Patient preferences and willingness-to-pay for Medicare part D consultations offered in a community pharmacy setting

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Patient Preferences and Willingness-To-Pay for Medicare Part D Consultations Offered in a Community Pharmacy Setting

by

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To My Grandparents

“We are born to believe we can’t change a thing. We can’t, and we never could. But before you believe the things you believe. You must understand to be understood.”

John O’Callaghan V

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ABSTRACT

Introduction: Community pharmacies across the state of Iowa currently offer Medicare Part D consultation services. Despite facilitating plan-switching behavior, identifying potential cost savings, and increasing medication adherence, patient uptake of these services remains low.

Objectives: The objectives of this study were to 1) explore patient-centeredness and patient preferences for Medicare Part D consultation service offerings from the perspective of patients. 2) calculate part worth utilities and willingness-to-pay (WTP) for specific service offerings as well as marginal willingness-to-pay (mWTP) for individual service offering attributes, 3) evaluate the effect of patient-specific factors on optimal service offerings and patient preference for Medicare Part D services, and 4) to use qualitative and quantitative data integration to make recommendations for Medicare Part D consultation service development and offerings in the community pharmacy setting.

Methods: This was a multi-phase exploratory mixed method study using qualitative interviews and a discrete choice experiment (DCE) survey. Participants for qualitative interviews were recruited by five Iowa CPESN pharmacies and were patients 65 years of age and older who had and had not previously used a Medicare Part D consultation service. A qualitative interview guide was developed using the SERVQUAL framework adapted for healthcare services, with questions focused on Technical, Interpersonal, Administrative, and Environmental quality. Interview transcripts were transcribed and coded using Template analysis, with attributes and levels developed for a DCE survey. Qualtrics was contracted to acquire survey responses from individuals who were 65 years of age and older, who currently use one or more prescription medications from a community pharmacy. Demographics and patient-specific factors

contributing to patient preference were reported as descriptive statistics. A mixed logit model was used to calculate part-worth utilities for service attributes. To calculate mWTP, the ratio of part-worth utilities to cost was used, with cost treated as a continuous variable. To evaluate patient-specific factors and demographics which may contribute to patient preference for Medicare Part D consultation service offerings, a latent class model was used.

Results: In total, 17 interviews were completed (8 service experienced, 9 service naive), with themes identified to design the Qualtrics DCE Survey. The overall themes associated with each SERVQUAL domain were as follows: Technical Quality (Pharmacist Expertise, Time, Cost-Outcomes, Service Availability, Scheduling Appointments, and Alternative Service Providers), Interpersonal Quality (Pharmacist Characteristics and Familiarity with Relationship, Continuity, and Trust), Administrative Quality (Tailoring Information to Patient and Information Delivery, Comparison and Choice, Experience with Other Services Facilitates Trust, Information Print-Out + Explanation), and Environmental Quality (Service Location, Customer Service Across Employees, and Private Consultation Space). In the final DCE instrument, the service attributes that were tested included: Information Provided, Service Location, Service Provider, Service Length, and Price. From the results of the DCE, 540 responses were collected, with the average age of respondents being 71 years. For the initial choice task designed as a dominant scenario, 481 respondents (89.07%) selected the dominant choice. Most respondents were female (60%), lived in a Suburban area (56%), used one pharmacy in the past 30 days (76%), were currently taking four or more prescription medication (51%), had previously used a pharmacy service outside of traditional medication dispensing (60%), and most frequently used a chain pharmacy (51%). Overall, self-reported health activation was high with an average of 7.52 ± 1.92. The

average scores for the subcomponents of the adapted Medicare Part D health insurance literacy items were 13.9±4.1 and 13.81±2.57, respectively. Service attributes with the highest utility were 15-minute services, discussion of services + a follow-up phone call, In person at the pharmacy, a pharmacist the patient knew, and at no cost. Latent class analysis revealed that patient preferences for service attributes differed by gender and difficulty affording prescription medications.

Conclusion: Overall, patients had a variety of preferences for Medicare Part D consultation service attributes. Community pharmacies should consider the balance between offering services which maximize patient utility and service sustainability.

PUBLIC ABSTRACT

Older individuals often have difficulty selecting Medicare Part D insurance plans to cover their prescription medications. Identifying this difficulty, community pharmacies across the country have begun offering insurance consultation services to assist individuals in their prescription medication insurance plan selection. Despite potential benefits of using these services, uptake and repeated use of these services remains low. Currently, little is known about how these consultation services are delivered at the community pharmacy level. While individual pharmacies have developed and implemented these services, service offerings vary across pharmacies and are infrequently designed to accommodate patient-specific abilities and preferences. Additionally, these services are almost always offered at no-cost to patients despite resources and staffing required to provide them. To increase the use and sustainability of Medicare Part D consultation services offered in the community pharmacy setting, a thorough evaluation of patent-preferences for service offerings as well as exploration of potential willingness-to-pay for such services should be performed.

This project used interviews and surveys to identify components of Medicare Part D consultation services that patients preferred and associated with value. These perspectives were gathered from individuals who had both used and not used a consultation service provided in the community pharmacy. Following the interviews and survey, a stated preference instrument was used to present individuals with a wide variety of service offering "bundles," or service offerings with attributes varying across five different service attributes: information provided, duration of service, location of service, service provider, and cost. Preference and

willingness-to-pay for each attribute were calculated and used to inform an optimal service bundle.

The results of the stated preference study identified patient preferences and willingness-to-pay for a Medicare Part D consultation service, with the preferred service offering reflecting the following service attributed: 15 minutes in duration, provide in person at the pharmacy by a pharmacist the patient knew, with a discussion of plans and a follow-up phone call, offered at no-cost. Preference for and importance of these attributes were different based on gender and difficulty affording prescription medications. The results of this study can help community pharmacies develop and expand existing Medicare Part D consultation services to maximize sustainability while accommodating patient preferences for enhanced service offerings.

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CHAPTER 1: INTRODUCTION

"What patients want is not rocket science, which is really unfortunate because if it were rocket science, we would be doing it. We are great at rocket science. What we're not good at are the things that are so simple and basic that we overlook them."

-Laura Gilpin, Planetree International

1.1 Overview

In the past two decades, there have been considerable changes to the community pharmacy practice and reimbursement landscape. As medication dispensing margins have continued to decline[1,2], community pharmacies have developed innovative practice models and expanded enhanced pharmacy service offerings to improve the health outcomes of the patients they serve while creating additional opportunities to generate revenue.[3] Some community pharmacies have successfully leveraged clinical services and outcomes data to receive payment directly from large insurers, while others continue to work with organizations and initiatives like the Community Pharmacy Enhanced Service Network (CPESN)[4,5] and *Flip-the-Pharmacy*[6] to expand and improve the health services offered in their community. Pharmacy-led Medicare Part D insurance plan consultations are an example of an innovative community pharmacy service currently being offered in the community setting, designed to assist Medicare beneficiaries with a challenging insurance selection process.

Medicare Part D consultation services offered in the community pharmacy setting have been successful in helping patients identify lower-cost Medicare Part D plans, facilitating plan-switching behavior, and increasing chronic medication adherence.[7-9] Selecting a suboptimal Medicare Part D may have significant implications to older adults, increasing barriers to care and medication costs for a group of individuals traditionally subject to low and/or fixed incomes.[10] Unexpected increases in the costs of prescription medications has the potential to increase cost-related medication nonadherence[11], contributing to suboptimal clinical outcomes[12], increased mortality[13], and increased health care spending.[11,14,15] With the

population of individuals eligible for Medicare Part D projected to reach nearly 100 million in the United States by 2060, community pharmacy-led Medicare Part D consultation services should be viewed as a means to decrease unnecessary medication spending, increase chronic medication adherence, and minimize overall Medicare expenditures for hospitalizations and complications resulting from uncontrolled chronic disease states.[16,17]

While nearly all patients who are eligible and/or enrolled in a Medicare Part D plan would benefit from evaluating their current prescription medication coverage on a yearly basis, few patients choose to do so.[18,19] Although select community pharmacies have developed interventions to address this phenomenon, Medicare Part D consultation services go largely underused, with an exceedingly smaller number of patients choosing to use existing services in successive years despite positive experiences.[8] Patients may fail to initially and repeatedly engage in Medicare Part D consultation services due to a number of patient-specific factors and service offering characteristics.[20] First, existing Medicare Part D consultation services focus on thorough patient education, potentially overwhelming service users with large amounts of plan-specific information related to costs, medications, and benefit designs.[7,21] This type of information may be preferred by some individuals with higher levels of information processing ability and health insurance literacy, but fails to accommodate those who are less savvy when navigating complex insurance information.[18] As a result, individuals may leave the experience feeling uncertain, worried, or frustrated with their Medicare Part D plan choices. These emotions have the potential to negatively affect perceptions of service value and quality.[21] Additionally, patient-specific factors like age, perception of risk, and self-efficacy when selecting a Medicare Part D plan may influence patients' preferences for not only information delivery and communication style, but relational and structural components of the Medicare Part D service, such as duration of consultations and expectations of the pharmacy personnel providing the service.[22-24] With variations in patient-specific preferences for enhanced community pharmacy service offerings and a wide variety of patient-specific factors which may contribute to these preferences, community pharmacies providing Medicare Part D consultation services may only be meeting the needs of select patients when offering a one-size-fits-all Medicare Part D consultation service. More specifically, existing Medicare Part D

consultation service offerings appear to be improving the experience of some patients while negatively effecting the experience of others.[21] By accommodating a wide variety of patient needs, abilities, and preferences for Medicare Part D service offerings, it may be possible to improve patient perceptions of service quality and value, encouraging initial and repeated service use.

