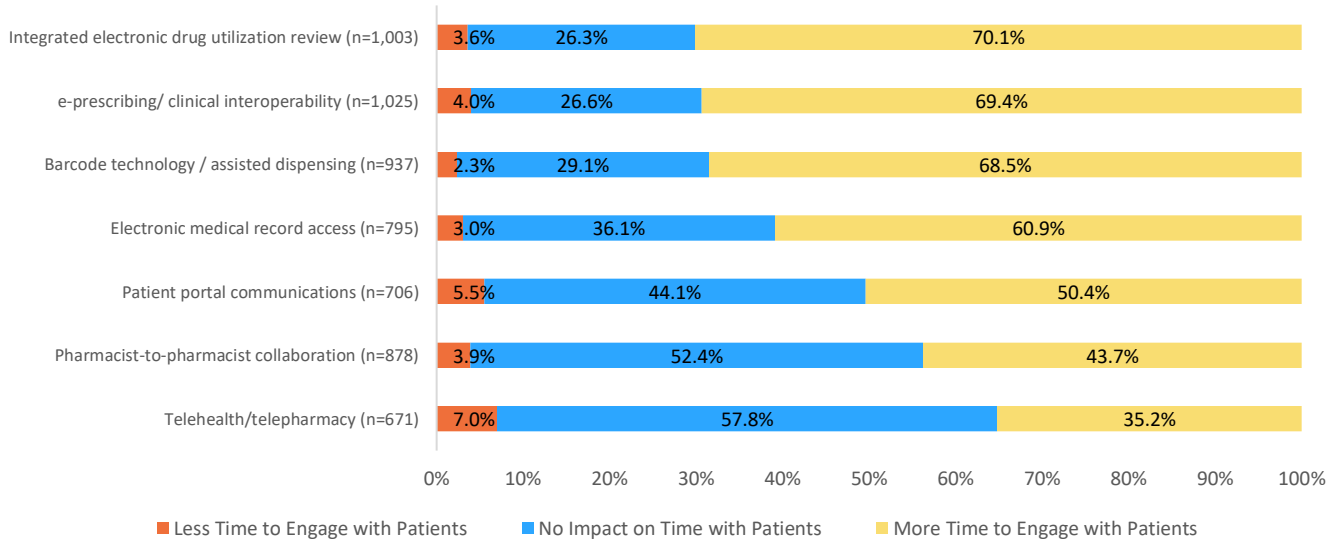
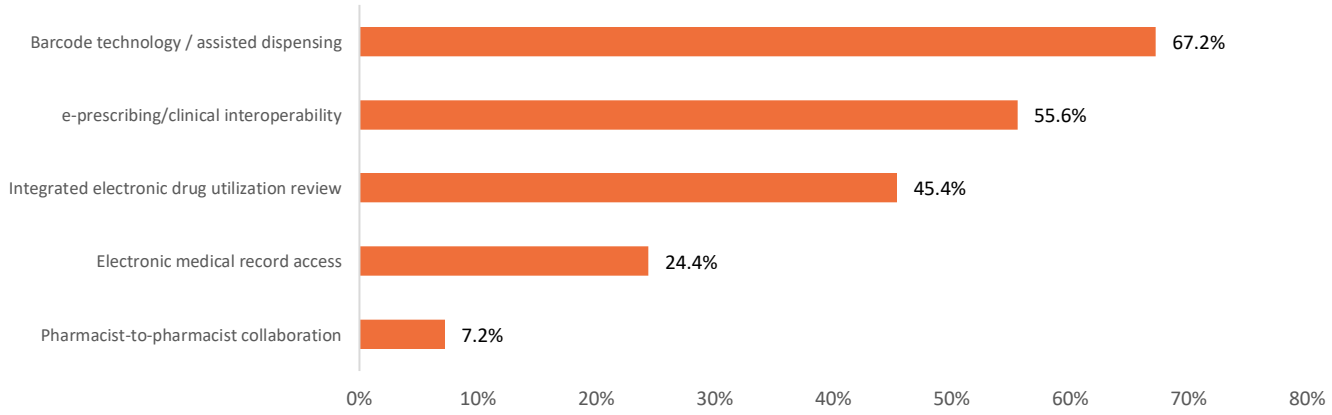


Figure 2.1-4 Which of the following has made the practice of pharmacy safer?



Stratifying by work setting, respondents in the ambulatory clinic/health system and home delivery setting identified electronic medical record access and pharmacist-to-pharmacist collaboration more frequently than retail pharmacists as areas improving the efficiency of their practice. (Figure 2.1-5) Ambulatory clinic/health system respondents identified electronic medical record access as one of the top two areas that has made the practice of pharmacy safer. (Figure 2.1-6) This highlights the differences in practice between the retail and ambulatory clinic / health system settings where pharmacists in a retail setting are most likely less integrated into the direct patient care process than their health system counterparts and home delivery pharmacists in between the two in regard to direct patient care.

Figure 2.1-5 Technology Impact on Efficiency (by work setting)

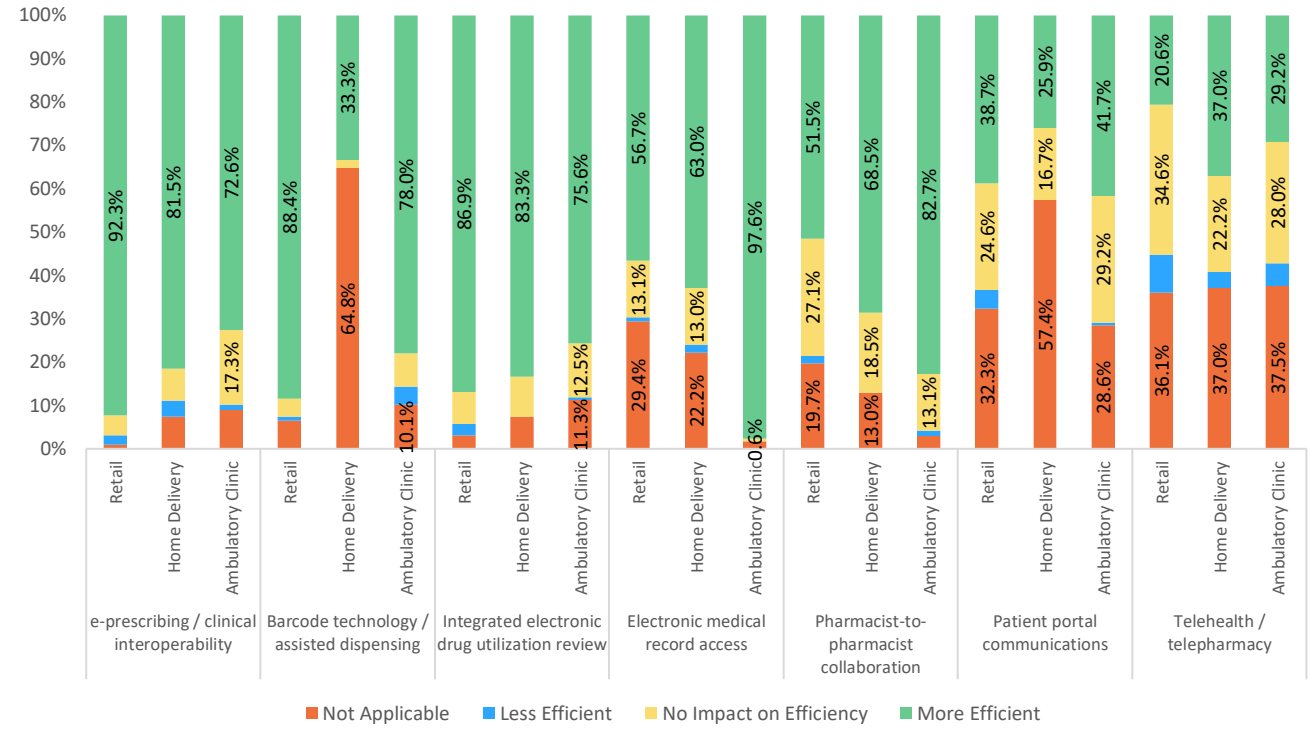
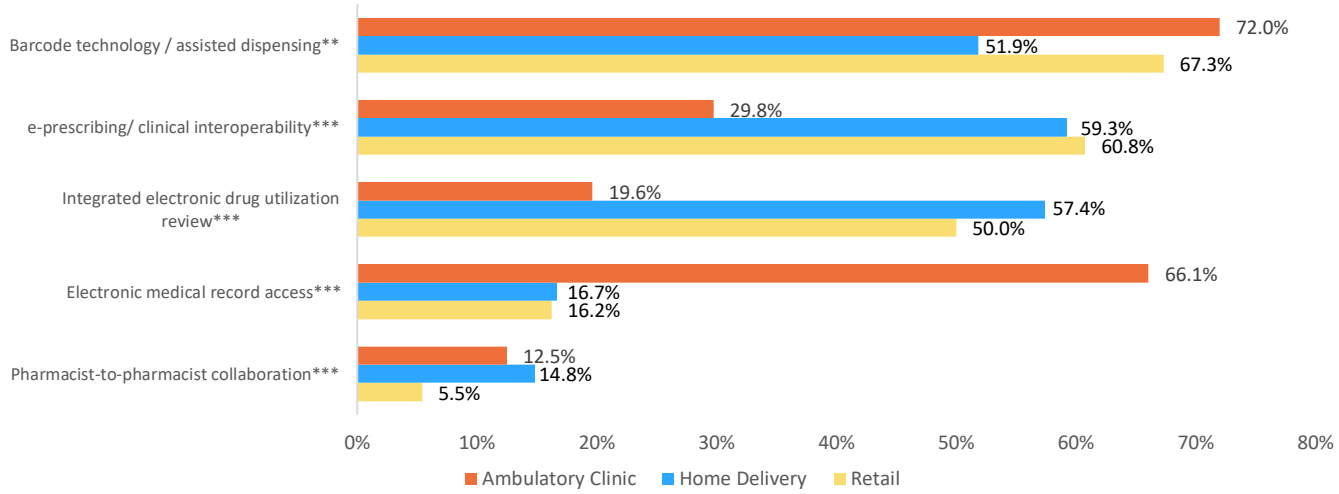


Figure 2.1-6 Which of the following has made the practice of pharmacy safer? (by work setting)

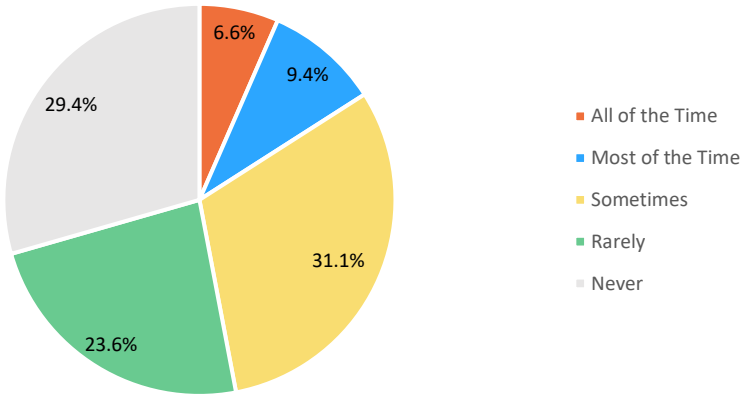


*** p-value<.01, ** p-value<.05, * p-value<0.1

2.1.4 Telehealth/Tele pharmacy Rarely Used Among Pharmacists

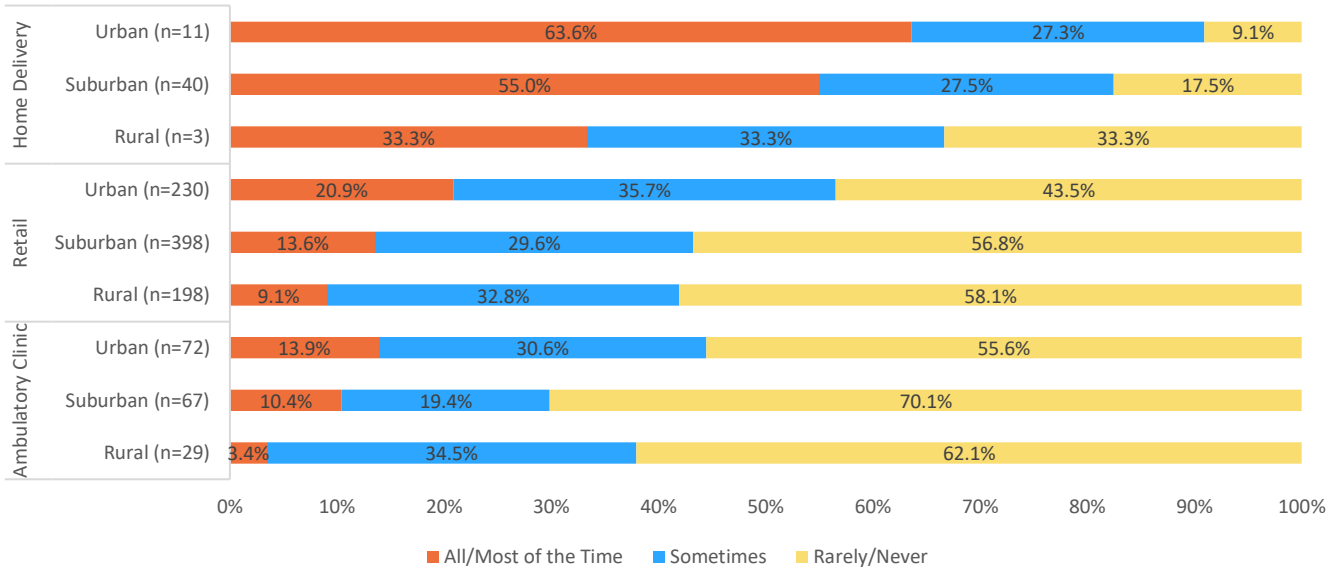
Telehealth utilization exploded during the COVID-19 pandemic. A recent McKinsey report estimated that as telehealth volume has stabilized following the initial surge at the onset of the pandemic it remains at 38x pre-pandemic levels (compared to February 2020).[10] Additionally, the market for tele pharmacy is expected to reach $71.4 billion by 2027.[11] However, only 16.0% of respondents engaged with patients via telehealth/tele pharmacy all of the time (6.6) or most of the time (9.4). Nearly one-third of respondents never engaged with patients and another 23.6% rarely engaged with patients via telehealth/tele pharmacy. (Figure 2.1-7) This result is further supported by the 36.3% of respondents that noted "not applicable" to the question about how different technologies affected the efficiency of their practice. (Figure 2.1-2)

Figure 2.1-7 Telehealth/Telepharmacy Use to Engage with Patients



Telehealth utilization varies by geographic location, with higher utilization in urban areas, followed by suburban, and the lowest utilization in rural locations. Home delivery pharmacists are also much more likely to utilize telehealth than their ambulatory clinic and retail counterparts. (Figure 2.1-8)

Figure 2.1-8 Telehealth Utilization by Work and Geographic Setting

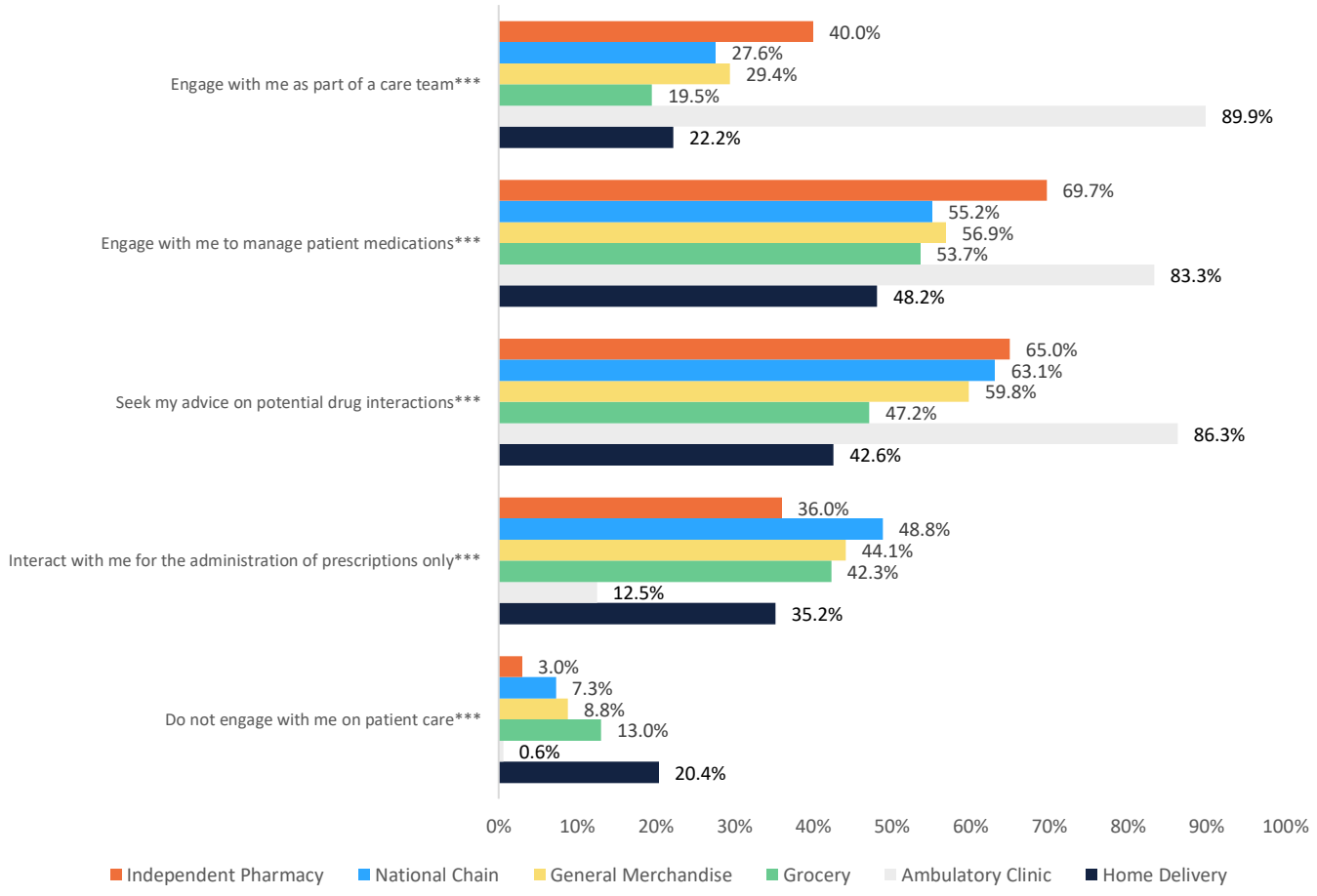


2.1.5 Medical Providers Engage Pharmacists More in Ambulatory Clinic/Health System Setting

Consistent with the differences in time allocation between retail and ambulatory clinic/health system pharmacists, over 80% of ambulatory clinic/health system respondents indicated a high level of engagement with medical providers to discuss patients' needs and medications or to seek advice on potential drug interactions. (Figure 2.1-9) Among retail- and home delivery-based respondents, there was higher level of engagement related to managing patient medications or seeking advice on drug interactions versus engagement as part of a care team. Further analysis within the retail respondents reveals a higher level of care team engagement among pharmacists that work in an independent pharmacy (40.0%) as compared to national chain (27.6), general merchandise (29.4) or grocery store (19.5). (Figure 2.1-9) Less than 10% of respondents indicated no engagement with medical providers, except for home delivery pharmacists (20.4%) and grocery store pharmacists (13.0).

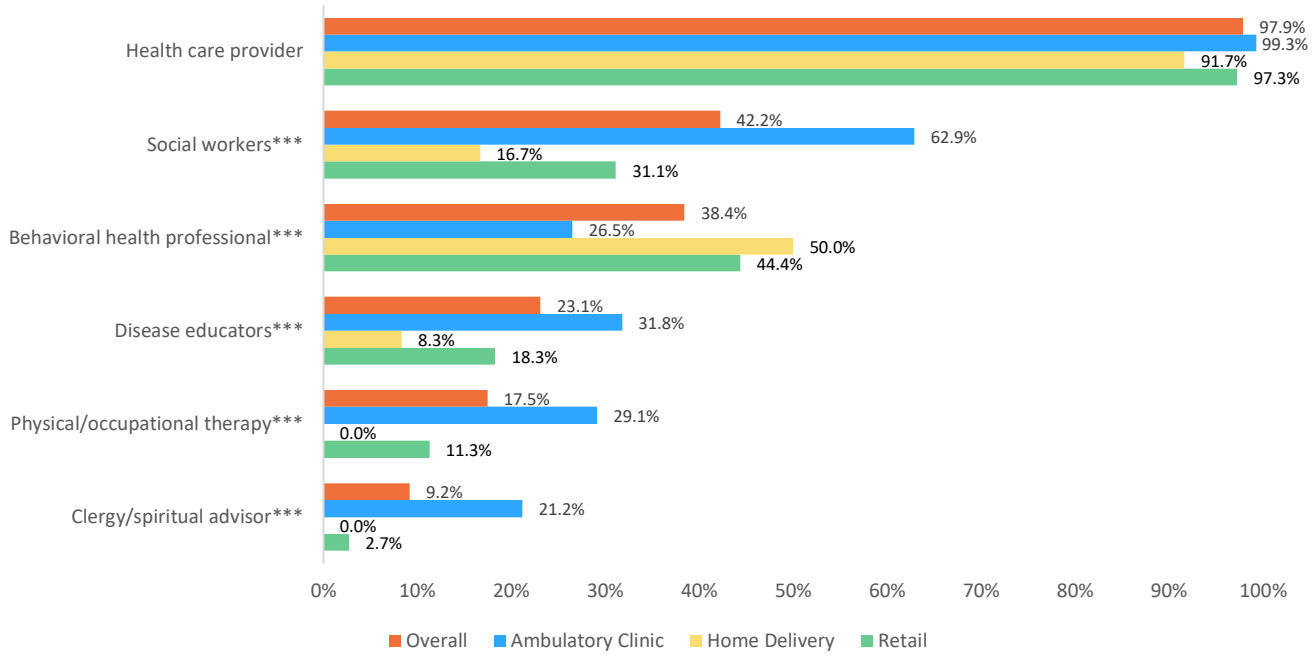
Of those respondents that positively indicated engagement as part of a care team, the composition of the care team was health care providers (MD, DO, NP, RN) (98.1%), social work (42.9) and behavioral health professionals (38.6) with all other team members mentioned in less than 25% of responses. Ambulatory clinic/health system pharmacists have a more diverse set of care team members than retail and home delivery pharmacists, though (Figure 2.1-10)

Figure 2.1-9 Engagement with Medical Providers



*** p-value<.01, ** p-value<.05, * p-value<0.1

Figure 2.1-10 Members of the Care Team

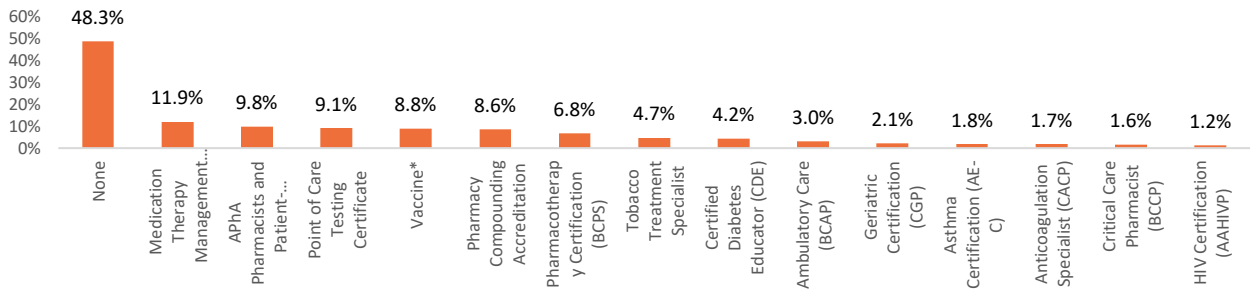


*** p-value<.01, ** p-value<.05, * p-value<0.1

2.1.6 Nearly Half of Pharmacists Do Not Hold Any Licenses, Certifications or Specializations

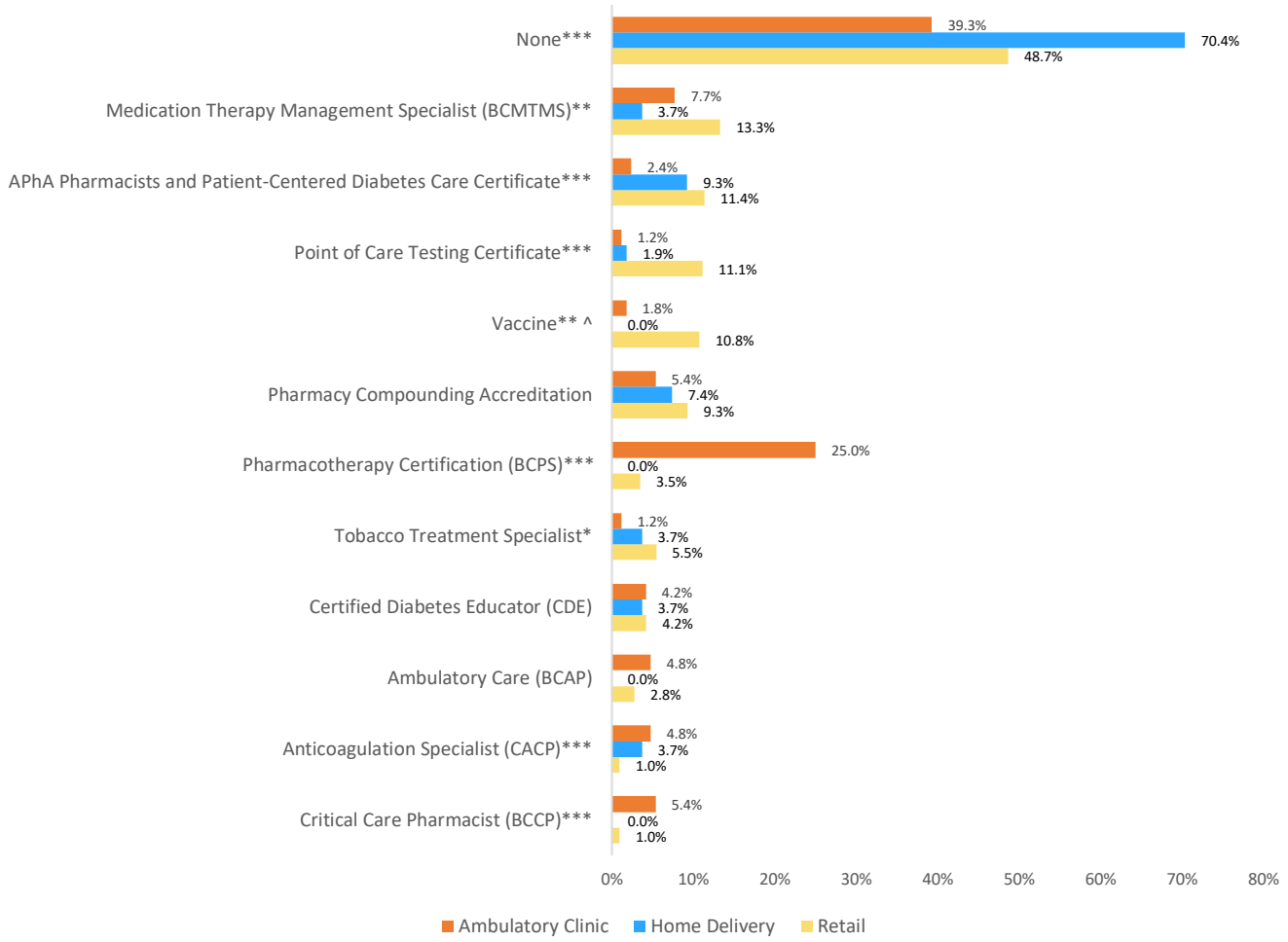
Pharmacists have access to a multitude of certifications, licenses and specializations ranging from condition-specific certificates (e.g., asthma) to more comprehensive disease educator (e.g., diabetes) certifications and from comprehensive medication therapy management to point of care testing. Nearly half (47.0%) of respondents do not hold any additional credentialing. When asked how additional specialization can help, some respondents indicated that "they don't provide a direct benefit," while others were more positive and suggested the certifications provide "more specialized care to optimize patient outcomes." Consistent with national trends where pharmacists were instrumental in the COVID-19 vaccine distribution into local pharmacies, 9.3% of all respondents and 20.8% of retail respondents (range, independent pharmacies – 17.0% to 31.2% – grocery stores) noted the acquisition of a vaccine certification. (Figure 2.1-11) Home delivery pharmacists are the least likely to hold a certification and ambulatory clinic/health system pharmacists are the most likely to hold a certification, though the primary certification for ambulatory clinic/health system pharmacists (25.0%) is the pharmacotherapy certification (BCPS). (Figure 2.1-12)