1.1.1 Patient Difficulties with Medicare Part D Plan-Selection

The Medicare Part D insurance program began in 2006, providing Medicare beneficiaries with outpatient prescription medication coverage.[25] Within the Medicare Part D population, the majority of enrollees typically overspend on medication costs and premiums affiliated with their Medicare Part D plan, with overspending defined as higher-than-necessary out-of-pocket (OOP) costs given an individual's current medication regimen and health status.[19] Overspending may be caused by a challenging Medicare Part D plan selection process, with individuals often selecting plans with inadequate medication coverage, higher-than-necessary premiums, large coverage gaps, or some combination of the three.

Errors in plan selection may be attributed to confusion caused by the large number of available plans, with the number of stand-alone Medicare Part D plans available in each state ranging from 25 (Alaska) to 35 (Texas) in 2021.[26] In the state of Iowa, eligible Medicare beneficiaries were required to select from 28 stand-alone Medicare Part D plans for 2021, only slightly below the national average of 30 prescription drug plans (PDPs) and 27 Medicare Advantage (MA) plans for the same year.[27] The number of available Medicare Part D plans across all states has steadily increased since 2017, with 996 available plans reported for 2021, a 33% increase over the 5 year period.[26] Furthermore, each Medicare Part D plan is allowed to have varying benefit designs (premiums, copayments, deductibles, etc.) provided that certain criteria are met, which makes plan selection increasingly challenging and contributes to beneficiary confusion.[18]

Medicare Part D plans are required to offer a standard benefit, which are indexed to change on annual bases based on the rate of Part D per capita spending and growth.[26] In addition or as an alternative to the standard benefit, Medicare Part D plan sponsors may offer plans that are equal in value to the standard benefit, also referred to as *actuarially equivalent*

plans. With typical Medicare Part D plans, enrollees pay a recurring monthly fee or "premium" to receive prescription medication benefits. Prescription medication benefits are comprised of various phases within a Medicare Part D plan that determine patient and insurer contributions for prescription medication costs.[26] The phases within a Medicare Part D insurance plan are sequential, with individuals progressing from the *deductible* phase, where individuals are responsible for the entirety or a large portion of their prescription medication coverage; to the *catastrophic coverage* phase, where individuals are only responsible for a relatively small coinsurance or copayment amount for each prescription filled. Prior to reaching the *catastrophic coverage* phase within a Medicare Part D plan, individuals must progress through two additional coverage phases, which may begin immediately if a Medicare Part D plan has no associated deductible. These coverage phases include *initial coverage* and the *coverage gap*, also known as the "donut hole." While the "donut hole" has recently closed[28,29], identifying how and when an individual will reach each stage in prescription medication coverage across many Medicare Part D plan benefit designs makes it challenging for patients to select a Medicare Part D plan.

In addition to the variations between plan benefit designs in any given year, beneficiary confusion may also be exacerbated by changes to plan benefit structure. Plan sponsors can make changes to benefit designs on a yearly basis, provided offered plans maintain actuarial equivalence when compared to the annually redefined standard benefit. For example, while the 2021 Part D base beneficiary premium of $33.06 was nearly identical to the base premium rate in 2020 (1% increase), there was considerable variation in premiums paid, both within and across states. In an example highlighted by the Kaiser Family Foundation, premiums for Part D plans in Florida ranged from $7.30 to $172 USD.[26] Further, with yearly changes to deductibles, initial coverage limits, and catastrophic coverage levels, it is increasingly apparent why changes to benefit design and structure may prevent Medicare-eligible beneficiaries from switching to more cost-effective plans during the annual open-enrollment period despite potential OOP cost savings.[19,30,31]

Finally, to process the variations between and across plans on a yearly basis, Medicare Part D beneficiaries are required to navigate a large amount of complex health information

effectively and efficiently, a process requiring high levels self-efficacy, health activation, and health insurance literacy. Previous research has shown that patients may find this process challenging to perform independently, and often require assistance when making their Medicare Part D plan selection.[18] Lack of plan switching may be attributed to or reinforced by patient inertia and uncertainty surrounding plan-switching decisions, frequently referred to as plan "stickiness."[18] Plan "stickiness" and patient inertia may be reduced when Medicare beneficiaries receive assistance from an individual experienced with the Medicare Part D plan-selection process.[32]

1.1.2 Community Pharmacies as Medicare Part D Resources

With a multitude of difficulties and challenges patients must overcome to select a Medicare Part D plan, community pharmacies and the Medicare Part D consultation services they offer have the potential to improve the patient experience with Part D plan selection and positively influence plan-switching behavior to minimize OOP costs for prescription medications.[7,9] Pharmacy personnel frequently assist patients with medication costs and insurance-related problems when dispensing medications, improving the likelihood that they can assist in the Medicare Part D plan-selection process.[33-35] In addition to expertise in insurance-related medication coverage, pharmacists and community pharmacies are considered trustworthy professionals[36,37]and are highly accessible[38,39], with the majority of Americans living in close proximity to at least one community pharmacy.[40]

Given pharmacists' insurance expertise, perceived trustworthiness, and accessibility, community pharmacy personnel can act as *helpers,* or individuals who assist Medicare beneficiaries with selecting their Medicare Part D plan. *Helpers* have been found to play an important role in plan-switching behavior, as the majority (88.9%) of individuals who switched Medicare Part D plans used a *helper* to inform their plan-switching decision.[18] In addition to assisting patients with their plan-switching decision, pharmacists may be well-equipped to help patients switch to lower-cost plan alternatives. Recent studies suggest that all patients who received a pharmacy-led Medicare Part D consultation service would experience cost savings after switching to a pharmacy-identified Medicare Part D plan.[8,9,31] Further, pharmacy-led Medicare Part D consultation services have the potential to improve disease state management

and health outcomes, as use of a Medicare Part D consultation service was positively associated with chronic medication adherence.[7] With the ability to not only assist patients in the Medicare Part D plan-selection process, but to help patients select plans that more appropriately meet their medication and health status needs, community pharmacies are among the most equipped to assist patients with a challenging Medicare Part D plan-selection process.

1.1.3 Service Offering Limitations

Despite the potential benefits of community pharmacy-led Medicare Part D consultation services, existing evidence suggests that many Medicare eligible or enrolled individuals inconsistently use pharmacists and pharmacy services for Medicare Part D information.[8,41] Individuals who choose to use a Medicare Part D consultation service and report positive experiences may not use the service in successive years, suggesting negative perceptions of service value or quality.[8] In an exploratory cross-sectional study comparing Medicare-eligible individuals who used and did not use a community pharmacy-led Medicare Part D consultation service for plan-selection assistance, the Medicare Part D consultation service resulted in a number of patient concerns which were not experienced by individuals who did not use the pharmacy service.[20] These concerns are potentially attributable to specific features of the Medicare Part D consultation service and patient preferences for service attributes including, but not limited to: the way information was presented, the communication style and techniques the service provider employed, patient ability to process complex health information, perceptions of pharmacy personnel trustworthiness, and expected pharmacist-patient relationship dynamic. In existing service offerings, pharmacists and pharmacy personnel often focus on presenting patients with a complete picture of the Medicare Part D plan-selection process, focusing on the number of available plans, each with their own benefit designs and associated costs. While pharmacies may focus their Medicare Part D consultation services on this information to improve transparency and facilitate patient choice, it may be detrimental to the patient decision-making process, with effects on patient trust and perceptions of service value or quality.[42]

When information is presented to patients in a way that may be difficult for them to understand, or when providers fail to establish trust with patients when assisting in complex

decisions, the patient experience may be negatively affected.[23,24] More specifically, previous work performed on consumer decision-making and patient-pharmacist relationships suggests that older individuals have difficulty trusting cost-related information and struggle to process complex health information associated with their Medicare Part D plan-selection process.[18,20,43] When trusting relationships are not present between patients and providers and/or cost and the complexities of the plan-selection process are emphasized within a Medicare Part D consultation service, it is reasonable to assume that older populations may leave the consultation experience uncertain, frustrated, and confused. To accommodate patients' preferences for information and communication style within Medicare Part D consultation services, there is need to reconsider how Medicare Part D consultations and other pharmacy service offerings are developed and delivered in the community setting.

1.1.4 A Potential Solution: Patient-Centered Service Design

To improve Medicare Part D consultation service offerings, aligning existing service attributes with patient preferences and abilities using a patient-centered service design approach may be useful. Since the passage of the Patient Protection and Affordable Care Act, there has been an increased focus on patient-centered care and patient-centered approaches to service design and refinement.[44] Patient-centered care uses a "holistic view of a patient's health, circumstances, and well-being in an effort to meet each patient's goals and needs to maintain or improve their health."[45] Patient-centeredness can be used to improve the quality of health care, focusing on the bio-psycho-social nuances associated within patient populations and groups.[46-50] Despite this increased focus, patient-centered care models continue to struggle with the inclusion of patient preferences into service offerings and clinical decision-making, as well as determining what is important to the patient, provider, and other stakeholders. These barriers to patient-centered care are exacerbated by limited patient preference information, inadequate trust and trustworthiness between patients and providers, and lacking patient-centeredness training and service design.[45]

To date, patient-centered pharmaceutical care has emphasized the roles of patient-pharmacist relationships, patient satisfaction, and pharmacist attitude and communication style.[24,51-55] Despite important contributions to patient-centered care and patient experience,

the effects of patient preference for community pharmacy service characteristics on patient health outcomes and experience are less explored.[56-59] To get closer to patient-centered care in the community pharmacy setting, patient preferences could be explicitly and quantitatively measured, detecting the effects of pharmacy/pharmacist attributes and patient-specific factors for patient preferences for service attributes to better meet patient needs and expectations. Further, formal evaluation of patient preferences for service offerings and service attributes may facilitate the identification of patient perceptions of service value and quality, which may be used to inform service design that encourages continued service use and developing more advanced frameworks and methods for evaluating community pharmacy service value.

1.2 Theoretical Framework

This study used an adapted version of the *SERVQUAL* framework, as proposed by Mirzaei et. al. in the community pharmacy setting[60], to identify pharmacy-led Medicare Part D consultation service components associated with service quality. Originally developed by Parasuraman, Zeithaml, and Barry in 1985, the *SERVQUAL* framework is a multi-dimensional instrument designed to measure consumer expectations and perceptions of service quality across five dimensions: *Reliability, Assurance, Tangibles, Empathy*, and *Responsiveness*.[61,62] In an adaptation to evaluate service quality in the community pharmacy setting, Mirzaei et. al. proposed that the quality of general service provided by community pharmacies is comprised of fifteen subdomains and four service quality domains: *Interpersonal, Technical, Administrative,* and *Environmental.*[60,63] The *SERVQUAL* framework has frequently been used in a wide variety of service industry settings, and while considerable debate surrounds the usefulness of scales developed to assess value using the *SERVQUAL* framework, the framework itself is one of the most consistently used for informing and structuring research initiatives focusing on the evaluation of healthcare service quality.[64-66] While *SERVQUAL* has been successfully adapted for use in evaluating quality of health services, existing models fail to incorporate the effect of patient-specific factors and preference on service expectations, quality, and value. As such, an additional expansion on the framework proposed by Mirzaei et. al. was used, accounting for a variety of patient-specific factors and preferences.

1.3 Study Rationale and Specific Aims

This study addressed several practical, theoretical, and methodological gaps in the existing literature. First, assessing patient-centeredness and patient preferences for community pharmacy services has historically been performed using satisfaction measures[67,68], often with variable methodologies and results. Patient satisfaction is complex and difficult to interpret, more so when there are few services or experiences to benchmark expectations.[67] As such, this study used a novel method to examine patient preferences when assessing enhanced pharmacy service value and quality. Including patient preferences and patient-specific factors which may influence preferences can facilitate individualized care based on needs and service expectations. Further, by quantifying patient preferences for enhanced community pharmacy services using part-worth utilities and willingness-to-pay (WTP), service attribute elements were identified that were important to patients and led to information which may be used to develop service bundles associated with a potentially acceptable patient cost. This allows community pharmacies to evaluate and expand services while receiving monetary reimbursement, an important component of sustainable pharmacy operation while gross margins for prescriptions continue to decline. By considering more proactive assessment of patient preference, these results can be used to inform practical recommendations for providing optimal patient-centered community pharmacy services.

Additionally, existing theoretical frameworks which have been proposed to evaluate service quality fail to consider patient preferences and underlying patient-specific factors which may influence patient perceptions of service value and quality. This study expands upon existing service quality theory to incorporate a thorough evaluation of patient preference and factors contributing to preferences for community pharmacy services into community pharmacy service quality theory. Incorporating patient preference into service quality theory more intentionally may provide a theoretical framework for objective service evaluation.

Finally, studies of community pharmacy services using stated preference methodologies are limited in number and by methodological concerns, with few studies specifically focusing on stated preference for community pharmacy services.[69-71] Existing stated preference studies in the community pharmacy setting have failed to identify attributes from the patient perspective,

with researchers selecting the service and pharmacy attributes they feel patients should value or associate with quality.[72-78] This study used qualitative interviews and a post-interview survey to identify patient-specific factors which may contribute to patient preferences for an enhanced community pharmacy service offering.

As community pharmacies continue to expand service offerings as members of enhanced practice networks and accountable care organizations, there is need for consistent and practical evaluations of service quality and value driven by service quality theory which accommodates and emphasizes patient preferences. Patient-centered service offerings must be available to maximize cost-benefit and patient uptake of pharmacy services. For these reasons, there is clear need to expand upon existing theory and methodology for consistent evaluation of patient preferences for service offerings to inform patient-centered service design.

1.3.1 Specific Aims

Given the existing literature surrounding Medicare Part D plan consultations and need for patient-centered assessment of preferences for pharmacy service attributes and offerings, this mixed-methods study achieved the following specific aims:

Specific Aim 1: To identify community pharmacy Medicare Part D consultation service attributes and patient-specific factors that increase patient perceptions of service value.
Specific Aim 2: To elicit Medicare-eligible community pharmacy patients' preferences for Medicare Part D consultations using part-worth utilities and marginal WTP.
Specific Aim 3: To explore the relationship between and effect of patient-specific factors on preferences for Medicare Part D consultation services offered at community pharmacies.
Specific Aim 4: To use qualitative and quantitative data integration to make recommendations for Medicare Part D consultation service development and offerings in the community pharmacy setting.

The long-term goal of this research was to use the findings to develop resources focused on best-practice recommendations for implementing sustainable and scalable Medicare Part D

consultation services into community pharmacies. Additionally, while this research focused on Medicare Part D consultation services, it also provided one method which may be used to evaluate other enhanced pharmacy service offerings using a patient-centered approach.

CHAPTER 2: LITERATURE REVIEW

The review of the literature begins with an overview of the evolution of pharmacy practice, moving from product-dispensing based community pharmacy practice settings to enhanced pharmacy service offerings and pharmaceutical care. Next, a review of existing enhanced pharmacy services will be presented, with emphasis on Medicare Part D consultation service offerings. This will be followed by a review of the patient-centered care literature, focusing on how patient-centered care has previously been considered in health care, community pharmacy practice, and pharmacy service offerings. Third, the review will focus on existing methods and theoretical frameworks for evaluating service quality and patient preferences while exploring the relationship between preference and quality. Finally, literature highlighting the patient-specific, contextual, and organizational factors that may contribute to patient perceptions of enhanced pharmacy service quality will be presented, with a proposed theoretical framework for community pharmacy-led Medicare Part D consultation patient-centered service quality depicted.

2.1 Pharmacy Practice: An Ongoing Transition from "Product-Centric" to "Patient-Centric" Care

To date, there have been four proposed eras of community pharmacy practice: Soda Fountain (1920-1949); Lick, Stick; Pour; and More (1950-1979), Pharmaceutical Care (1980-2009), and Post-Pharmaceutical Care (2010-Present).[79] Within each distinct era, the ongoing evolution of the pharmacists role in the healthcare system and necessity for innovation to meet community and patient need has remained constant. As manufacturing processes became more prominent, the need for pharmacy compounded prescriptions declined well through the 1900's[80], forcing community pharmacists to reconsider the professional identify of community pharmacy practice. As a result, community pharmacists and pharmacies continued to expand patient care roles in hospital and community settings.[81] During this time, the term "customers" transitioned to "patients" and the early concepts of pharmaceutical care took flight.[79] While large-scale practice model changes were still distant, the foundational work required to advance the profession into the patient care era had been established.

In the 1980's up until 2009, pharmacists continued their professional advancement in the patient care space through education[82,83] and practice expansion, including pharmacist-provided immunizations, prescription medication counseling, and early iterations of pharmaceutical care services which would later become medication therapy management (MTM).[84-86] Although select pharmacies were expanding services and engaged in research initiatives to explore the benefits of these services, uptake of pharmaceutical care services across the profession remained low. In 2009, at the end of the Pharmaceutical Care era, pharmacists reported spending a marginal 8-11% of their time providing patient care services, with 70-78% of time dedicated to dispensing activities.[87]

Progressing into the Post-Pharmaceutical Care era (2010-Present), the profession of pharmacy has found itself at another apparent crossroads. In recent years, community pharmacies have continued to see considerable decreases in third-party payer reimbursements for prescription medications in an increasingly complex reimbursement environment, with implications to pharmacy closures across the country.[1,2,88-91] Furthermore, community pharmacies have been forced to fill a larger volume of prescriptions, often with decreased staff, in order to maintain profit margins for medication dispensing activities.[2] These changes have made the provision and advancement of pharmaceutical care and enhanced pharmacy services particularly challenging. As constraints on prescription medication revenue have continued to tighten, community pharmacies have turned to leveraging patient care services with public and private payers, with hopes that innovative services may accomplish two predominant objectives: 1) improve healthcare quality and decrease spending by meeting community need and improving patient health outcomes and 2) establish alternative means of reimbursement and payment structures to remain profitable business entities.