Figure 2.1-11 Licenses, Certifications or Specializations Held by Pharmacists



* Vaccination certificates identified in the "other" category in the survey

Figure 2.1-12 Licenses, Certifications or Specializations by Work Setting

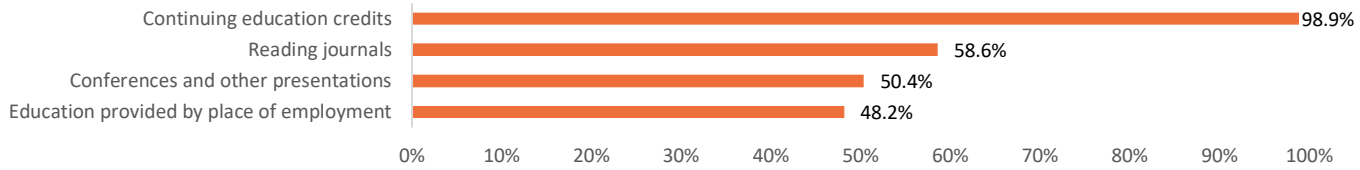


*** p-value<.01, ** p-value<.05, * p-value<0.1

^ Vaccination certificates identified in the "other" category in the survey

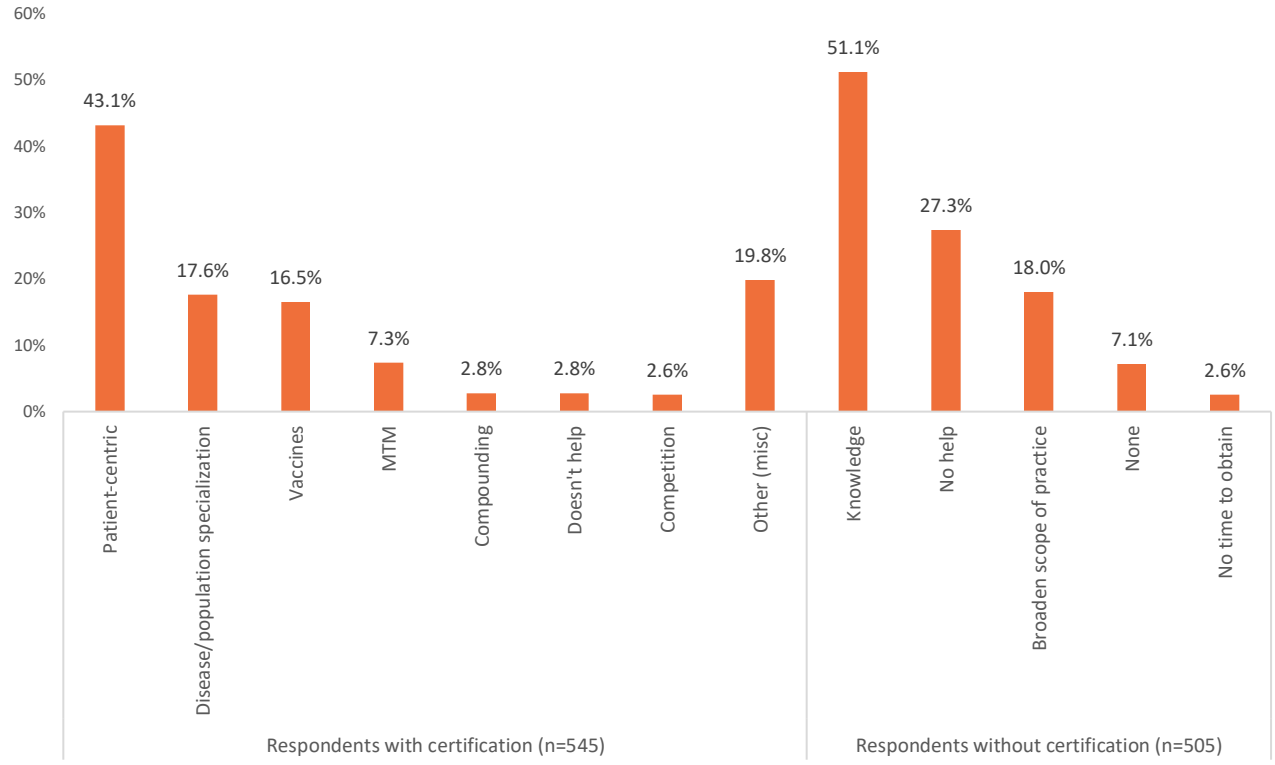
Nearly all respondents with a certification indicated they stay current using continuing education credits (98.8%) followed by reading journals (59.1) and attending conferences and other presentations (50.7). (Figure 2.1-13)

Figure 2.1-13 Staying Current on Licenses, Certifications and Specializations



Respondents that responded positively (n=545) to any certification were asked how those certifications help them in providing patient care. 43.1% described that the knowledge gained helped to provide a more patient-centric approach. Another 17.6% of respondents noted the ability to focus on a specific disease state or patient population. Of the 48.3% of respondents without a certification, 51.1 noted the acquisition of a new certification would help to broaden their knowledge base, while another 27.3% noted that the additional credential would provide no help to their practice. (Figure 2.1-14)

Figure 2.1-14 Open End Certification Themes



2.1.7 Pharmacists Expect to Shift Time from Dispensing Medications to Direct Patient Care

Currently, pharmacists spend all or most of their time doing "traditional" pharmacist activities such as dispensing medications or supervising medication dispensing (all of the time = 63.7%, most of the time = 21.9%), assessing drug interactions (all of the time = 51.7, most of the time = 30.1), or answering questions about medications (all of the time = 45.9, most of the time = 33.8). Many pharmacists spend time conducting more direct patient care activities such as being a first-contact provider (all of the time = 17.9, most of the time = 29.7) or interacting with a larger health team (all of the time = 14.1, most of the time = 14.3). (Figure 2.1-15) When stratified by work setting, there are some notable differences between pharmacists in retail settings compared to those in ambulatory clinic/health systems and home delivery. Retail pharmacists are more engaged in dispensing and answering questions, whereas the ambulatory clinic/health system pharmacists are more engaged in prescribing, acting as a disease specialist and interacting with a larger health team. Home delivery pharmacists are more engaged in direct patient care than retail pharmacists, especially via telehealth. (Figure 2.1-16)

In response to how pharmacists will spend their time in the future, approximately 50% or more of pharmacists surveyed expect to spend more time administering vaccines (56.6%), conducting telehealth visits (56.4), prescribing medications (53.3), counseling patients on medications (52.1), being a first-contact provider (50.6), interacting with a larger health team (49.9), conducting wellness screenings (49.8), and acting as a disease specialist (48.6). As far as where time will be saved, 35.7% of respondents expect to spend less time dispensing medications. (Figure 2.1-17) Open-end responses to describing pharmacy care in 2030 reveal similar patterns and trends with less dispensing and greater focus on direct patient care. (Figure 2.1-18)

Figure 2.1-15 Distribution of Work Activities

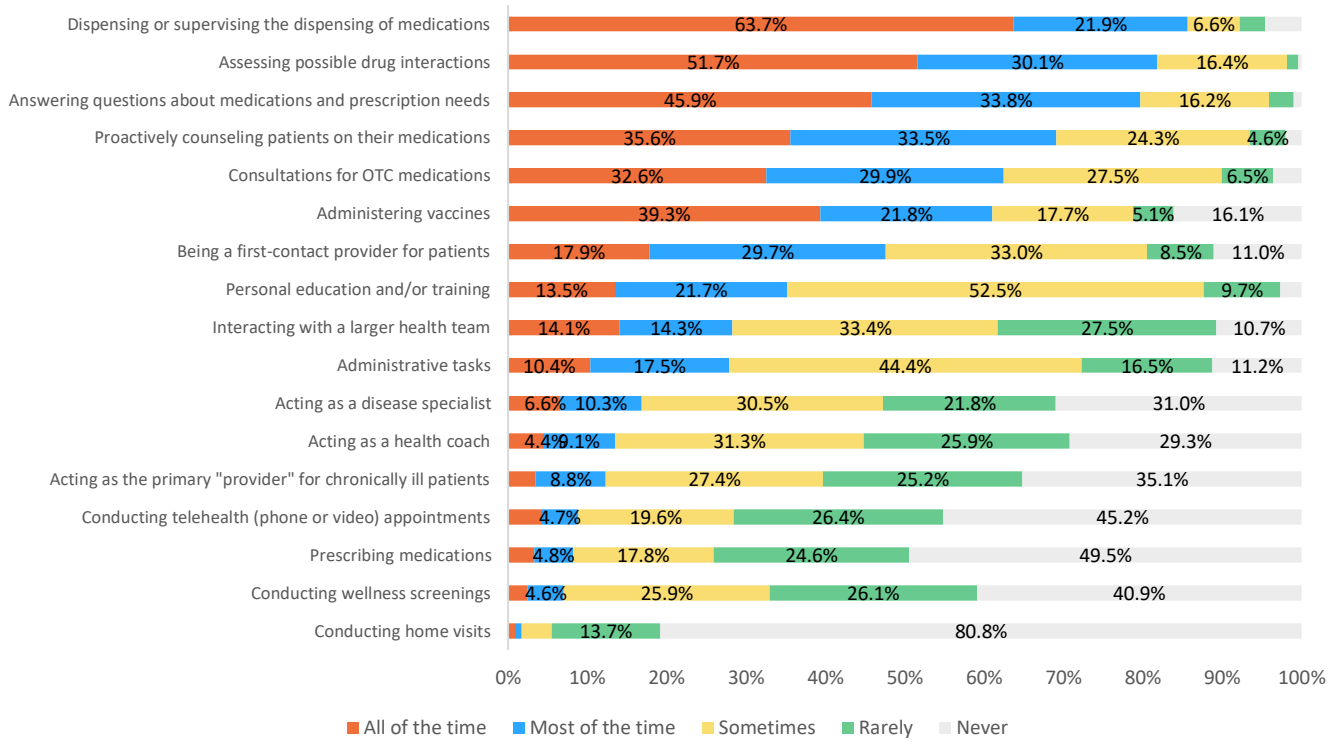
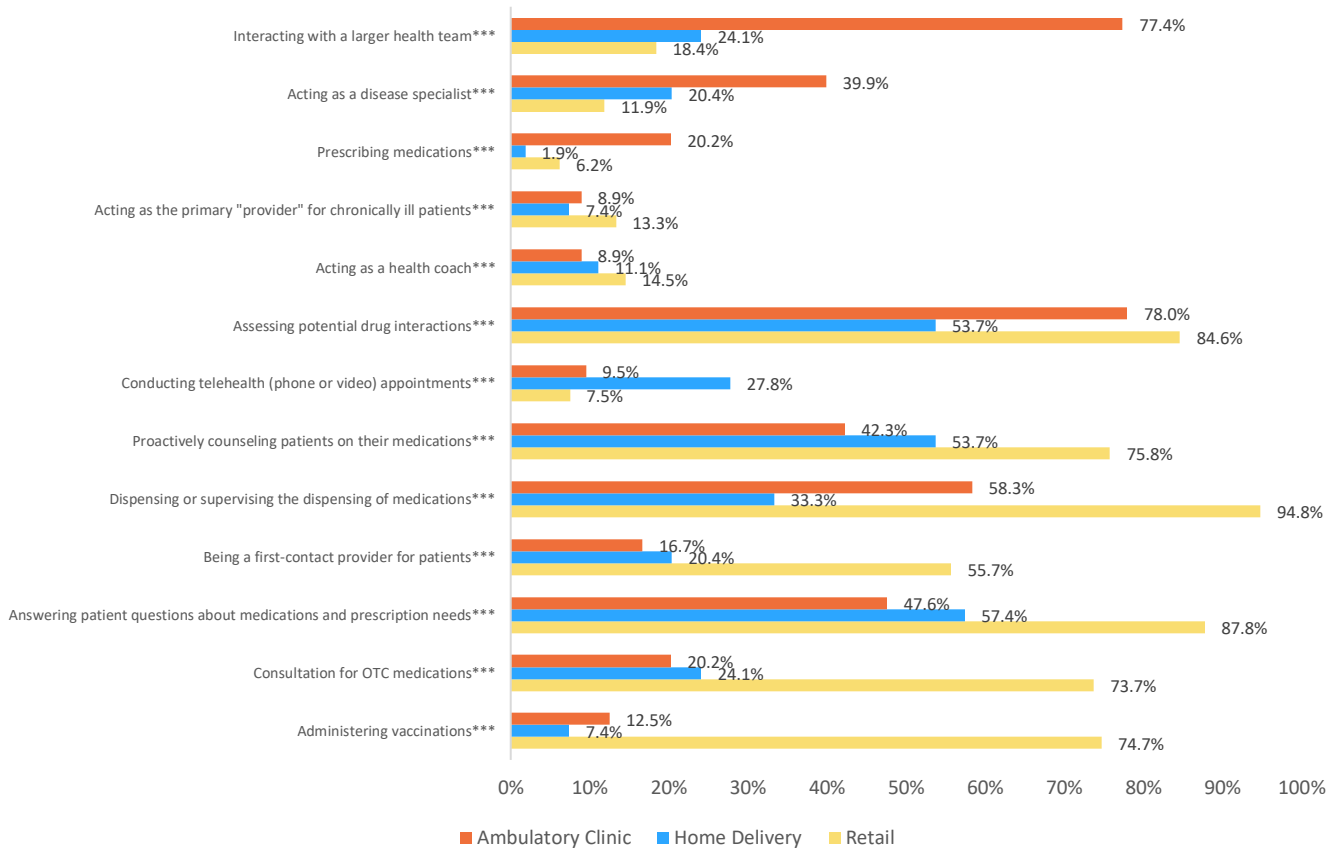


Figure 2.1-16 Work Activities by Work Setting, Combined "All of the Time" and "Most of the Time"



*** p-value<.01, ** p-value<.05, * p-value<0.1

Figure 2.1-17 Anticipated Change in Time Spent on Work Activities by 2030

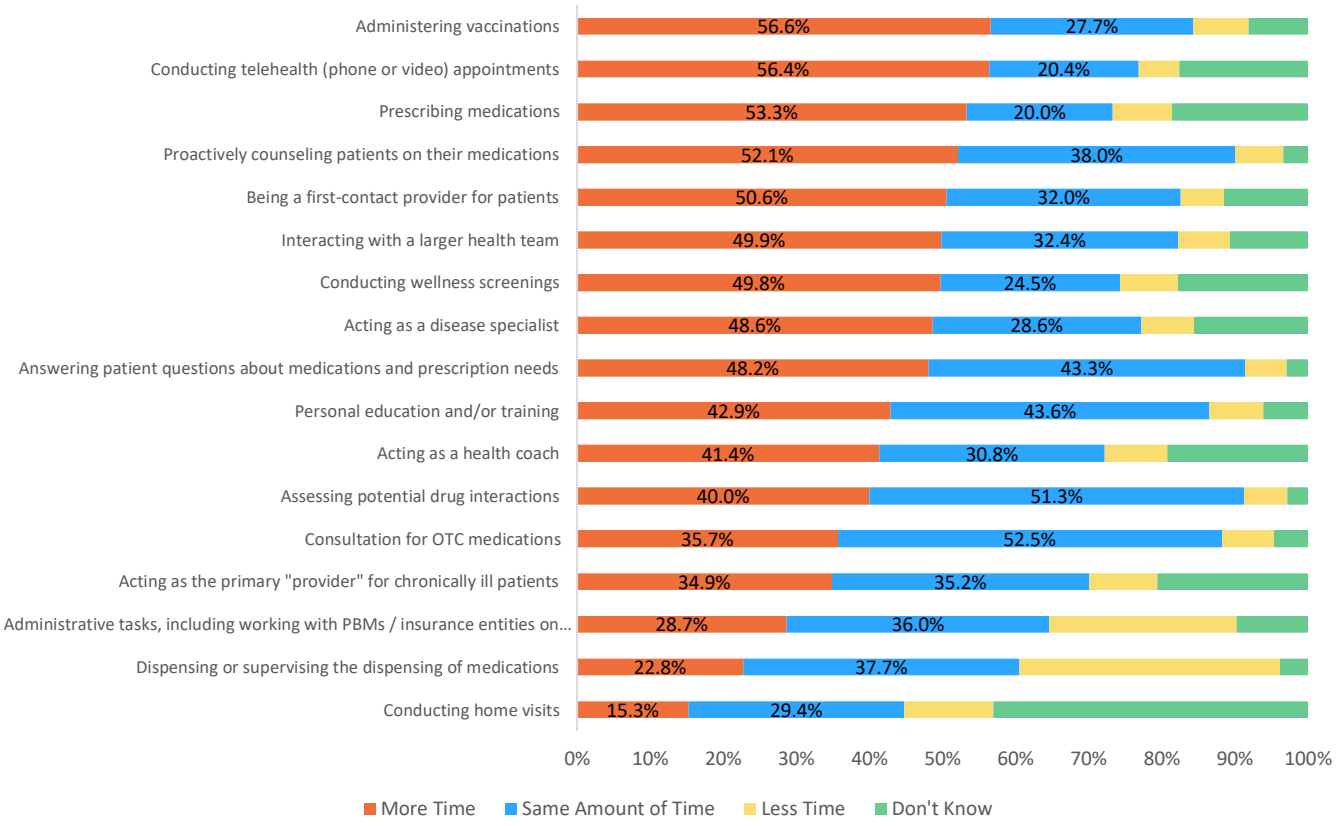
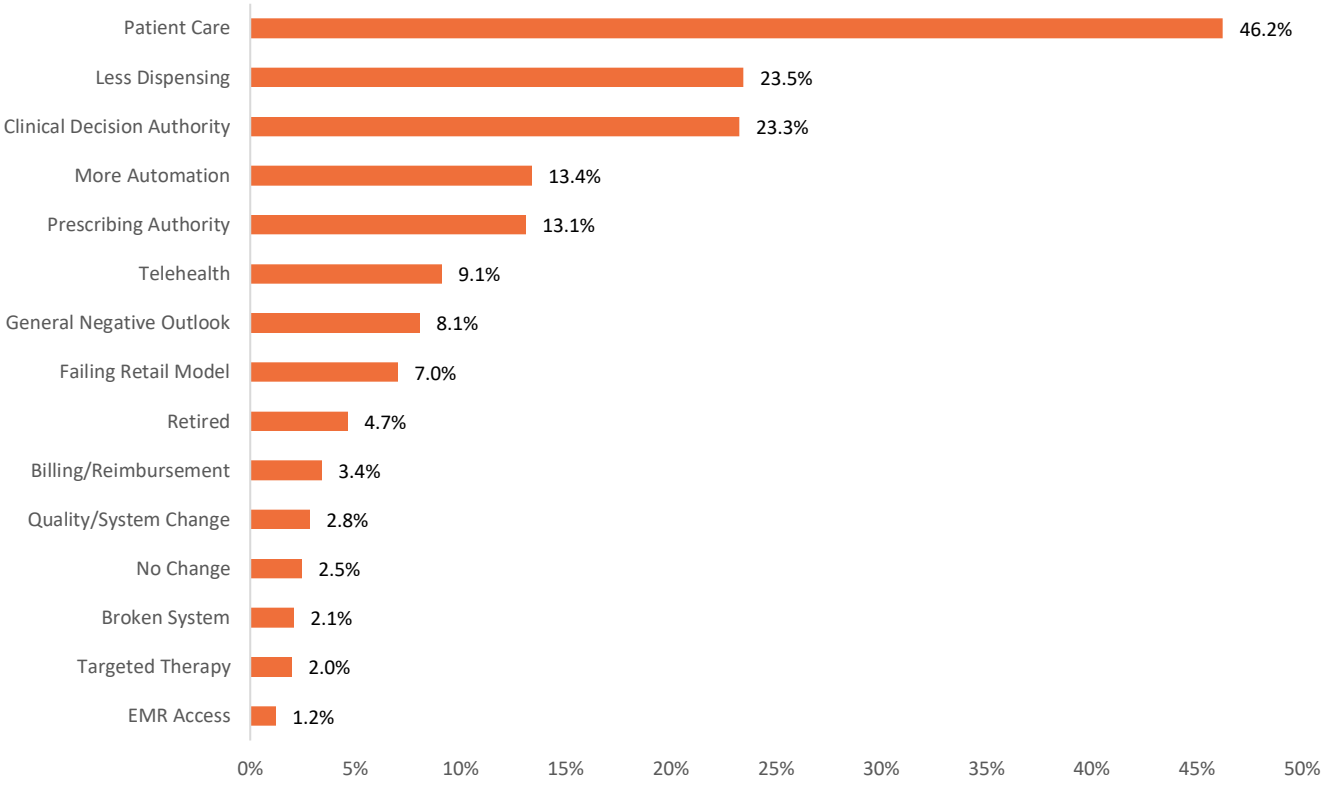


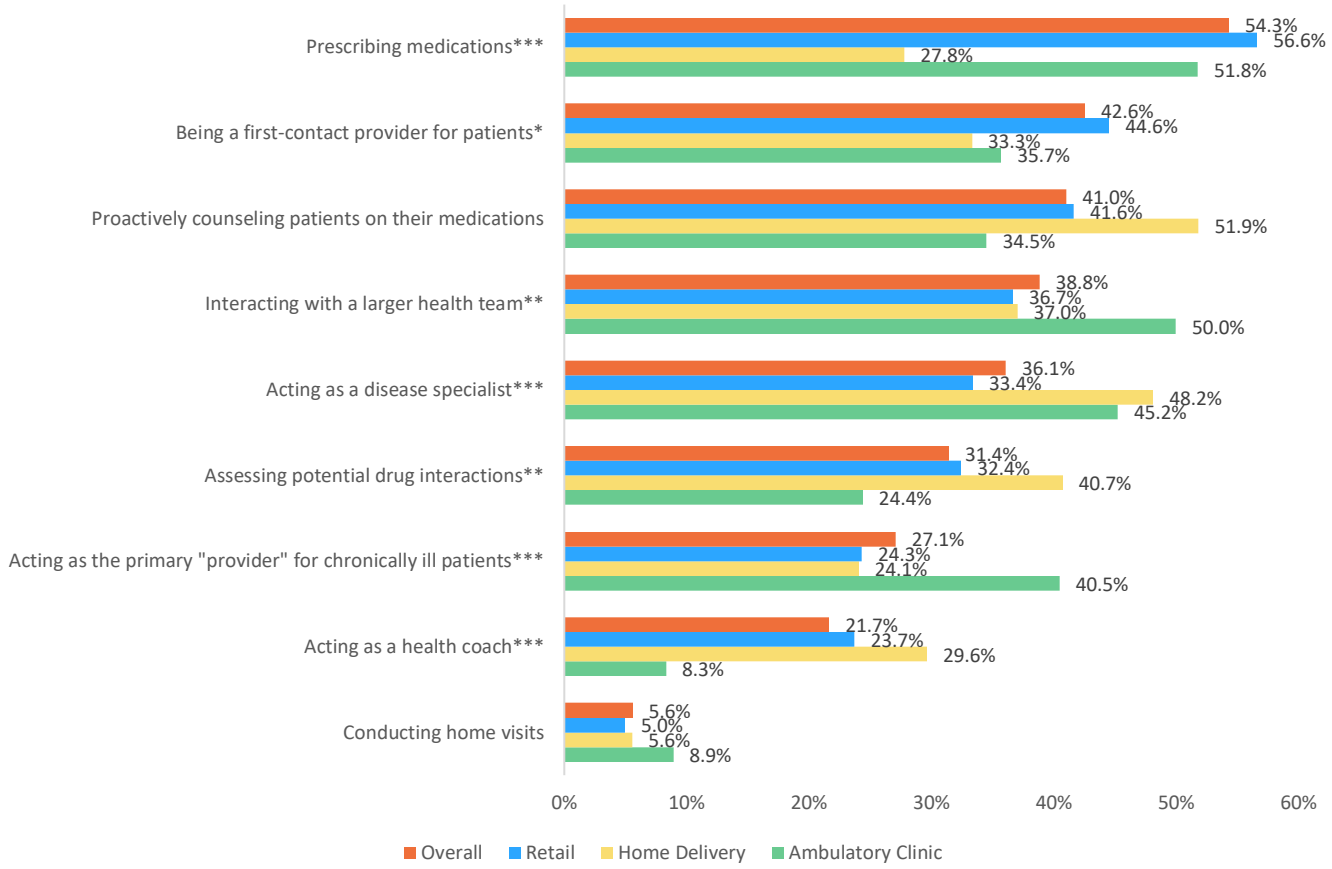
Figure 2.1-18 Open End Response Themes (Percent of Mentions) – Pharmacy Care in 2030



2.1.8 Prescribing Is Expected to Have Greatest Impact on Pharmacy Care by 2030

Respondents expect that prescribing medications (54.3) will have the greatest impact on pharmacy care by 2030. (Figure 2.1-19) Home delivery pharmacists expect the biggest impact on pharmacy to be patient medication counseling (51.9%), acting as a disease specialist (48.2), and assessing potential drug interactions (40.7). Home delivery pharmacists ranked prescribing the 7th most impactful change by 2030, whereas retail and ambulatory clinic/health system pharmacists ranked it first. For ambulatory clinic/health system pharmacists, the biggest impact on pharmacy care, other than prescribing (51.8%), is expected to be interacting with a larger health team (50.0), acting as a disease specialist (45.2), and acting as the primary provider for chronically ill patients (40.5). (Figure 2.1-19)