In the Post-Pharmaceutical Care era, some community pharmacies have had success establishing value-based payment contracts with payers to improve medication-related quality measures and decrease total costs of care, providing high-quality baseline and additional enhanced services to subsets of insurance beneficiaries for additional compensation.[92] In addition to select value-based payment models, payers across the United States have implemented performance-based payment models, intended to reimburse community

pharmacies based on the quality of care beneficiaries received.[93-95] While increasingly common, the true effects of these payment models on healthcare quality and total healthcare costs is unclear.[93] Outside of their intended effects, performance-based payment models appear to increase community pharmacist frustration and contribute to reimbursement concerns.[93] These models may have expedited a shift towards expanded service offerings in the community pharmacy setting. In a study exploring the effects of performance-based payment models, many community pharmacy owners reported expanding existing enhanced services, including but not limited to: collaborative practice agreements, targeted medication reviews, and increased technician full-time equivalents devoted to medication dispensing and patient care services.[93] With many community pharmacists reporting expanding existing services, a smaller number of community pharmacists reported implementing new enhanced pharmacy services in response to performance-based payment models.[93] While performance-based payment models have had negative financial effects on pharmacy practice as reported by community pharmacists, their presence has encouraged a continued shift towards enhanced community pharmacy services and patient care.[93] Further, as public and private payers have emphasized and required additional pharmacy services like comprehensive medication review (CMR) within the Medicare Part D benefit, more pharmacies have begun offering enhanced pharmacy services.[93]

With the continued shift towards enhanced services and patient care in the community pharmacy setting, several organizational initiatives have supported community pharmacies in their efforts. The Community Pharmacy Enhanced Services Network (CPESN) has provided support in the modernization and expansion of enhanced pharmacy services, assisting pharmacies in the provision of core services: face-to-face access, medication reconciliation, clinical medication synchronization, immunizations, comprehensive medication reviews, and creating personal medication records.[96,97] Alongside these core services, CPESN USA requires that participating pharmacies help patients understand the importance of their medications, work with patients to resolve medication concerns, and address needs and develop patient-specific care plans to improve patient engagement and overall health. Patient-specific care plans show promise for increasing the pharmacist's role as patient-care providers.[98] Further,

developing and implementing patient-specific care plans has the potential to provide community pharmacies with an opportunity to bill third-party payers, such as Medicare Part B, for community pharmacy enhanced services.[99,100] Multiple federal legislative initiatives have been unsuccessfully introduced to grant pharmacists recognition as providers under Medicare Part B, allowing pharmacists to bill for enhanced services, which would create an essential reimbursement avenue for the sustainable provision of enhanced community pharmacy services.[100-102] Moving forward, provider status and other legislative initiatives will likely be necessary for community pharmacies to receive adequate reimbursement and billing opportunities to scale and sustain innovate enhanced services offered in the community setting.[103] Despite limited billing opportunities and continued difficulties with payer reimbursement for enhanced services, community pharmacies have continued innovation of enhanced community pharmacy services throughout the duration of the Post-Pharmaceutical era of community pharmacy practice.

2.2 Enhanced Community Pharmacy Services

Currently, a diverse array of community pharmacy services exist that extend beyond traditional roles of medication dispensing activities. Offered in a few countries, the increase in community pharmacy enhanced services can possibly be explained by several factors. As previously mentioned, performance-based reimbursement models in the United States have all but mandated community pharmacies expand or develop additional services to meet quality metrics and receive reimbursement.[93] Additionally, a small number of community pharmacies may have potentially identified community needs in areas where provider shortages and inadequate access to healthcare continue to exist, such as medically underserved areas (MUAs).[100,104,105] Some pharmacists and pharmacies have begun to identify patient-specific needs within their communities, considering the effects of social determinants when designing and refining community pharmacy-based services and interventions, which may be especially useful within MUAs.[106,107] Third, the general perceptions and expectations that patients have of community pharmacists may be changing. A study published in 2021 by Taylor, Cairns, and Glass suggests that patients, especially older patients located in rural settings, believe that pharmacists have the skills and knowledge to provide a wide variety of expanded or enhanced

services and that these services would help them to save money on doctor's visits.[108,109] Further, 96% of respondents suggested they would be supportive of a wide variety of expanded service offerings in their community pharmacy, and approximately 66% of respondents would be willing to pay for these services.[109] While there is still mixed evidence on patient perceptions of pharmacist involvement in untraditional roles[110], the evolution of the community pharmacist from shopkeeper to healthcare providers with medication-disease expertise has rapidly progressed.[111-113] With increasing community pharmacy service offerings and the evolution of patient perceptions of their community pharmacist, enhanced and expanded community pharmacy services may be more acceptable to, and in some instances preferred or requested by, the communities pharmacies serve.

Recent systematic reviews have focused on expanded practice in rural community pharmacies, with emphasis on current service offerings and opportunities for improvement.[3,108,114,115] In a review by Melton and Lai, fifty studies focusing on pharmacy interventions, assessments of a current service offering, or comparison between services were identified from 2006 to 2016.[3] Studies included for review were conducted in a diverse set of geographical locations, including but not limited to the United States, Uganda, Scotland, Spain, Denmark, and Australia.[3] The global prevalence of enhanced community pharmacy service offerings suggests that the need for and value of enhanced pharmacy services in the rural community setting are widely appreciated. Of the fifty studies identified, twenty-eight (56%) focused on more traditional community pharmacy services or services that were aligned with traditional roles of the community pharmacist, such as medication and disease state interventions focused on adherence. In addition to more traditional pharmacy services and interventions, 22 (44%) of the studies identified new service offerings reflecting enhanced practice settings and innovative technology-assisted community pharmacy services, such as memory screenings, sleep-apnea, transitions of care, intramuscular contraception injections, and health coaching. Similarly, Taylor, Cairns, and Glass identified twenty-nine studies focusing on expanded practice services in rural community pharmacy settings, emphasizing disease state-specific interventions.[108] These services, while outside the traditional pharmacy practice model, provide a strong body of evidence that community-based pharmacists are developing

and offering enhanced services designed to provide additional access to screening, testing, and management of acute and chronic conditions.

2.2.1 Community Pharmacy-led Medicare Part D Consultations

In addition to the enhanced community pharmacy services identified in the literature, a small number of community pharmacies within the United States have begun offering Medicare Part D consultation services. These services have helped to inform and facilitate Medicare Part D plan-switching behavior, identify potential patient OOP cost-savings, and increase chronic medication adherence.[7,31,33,41] These services vary in duration across pharmacies, with different pharmacists and pharmacy personnel emphasizing different Part D plan attributes or benefits. Additionally, some community pharmacies offering Medicare Part D plan consultations have been included within more traditional pharmacy services or clinical interventions, such comprehensive medication reviews (CMRs).[7,9]

In one community pharmacy setting, relatively few patients chose to use these services when actively recruited, despite the potential benefits.[7] Of the relatively few patients who chose to use these services, 23% did not repeatedly use a Medicare Part D consultation service, despite reporting positive service experiences.[8] In addition, only 2.8% of patients using the service in both years ultimately switched plans.[7] These results are potentially explained by an additional study of a community pharmacy-led Medicare Part D consultation service performed by Murry, Al-Khatib, and Witry, where the patient experience with selecting a Medicare Part D plan after using a Medicare Part D consultation service was evaluated using remote ethnography techniques.[21] Within the specific Medicare Part D consultation service, patients were exposed to large amounts of complex insurance benefit information, with particular emphasis on medication costs. Further, there were considerable variations within the service offering including who provided the service (pharmacist vs. pharmacy technician) and how the service was delivered (in-person vs. telephonically). Some patients appeared to greatly appreciate their experience with the consultation service, alluding to their preferences being met for the complexity of information they received and for the service provider and their communication style. Alternatively, a larger group of patients left the consultation experience with greater concern and uncertainty with their Medicare Part D plan selection, having

potentially obtained a newfound appreciation for the complexity and variety of available plans. The authors concluded that there may have been asymmetry between service offering and preference, feeling overwhelmed with information and struggling to trust the individual providing the consultation.[21] The authors conclude that variations in the patient experience may be attributable to patient specific-factors like health literacy, elaboration ability, and demographics all of which have varying effects on the patient experience with a Medicare Part D consultation service and their plan selection experience.[21]

Given the potential benefits of Medicare Part D consultation service offerings and asymmetry between patient needs and expectations of the Medicare Part D service and the service currently being offered, there is clear need to evaluate the components, processes, and outcomes of Medicare Part D consultation services to accommodate variations in the patient-specific factors which are likely to influence the patient experience with Medicare Part D consultation services offered in the community pharmacy setting. Alternatively known as the process of patient centered-service design or patient-centered care, developing services to accommodate patient-specific needs and preferences may improve patient perceptions of Medicare Part D service quality, improving intervention uptake, repeated use, and plan-switching behavior.[116-118] By designing patient-centered interventions, community pharmacies may be more equipped to accommodate patient needs while helping pharmacists and other health care providers to provide more individualized care, improving the physical and social well-being of the patients they serve.[119]

2.3 Patient-Centered Care

The concept of patient-centered care originated as early as the 1960s, with a proposed shift from an illness-centered model of care to increased emphasis on the patient.[120-122] Patient-centered care has been defined as care that is "respectful of and responsive to individual patient preferences, needs, values, and ensuring that patient values guide all clinical decisions."[50] More recently, the Robert Woods Johnson Foundation described the patient-centered care process as engaging individuals and their family members/care givers in informed or shared decision-making in partnership with their practitioners; respecting patient and family member preferences, values, and cultural and socioeconomic contexts.[45] Further, patient-

centered care focuses on identifying patient needs and preferences with the intention of engaging them in care and empowering them to make informed decisions.[120] A multifaceted approach to patient-centered care has been linked to improved health status, with better management of chronic illness and improved patient experiences while addressing racial, ethnic, and socioeconomic disparities.[123-126] The Institute of Medicine included patient-centered care as one of six core elements of high quality care, with a multitude of additional calls for changes in policy to focus on patient-centered care to follow.[120,127] Evidence for patient-centered care and policy recommendations likely contributed to the passage of the Patient Protection and Affordable Care Act, which created financial incentives for high-quality, patient-centered care.[128-130] With reimbursement more directly tied to quality measures, including patient experience and satisfaction, greater emphasis on patient-centered care encouraged one of the largest healthcare transformation initiatives in recent memory, with institutions and researchers focused on implementing and evaluating patient-centered care and patient experience more intentionally.[131]

An article by Boissy offers further exploration of what patient-centered care could mean in the decades to come, with emphasis on moving past patient satisfaction to redesign patient experience measurement and assessment focusing on understanding and appreciating the patient experience in its entirety.[131] At the Cleveland Clinic, generally positive patient experiences were not without difficulties and opportunities for improvement, as patient "pain points" were identified within medical practices and outpatient services.[131] Positive experiences depended upon patient perceptions of provider communication with patients and their overall sense of being cared for by doctors, staff, and nurses. Pain points were identified as the difficulties within the health care system (e.g., waiting for appointments) and lack of communication and empathy. To address the shortcomings of current offerings, Boissy recommends a patient experience approach for assessing patient-centered care, focusing on specific elements related to empathy, teamwork, communication, and ease within the patient experience. In order to effectively provide patient-centered care there is need to evaluate the systems and processes that patients currently experience and develop assessment tools and service design techniques to improve system-oriented patient centered care, as patient-

centered care has historically relied on the "individual heroes" and their abilities and skills without emphasis on delivery as a whole.[131]

Although emphasis on patient-centered care has increased in recent years, studies focusing on patient-centered care approaches and care delivery remain sparse. In a 2014 scoping review of patient-centered care approaches in healthcare by Constand at. al., nineteen articles were focused on patient-centered care, with only one article focusing on patient-centered pharmacy services.[132,133] The remainder of the articles highlighted patient-centered approaches in nursing and inpatient hospital settings, including psychiatry, surgery, palliative care, neurology, and geriatrics. Further, of the nineteen articles; twelve were reviews, five were qualitative research papers, one was a randomized control trial, and one was a prospective study.[133] From the review, a wide variety of patient-centered care frameworks were identified, with effective communication and patient partnership two domains that were consistently present. Articles also emphasized sharing information, compassionate and empowering care provision sensitive to patient needs and preferences, partnership between patients and providers, and relationship building. Similarly, the Robert Wood Johnson Foundation proposed a theoretical model for patient centered care comprised of four domains: *External Context, Health Care System, Care Team, and Patient*, with the *Patient* domain comprised of six subdomains comprised of *Care Preferences, Health Status & Symptoms, Access, Goals, Life Circumstances, and Values & Culture.* While no theoretical model has been consistently used, there is considerable overlap in the domains and subdomains thought to comprise patient-centered care, many of which apply to patient-centered care in community pharmacies and community pharmacy service offerings.

2.3.1 Patient-Centered Care and Community Pharmacy Services

Although emphasis on patient-centered care in the broader heath care service context has increased, enhanced community pharmacy services have inconsistently and infrequently adopted a patient-centered approach. In the community pharmacy space, few studies formally address patient-centered service design or evaluation. A study by Kibicho and Owczarzak is one of the earliest formal investigations of a patient-centered community pharmacy service evaluations and proposed frameworks.[132] Using qualitative interviews with community

pharmacies offering HIV patient care, a wide variety of HIV adherence support interventions were being offered. The authors emphasized the need to address the variation in these services and the inability to measure service attributes and patient outcomes. Additionally, recommendations for standardization and consistency of patient-centered pharmacy services would allow for evaluation of patient outcomes and health-care costs with opportunities to justify payer reimbursement. Most notably, the work generated a practical model for patient-centered care in community pharmacy services. The proposed model for patient-centered pharmacy service model focuses on five theoretical domains: Patient Contextualization (individual patient assessments), Customized Interventions (resolving patient barriers and multi-level interventions), Patient Empowerment (education, mental and physical adherence strategies), Provider Collaborations (readiness assessments, monitoring, resolution of socioeconomic barriers), and Sustained Relationships (continued monitoring of behavioral change). While Kibicho and Owczarzak focused on a theoretical framework for patient-centered community pharmacy services, there is limited existing literature focusing on practical considerations for developing and accessing community pharmacy patient-centered services. Studies suggesting patient-centered approaches for weight management[134] and medication adherence[135] incorporated elements of patient-centered care proposed by Kibicho and Owczarzak, such as patient assessments and continued monitoring of behavioral change, but consistently failed to assess patient preferences and socio-behavioral needs. Similarly, a study evaluating the effect of a patient-centered prescription drug label on adherence considered a number of patient-centered recommendations with mixed results.[136] Using guidance from national agencies and existing best-practices literature, prescription medication labels were redesigned, intended to accommodate patient needs. Although some changes in prescription medication adherence were noted in English-speaking, low health literacy groups with multiple medications, higher health literacy and non-English speaking groups did not experience such benefits. As a result, even when elements of patient-centered care frameworks are considered, benefits of community pharmacy services and interventions may be limited by patient-specific and environmental factors not accommodated by service or intervention design.

To date, patient-centered pharmaceutical care has primarily emphasized the roles of patient-pharmacist relationships, patient satisfaction, and pharmacist attitude and communication style.[24,51-55] Despite important contributions to patient-centered care and patient experience, the effects of community pharmacy service characteristics on patient health service experience are less explored.[56-59] Patient-centered care and service design may be especially important In older populations, with health needs and preferences varying over a substantive age range.[137] Existing research in patient-centered pharmaceutical care has focused on making changes to existing interventions or developing interventions intended to meet patient needs, often without accommodating patient preferences or appreciating the variations in patient-specific factors which may contribute to intervention success.[136,138,139] To achieve patient-centered care in the community pharmacy setting, patient preferences should be explicitly and quantitatively measured, detecting the effects of pharmacy/pharmacist attributes and patient preferences for service attributes to better meet patient needs and expectations. While patient-centered care has been a focal point of health care reform over the past ten years, several barriers have made implementing and assessing patient-centered care in the broader health care landscape and pharmacy practice a challenge.

2.3.2 Barriers to Patient-Centered Care

A 2019 report by Sinaiko et. al. in partnership with the Robert Wood Johnson foundation identified four key barriers to the delivery of patient-centered care in the U.S. health care system: 1) Missing Information and How to Collect It, 2) Inadequate Trust, Respect, and Trustworthy Exchange of Information, 3) Organizational Culture, and Clinicians' Training, Demographics, and Beliefs, and 4) Alignment of Incentives and Other Factors from the External Environment.[45]

First, to provide patient-centered care, we must understand the patient context, including their access to health care, health status and symptoms, life circumstances, values and culture, and goals and preferences. The article by Sinaiko et. al. suggests that while health status and symptoms are typically readily available, obtaining additional information related to other components of the patient context are particularly challenging. Information on access to care, life circumstances, values and culture, and goals and preferences are not systematically

captured within existing health systems, nor are they consistently operationalized in meaningful ways.[140,141] More specifically, patient preferences for service offerings and the extent to which patients are willing to engage in their care are infrequently collected, despite the importance of preferences in patient-centered care and the impact they may have on health service engagement.[142] As described by Kibicho and Owczarzak, patient preferences and context may be especially important when considering patient-centeredness in community pharmacy services, as both factors appear to be present in the domains of patient-centered pharmacy services: Patient Contextualization and Customized Interventions.[132]

The second barrier to patient-centered health care, as identified by Sinaiko et. al. is the lack of trust between patients and health care providers and the health care system. Patient trust is a foundational component of patient-centered care, as patient trust in providers and the health care system influences patient behavior and perceptions of care, including seeking medical care, adherence to recommended treatments, and improved satisfaction with health care experiences.[143] Additionally, patient trust has been consistently identified as one of the key principles of patient-centered care in the pharmacy specific literature. Worley at al. identified that patient trust is instrumental in moderating the relationship between patients and pharmacists.[23,24] Recent explorations Gregory and Austin have emphasized the importance of trust in the pharmacist-patient relationship, suggesting that patient trust is earned not conferred[144,145], with lower levels of patient trust potentially associated with sub-optimal health outcomes.[146-148] Patient trust may be especially important to delivering patient-centered care, as a recent evaluation of as enhanced community pharmacy service proposed trust to be an important factor in patient perceptions of service experience.[21]

Third, patient-centered care is limited by the organizational culture and clinicians' training, demographics, and beliefs. Specifically, Sinaiko et. al. highlights the importance of shared decision-making. The authors provide a specific example from the breast cancer literature where doctors make inaccurate assumptions about breast cancer patient preferences for care. In the context of enhanced community pharmacy services, pharmacists may be providing consultations based on their beliefs, focusing on the information and delivery from a perspective which differs considerably from that of a patient. As a result, pharmacists may be

providing information which is misaligned with patient preference, such as specific information about benefit design and medication costs. Further, patients may have preferences for enhanced community pharmacy service offerings or outcomes that are misaligned with pharmacist beliefs or perceptions regarding optimal plans. For situations of this nature, Sinaiko et. al. suggest that there may be an additional need in training and resources for clinicians about how to navigate encounters where patient preference for care are in conflict with optimal or guideline specific health care decisions.[45]

The fourth barrier to patient-centered care is alignment of incentives and other factors from the external environment. Sinaiko et. al. suggests that a patient-centered model for service reimbursement would result in health service provides receiving payment for services provided that accommodate patient preference and need (e.g., face-to-face or telehealth interventions are reimbursed equally based on patient preference and need), however, they acknowledge this is not the case. In their report, the authors consider a fee-for-service payment structure, incentivizing practitioners and organizations to avoid more time-consuming, patient-centered approaches.[45] While many community pharmacies are subject to performance and value-based reimbursement structures, misaligned incentives may still be present. Expanded or newly developed service offerings may be designed to address quality metrics that are directly tied to reimbursement rather than providing patient-centered care.[93,149] Potential examples of this misalignment are present in adherence measurements, where percent of days covered (PDC) has become a standard practice for assessing appropriate medication use, despite potential inaccuracies in their estimates.[150,151]

In addition to the barriers identified by Sinaiko et. al, community pharmacies face additional barriers to delivering patient-centered care. With increasing occupational demands and decreased pharmacy staffing, levels of pharmacist burnout, a work-related syndrome characterized by three elements: emotional exhaustion, depersonalization, and reduced feelings of personal accomplishment, has continued to rise.[152-154] Additionally, the COVID-19 pandemic has placed strain on community pharmacy practice, as community pharmacies were tasked with storage of vaccination materials and the development of wide-spread vaccination administration efforts, with effects on community pharmacy cognitive services and

burnout.[155,156] Further, the fragmentation of the current healthcare system prevents pharmacists from accessing important contextual information such as prescriber treatment plan, limiting the ability for pharmacists to provide patient-centered care.[157] Finally, pharmacists have been implicated as potential barriers to the delivery of patient-centered care, with lack of confidence, fear of new responsibilities, paralysis in the face of ambiguity, need for approval, and risk aversion identified as elements of professional and practice culture which may be preventing pharmacists from engaging in and delivering patient-centered care.[158]

2.3.3 Patient-Centered Service Design: An Opportunity to Improve Patient-Centered Care

With environmental, practice-oriented, and self-imposed barriers impeding pharmacist delivery of patient-centered care, a systems-level approach to patient centered care may facilitate the delivery of patient-centered care while minimizing the burdens and barriers associated with patient-centered care in the community pharmacy setting. One such systems-levels approach is patient-centered service design.