Figure 3.1-19 Biggest Impact on Pharmacy by 2030

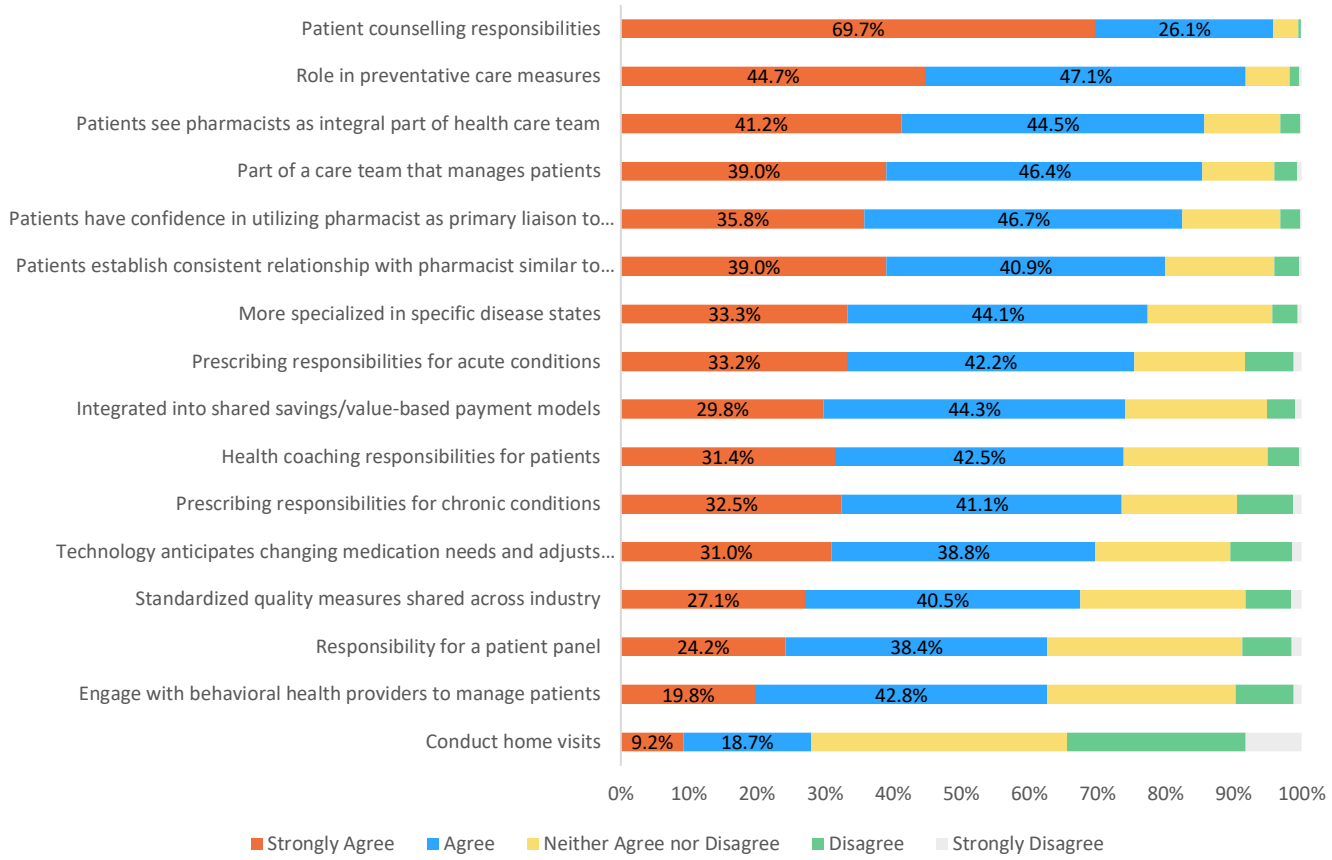


*** p-value<.01, ** p-value<.05, * p-value<0.1

2.1.9 Pharmacists Positioned to Fill More Direct Patient Care Gaps

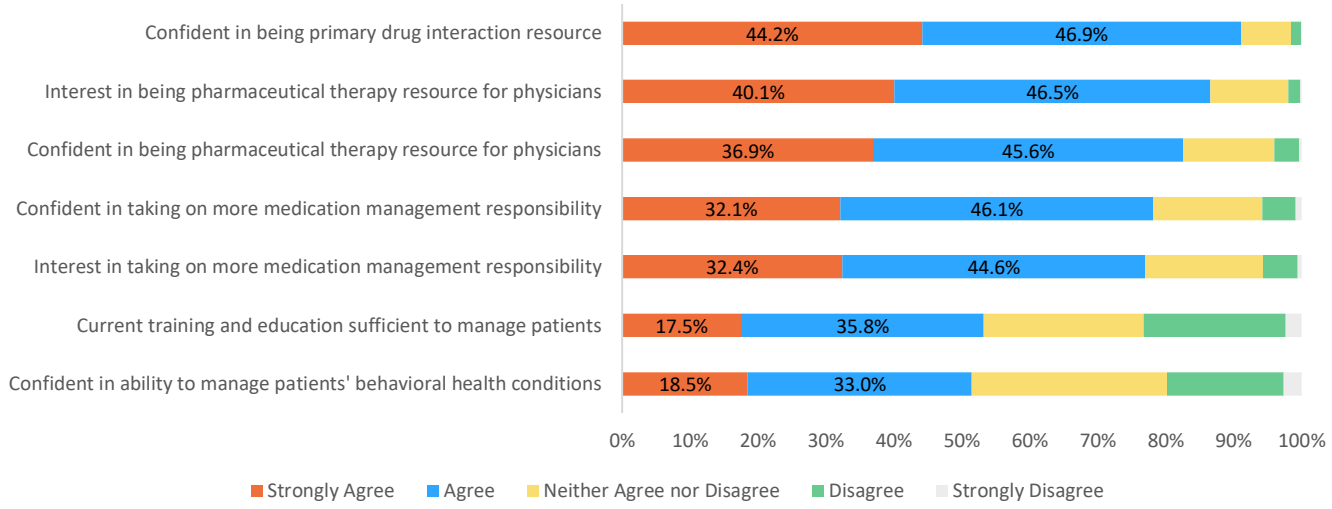
As respondents pondered the field of pharmacy in 2030, there was significantly more agreement than disagreement regarding the pharmacists' role in taking on more direct patient care responsibilities. In fact, greater than 80% of respondents agree or strongly agree that pharmacists will take on more patient counseling responsibilities, take on more of a role in preventative care measures, and be more integrated in a care team structure. Similarly, 80% or more of respondents felt that patients would see pharmacists as an integral part of the health care team, have confidence in utilizing their pharmacist as a primary liaison to the medical care system, and establish a consistent relationship with a pharmacist like other health care professionals. (Figure 2.1-20)

Figure 2.1-20 Anticipated Changes in Pharmacy Care



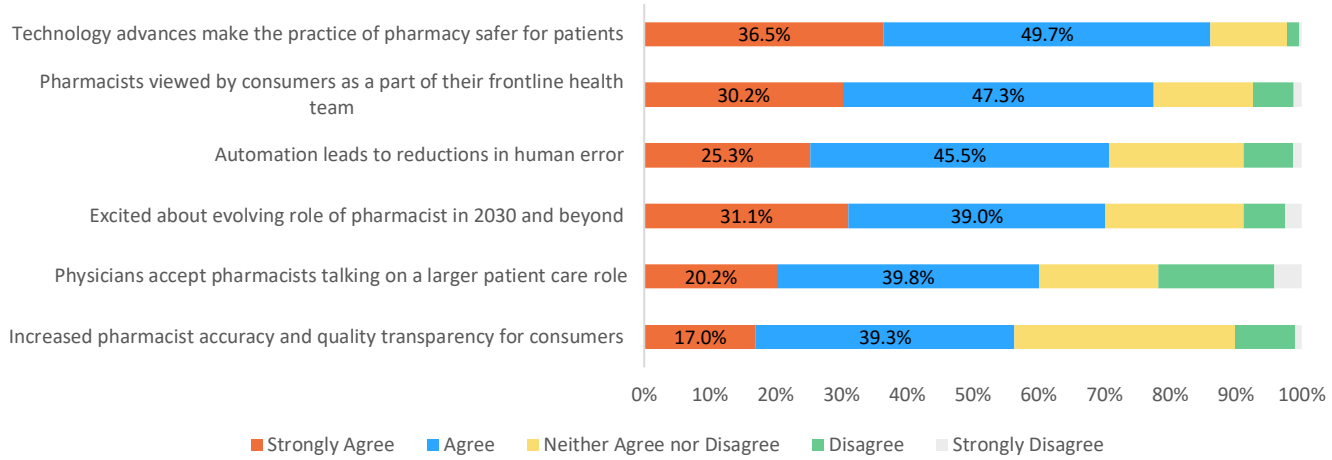
When respondents were asked if they had the interest and confidence to meet the needs of physicians and patients in the future of pharmacy, greater than 75% agree or strongly agree with the ability to be a resource for drug interactions, medication management, and pharmaceutical therapy. However, when faced with the question about the sufficiency of current training and managing patients' behavioral health needs, just about half of respondents agreed or strongly agreed. (Figure 2.1-21)

Figure 2.1-21 Interest and Confidence to Do More



Generally, respondents were optimistic and excited about the future of pharmacy care. More than 77% of respondents agreed or strongly agreed that automation and technological advances would make the practice of pharmacy safer and that patients would view pharmacists as part of the frontline health team. Further, when asked whether physicians would accept pharmacists taking on a larger patient care role, just about 60% of respondents agreed or strongly agreed. (Figure 2.1-22)

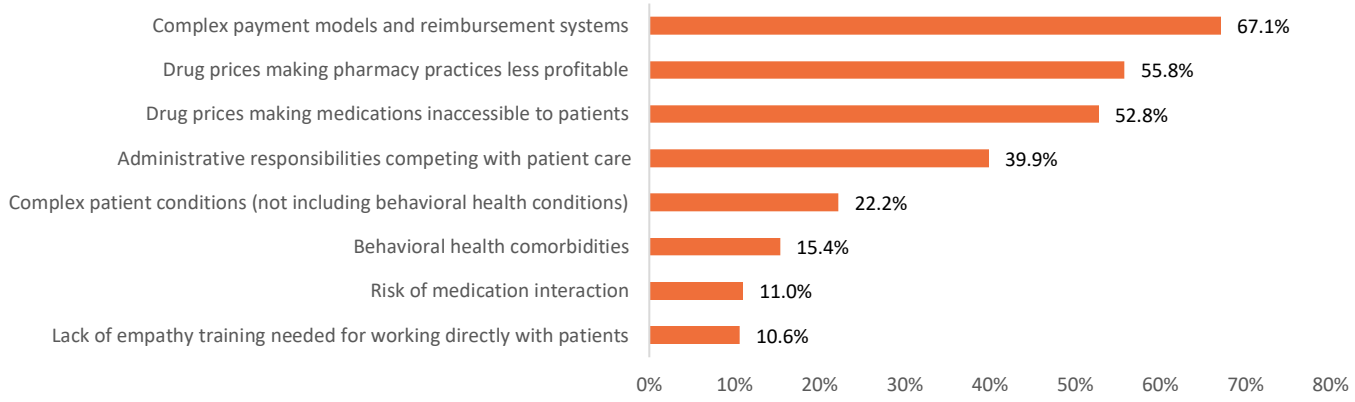
Figure 2.1-22 General Thoughts About Future



2.1.10 Payment Systems, Drug Prices and Retail Challenges

The United States health care system is often fragmented, challenging to navigate and expensive. These themes also emerged when respondents were asked to choose the primary challenges to the evolution of the pharmacist. 67.1% of respondents noted the complex payment models and reimbursement systems as one of the primary challenges. The fact that pharmacists are not able to bill for patient care is a sizeable barrier to achieving the desired future. Further, the drug pricing system in the United States that threatens the profitability of pharmacy practices (55.8%) and makes medications inaccessible to patients (52.8%) represents yet another barrier to the future. Patient complexities were not considered a primary challenge, with only 22.2% of respondents identifying complex patient conditions and 15.4% identifying behavioral health comorbidities as a challenge. (Figure 2.1-23)

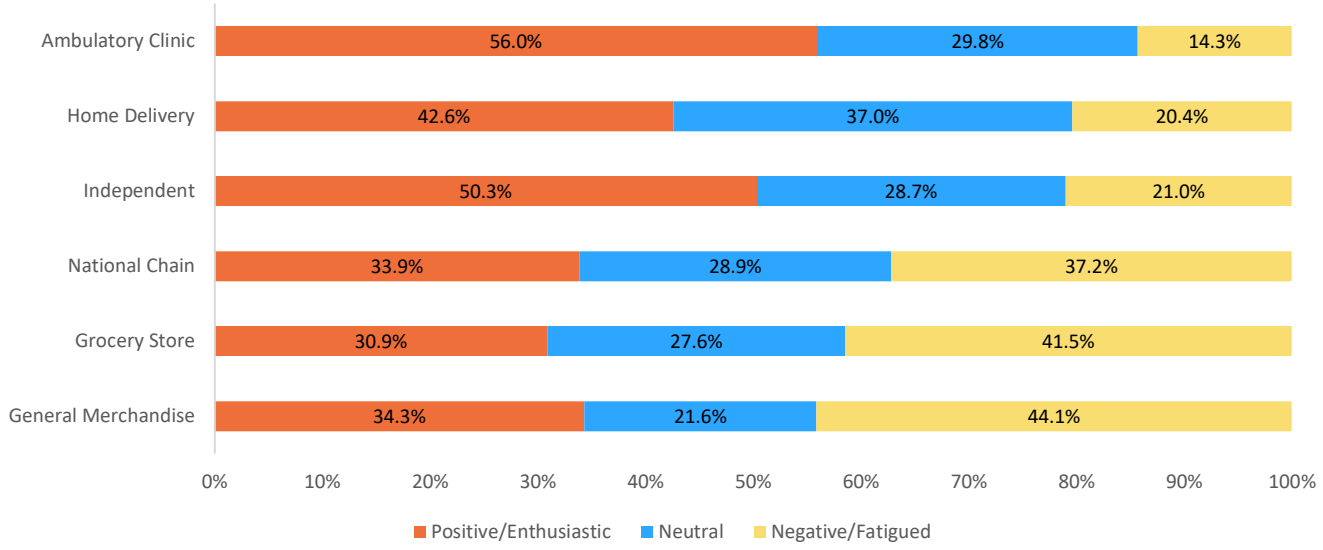
Figure 2.1-23 Challenges to Practice of Pharmacy in 2030



2.1.11 Urban and Ambulatory Clinic/Health System Pharmacists Are Most Positive About Future

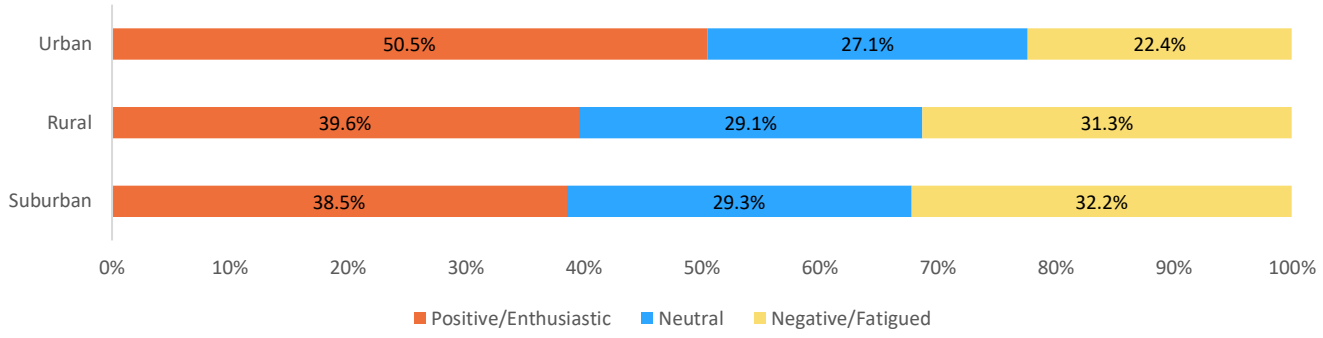
Respondents were asked about their general outlook of their profession over the next two years and pharmacists in ambulatory clinic/health system settings had the most positive outlook (56.0%) and only 14.3% had a negative outlook. (Figure 2.1-24) Pharmacists in urban environments also had the most positive outlook (50.5%). (Figure 2.1-25)

Figure 2.1-24 Outlook on Profession – Next Two Years, by Work Setting***



*** p-value<.01, ** p-value<.05, * p-value<0.1

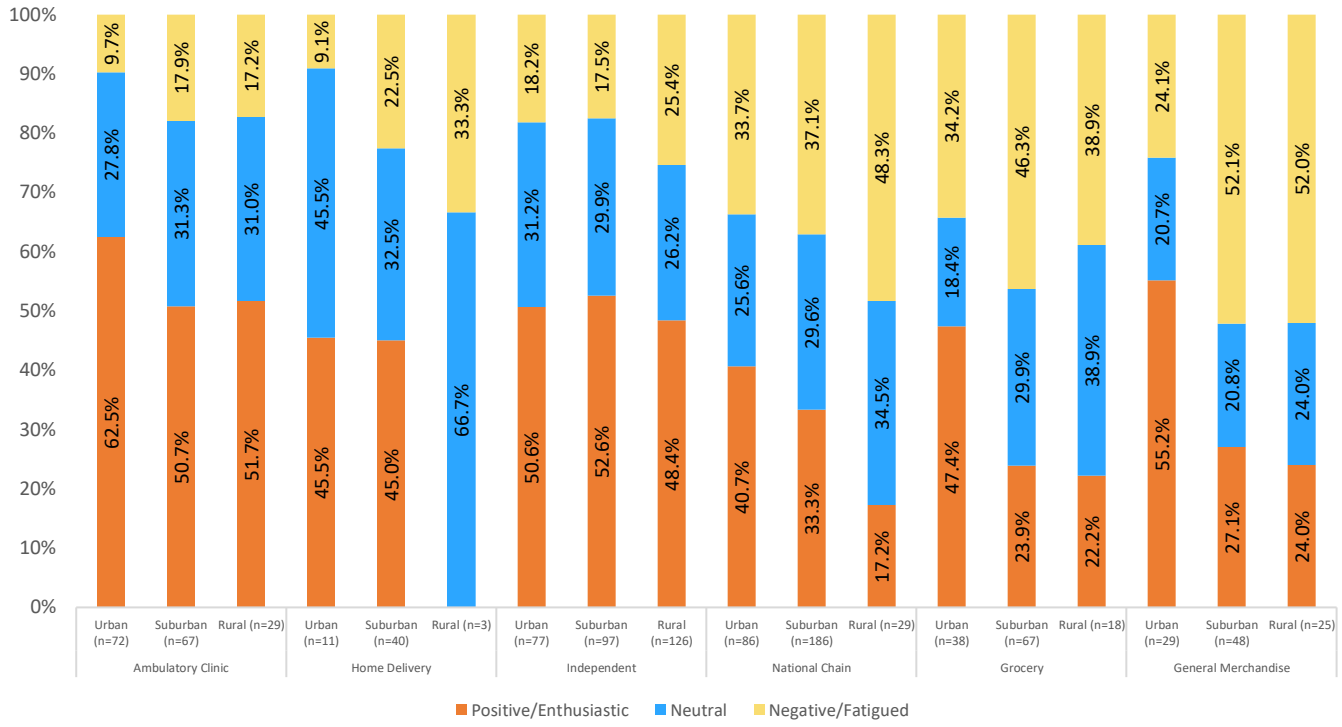
Figure 2.1-25 Outlook on Profession – Next Two Years, by Geographic Location***



*** p-value<.01, ** p-value<.05, * p-value<0.1

Combining work setting and geographic location, pharmacists in general merchandise stores in suburban and rural areas have the most negative outlook with more than half of pharmacists in those locations feeling negative/fatigued about the next two years. (Figure 2.1-26) Greater than 50% of ambulatory clinic/health system pharmacists in all geographic locations have a positive/enthusiastic outlook of the next two years. Open-end responses to pharmacists' thoughts about pharmacy care in 2030 support the general outlook, with retail pharmacists exhibiting a much higher percentage, approximately 9-12%, of mentions of a broken system or the failing retail model as compared to ambulatory clinic/health system or home delivery pharmacists, approximately 2-4% mentioned.

Figure 2.1-26 Outlook on Profession – Next Two Years, by Work Setting and Geographic Location



2.1.12 Differences by State Prescriber Status

Currently, pharmacists in Idaho, Florida, and Oregon have prescribing authority for certain classifications of medication and pharmacists in California, Montana, New Mexico, and North Carolina can prescribe once they obtain additional credentialing. Pharmacists in those states exhibit some differences in how they spend their time and in their interaction with larger care teams. For instance, pharmacists in prescriber states spend less time dispensing and more time counseling patients than pharmacists in non-prescribing states. (Figure 2.1-27) Additionally, pharmacists in prescribing states are more likely to engage with medical providers as part of a care team. (Figure 2.1-28)

Figure 2.1-27 Pharmacist Typical Allocation of Time, by State Prescriber Status

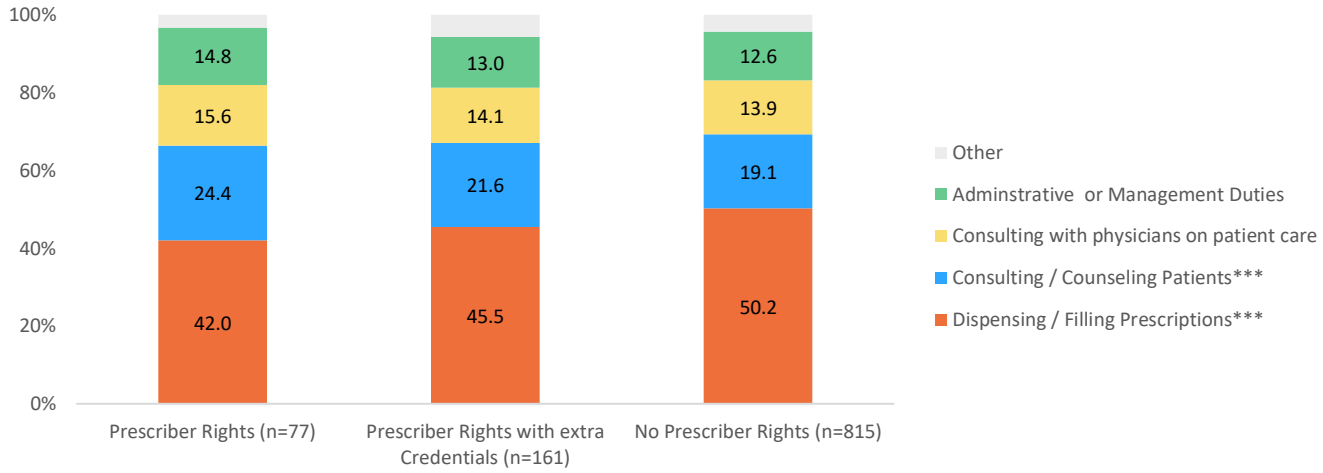


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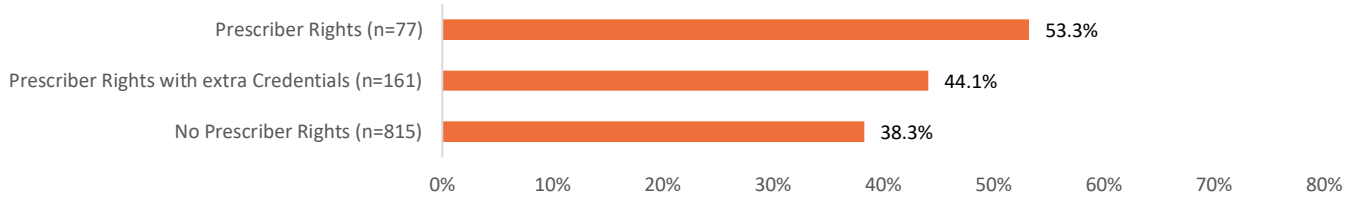
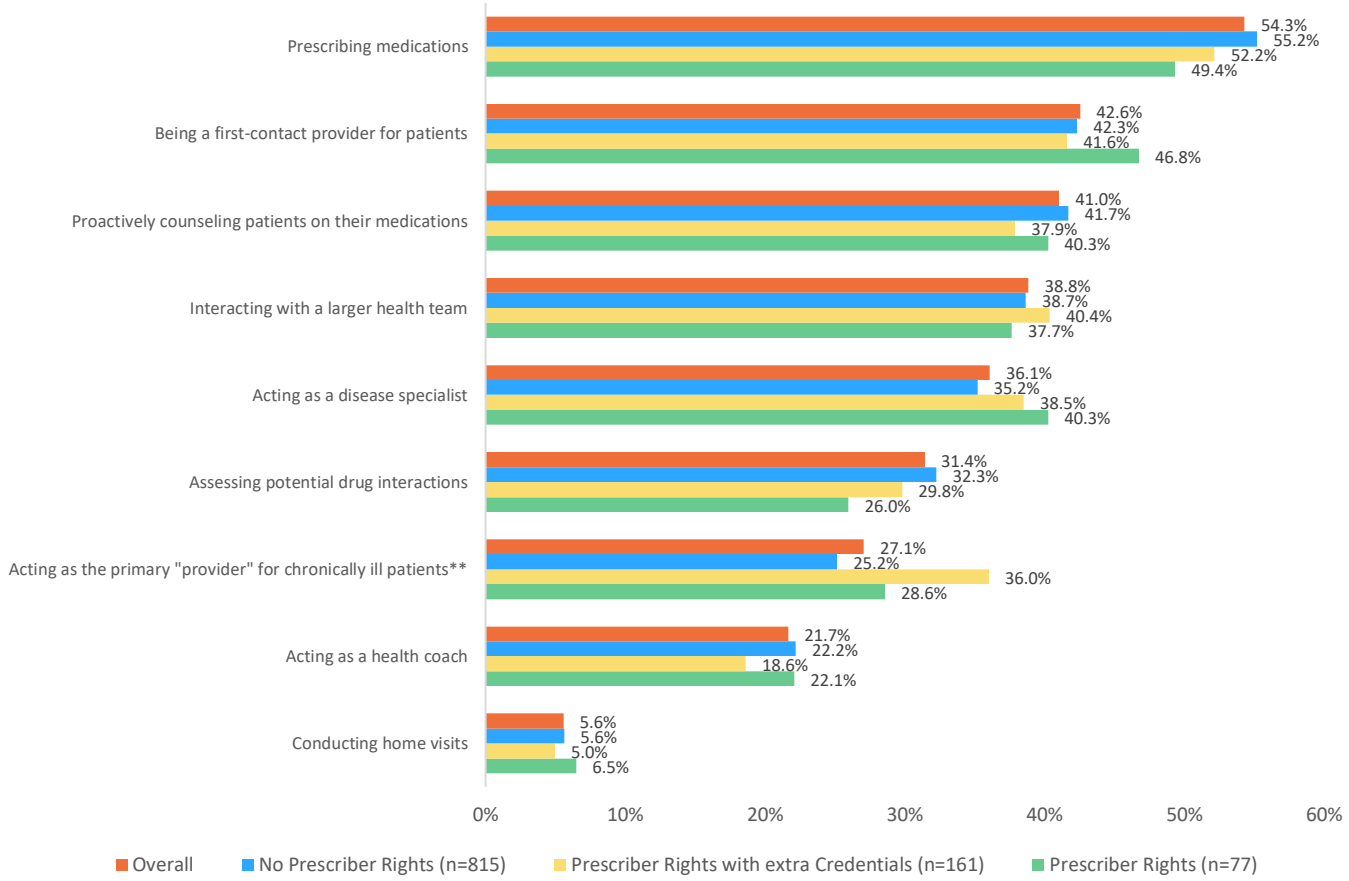
Figure 2.1-28 Pharmacists Engage with Medical Providers as Part of a Care Team, by State Prescriber Status**