Patient-centered service design (alternatively, human-centered design) is an approach to developing services and interventions that focuses on engaging with and understanding the needs of all service users while retaining a systems perspective.[159] Including potential health service users in service development has the potential to assist in developing interventions patients would find acceptable an align with their preferences.[160] Although limited pharmacy-specific research exists, patient-centered service design has been used to develop interventions focused on communicating antibiotic resistance and effective use of antimicrobials in the community pharmacy setting.[161,162] Journey mapping, a process that facilitates a more holistic representation of the patient experience from the perspective of a particular user, visualizing the user's experience with a service or experience, and pinpointing distinct moments to redesign or improve[21,163,164], was recently used to evaluate the patient experience with a Medicare Part D consultation service offered in the community pharmacy setting, emphasizing the importance of patient-centered service design.

The recent focus on patient-centered service design has resulted in federal and independent organization efforts focusing on developing evidence-based interventions that are tailored to the individuals they are intended for.[128,130,165] Despite recent considerations for

enhanced community pharmacy services developed using a patient-centered approach, these services are frequently developed and offered based on pharmacist expertise or organizational initiatives. Further, there has been considerable debate surrounding the evaluation and assessment of patient-centeredness and individual experiences with enhanced community pharmacy services, most notably on the concept of patient satisfaction.

2.3.4 Measurement of Patient-Centered Services and Patient Preference

Historically, patient-centered care has been measured using items that represent a culmination of the care experience, such as patient satisfaction measures.[166-170] Originally proposed as an outcome of care by Donebedian[171], research has been done to explore the assessment and composition of satisfaction, with the complexity of patient satisfaction as a construct increasing over time.[172,173] In the larger context of health care services, patient satisfaction has been measured using a multitude of instruments, with the initial measurements performed using the "Satisfaction with Physician and Primary Care Scale," developed by Hulka et. al. in the 1970s.[174] Following, the 'Patient Satisfaction Questionnaire" developed by Ware et. al.[175] and the "Patient Satisfaction Scale," developed in Iowa by Larsen et. al. to test patient satisfaction with pharmaceutical care.[176,177] To date, patient satisfaction in the context of pharmacy and pharmacy service has been most thoroughly explored by Schommer and Kucukarslan, who proposed that patient satisfaction with pharmacy services is a result of four main conceptualizations: performance evaluation, disconfirmation of expectations, affect-based assessment, and equity-based assessment.[178,179] More recent approaches have been proposed to assess the experiential outcomes and patient-centeredness of health service interventions, such as Consumer Assessment of Healthcare Providers & Systems (CAHPS) surveys, which are designed to collect information on the patient experience with a range of health care services at multiple levels of the delivery system.[180-182]

Within community pharmacy intervention evaluations, patient satisfaction has maintained its status as one of the most popular focuses for patient experience and service quality research, using patient satisfaction as a complement to clinical outcomes to assess service quality. In the review of enhanced community pharmacy services by Melton and Lai, fifteen of the fifty studies identified focused specifically on patient satisfaction with enhanced

community pharmacy service.[3] Patient satisfaction, as a measure of humanistic rather than clinical outcomes, has important implications to enhanced community pharmacy service quality and value. Higher levels of patient satisfaction increases the likelihood that patients will continue using services, maintain relationships with health providers, and adhere to the treatments and medications their providers prescribe.[183]

2.3.5 Debate Surrounding Patient Satisfaction Measures

While clinical outcomes have been widely accepted as a measure of service quality and value, patient satisfaction has been subject to increased scrutiny, more specifically how it is measured and what it is measuring. The predominant patient satisfaction theories were originally published in the 1980s and quickly found a foothold in healthcare service evaluation.[172,173,184,185] Most notably, Donabedian proposed the *Healthcare Quality* theory, which postulates that satisfaction is the principle outcomes of the interpersonal process of care, suggesting that the expression of a patient's perception of service quality is represented by patient satisfaction.[171,186] In the broader healthcare literature, there have been a number of critiques on the usefulness and accuracy of patient satisfaction measures as a reflection of service quality.[67,187,188] Despite this increased scrutiny, patient satisfaction measures continue to be among the most common form of evaluating the patient experience with health and enhanced community pharmacy services.[3]

While satisfaction may adequately summate an individual's experience, it may be limited in its effectiveness for measuring patient-centered care.[131,168] In an article by Kupfer and Bond, the subtle but important differences between patient satisfaction and patient-centered care are thoughtfully presented.[168] The authors summarize that patient-centered care requires shared decision making, "elevating the values, preferences, and needs of the patient" above those of the provider or organization. Conversely, patient satisfaction is a measure of "how services or products of a company meet or exceed the anticipated expectations of the customer."[168] As such, to achieve patient satisfaction, a service provider or service does not need to accommodate patient preference but rather meet expectations. Further, while multiple existing studies have reported patient-centered care to be associated with improved satisfaction[167,189,190], a number of studies have highlighted inconsistencies in the relationship

between patient-centered care and patient satisfaction, either failing to identify a relationship or finding patient-centered care to decrease patient satisfaction.[191-193]

In a recent systematic review, Anufriyeva et. al.[194] concluded that the majority of self-reported patient satisfaction measures were valid and reliable despite the inherent biases (courtesy bias and Hawthorne effect) and subjectivity of these measures when used to assess quality of healthcare. The authors note that patient satisfaction may reflect personal expectations rather than quality of healthcare and may be influenced by patient-specific factors such as increased use of inpatient services, prescription medications, overall healthcare expenditure, and mortality risk. Despite reporting that most self-reported satisfaction measures were valid and reliable assessments of service quality, the authors refrain from making recommendations for the use of such measures and encourage the development of a unified satisfaction measurement standard.

All critiques emphasize that patient satisfaction is limited by inadequate conceptualization, that no universal definition is consistently applied to patient satisfaction, and inconsistencies in satisfaction measurement. Given the frequency with which satisfaction is used as a measure of enhanced pharmacy service quality, these criticisms have not gone unnoticed by pharmacy researchers, with much of the pharmacy-specific criticism coming from Panvelkar, Saini, and Armour and Melton and Lai.[195,196] Panvelkar, Saini, and Armour highlight two major concerns with existing literature on patient satisfaction related to instruments designed to measure satisfaction and how it is measured. First, patient satisfaction is lacking clear, theoretically informed instruments to measure patient's satisfaction, drawing attention to concerns regarding satisfaction as a valid and reproducible measure of the patient experience with enhanced pharmacy services.[67,197] Additionally, satisfaction is frequently measured post-intervention, without a baseline comparison group. The authors point out that in the few studies with available baseline measures, satisfaction was comparable before and after receiving a community pharmacy intervention.[197] These concerns suggest that existing measures of satisfaction may not only be inaccurate, but provide little information on the realized patient experience during and throughout a pharmacy encounter.

In addition to the criticism of Panvelkar, Saini, and Armour, Melton and Lai address the shortcomings of satisfaction in a number of studies focused on evaluating patient satisfaction with enhanced community pharmacy services.[3] In a study of pharmacist-consumer interactions surrounding complimentary medicines, patients reported high levels of satisfaction but had low expectations of their pharmacist, suggesting that patient expectations may have a greater effect on patient satisfaction than service experience. In a study evaluating patient satisfaction with a community pharmacy-led asthma management service, patient satisfaction was the same for both service-naïve and service-experienced groups, despite service experienced patients with more specific service preferences and higher expectations of their pharmacist. As patient exposure to pharmacy services increases, their expectations and preferences may become more well-defined or change based on previous experiences, influencing satisfaction without a change in service offering. Lastly, patient satisfaction may not be associated with specific attributes or experiences within a service, as pharmacist accessibility and other environmental factors may be tied to patient satisfaction.[198] As a result, patient satisfaction may be heavily influenced by service experience and changes or variation in patient preferences and expectations. Melton and Lai conclude their review emphasizing the need for additional or alternative measures for patient experience evaluation associated with enhanced community pharmacy service offerings.