*** p-value<.01, ** p-value<.05, * p-value<0.1

When asked about the biggest impact to pharmacy care in 2030, pharmacists in states with some prescribing rights were significantly more likely to identify acting as the primary provider for chronically ill patients as having an impact. Directionally, pharmacists in prescribing states were more likely to choose more direct patient care items such as being a first-contact provider for patients or acting as a disease specialist. (Figure 2.1-29)

Figure 2.1-29 Biggest Impact to Pharmacy Care by 2030, by State Prescribing Rights



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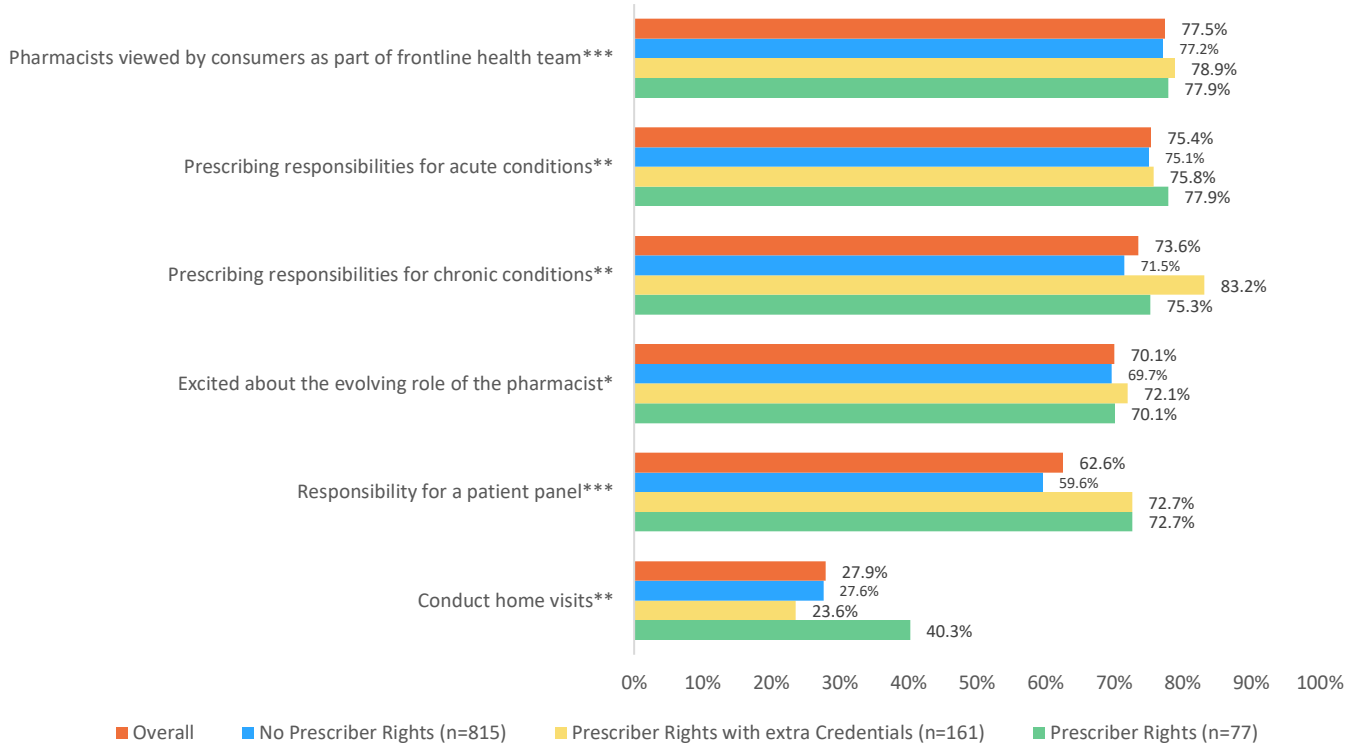
The areas where there are significant differences between pharmacists in prescriber states and non-prescriber states are responsibility for a patient panel, conducting home visits and prescribing for both acute and chronic conditions. Pharmacists in prescribing states were also more likely to agree or strongly agree with being viewed by patients as part of their frontline health care team and excited about the evolving role of the pharmacist. (Figure 2.1-30)

Figure 2.1-30 Pharmacists Agree or Strongly Agree with Future of Pharmacy Care, by State Prescriber Status



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2.2 Provider Survey Results

Providers certainly view pharmacists as integral to patient care and they have a high level of trust in pharmacists to conduct most activities. In the future, providers see pharmacists taking on more roles in patient care. The provider survey revealed the following themes:

- Pharmacists are often part of multidisciplinary teams, and where providers have prior experience with pharmacists in this type of setting, they tend to have a more accepting view of their future role – this may indicate that the hesitation among some survey respondents is attributed to the lack of exposure
- While some are reluctant to accept, most providers see pharmacists serving in more direct patient care roles, either independently or with the support of a medical doctor or a nurse practitioner
- Providers aligned with pharmacists in their recognition that pharmacists need more training to take on an expanded patient care and prescribing role
- While providers recognize the expanded role of the pharmacist in the future, they do not currently seek advice of pharmacists that often; however, providers do see the need to increase their time spent researching new medications – there is an opportunity to leverage the expertise of the pharmacist to serve in an advisory role

Describing future pharmacist – "…more involvement in the treatment team. Some of the activities we now perform will be shifted to the pharmacists-they will become physician extenders."
- Hospital-based Otolaryngologist, Maryland

2.2.1 Respondent Demographics

Of the 511 respondents to the provider survey, 62 (12.1%) were nurse practitioners, 33 (6.5%) were psychiatrists, and 416 (81.4%) were other physician specialties. The average age of the provider survey respondents was 49.7 and 40.9% identified as female. 58.3% of respondents were white, and 22.3% were Asian or Pacific Islander. When asked how long respondents have been working as a provider since obtaining their degree, 53.6% have been working for 16 years or more and 40.3% have been in their current role for 16 years or more. 54.8% of respondents work in a private practice office and 31.4 work in a hospital-based clinic (16.1) or in a hospital (15.3). 8.4% of respondents work in a federally qualified health center (FQHC). The highest percentage of respondents work in a southern state (37.2) and the fewest respondents were from a northeast state (18.9). Distribution across geographic settings was 30.3% in urban core areas, 45.2 in suburban locations and 24.5 in rural areas. Table 2.2-1 shows respondent characteristics overall and by respondent type (nurse practitioner, non-psychiatry physician, psychiatrist).

Of those respondents that are not psychiatrists, 308 of those 478 respondents are family practice/general practice (158) or internal medicine (150). Of the remaining respondents, 12.1% are pediatricians, 3.7% practice emergency medicine, 2.9% practice cardiology, 2.1% each practice nephrology and dermatology. (Figure 2.2-1)

Figure 2.2-1 Provider Specialties (non-psychiatrists)

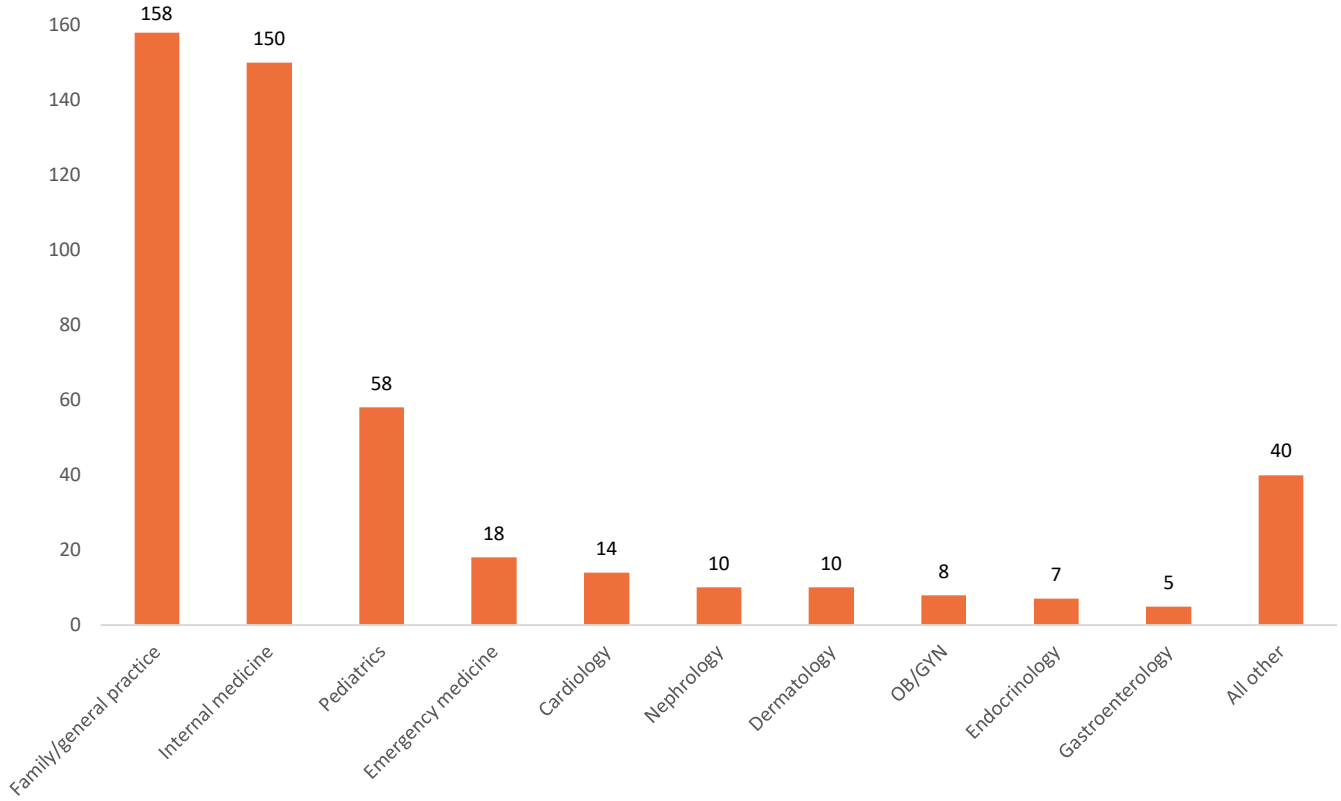

Table 2.2-1 Provider Survey Respondent Characteristics

	Overall (n=511)	NP (n=62)	Physician (n=416)	Psychiatrist (n=33)
Age (sd)	49.7 (11.9)	45.5 (12.0)	50.5 (11.8)	47.6 (11.9)
Gender Identity (%)				
Female	40.9	93.6	33.2	39.4
Male	54.4	4.8	61.8	54.6
Non-binary	0.4	0.0	0.5	0.0
Prefer not to say	4.3	1.6	4.6	6.1
Race (%)				
Asian or Pacific Islander	22.3	6.6	24.8	21.2
Black or African American	2.7	6.5	2.2	3.0
Hispanic or Latino	3.7	4.8	3.4	6.1
Native American or Alaskan Native	0.4	0.0	0.5	0.0
White or Caucasian	58.3	79.0	55.1	60.6
Multiracial or Biracial	2.2	0.0	2.6	0.0
A race/ethnicity not listed here	1.2	0.0	1.4	0.0
Prefer not to say	9.2	3.2	10.1	9.1
Years since obtaining degree				
Two years or less	3.5	9.7	2.4	6.1
Three to four years	6.1	8.1	6.0	3.0
Five to nine years	16.2	24.2	14.4	24.2
Ten to fifteen years	20.4	19.4	20.9	15.2
Sixteen years or more	53.6	38.7	56.0	51.5
Years in current role				
Two years or less	11.0	9.7	10.3	21.2
Three to four years	11.7	17.7	11.5	3.0
Five to nine years	18.4	37.1	15.9	15.2
Ten to fifteen years	18.6	16.1	19.0	18.2
Sixteen years or more	40.3	19.4	43.3	42.4
Work location				
Freestanding clinic	5.7	8.1	5.5	3.0
Hospital-based clinic	16.1	12.9	17.1	9.1
Hospital or health system	15.3	8.1	16.6	12.1
Private practice	54.8	59.7	53.1	66.7
FQHC	8.2	11.3	7.7	9.1
Geographic region				
Northeast	18.9	14.5	19.2	24.2
Midwest	20.2	14.5	21.2	18.2
South	37.2	50.0	36.3	24.2
West	23.7	21.0	23.3	33.3
Geographic area				
Urban	30.3	35.5	29.1	36.4
Suburban	45.2	48.4	43.8	57.6
Rural	24.5	16.1	27.2	6.1

Slightly less than 40% of respondents work in a practice with an on-site pharmacy and even less (28.8%) are in a practice that participates in a shared savings model. Psychiatrists are the least likely to participate in shared savings (9.1%) or have an on-site pharmacy (27.3), whereas all other physician respondents are the most likely to have an on-site pharmacy (38.9) or participate in shared savings (32.0). (Figure 2.2-2)

Assessing the patient characteristics of respondent practices, almost 70% of respondents are in a practice where most of the patients have chronic conditions. Further, most respondents indicated that just some of their patients suffered from behavioral health conditions, either severe and persistent or less severe conditions, and some of their patients are challenged with medication adherence. (Figure 2.2-3)

Figure 2.2-2 On-site Pharmacy and Shared Savings Participation

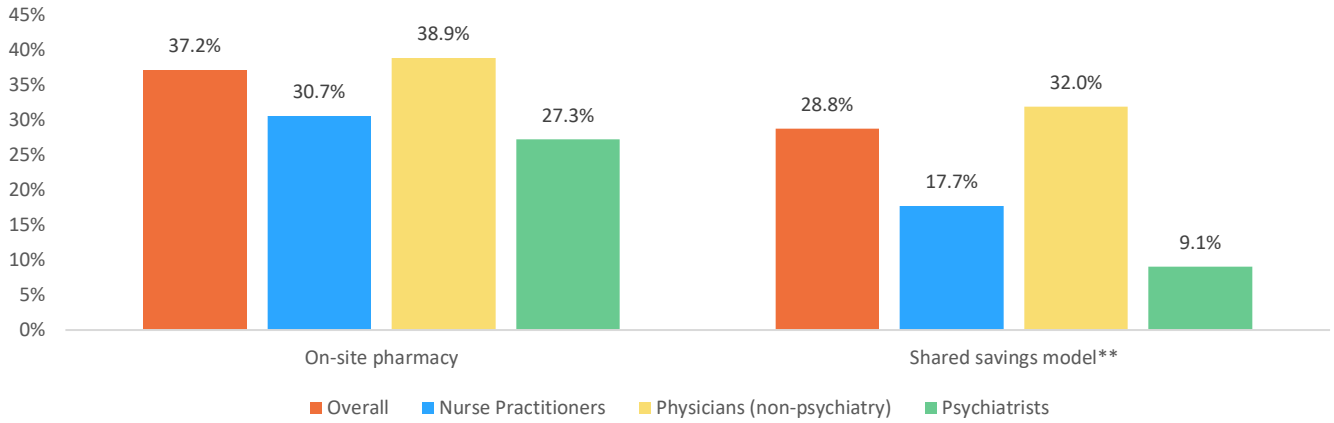

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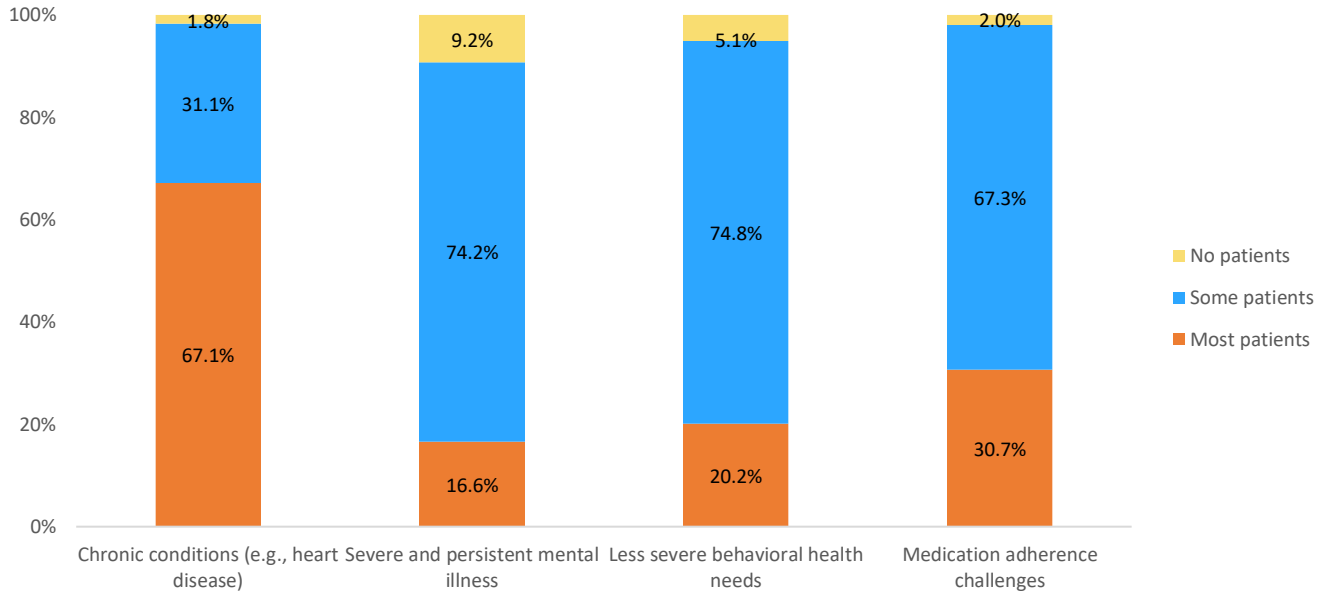
Figure 2.2-3 Patient Panel Characteristics



2.2.2 Pharmacists Integral to Patient Care and Physicians Have High Trust Level for Most Activities

There is very little disagreement among providers that pharmacists are integral to patients' care. 88.9% of respondents either strongly agree (44.4) or agree (40.5) with the importance of pharmacists. (Figure 2.2-4) Further, there is a relatively high level of trust among providers regarding pharmacists performing certain tasks including, dispensing medications (84.2%), informing health professionals (68.3) and patients (62.8) of potential adverse drug interactions, counseling patients on their medications (67.5), and administering vaccines (57.7). The only areas where less than 50% of respondents did not have a high or moderate level of trust in pharmacists to perform a task is prescribing medications for acute or chronic conditions. (Figure 2.2-5) The trust that providers have in pharmacists is consistent across both patients with and without chronic conditions. (Figure 2.2-5 and 2.2-6)

Figure 2.2-4 Pharmacists are Integral to Patients' Care

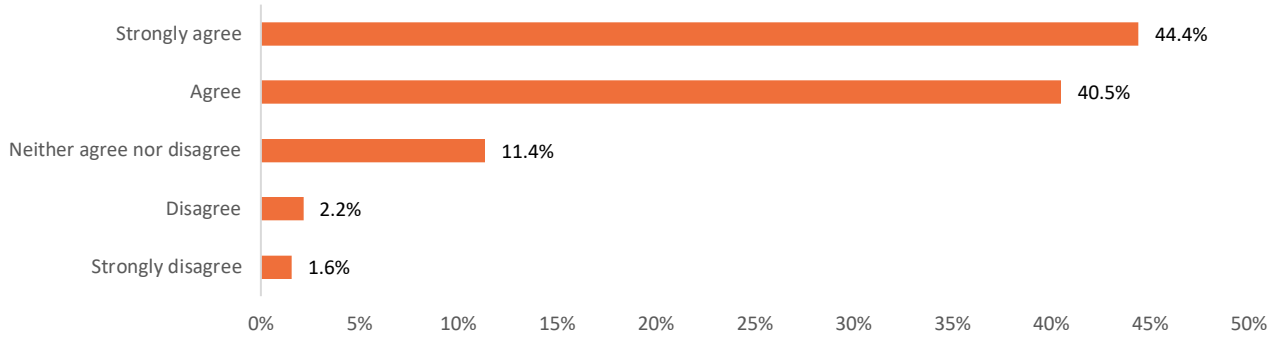


Figure 2.2-5 Trust in Pharmacists for Patients with Chronic Conditions

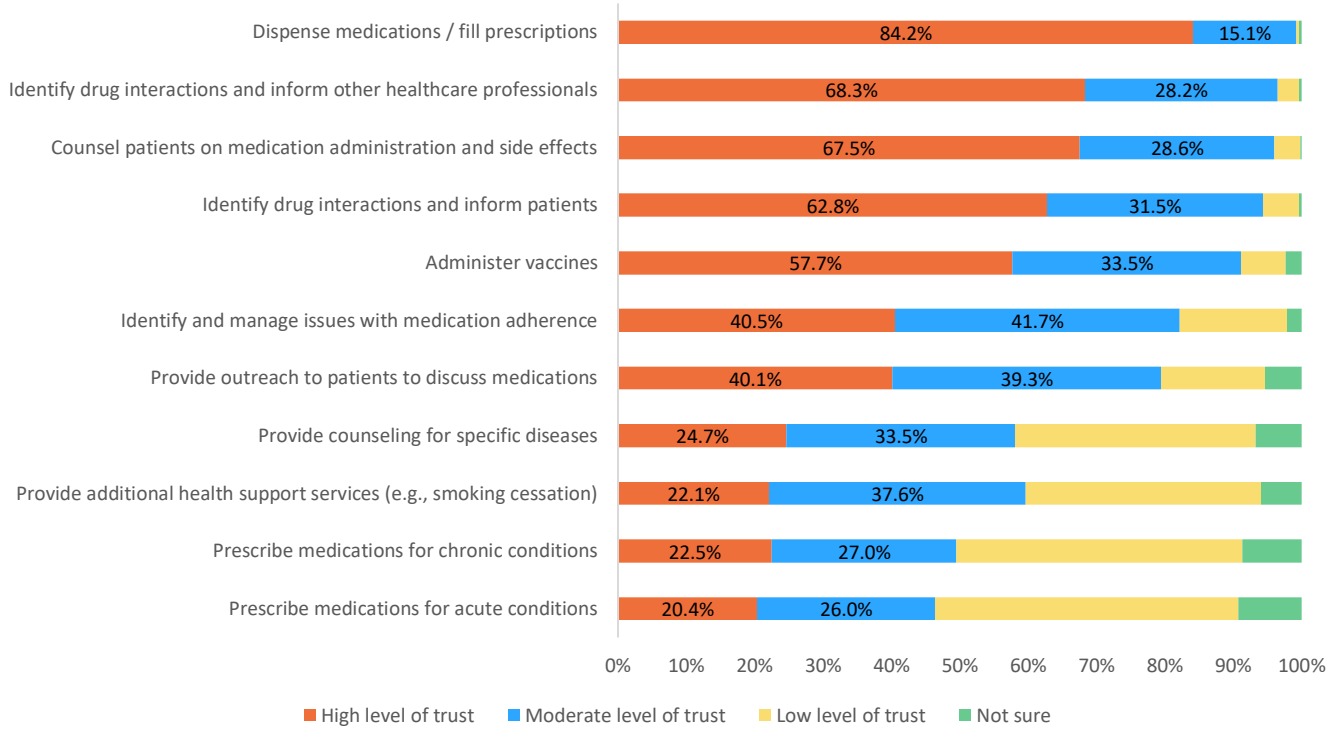
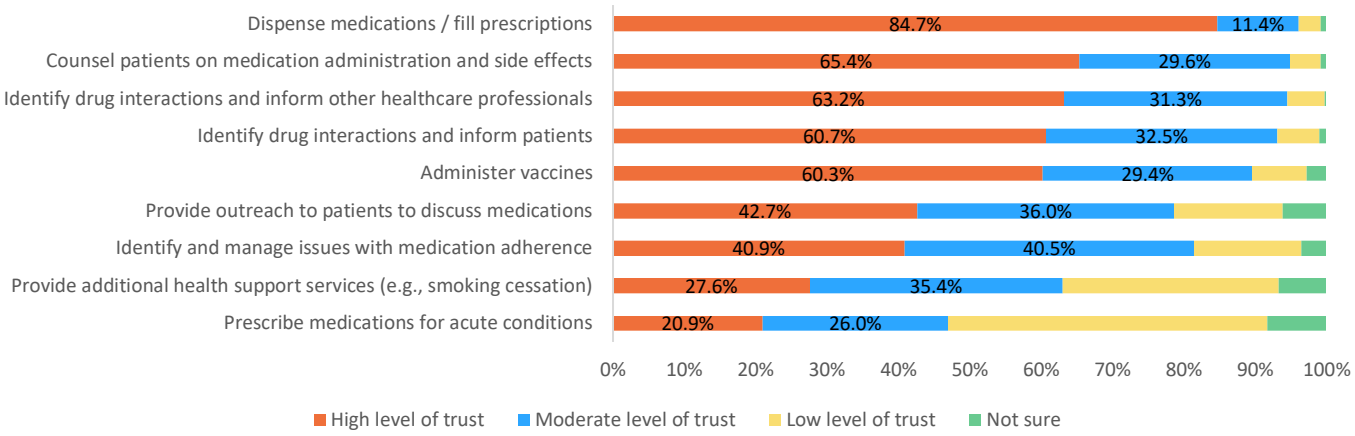
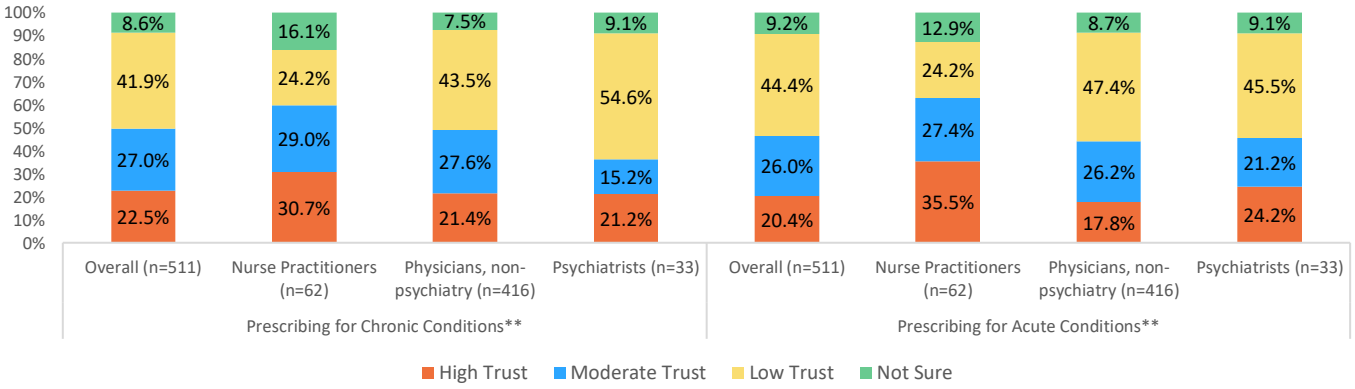


Figure 2.2-6 Trust in Pharmacists for Patients without Chronic Conditions



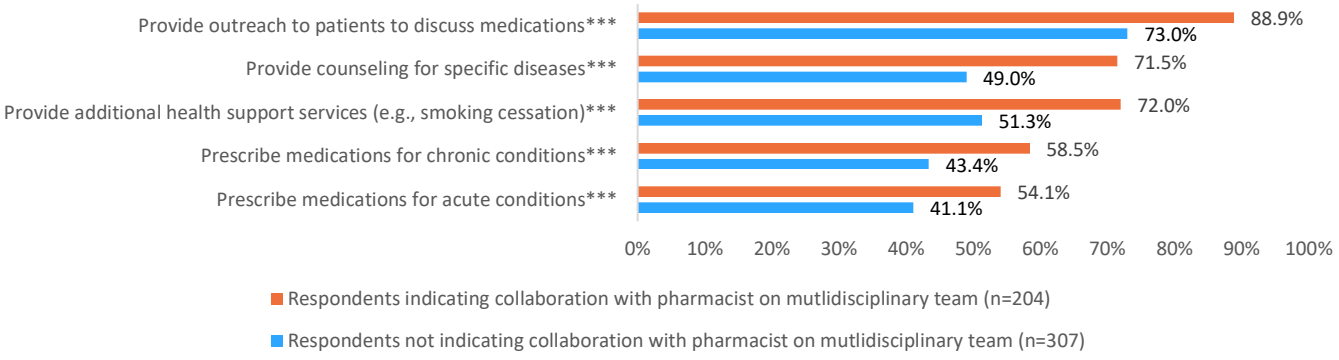
Nurse practitioners have more trust in pharmacists as it relates to prescribing, for both acute and chronic conditions. (Figure 2.2-7) There is also a higher level of trust among providers that have prior experience collaborating with pharmacists as part of a multi-disciplinary team. (Figure 2.2-8)

Figure 2.2-7 Level of Trust for Pharmacists to Prescribe Medication, by Provider Type



*** p-value<.01, ** p-value<.05, * p-value<0.1

Figure 2.2-8 High/Moderate Trust Level to Perform Activities for Patients with Chronic Conditions (Activities with less than 80% high/moderate trust level overall – figure 2.2-5)



*** p-value<.01, ** p-value<.05, * p-value<0.1

2.2.3 Location is the Primary Attribute When Providers Direct Patients to a Preferred Pharmacy

Providers do not often direct patients to a preferred pharmacy. Only 9.6% of respondents directed patients all the time versus 10.4% that never direct patients to a preferred pharmacy. About one-third of respondents direct patients some of the time. (Figure 2.2-9) When providers do direct patients to a preferred pharmacy, location (75.7%) and service quality (68.3) were the primary attributes considered. The pharmacist's expertise (27.8%) or having access to specialty pharmacists (24.6) were not often considered in directing patients to a preferred pharmacy. (Figure 2.2-10)

Figure 2.2-9 Directing Patients to Preferred Pharmacy

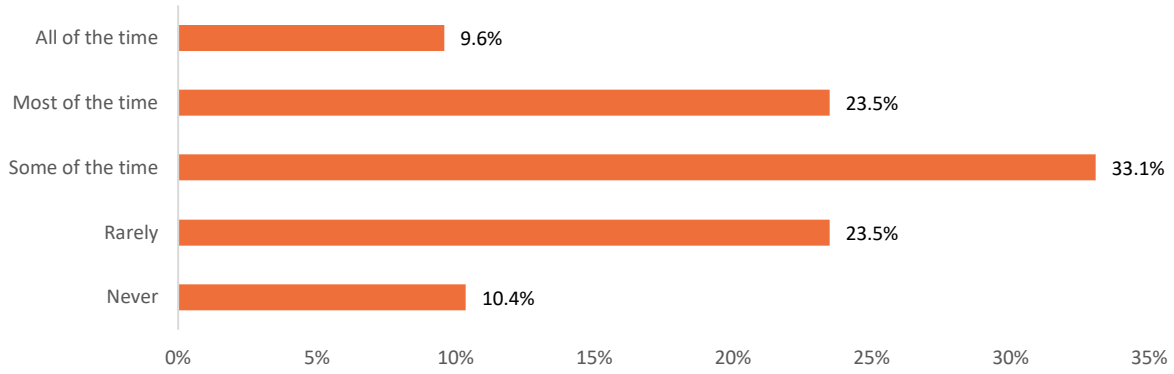
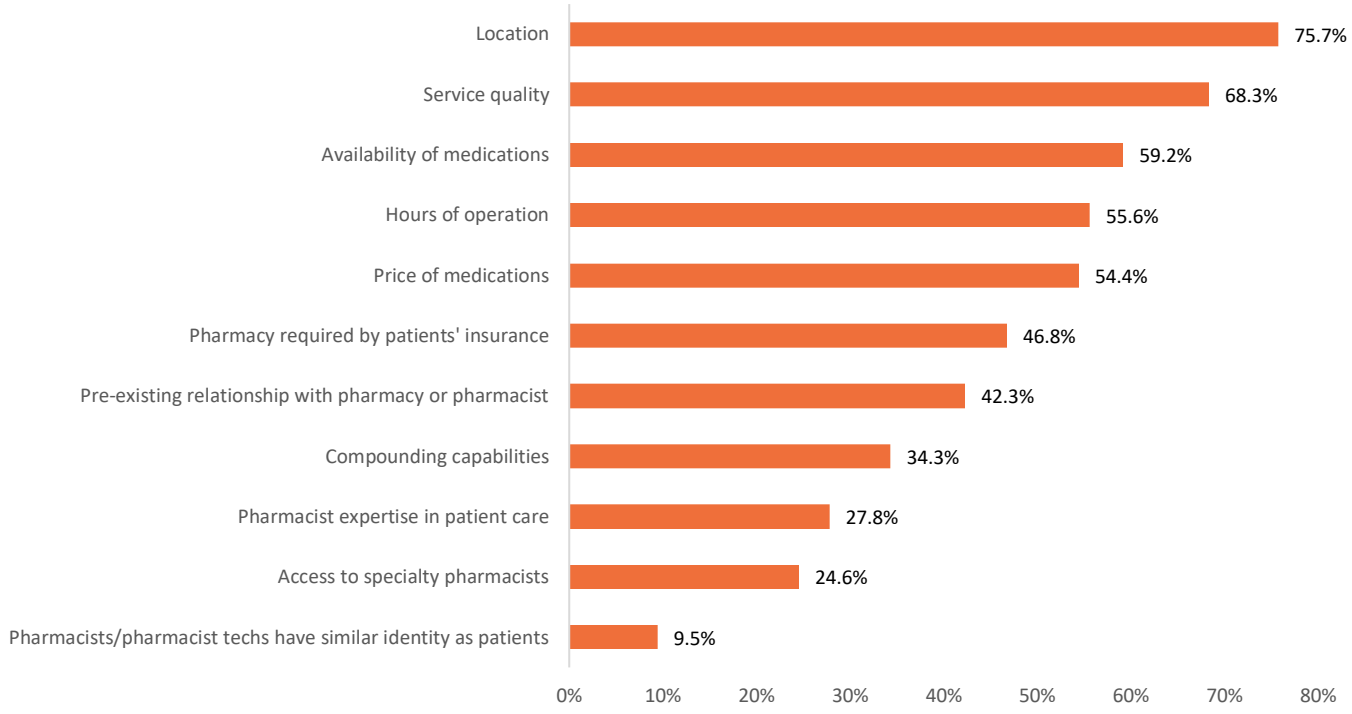


Figure 2.2-10 Attributes Driving Preferred Pharmacy



2.2.4 Pharmacists Are Often Part of Multidisciplinary Care Teams

Nearly two-thirds (62.8%) of respondents collaborate with a multidisciplinary team to help address patient needs. (Figure 2.2-11) For those respondents that do participate in multidisciplinary teams, the most frequent collaborator is another health care provider (85.7%). Collaborations such as this are most likely primary care/specialist (e.g., cardiology) collaborations to care for patients with chronic conditions. Given the complexity of behavioral health needs among patients, behavioral health professionals are also part of multidisciplinary teams for three-quarters (74.1) of respondents. Pharmacists (64.5) and social workers (65.7) were identified by about two-thirds of respondents. (Figure 2.2-12) However, for those respondents that did not identify pharmacists as part of their multidisciplinary team, 53.3% would value the addition of a pharmacist extremely (22.0) or highly (31.3) and only 4.9% would not value the addition of a pharmacist. (Figure 2.2-13)

Figure 2.2-11 Collaboration with Multidisciplinary Team

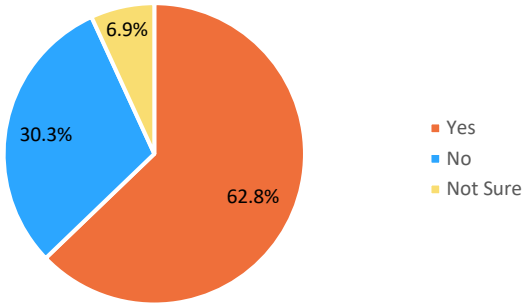


Figure 2.2-12 Care Team Members

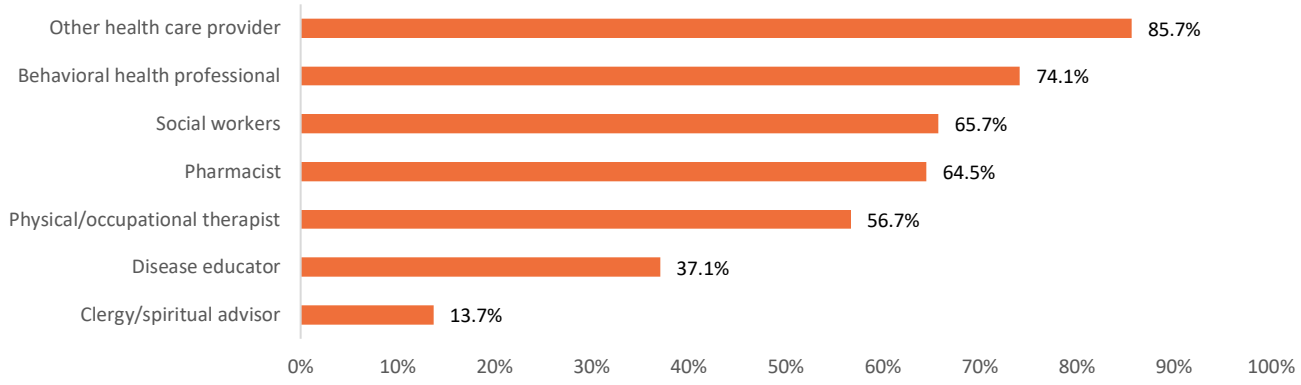
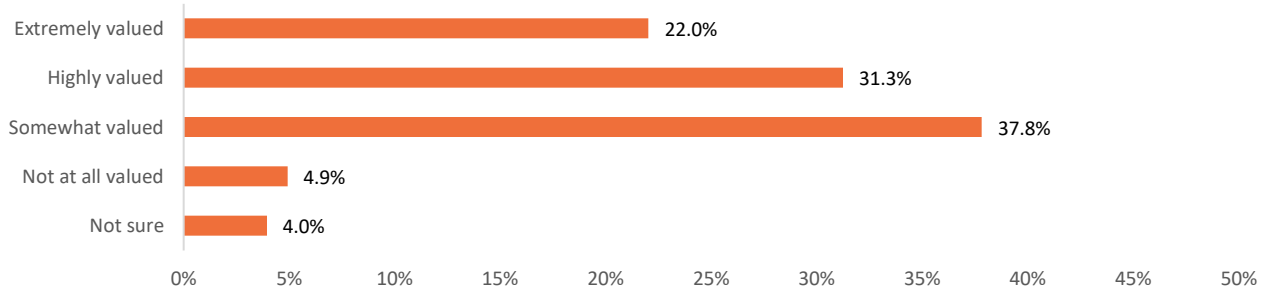


Figure 2.2-13 For those without Pharmacists on Team, How Valued Would it Be?



2.2.5 Providers Do Not Often Seek Advice from Pharmacists

When patients have questions about their medications, most often it is related to side effects (68.7%, all or most of the time) or medication administration (61.1). (Figure 2.2-14) Providers do not often seek advice from pharmacists for various issues. The most common areas where respondents noted seeking advice from pharmacists was for prescription drug interactions (31.9%, all or most of the time) and potential interactions with over-the-counter (OTC) medications (27.6, all or most of the time). (Figure 2.2-15)

About 30% of respondents expect to spend more time researching new pharmaceutical interventions or potential drug interactions and another 60% expect that research time to stay the same. (Figure 2.2-16) Fifty-five% of provider respondents do consider pharmacists to be a reliable source of general health information, while only 20.9% do not consider pharmacists to be a reliable source. (Figure 2.2-17) These findings point to an opportunity for more collaboration among providers and pharmacists. In fact, for those providers that indicated that they are part of a multidisciplinary team that includes pharmacists, 61.8% consider pharmacists to be a reliable source of general health information, while only 14.0% do not.

Figure 2.2-14 Frequency of Patient Medication Questions

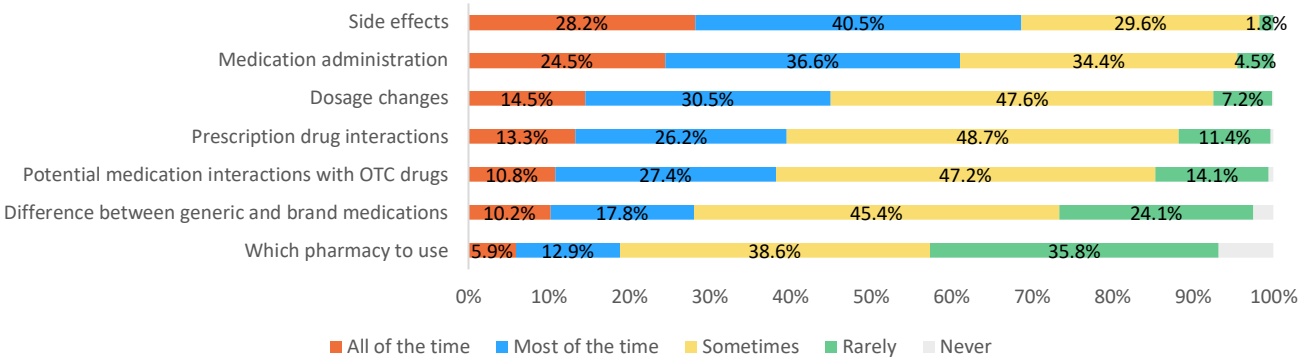


Figure 2.2-15 Frequency of Seeking Input from a Pharmacist

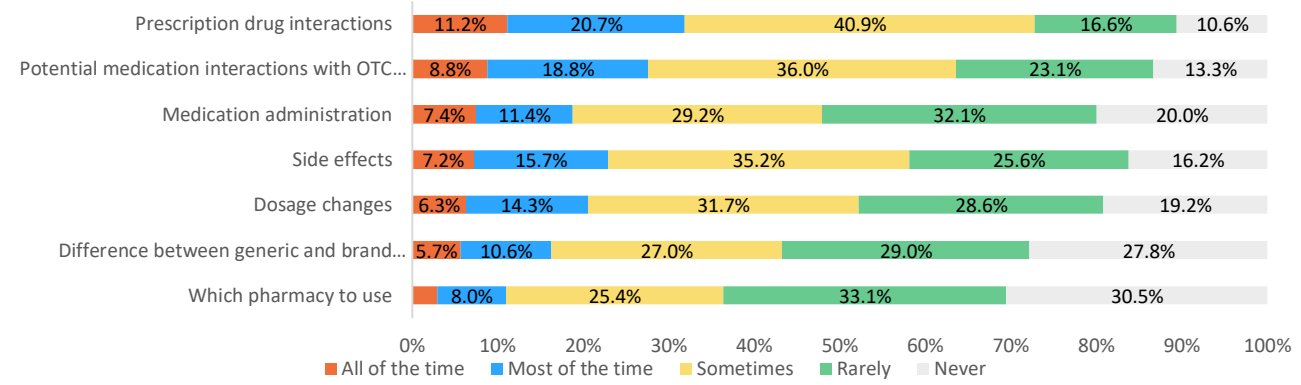


Figure 2.2-16 Expected Time Researching Patient Care and Medication Topics

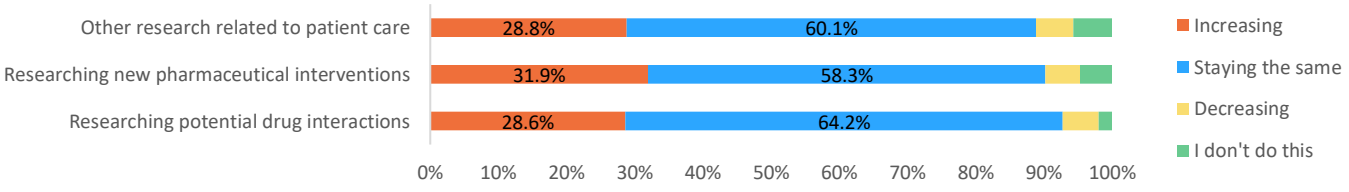
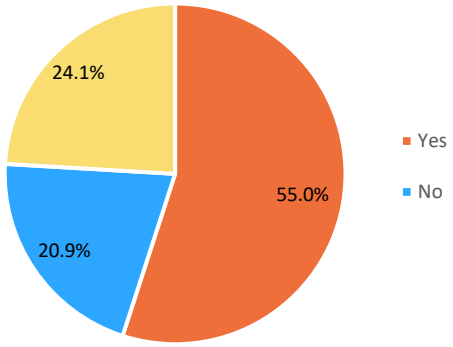


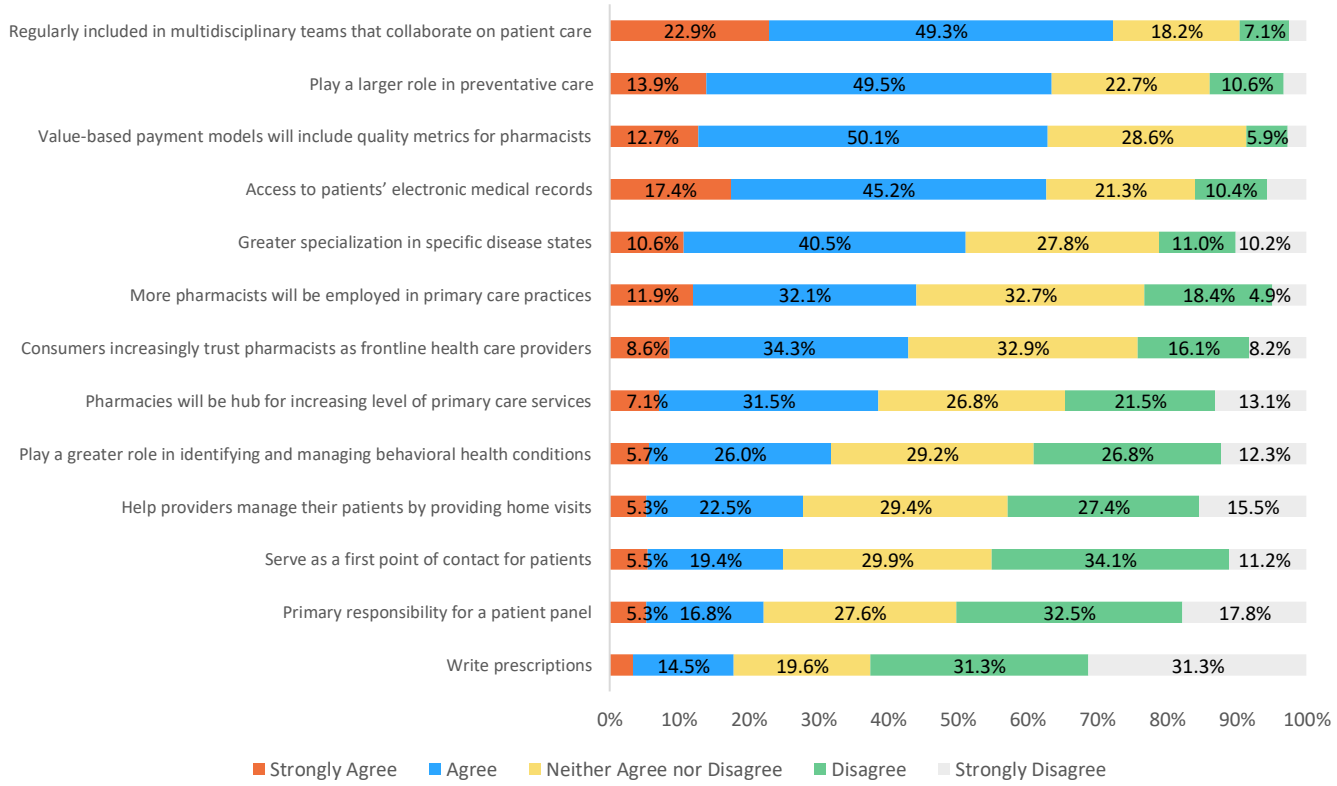
Figure 2.2-17 Is a Pharmacist a Reliable Source of General Health Information



2.2.6 Providers Recognize the Evolving Role of the Pharmacist in Supporting Patient Care Needs

There is general agreement among provider respondents that pharmacists will play an increasingly important role in patient care. Most notably, there is clear recognition that pharmacists will be regularly included in multidisciplinary teams (72.2% agree or strongly agree). Approximately two-thirds of respondents agree or strongly agree that pharmacists will play a larger role in preventative care (63.4), be included in value-based payment models (62.8) and gain access to patients' electronic medical records (61.6). Of equal note is the minimal disagreement with changes listed above. Less than 20% of respondents disagreed or strongly disagreed. (Figure 2.2-18)

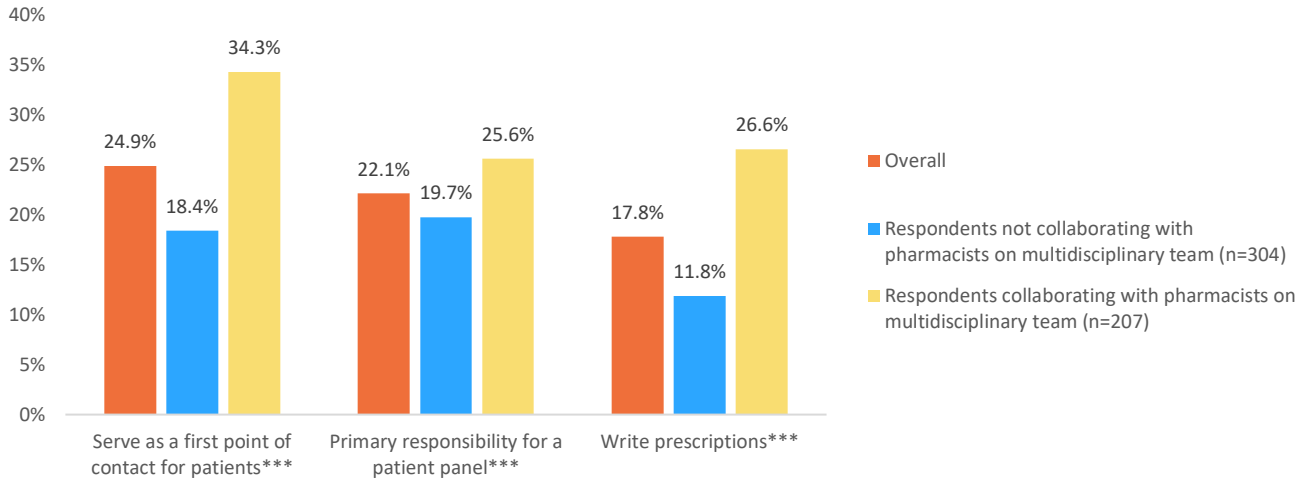
Figure 2.2-18 Pharmacist Engagement in Patient Care by 2030



There is less agreement on some of the more systemic changes posed. Only about 20% of respondents agreed or strongly agreed that pharmacists would serve as a first point of contact for patients (24.9% agree or strongly agree),

have primary responsibility for a patient panel (22.1), or write prescriptions (17.8). (Figure 2.2-18) However, when those responses are limited to those respondents that currently collaborate with pharmacists in a multidisciplinary team, there is slightly more agreement, with more than one-third of respondents agreeing or strongly agreeing that pharmacists will have primary responsibility for a patient panel. (Figure 2.2-19)

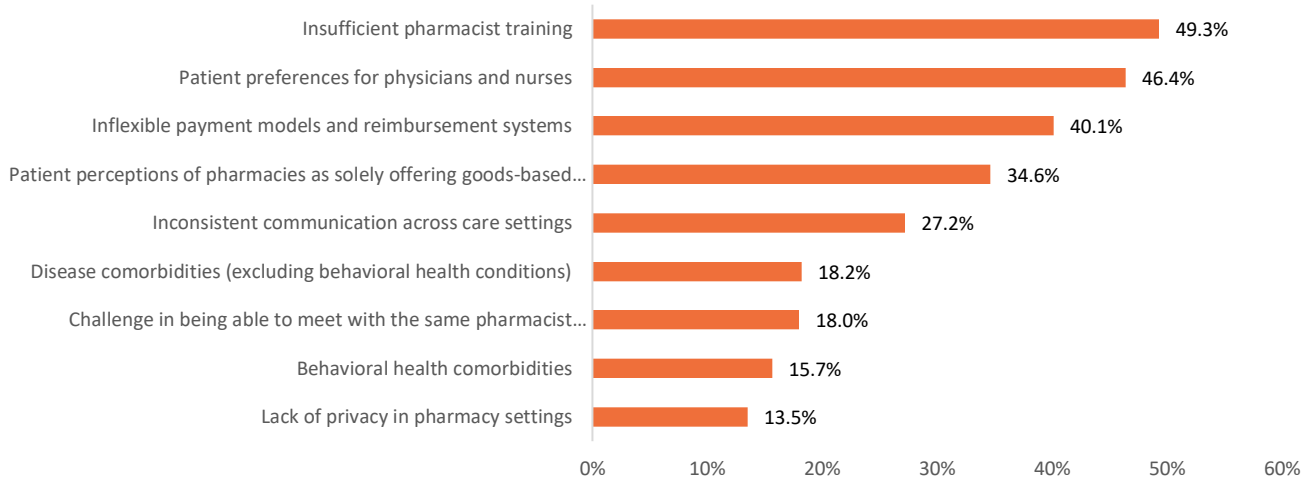
Figure 2.2-19 First Point of Contact, Patient Panel Responsibility and Prescription Writing Stratified by Respondents Collaborating with Pharmacists



*** p-value<.01, ** p-value<.05, * p-value<0.1

The area that providers identify as the biggest challenge to greater pharmacist involvement in patient care is training (49.3%). Secondary challenges identified include patient preferences for physicians and nurses (46.4), inflexible payment models (40.1), and patient perceptions of pharmacies as offering goods-based services (34.6). (Figure 2.2-20)

Figure 2.2-20 Challenges to Greater Involvement of Pharmacists in Patient Care



2.3 Patient Survey Results

The patient survey represented a cross-section of the US population and revealed the high level of trust that patients have with pharmacists and the challenges that patients face in navigating the US health care system. Some of the key themes revealed include:

- Despite the emergence of new modes of medication attainment, the respondents preferred retail pharmacies and engaging with pharmacists face-to-face
- Patients have a high level of trust in pharmacists and that extends to less traditional activities like prescribing medications and serving as a primary provider for patients
- Access and convenience are the most desirable for helping to manage health conditions – the pharmacist may be able to play a pivotal role in expanding access and making care more convenient
- There appears to be some level of consistency that patients have with their pharmacist, helping to address some of the concern raised in the provider survey about patient acceptance of expanded pharmacist roles

> "…a one-stop shop kind of situation could be more convenient." – Ohio resident
> "Be more like the rest of the world and basically be the prescribing doctor." – Texas resident

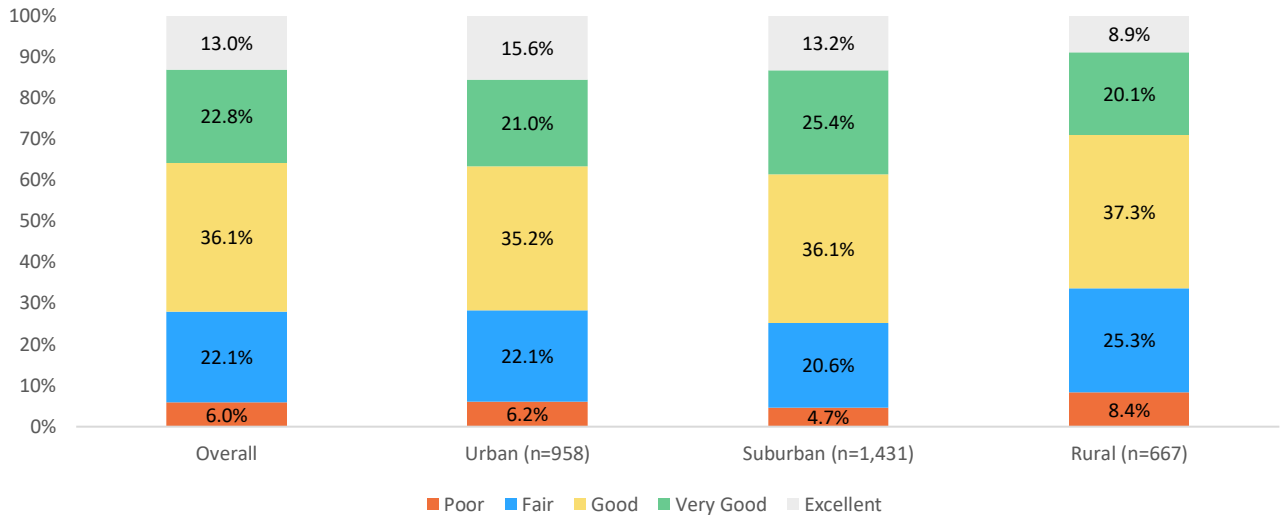
Patients seem ready to embrace the future of the pharmacist.