Summarizing the criticisms, patient satisfaction may not reflect patient experience with community pharmacy services, but rather represent alternative factors like low patient expectations, bias towards high level of satisfaction, and naivety with service experience. Satisfaction measurements may change based on service exposure, with patient preferences for service offerings changing with increased service exposure and variation in patient-specific and environmental factors. Further, satisfaction has been described as a summary psychological state resulting when the emotions surrounding disconfirmed expectations is coupled with the consumer's prior feelings about the consumption experience, suggesting that satisfaction measures the specific experience with a singular interaction and not the value of the service as a whole.[199] In exploratory work used to inform service quality evaluation tools, individuals illustrated satisfaction in a number of service experiences while reporting that the service was

not of particularly high quality.[62] Given the existing concerns with patient-reported satisfaction measures, there may be solutions or alternative methods to evaluate the patient-centeredness of enhanced community pharmacy services. In doing so, health service providers and pharmacists can collect information that is reflective of the patient experience with the services they provide and will inform intervention development and refinement to accommodate everchanging patient preference and context.

2.3.6 Alternatives to Patient Satisfaction

Acknowledging the limitations of patient experience measurement provided by satisfaction assessments, there are several recommendations proposed. Alternative and multi-method approaches to measuring patient satisfaction are needed and should be based on expectations and preferences from the patient perspective and the service they are receiving. One way of assessing, refining, and evaluating the patient experience and humanistic outcomes associated with community pharmacy services is through a patient-centered approach that extends beyond traditional satisfaction measures frequently used in the community pharmacy enhanced service literature.

More recently, healthcare and community pharmacy researchers have explored patient experience as a potentially more useful measure of service quality.[21,118,200] Bull (2021) belabors this point, stressing that the lack of objectivity associated with patient satisfaction minimizes its usefulness as a means of quality evaluation, and encourages the use of patient-reported experience measures (PREMs) for more objective evaluations of service quality and identification of aspects of healthcare service that patients truly value.[200] In addition to patient experience measures, evaluating service quality from the perspective of the patient has been proposed as an objective measure of service offerings. Health service quality has been observed as a means for increasing patronage, profitability, and competitive advantage within the health care sector.[57,201-203] Additionally, health service quality has been shown to have positive associations with health service user's autonomy and experiences of care.[204] Domains of service quality have been shown to have significant associations with patient satisfaction the hospital setting, making patient perceptions of service quality a potentially useful tool for assessing patient experience and satisfaction with health services.[205] Within the pharmacy-specific

service quality literature patient experience instruments and journey mapping processes have been used to evaluate patient perceptions of service quality.[21,118] A recent study by Carter et. al. explored the relationship between perceptions of service quality with medication adherence in the community pharmacy setting, finding that patients who received high-quality pharmacy services reported increased medication adherence.[206] Given the outcomes associated with patient perceptions of service quality and the association between patient perceptions of service quality and medication adherence in the community pharmacy setting, evaluating patient perceptions of service quality may be more reflective of their experiences while considering patient-specific needs, preferences, and realized outcomes associated with enhanced community pharmacy services.

2.4 Service Quality Theory and Proposed Framework

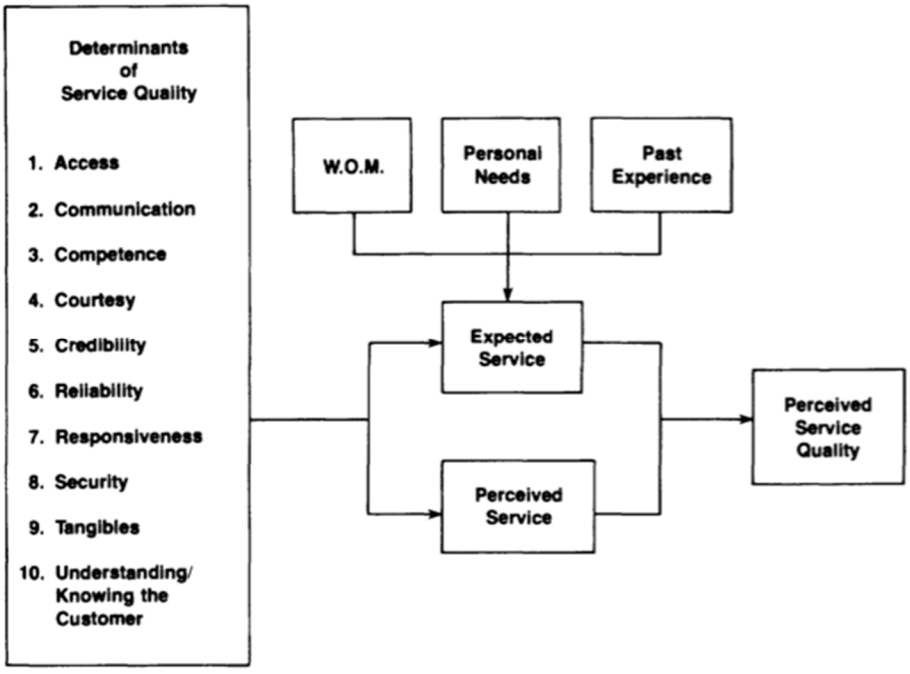
Perhaps the earliest conceptual model for service quality emerged from the marketing and consumer behavior literature and until the 1980's, had been largely undefined. Parasuraman, Zeithami, and Berry developed the Service Quality Model, which considered elements of the service experience and perceptions of service offerings from both the consumer and marketer perspective.[61,62,207] More specifically, perceived service quality from the consumer perspective can be derived from the summation of the consumer perception of the service offering and their expectations surrounding it. Service expectations are most immediately informed by individual personal needs, past experiences, and communication they receive from other service users. Consumers' perceived service is informed by the delivery of the service by the marketer, which encompasses all forward-facing contact the marketer has with the consumer (e.g., marketing materials, the service offering itself, and pre/post-contact or follow-up).

In addition to the factors contributing to service quality from the perspective of both the consumer and the marketer, Parasuraman, Zeithami, and Berry identified a few important gaps between consumers and marketers which may affect overall service quality values. Gaps can be found between the following components of the conceptual model: consumer expectation-management perceptions, management perception-service quality specification, service quality-specification-service delivery, service delivery-external communications, and expected

service-perceived service. These gaps can be summarized as asymmetry between consumer perceptions and expectations of the service offering and the service itself, either in its delivery or from the perspective of the marketer. Perhaps most importantly is the expected-service-perceived service gap, which is proposed as an overarching reflection of the other four gaps. To encourage continued service use and to increase service value, it is important to meet or exceed consumer expectations of the service. As such, it is necessary to understand the specific factors which contribute to expected service and perceived service components, which drive service quality.

In the original Service Quality Model, Parasuraman, Zeithami, and Berry determined that there are ten determinants of service quality: reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding/knowing the customer, and tangibles. A depiction of the relationship between determinants of service quality within the Service Quality Model can be found in Figure 1.[61,62,207]

Figure 1. Determinants of Service Quality proposed by Parasuraman, Zeithami, and Berry



2.5 SERVQUAL Framework and Scale

From the originally proposed Service Quality Model, Parasuraman, Zeithami, and Berry focused on developing the *SERVQUAL* framework and scale for measuring consumer perceptions of service quality comprised of 5 domains: *Tangibles, Reliability, Responsiveness, Assurance,* and *Empathy*.[61,207] The ten determinants of service quality were reduced to five dimensions after factor analysis and validation, with three of the dimensions (*Tangibles, Reliability, Responsiveness*) taken directly from the original Service Quality Model and two domains (*Assurance* and *Empathy)* comprised of factors originally associated with the other seven determinants of service quality. Specifically designed to guide evaluations of service quality, SERVQUAL offers a theoretical framework to appreciate patient preference and perceptions of service value and has previously been used to understand how quality is construed based on the perceived value derived from using a good or service.[208] Perceived quality has been defined as the consumer's judgment about an overall experience.[207] The domains and descriptions are detailed in Table 1.

Table 1. SERVQUAL Domains and Descriptions.[61,207]

SERVQUAL Domain	Description
Tangibles	Physical attributes of the location where a service or good is procured, or the appearance of the personnel providing that good or service.
Reliability	Ability to perform the promised service dependably and accurately.
Responsiveness	Willingness to help customers and provide prompt service.
Assurance	Knowledge and courtesy of employees and their ability to inspire trust and confidence.
Empathy	Caring, individualized attention the firm provides its customers.

Prior to use in healthcare service quality evaluation, the *SERVQUAL* framework was widely used in marketing literature, exploring a variety of services and consumer perceptions of service quality. While scales derived from the *SERVQUAL* framework have come under heavy

scrutiny, highlighting the complexity of the service quality construct and variation in service expectations, and lived experiences, the framework itself continues to be regarded as an important tool in defining service attributes and characteristics associated with service value. Within healthcare, the SERVQUAL scale and framework have been used sparingly and with considerably variability in the service quality evaluation, with inconsistencies in the number of dimensions necessary to effectively measures service quality. Importantly, there is general consensus that healthcare service quality should be considered a higher-order construct, with service quality determinants proposed in the *SERVQUAL* framework and scale important elements of health service quality.[60,66] To understand how *SERVQUAL* may be used to inform service quality evaluations of a community pharmacy led Medicare Part D consultation service, it is important to appreciate how *SERVQUAL* has been used and adapted within the health service quality literature.