2.3.1 Respondent Demographics

Of the 3,056 respondents to the patient survey, the average age was 48.6 and 59.9% identify as female. 54.6% of respondents are white, 16.9% are black or African American and another 13.1% are Hispanic or Latino. Most respondents are married of living with a partner (60.7%) and have no children in the house (54.8). The most prevalent household size is two people (34.2%). Average household income was well distributed across income levels, representing a good cross-section of the U.S. population. 54.5% of respondents are self-employed or employed full- or part-time. (Table 2.3-1) Slightly more than one-third (37.2%) of respondents report excellent or very good health, with only 5.9% reporting poor health. (Figure 2.3-1)

There are notable differences across geographic settings. Respondents from rural geographies are more likely to identify as female (68.2%) and white (67.5) as compared to those in urban locations who are 56.7% female and 43.3% white. Nearly one-quarter (23.9%) of respondents from urban locations are black or African American as compared with just 14.5% in suburban and 12.0% in rural locations. Lower income respondents are more likely to be from urban or rural locations (47% or more report lower than $50,000 income) and respondents from suburban locations reported higher income levels (34.5% greater than $100,000). Rural respondents reported the highest percentage of divorced/separated/widowed marital status (21.9%) and urban respondents reported the highest level of single respondents (27.3). Most urban respondents are self-employed or employed full- or part-time (61.6%), and suburban (27.5) and rural (27.9) respondents have the highest percentages of retirees. (Table 2.3-1) Rural respondents report poorer health than their urban and suburban counterparts, with the highest reporting of poor (8.4%) and fair (25.3) health among rural respondents. (Figure 2.3-1)

Figure 2.3-1 Self-reported Health, by Geographic Location***



*** p-value<.01, ** p-value<.05, * p-value<0.1

Table 2.3-1 Respondent Characteristics

	Overall (n=3,056)	Urban (n=958)	Suburban (n=1,431)	Rural (n=667)
Age (sd)	48.6 (16.1)	44.6 (14.5)	50.5 (16.6)	50.1 (16.0)
Gender Identity^ (%)				
Female	59.9	56.7	58.1	68.2
Male	39.6	42.9	41.4	31.2
Non-binary	0.4	0.2	0.4	0.6
Race^ (%)				
Asian or Pacific Islander	7.8	9.3	9.3	2.2
Black or African American	16.9	23.9	14.5	12.0
Hispanic or Latino	13.1	18.2	12.0	8.3
Native American or Alaskan Native	2.1	0.8	2.2	3.6
White or Caucasian	54.6	43.3	56.0	67.5
Multiracial or Biracial	3.5	3.1	3.2	4.8
Household Income				
Less than $25,000	17.9	21.8	12.0	24.7
$25,000 to $49,999	24.5	24.9	20.7	32.0
$50,000 to $74,999	19.0	18.4	19.8	18.3
$75,000 to $99,999	11.8	10.4	13.0	11.2
$100,000 to $199,999	17.0	15.5	21.4	9.5
$200,000 or more	9.9	9.0	13.1	4.3
Marital Status				
Married or living with partner	60.7	56.7	63.4	60.4
Divorced / separated / widowed	17.5	16.0	16.6	21.9
Single, never married	21.8	27.3	20.0	17.7

^ remaining respondents chose “not listed” or “prefer not to say”

Table 2.3-1 Respondent Characteristics (continued)

	Overall (n=3,056)	Urban (n=958)	Suburban (n=1,431)	Rural (n=667)
Household Size				
1 person	17.1	18.3	17.1	15.4
2 people	34.2	26.6	38.5	36.0
3 people	19.5	18.8	18.9	21.7
4 people	17.2	22.3	15.2	14.1
5 people	7.9	9.4	6.8	8.3
6 or more people	4.1	4.6	3.5	4.5
Children/Grandchildren in House^				
None	54.8	48.2	58.7	56.1
1	19.4	19.8	18.5	20.8
2	16.1	20.8	13.9	13.9
3	6.0	6.6	5.7	5.6
4 or more	3.2	4.0	2.9	2.9
Geographic region				
Northeast	17.5	19.9	17.5	13.8
Midwest	20.6	19.0	20.3	23.4
South	40.1	36.7	38.9	47.4
West	21.9	24.3	23.3	15.4
Employment Status				
Employed full-time	40.7	47.6	41.5	29.2
Employed part-time	7.0	7.8	6.1	8.0
Self-employed	6.8	6.2	7.0	7.4
Unemployed, but looking	5.9	7.2	5.1	5.9
Unemployed and not looking	5.2	6.2	3.4	8.0
Full-time parent or caregiver	7.0	5.1	6.6	10.3
Retired	23.7	15.3	27.5	27.9
Student or Other	2.9	4.0	2.2	3.2
Industry				
Education	6.4	6.2	6.9	5.4
Health care services	4.0	4.5	3.6	4.2
Professional business services	8.2	8.7	9.6	4.5
Manufacturing	5.4	5.5	5.5	5.0
Leisure and hospitality	2.8	3.3	2.5	2.4
Construction	4.9	8.0	3.2	3.9
Financial activities	4.1	4.6	4.9	1.7
Transportation and utilities	2.2	2.6	2.4	1.4
Public administration/government	2.7	2.5	2.9	2.3
Other	59.5	54.1	58.4	69.4

^ remaining respondents chose “not listed” or “prefer not to say”

2.3.2 Insurance and Pharmacy Benefit Coverage

Most respondents (40.9%) have coverage through their employer or their spouse/partner's employer, followed by Medicare (23.3) and then Medicaid (15.5). Nearly 50% of rural respondents (46.6%) have insurance through either Medicaid (21.0) or Medicare (25.6). Nearly 75% of suburban respondents have coverage through employer-based insurance or Medicare. (Figure 2.3-2) Overall, 88.9% of respondents have prescription coverage with their insurance plan. (Figure 2.3-3) Most respondents have coverage through Blue Cross Blue Shield (24.4) followed by United (16.9). (Figure 2.3-4) Most respondents (30.2%) do not know their pharmacy benefit manager. (Figure 3.3-5) The most common pharmacies used are CVS (retail stores) (43.0), Walgreens (33.8), and Walmart (20.8). (Figure 2.3-6)

Figure 2.3-2 Insurance Coverage

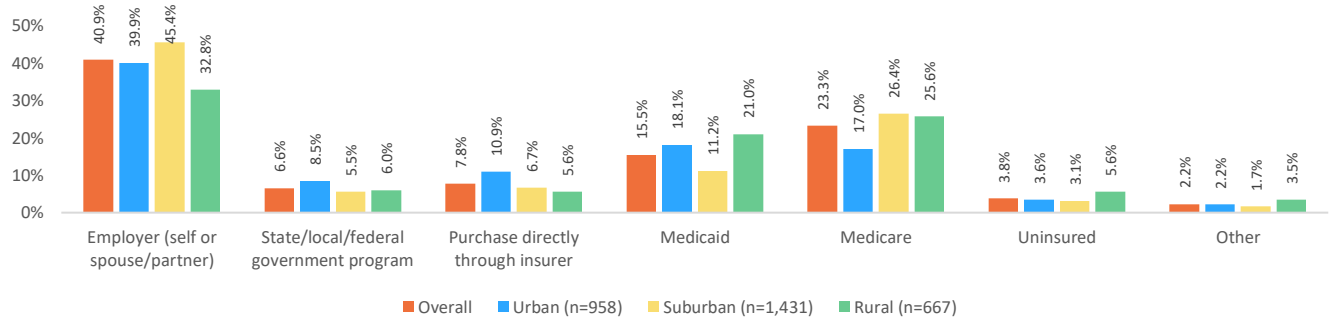


Figure 2.3-3 Prescription Coverage

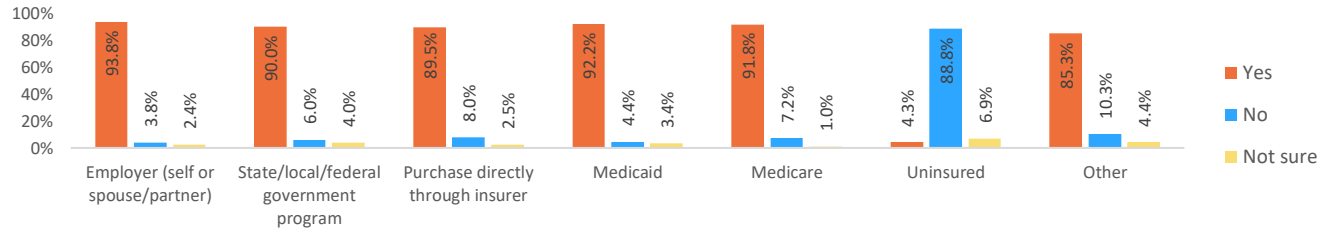


Figure 2.3-4 Current Insurance Carrier

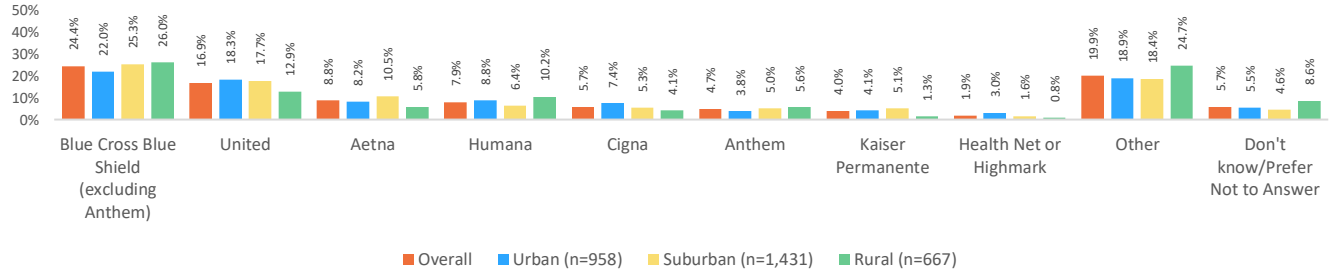


Figure 2.3-5 Pharmacy Benefit Manager

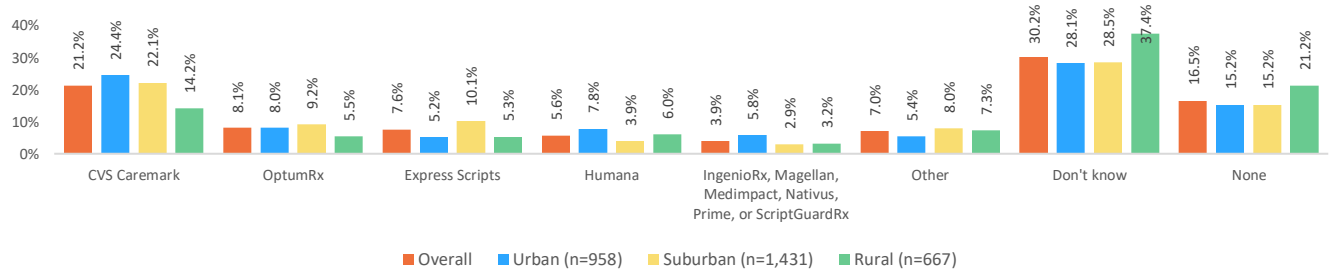
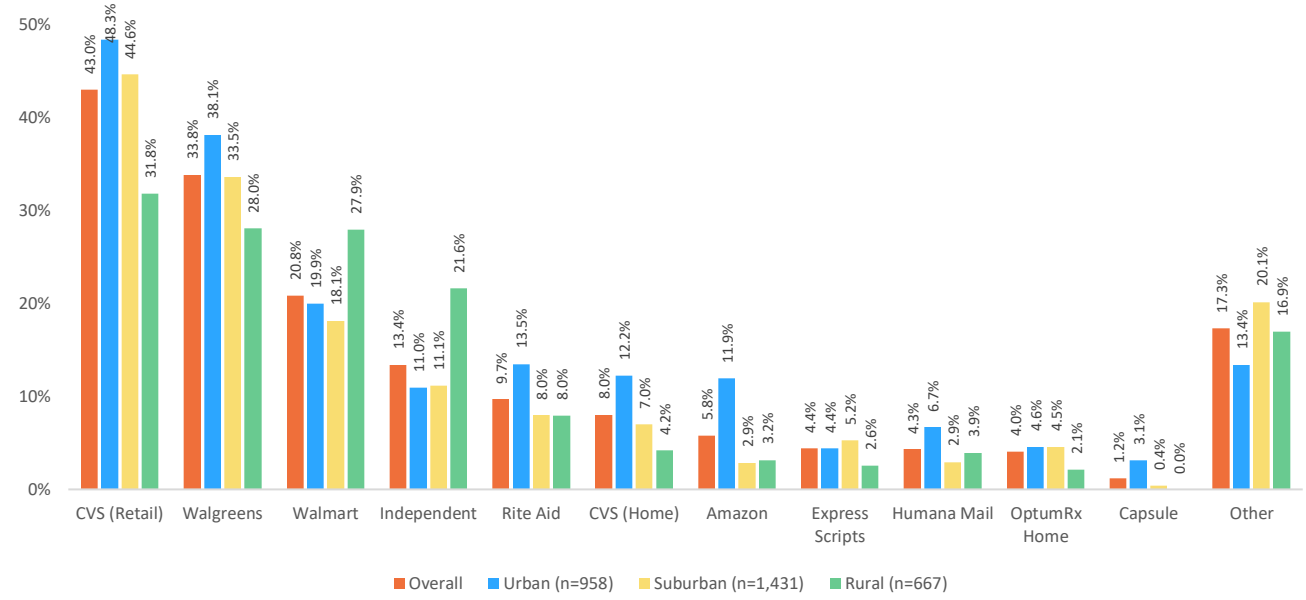


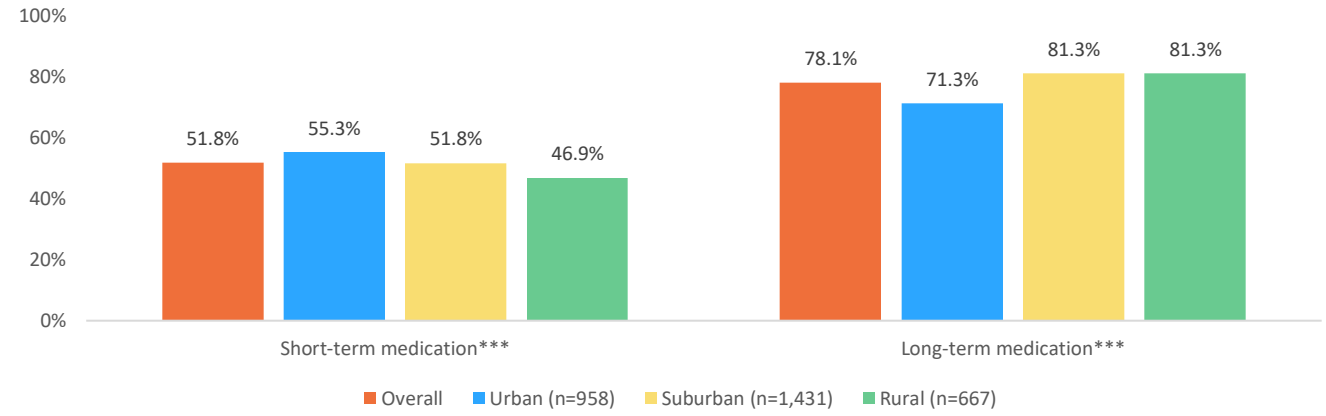
Figure 2.3-6 Pharmacies Used in the Past 12 Months



2.3.3 Prescription Statistics – Retail Pharmacies are the Preferred Choice

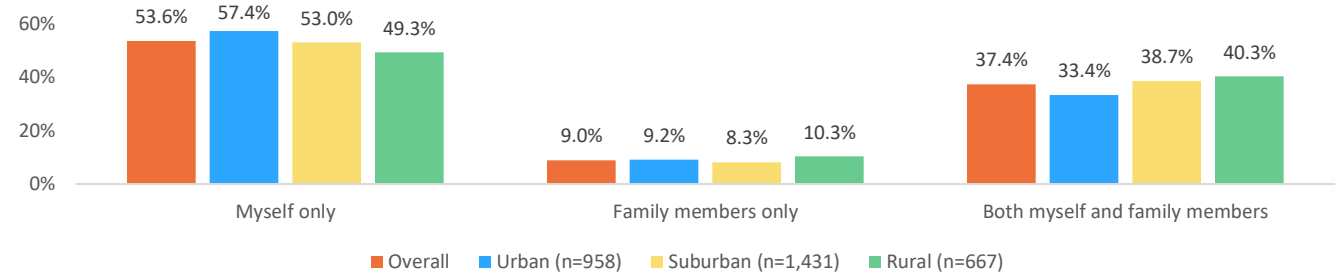
Nearly 80% of respondents filled a prescription for a long-term medication in the past 12 months and just over 50% filled a prescription for a short-term medication. Short-term medication prescription fills ranged from 46.9% in rural locations to 55.3% in urban locations. Long-term medication prescription fills ranged from 71.3% in urban to 81.3% in suburban and rural locations. (Figure 2.3-7) The majority of respondents filled prescriptions for themselves (53.6) and are solely responsible for selecting where to fill prescriptions (75.3). (Figure 2.3-8 and Figure 2.3-9) Most respondents (85% or more across all geographic settings) have used a retail pharmacy to fill a prescription in the past 12 months. Respondents from urban locations are more likely to have used ambulatory clinic or health system pharmacies (17.9) or specialty pharmacies (19.1). More than 20% of respondents across all geographic settings have used mail order or home delivery pharmacies in the past 12 months. (Figure 2.3-10) When choosing a preferred pharmacy, most respondents (range, 67.9% (urban) to 73.6% (rural)) prefer to fill prescriptions at a retail pharmacy. Suburban respondents have the highest preference for mail order/home delivery pharmacy (20.8%). (Figure 2.3-11)

Figure 2.3-7 Short-term and Long-term Medication Prescriptions Filled, past 12 months



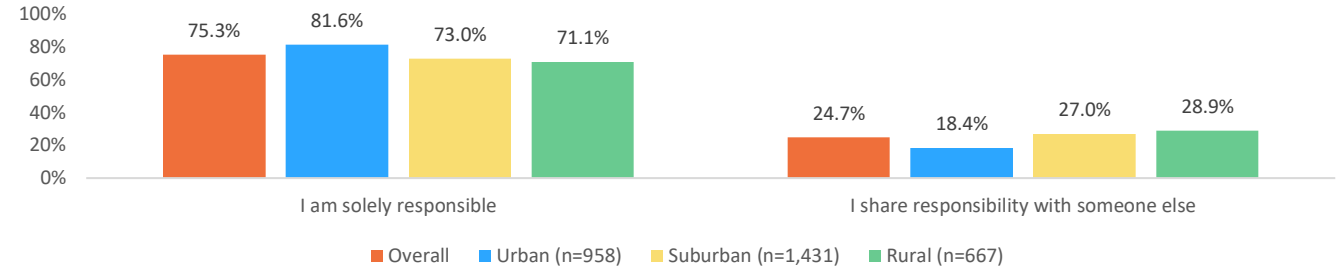
*** p-value<.01, ** p-value<.05, * p-value<0.1

Figure 2.3-8 Whose Prescriptions are Getting Filled***



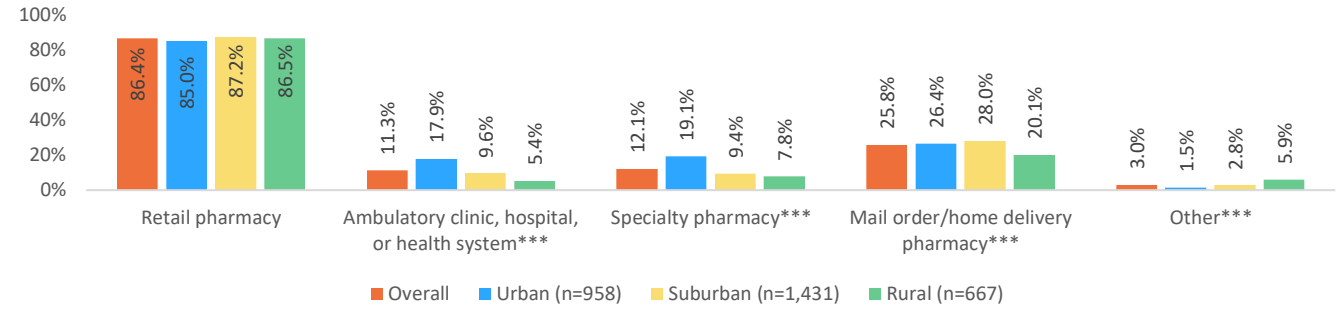
*** p-value<.01, ** p-value<.05, * p-value<0.1

Figure 2.3-9 Responsibility to Select Where to Fill Prescriptions***



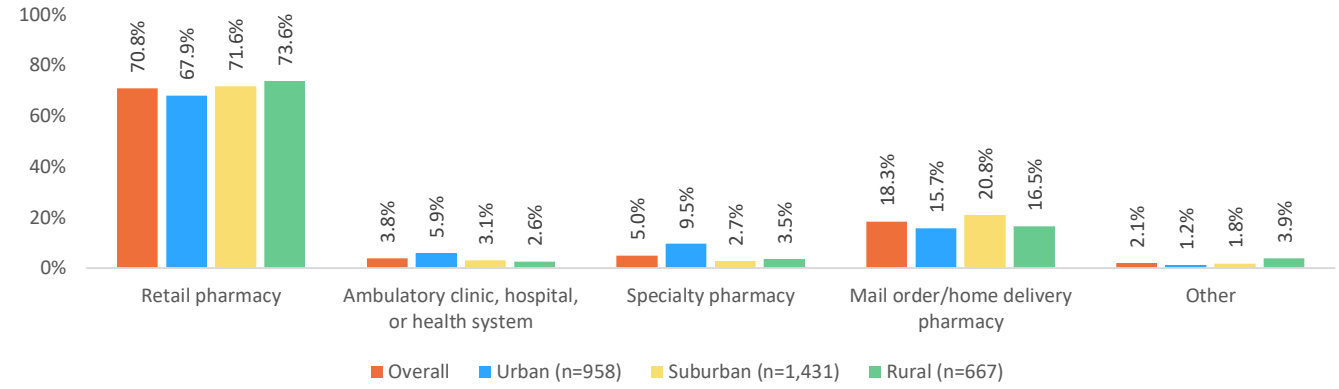
*** p-value<.01, ** p-value<.05, * p-value<0.1

Figure 2.3-10 Pharmacies Used in the Last 12 Months



*** p-value<.01, ** p-value<.05, * p-value<0.1

Figure 2.3-11 Preferred Pharmacy Type



*** p-value<.01, ** p-value<.05, * p-value<0.1

The average monthly out-of-pocket prescription costs are $60 (standard deviation, $233), ranging from $57 in suburban locations to $63 in urban locations. (Figure 2.3-12) Respondents from rural locations spend $61 per month, on average. Suburban and rural respondents have higher levels of cholesterol and blood pressure prescriptions than urban respondents. Rural respondents also have the highest levels of mental health, GERD, arthritis and diabetes medications. Urban respondents have the highest levels of asthma/allergy and pain medications. (Figure 2.3-13)

Figure 2.3-12 Average Household Monthly Prescription Out-of-Pocket

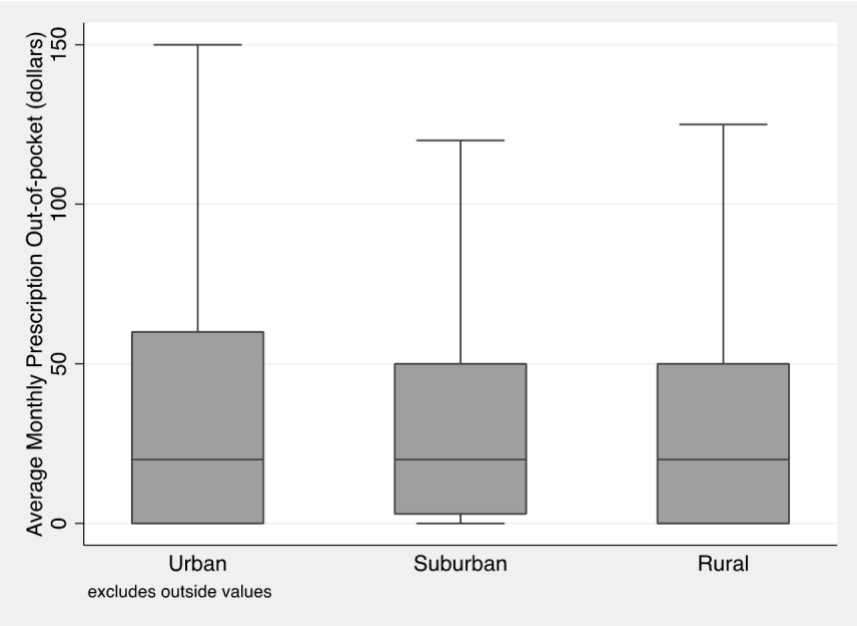
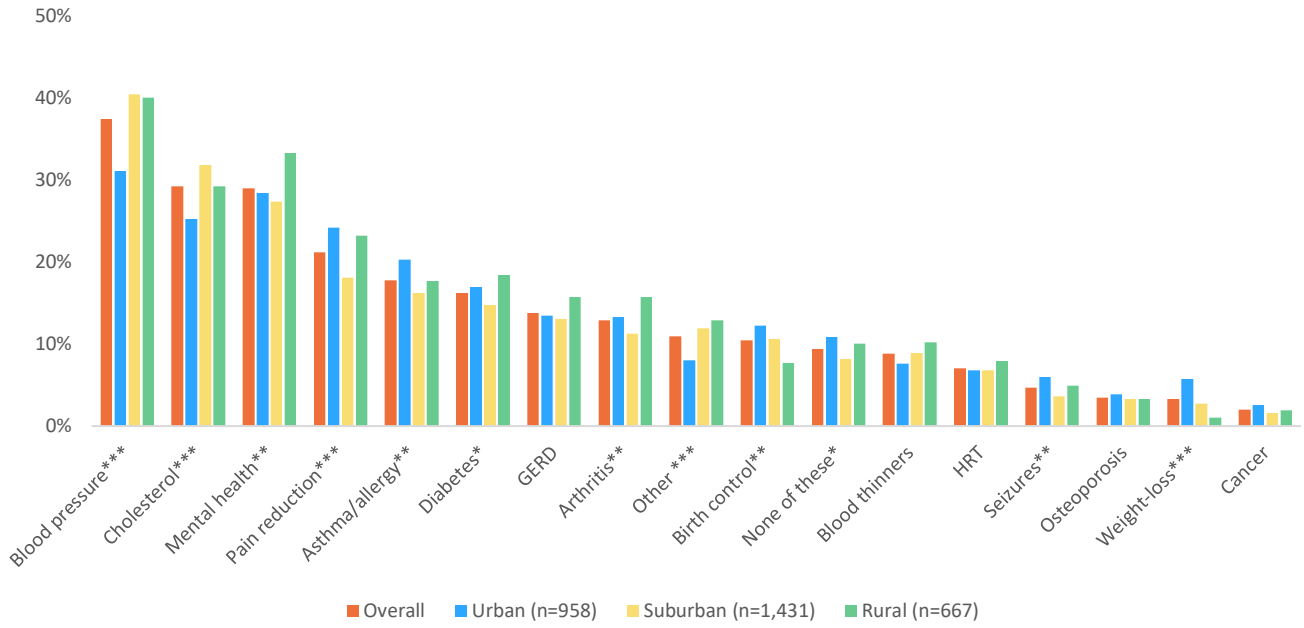


Figure 2.3-13 Types of Long-term Prescriptions Filled



*** p-value<.01, ** p-value<.05, * p-value<0.1

2.3.4 Patients Desire Convenience – Pharmacists Often Engaged by Patients

Most respondents believe it is extremely or very important to have all prescriptions at one pharmacy (85.5% combined) or to work with the same pharmacy (68.4% combined). (Figure 2.3-14) While only 46.6% of respondents find it extremely or very important to have a pharmacist who shares their identity/background and 43.9% find it extremely or very important to have a pharmacist with disease specific training, there is wide variation across race/ethnicities. Among black or African American and Hispanic or Latino respondents, 60.3 and 55.6% of respondents, respectively, find it extremely or very important to have a pharmacist who shares their identity/background and 62.0 and 59.1% of respondents, respectively, find it extremely or very important to have a pharmacist with disease specific training. Among white respondents, only 40.1 and 33.2% of respondents, find it extremely or very important to have a pharmacist who shares their identity/background or with disease specific training. (Figure 2.3-15)

When visiting the pharmacy, some patients do not know if they are interacting with the pharmacist or a pharmacist tech. Nearly two-thirds (64.7%) of respondents, though, do know when they are interacting with one or the other. (Figure 2.3-16) 39.6% of respondents speak with the pharmacist all (16.5%) or most (22.9) of the time, while another 30.7% speak with a pharmacist some of the time. Only 4.6% of respondents never speak with a pharmacist. Black/African American (28.3% all of the time, 23.8% most of the time) and Hispanic/Latino (22.0 all of the time, 26.4 most of the time) respondents are much more likely to speak with a pharmacist than White/Caucasian respondents (12.8 all of the time, 21.2 most of the time). (Figure 2.3-17) While 19.4% of respondents noted that the availability of a private consultation space would make them more willing to speak with a pharmacist, nearly half (49.1%) indicated that there is nothing that would make them more willing to speak with a pharmacist. (Figure 2.3-18)

Figure 2.3-14 Important Factors when Interacting with Pharmacies and Pharmacists

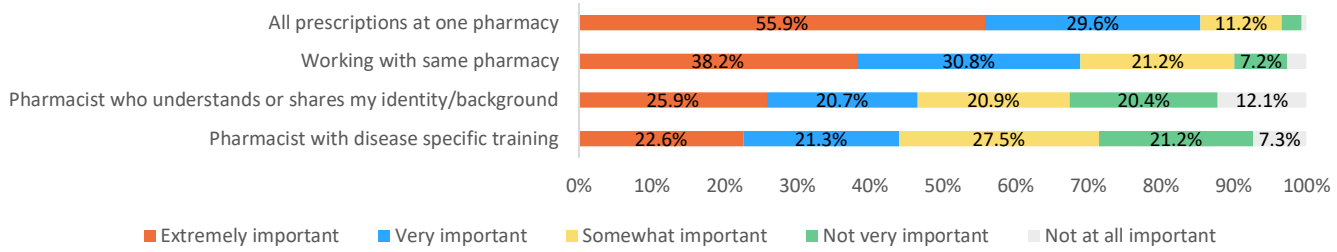
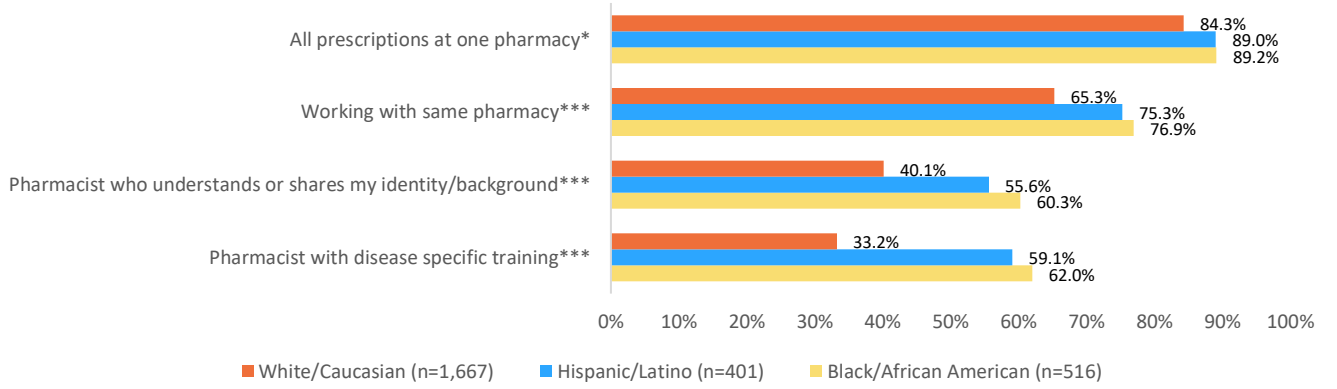


Figure 2.3-15 Extremely or Very Important Factors when Interacting with Pharmacies and Pharmacists, by Race/Ethnicity



*** p-value<.01, ** p-value<.05, * p-value<0.1

Figure 2.3-16 Knowledge of Interacting with Pharmacist or Tech

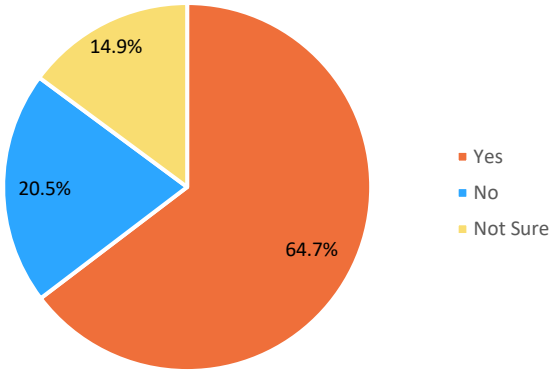
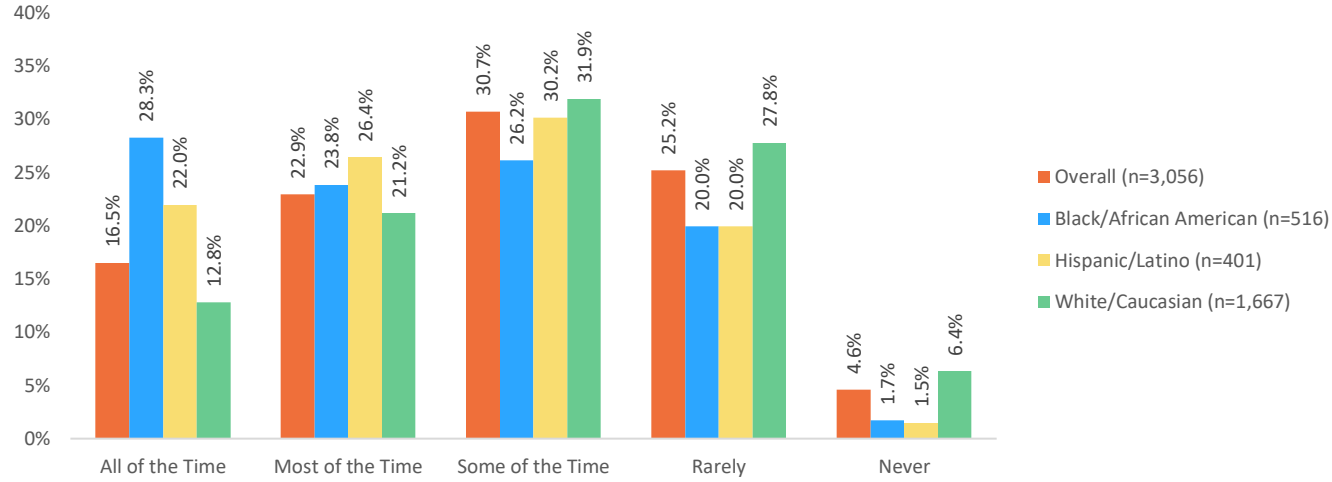
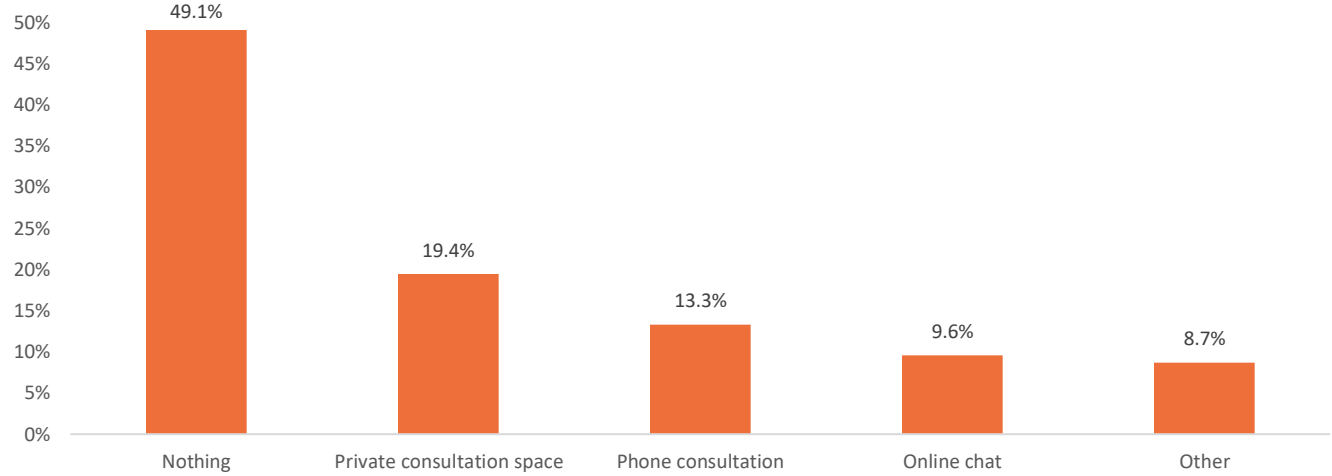


Figure 2.3-17 Frequency of Speaking with Pharmacist When Picking Up Medication, by Race/Ethnicity***



*** p-value<.01, ** p-value<.05, * p-value<0.1

Figure 2.3-18 What Would Make Respondents More Willing to Speak with Pharmacist



2.3.5 Patients Trust Pharmacists

To have trust in pharmacists, it is important for patients to understand the years of education required to become a pharmacist. Pharmacists in the United States require completion of a typically four-year Doctor of Pharmacy program. The PharmD is often followed by one to two years of residency or fellowship training and, finally, pharmacists must complete state licensing exams. In comparison, a nurse practitioner requires about a two- to three-year master's program (though some NPs enter doctoral programs) post-bachelor's degree and passing the specialty board certification exam. On average, respondents appear to have a general idea about the pharmacist educational requirements in comparison to other health care professionals. (Figure 2.3-19)

Respondents have a high to moderate level of trust in pharmacists to complete most activities listed in Figure 2.3-20, including prescribing medications (40.5% high trust, 32.4% moderate trust), conducting health and wellness screenings (37.5% high trust, 42.1% moderate trust), and providing disease specific counseling (33.1% high trust, 44.0% moderate trust). (Figure 2.3-20) Nearly 80% of respondents find pharmacists to be a reliable source of general health information beyond general medication questions. (Figure 2.3-21) Pharmacists (26.4%) are also the second most indicated resource for respondents when they have a question about their medication, behind only the physician's office that wrote the prescription (32.9). (Figure 2.3-22)

Figure 2.3-19 Perception of Pharmacist Training Compared to Other Health care Professionals

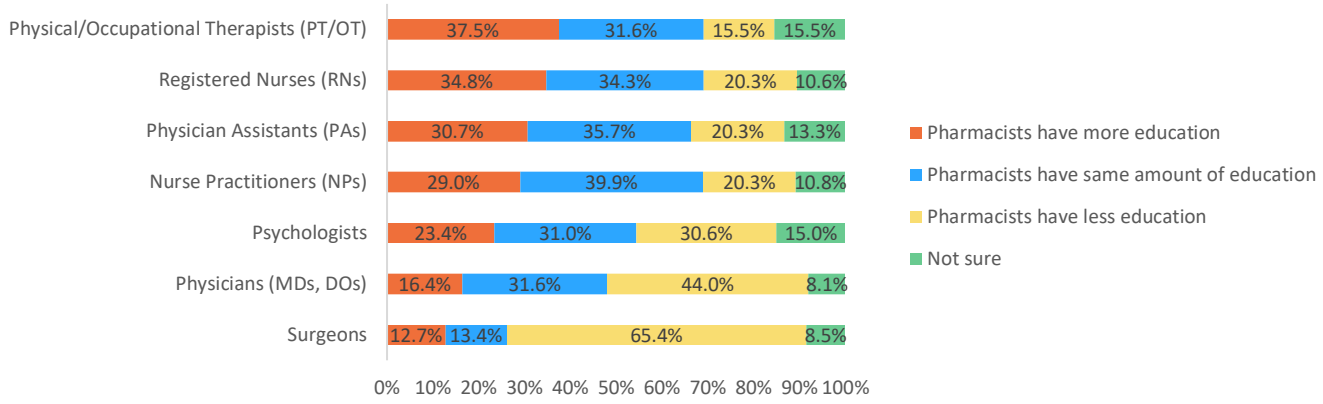


Figure 2.3-20 Level of Trust in Pharmacists to Perform Certain Activities

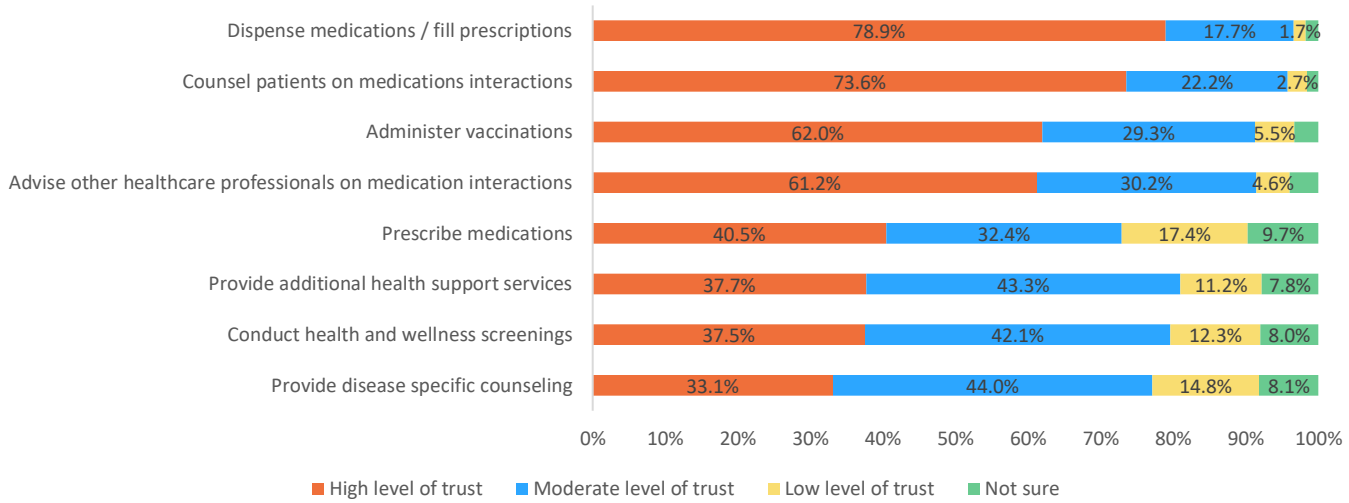


Figure 2.3-21 Pharmacist Considered a Reliable Source of General Health Information

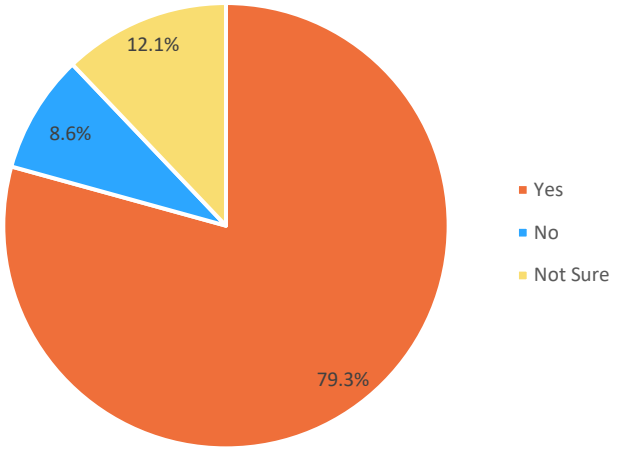
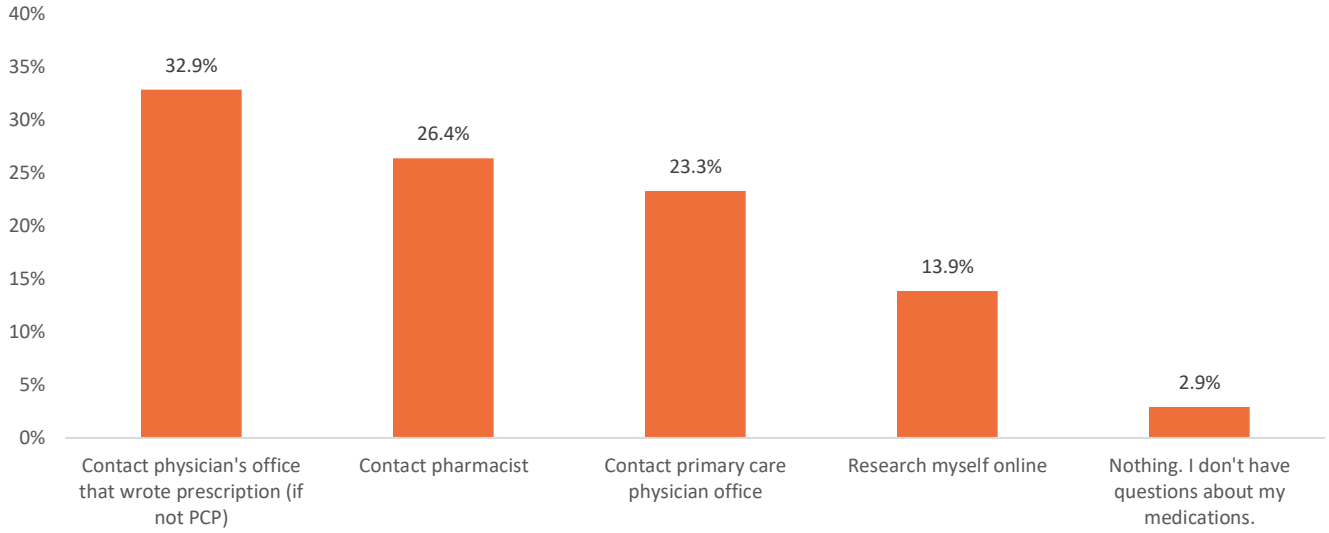


Figure 2.3-22 First Contact to Ask About Medication Questions



2.3.6 Fragmented, Expensive System Creates Challenges for Patients

The fragmented nature of the United States health care system is well documented and persists despite efforts to improve. Further, the United States ranks as one of the most expensive health systems globally. These facts were prominent in how respondents ranked the challenges they face in managing their or their family members' health conditions and medications. The primary challenges noted in managing health conditions are understanding who to contact with questions, scheduling appointments with multiple specialists, accessing preferred health care providers, and managing multiple medications. (Figure 2.3-23) When considering the challenges faced in managing their or their family members' medications, respondents noted understanding potential negative interactions, dealing with insurance carrier requirements, and understanding dosages and instructions. (Figure 2.3-24) The cost of medications ranked fifth, though had the highest percentage of top ranked responses and the highest percentage of lowest ranked responses. Even after removing those respondents that average $0 per month out-of-pocket for medications, the cost of medications remained in the fifth position. This could be a result of the high percentage of survey participants with pharmacy benefits included with their health coverage.

Figure 2.3-23 Primary Challenges in Managing Your or Your Family's Health Conditions

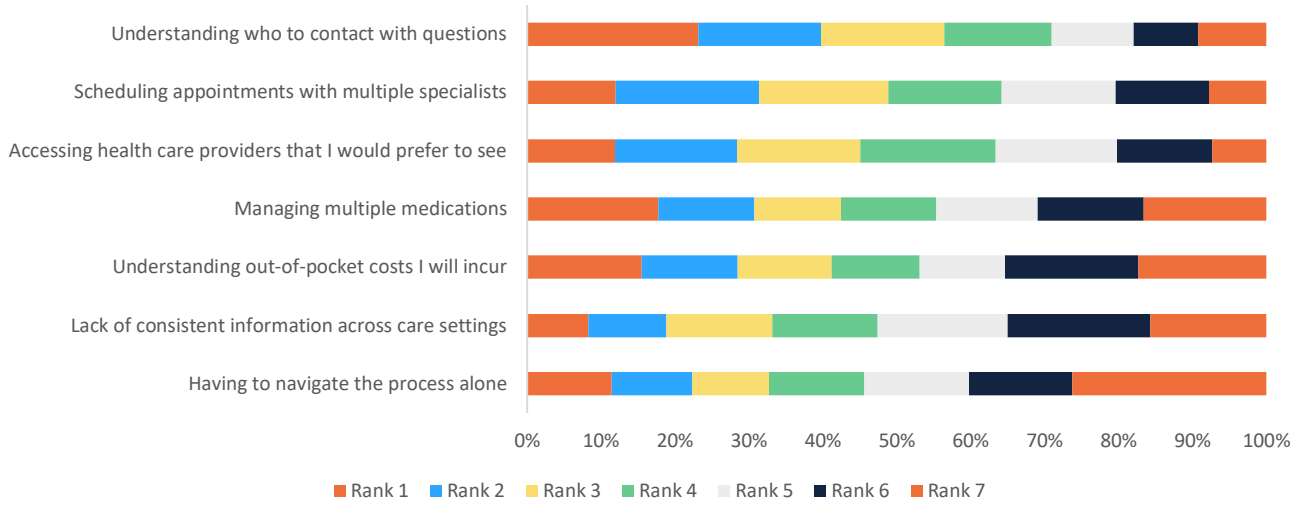
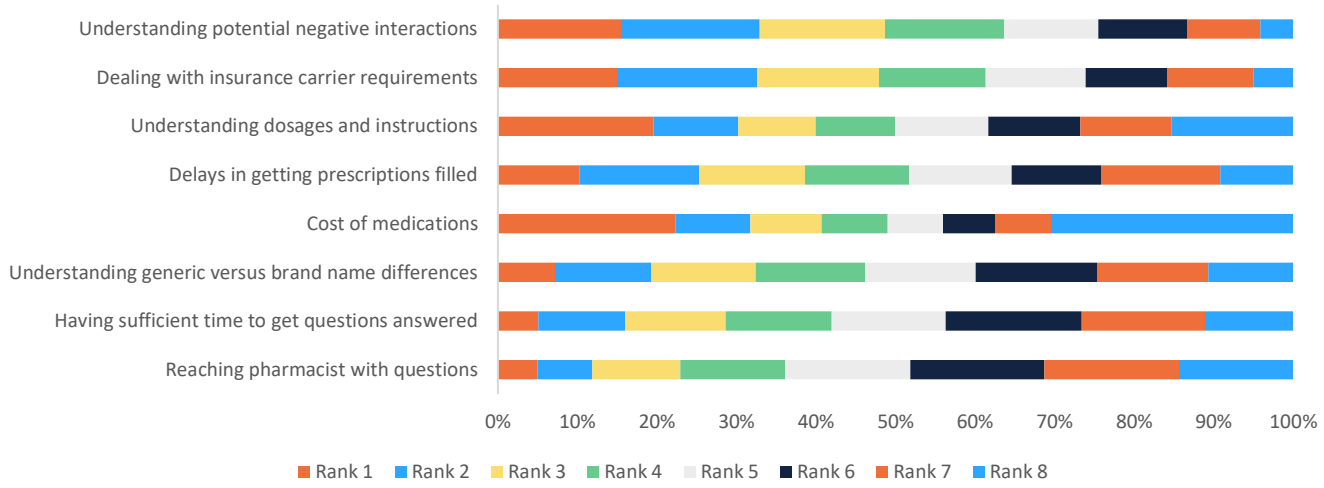


Figure 2.3-24 Primary Challenges in Managing Your or Your Family's Medications



2.3.7 Patients Find Consistency with Pharmacists, Consider them Important Health Team Member

Despite 18.0% of provider respondents noting that one of the challenges of pharmacists increasing their patient care responsibilities is being able to see the same pharmacist, 52.6% of patient respondents indicated they interact with the same pharmacist always or most of the time, and less than 20% (18.1) rarely or never see the same pharmacist. (Figure 2.3-25) Further, 77.3% of respondents strongly agree (37.9) or agree (39.4) that the pharmacist is an important part of the health care team. (Figure 2.3-26) Respondents overwhelmingly agree that they are treated with respect (65.5% all the time, 27.5% most of the time) and are given easy-to-understand instructions (56.1% all the time, 34.9% most of the time). Less than 50% engage all or most of the time with a pharmacist who shares or understands their background and/or identity or a pharmacist who asks about their beliefs or opinions about care. (Figure 2.3-27) 75.2% of respondents trust the pharmacists' advice about medications as much or more than a physician's advice. (Figure 2.3-28)

Figure 2.3-25 Frequency of Interacting with Same Pharmacist

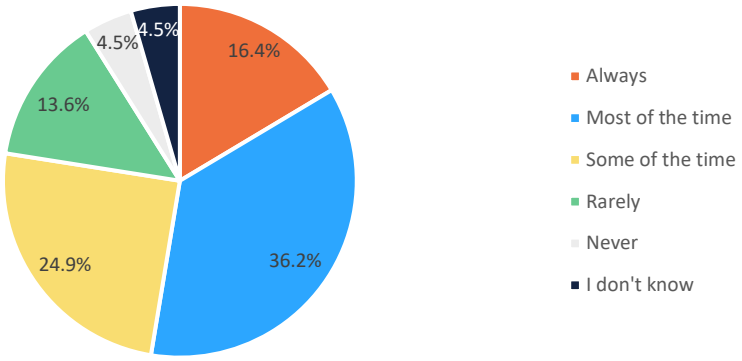


Figure 2.3-26 Respondents Consider Pharmacist an Important Part of Health Care Team

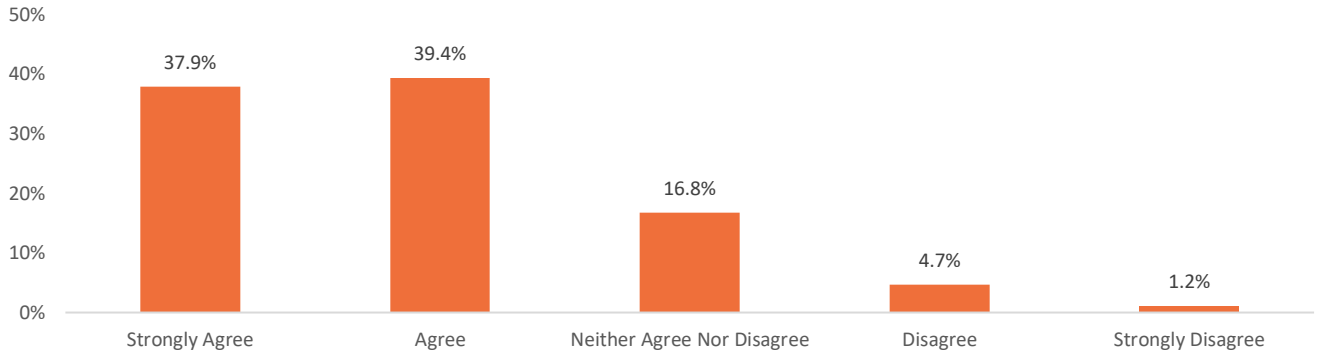


Figure 2.3-27 When Engaging with Pharmacist, Frequency Experienced the Following

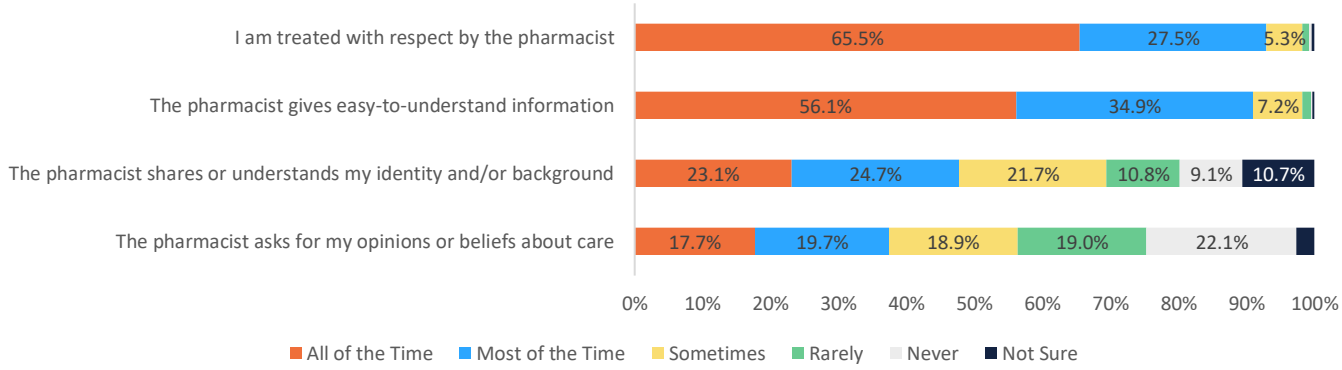
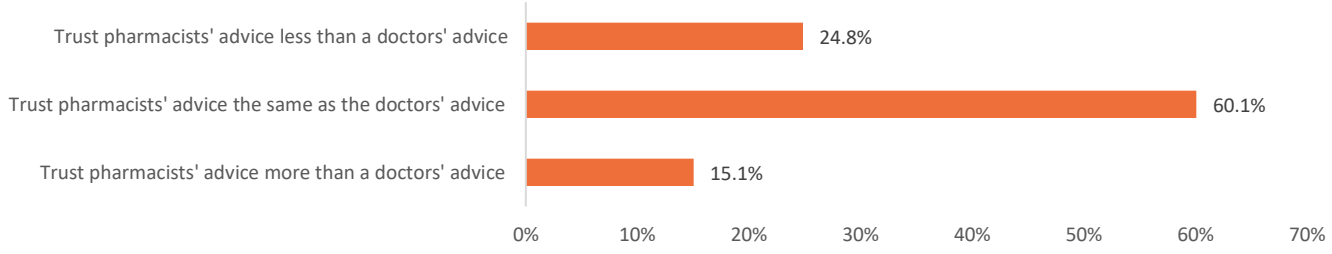


Figure 2.3-28 Trust the Advice of Pharmacist on Medications



2.3.8 Patients Engage with Pharmacists for Traditional Activities in Face-to-Face Setting

In the past year, respondents engaged with pharmacists for traditional pharmacist activities, including to clarify medication instructions and usage (46.0%), explaining drug interactions (37.0) and consultation for OTC medications (31.7). Some respondents engaged with pharmacists for more patient-facing activities such as prescribing medications (24.4%), medication counseling (23.1), conducting wellness screenings (9.4), acting as a health coach (7.3), or disease management counseling (6.3). (Figure 2.3-29) One-fifth of respondents have not engaged with a pharmacist in the past year. Respondents noted that meetings with pharmacists are still primarily face-to-face with 43.7% using this method all the time and 33.7 meeting face-to-face most of the time. Consistent with the low telehealth usage noted in the pharmacist survey findings, 71.1% of respondents never used a video visit. (Figure 2.3-30)

Figure 2.3-29 Engaged with Pharmacist for the Following Activities in the Past Year

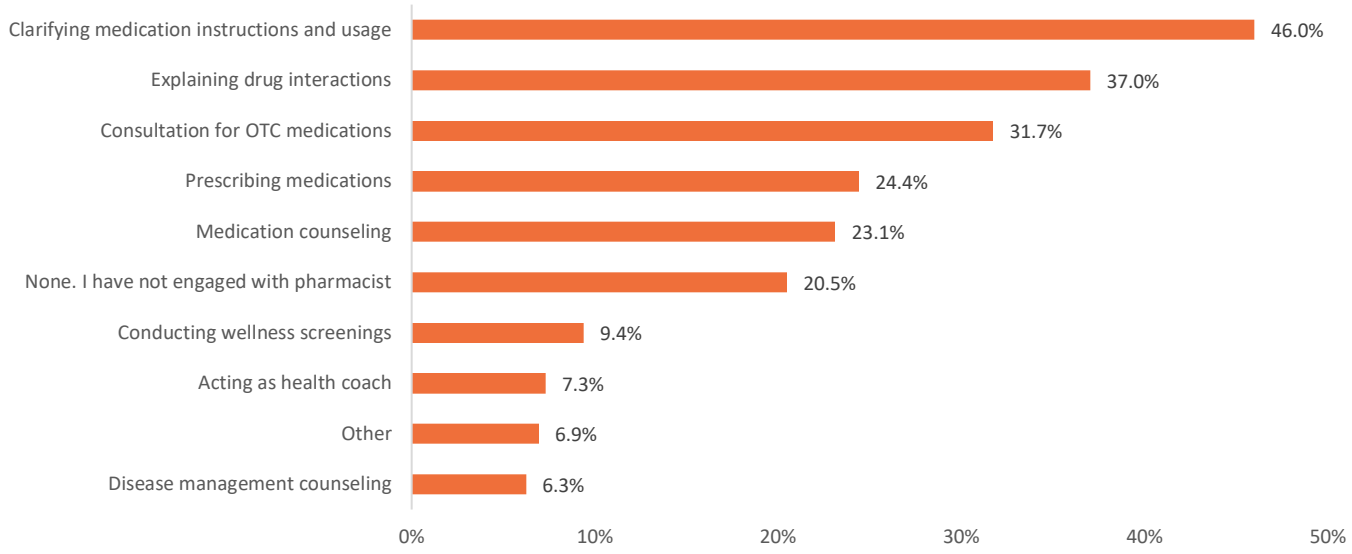
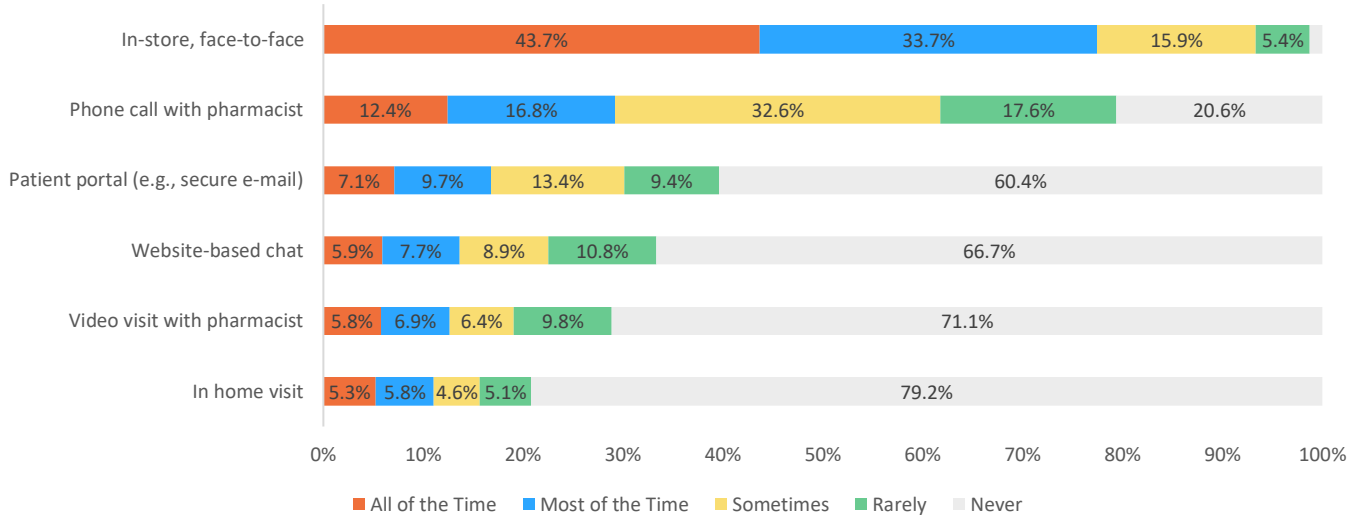


Figure 2.3-30 Methods of Engagement with Pharmacist, past 12 months



2.3.9 Patients Desire Easy Access and Have High Comfort Level for Most Future Pharmacist Activities

Respondents have a very high level of comfort with pharmacists completing traditional pharmacist tasks such as clarifying medication instructions and usage, explaining drug interactions, consulting for OTC medications and conducting medication counseling. Even for those activities not traditionally performed by a pharmacist, respondents were still somewhat to very comfortable, with little discomfort. For instance, respondents were somewhat to very comfortable with pharmacists prescribing medications (68.1% combined), conducting wellness screenings (78.5), performing disease management counseling (73.6), and acting as a health coach (67.8). (Figure 2.3-31) As it relates to pharmacists performing clinical activities, there was still very little discomfort and a high level of comfort with pharmacists performing the tasks. For instance, 76.2% of respondents would be extremely to very comfortable with pharmacists checking vitals and 54.9% of respondents would be extremely to very comfortable with pharmacists diagnosing acute conditions with even more, 58.1% of respondents, comfortable with pharmacists prescribing medications for acute conditions. Less than 30% of respondents were not very to not at all comfortable with pharmacists performing any of the clinical activities. (Figure 2.3-32)

Figure 2.3-31 Comfort Engaging with Pharmacist for the Following

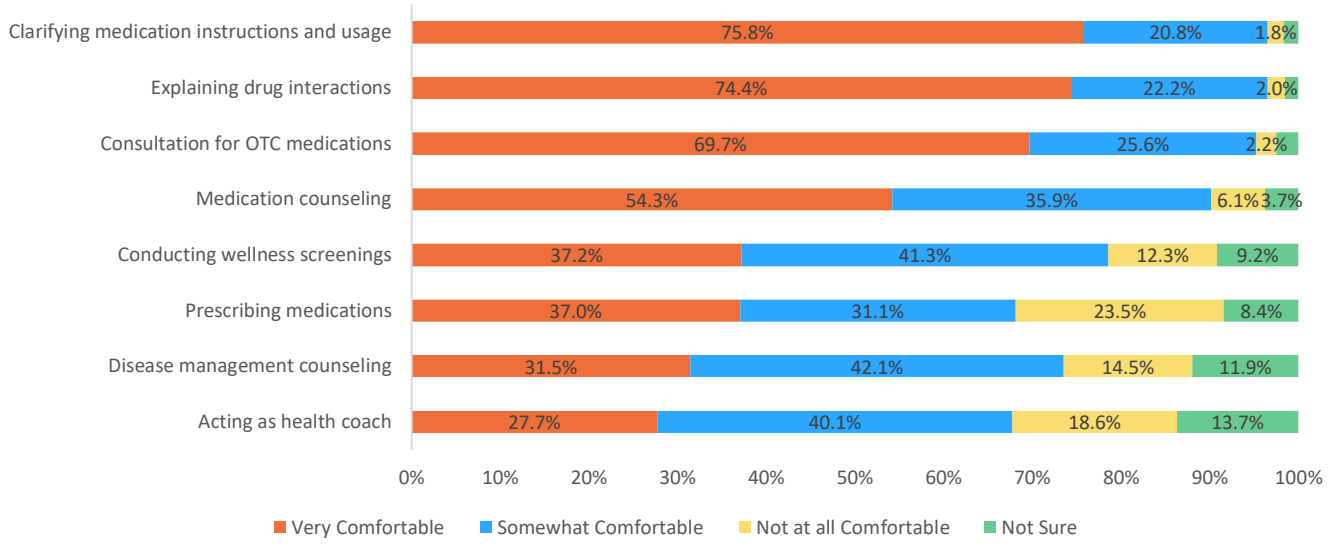
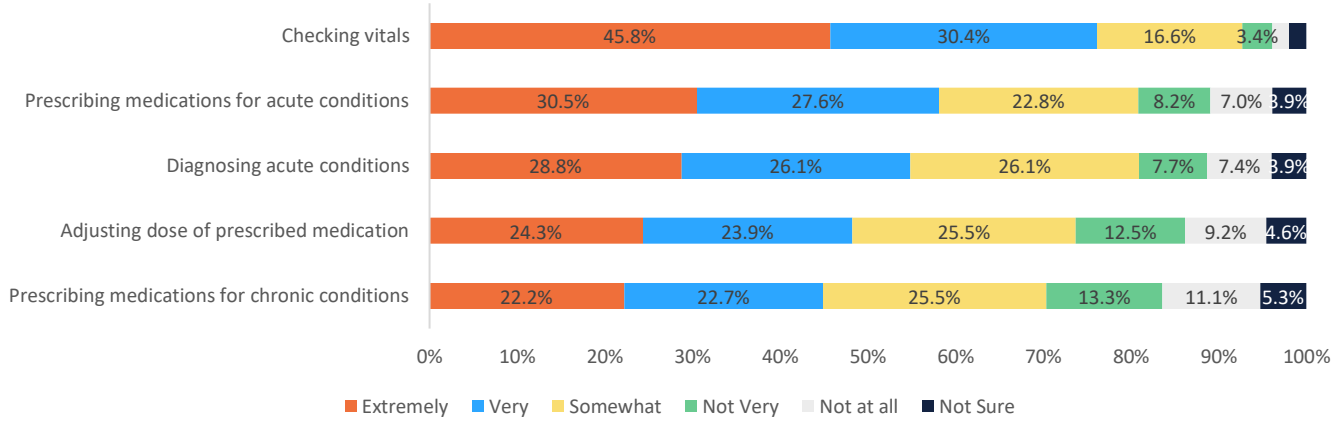
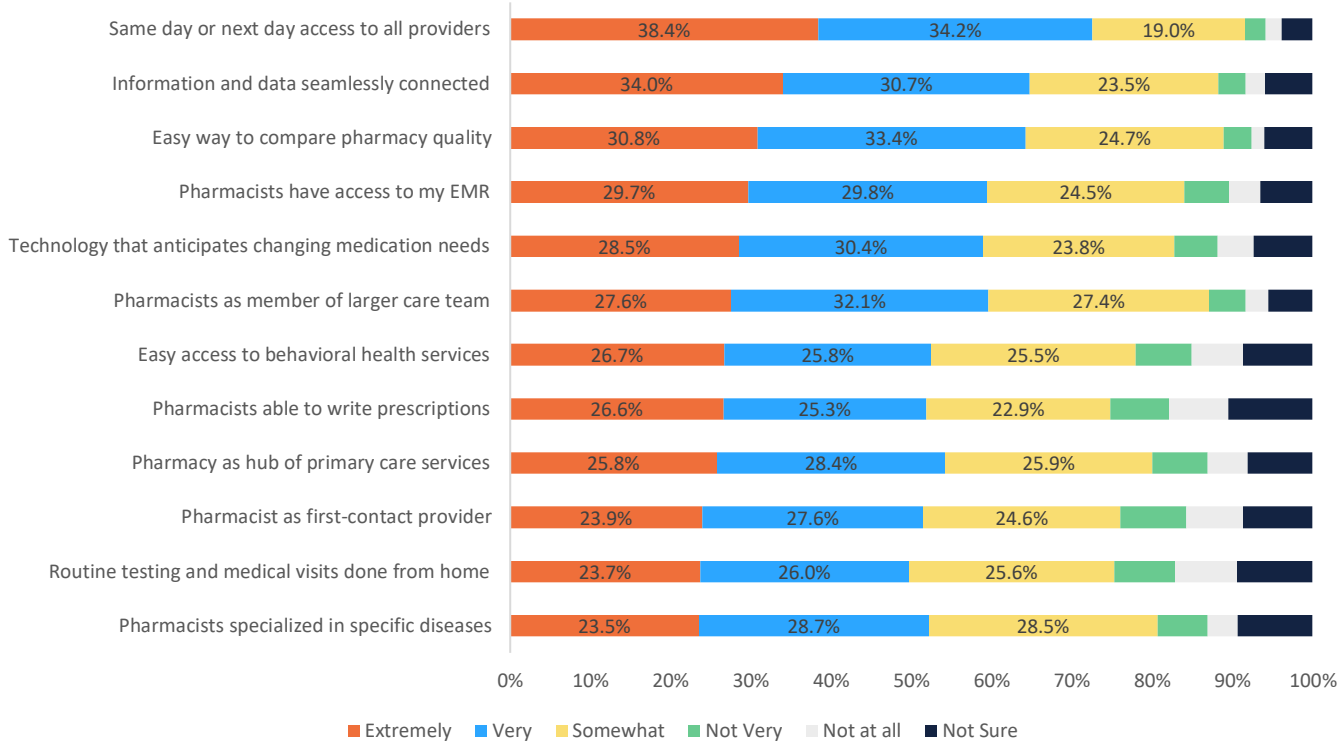


Figure 2.3-32 Comfort with Pharmacists Performing Clinical Activities



When asked what respondents would want or expect as they manage their and their family's health, same day or next day access to all providers was noted as the top choice, with 38.4% of respondents finding this extremely helpful and another 34.2% finding it very helpful. Seamlessly connected data, easy ways to compare pharmacy quality and pharmacist access to the EMR were also noted as being helpful to the process of managing one's health. Overall, respondents seem to desire easier access with better information sharing to help manage the health care journey. Respondents did not tend to find any activities/system changes to be unhelpful, with one-quarter or less of respondents finding any activity to be not very or not at all helpful. (Figure 2.3-33)

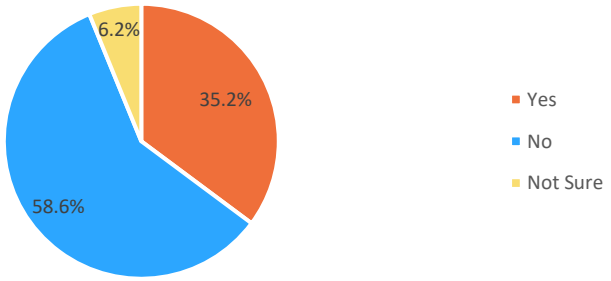
Figure 2.3-33 Expectations for Helping to Manage Your and Your Family's Health



2.3.10 Covid-19 Did Not Change Patient's Reliance on Pharmacists

Consistent with findings from the pharmacist and patient surveys indicating very little uptake of telehealth in the pharmacy industry, 58.6% of respondents noted that they did not rely more on pharmacists during the pandemic. (Figure 2.3-34)

Figure 2.3-34 Did Respondent Rely on Pharmacists More During COVID Pandemic



3. Description of Study Approach

3.1 Survey Design

Questionnaires were developed collaboratively by researchers at Columbia University's Mailman School of Public Health and content experts at Express Scripts® Pharmacy and Coyne PR. Closed-ended questions covered a range of domains as shown in Table 3.1-1, and included dichotomous, multiple choice and Likert scale response options. In addition, each tool included several open-ended questions to elicit a broader range of inputs from respondents. Tools were available in English and Spanish.

Each survey included a series of screening questions to help filter for appropriate respondents and a series of demographic questions that allowed researchers to conduct pre-determined and post-hoc sub-analyses.

Table 3.1-1 Description of questionnaires by survey type

	Pharmacists	Health Care Providers	Health Care Patients
Number of questions	34	34	51
Areas of inquiry	Importance of credentialing	Characteristics and needs of patient population	Current engagement with pharmacists
	Impact of technology on time allocation, efficiency, and patient safety	Engagement with pharmacists for medication management	Perception of pharmacists' role in health and medication management
	Engagement with health care providers for medication management	Perception of pharmacists' contributions to patient care	Preferences for pharmacist involvement in health and medication management
	Use of telehealth	Confidence in pharmacists' technical abilities	Confidence in pharmacists' technical abilities
	Expected evolution of task allocation	Expected evolution of pharmacists' role in patient care	Challenges in managing their or family members' health and medication
	Perceived drivers of change in pharmacy care	Perceived challenges to expanded involvement of pharmacists in patient care	

Final survey tools are available on request.

3.2 Survey Dissemination

We conducted cross-sectional surveys with: (1) pharmacists; (2) health care providers; and (3) health care patients.

Table 3.2-1 Target sample size and inclusion/exclusion criteria by survey type

	Pharmacists	Health Care Providers	Health Care Patients
Target sample size	1,000	500	3,000
Final sample	1,053	511	3,056
Inclusion criteria	25+ years of age	25+ years of age	25+ years of age
	Currently employed	Currently employed as a nurse practitioner, physician or psychiatrist	Filled a prescription for self or family member in the prior 12 months
		Prescribes medication	Has sole or shares responsibility for selection of pharmacy
		Working in a freestanding or hospital-based ambulatory medical clinic; hospital or health system (including Emergency Department); private practice, or a federally qualified health center or rural health clinic	
Exclusion criteria	Not a pharmacist (e.g., pharmacist tech, pharmacy benefits manager)		Self or family member employed in the health care industry

A survey-deploying firm, Dynata, collected the data from November to December 2021. Respondents meeting the eligibility criteria shown in Table 3.2-1 were sampled consecutively until the target sample size was reached. Quotas for region and urbanicity were employed for all surveys by sampling a proportional number of individuals relative to the specified population in the US. Quotas for race/ethnicity and income were similarly set for the patient survey. Additionally, for the pharmacist and health care surveys, pre-determined quotas were set for practice setting to ensure enough respondents in settings of particular interest. Participation was free and voluntary, and no identifying information was obtained. The Columbia University Institutional Review Board determined that the study did not constitute human subjects research and thus informed consent was not obtained.

3.3 Data management and analysis

De-identified data were transferred to Columbia University researchers in Excel format, and then imported into STATA for analysis. Descriptive analyses were conducted by respondent type, and in each case, stratified by pre-determined variables as shown in Table 3.3-1. Tests of significance were conducted using chi-square analysis. In some cases, subgroup analysis included additional unplanned stratification where researchers discussed additional criteria that may influence participant responses (e.g., provider's prior experience with a pharmacist on a multidisciplinary team).

Table 3.3-1 Pre-determined subgroup analyses

Survey	Pre-determined subgroup analyses
Pharmacist	• Work location • Geographic location (state, region, or urbanicity) • Years of experience
Health Care Provider	• Respondent type (NP, Physician, Psychiatrist) • Work location • Geographic location (state, region, or urbanicity) • Years of experience • Shared savings participation • On-site pharmacy
Health Care Patients	• Geographic location (state, region, or urbanicity) • Insurance coverage (including prescription drug coverage) • Income • Race/ethnicity • Gender Identification • Self-reported health status

Not all subgroup analyses are reported in the final report.