2.5.1 Applications and Advancements of SERVQUAL in Health Service Quality

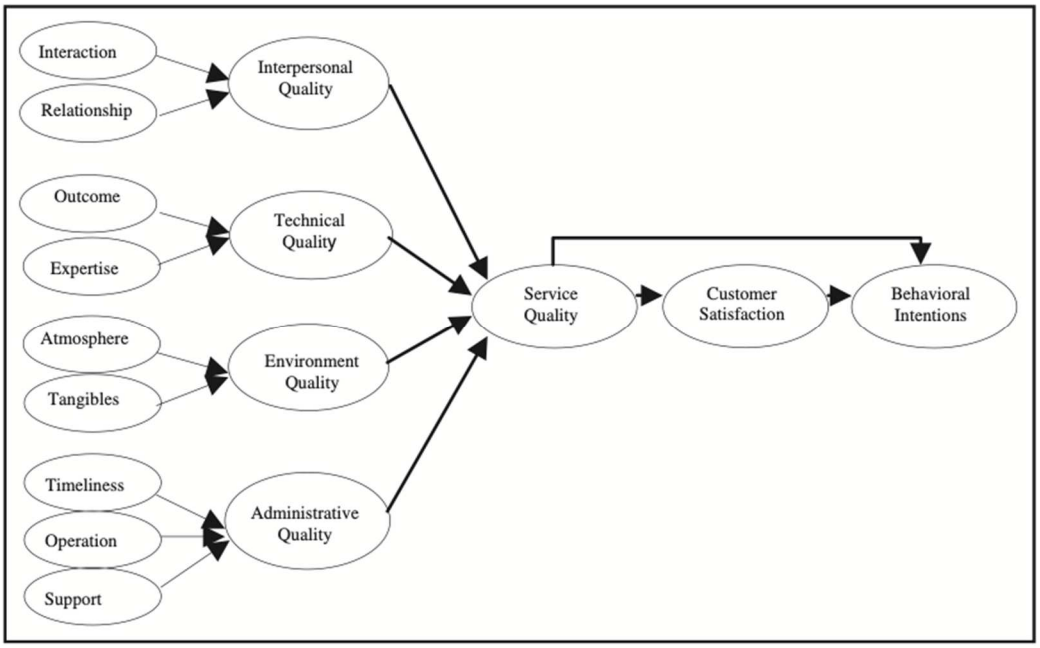
When considering the application of the *SERVQUAL* framework in the context of health care service, a wide variety of models exist.[209-214] In an attempt to develop an integrative model for predicting service satisfaction and behavioral intentions, Dagger, Sweeney, and Johnson[66] proposed a hierarchical health service model informed by *SERVQUAL* and other existing health service quality framework to develop a quality model focusing on four overarching domains of service quality: *Interpersonal Quality, Technical Quality, Environmental Quality,* and *Administrative Quality.* In addition to the four major domains of service quality in the proposed framework, nine subdomains are also proposed: *Relationship, Interaction, Outcome, Expertise, Atmosphere, Tangibles, Operation, Timeliness,* and *Support,* which exhibit considerable overlap to the previously introduced *SERVQUAL* framework.

Importantly, the theoretical framework proposed by Dagger, Sweeney, and Johnson emphasized the importance of context-specific service quality attributes, which prior versions of the *SERVQUAL* and other health care quality models did not consider. The four domains and associated definitions are included in Table 2, with a depiction of the Health Service Quality model illustrated in Figure 2.

Table 2. Domains of Health Service Quality and descriptions as proposed by Dagger, Sweeney, and Johnson

Health Service Quality Model Domains	Descriptions
Interpersonal Quality	Reflects the relationship and the dyadic interplay between service provider and user.
Technical Quality	Outcomes achieved and the technical competence of a service provider.
Environmental Quality	Complex mix of environmental features that shape consumer service perceptions.
Administrative Quality	Facilitation of a core service while adding value to the customer's use of the service.

Figure 2. Health Service Quality model proposed by Dagger, Sweeney, and Johnson



This model is important to note, as it simultaneously builds upon existing service quality frameworks while emphasizing important factors associated with health care service. First, it expands upon concepts originally introduced by Donabedian[186], that health service quality is driven by both technical and interpersonal delivery of services, or alternatively: the attributes

and characteristics of the service being offered (technical components) as well as emphasizing how the service was delivered to the patient (functional components).[215] Another important consideration is that Dagger, Sweeney, and Johnson identified and clarified the potential relationship between service quality, customer satisfaction, and behavioral intention. It may be argued that behavioral intentions are a crucial element of health service evaluation, as the intended goal of health services design and evaluation is to not only develop and offer health services with positive clinical outcomes but to encourage patients to use them initially and repeatedly. As such, including behavioral intent and the relationship between satisfaction and service quality is meaningful within the context of health service quality evaluation. The authors found that service quality perceptions had a large influence on service satisfaction in both the exploratory and confirmatory analysis, that service quality had a significant and large impact on behavioral intention, and that service quality perceptions mediated the relationship between the primary dimensions of service quality and behavioral intentions, suggesting that service quality may be an appropriate focus of evaluation to understand patterns in health care service use and uptake.

More recently, the *SERVQUAL* framework and the proposed model for Health Service Quality proposed by Dagger, Sweeney, and Johnson have been used to explore general community pharmacy service quality, with increased use in a wide variety of healthcare service value assessments. An expanded *SERVQUAL* framework and questionnaire for community pharmacy services in Australia was developed by Mirzaei et. al.[60] and validated by Grew et. al.[63] in 2019. The model maintains the original four domains proposed by Dagger, Sweeney, and Johnson, expanding upon the subdomains to accurately reflect patient preferences and perceptions of service quality in the community pharmacy setting.

Using qualitative interviews and exploratory factor analysis, the authors expanded upon six domains associated with service quality in healthcare: interpersonal quality, technical quality, environmental quality, and administrative quality. From qualitative interviews, Mirzaei et. al. identified that interpersonal quality associated with community pharmacy services was comprised of four overlapping sub-dimensions: trusting relationships, interaction,

friendliness/helpfulness, and availability. The study further identified that interpersonal quality sub-dimensions were among the most frequently mentioned components of service quality.

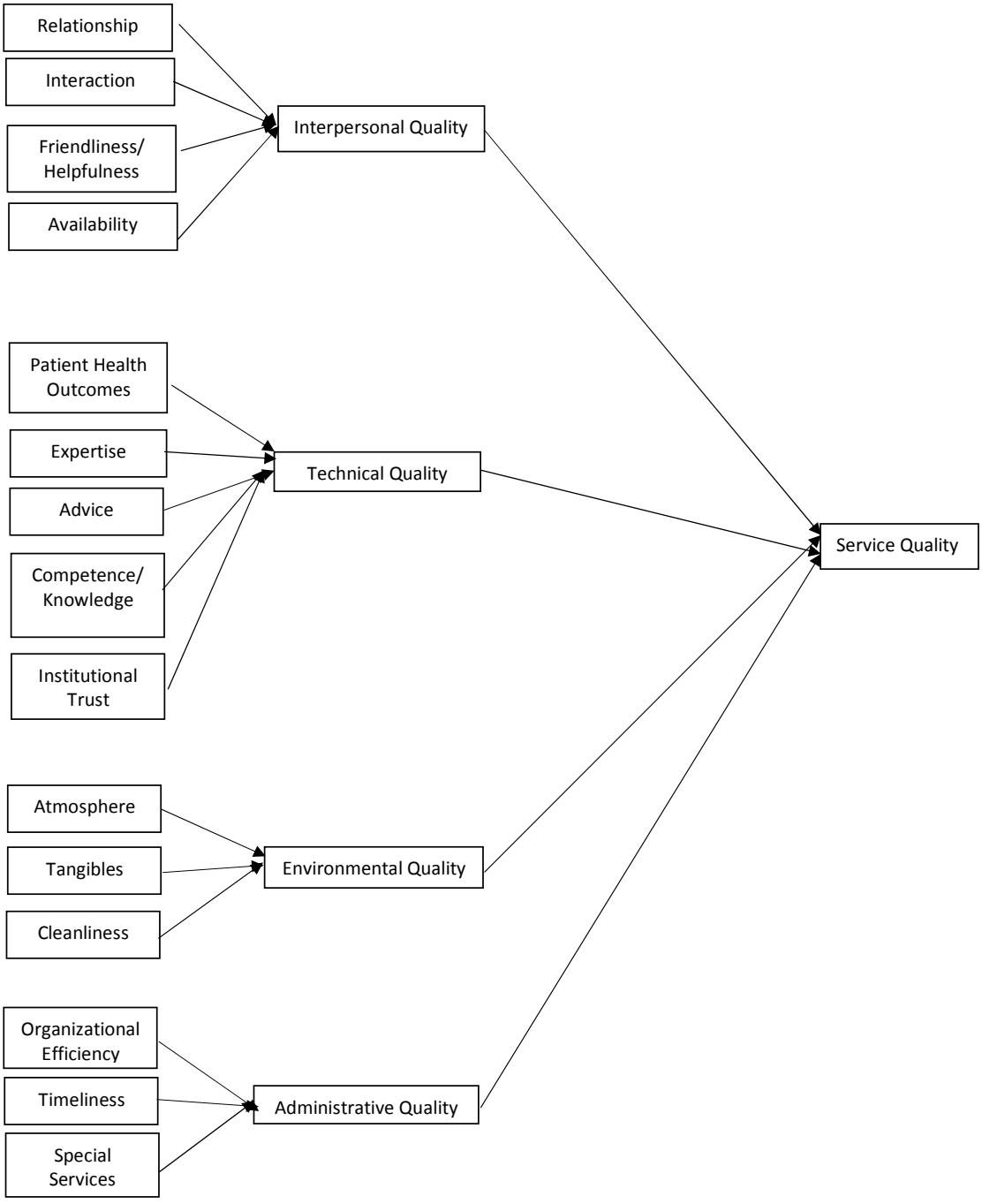
In addition to interpersonal quality, Mirzaei et. al further identified that technical quality was comprised of five-sub dimensions: advice, expertise, competence/knowledge, patient health outcome, and institutional trust. Reflective of early service quality work by Donabedian[171,186,216], technical quality reflects the outcomes of patient service use in addition their reflective beliefs surrounding the service experience. In existing literature, technical quality appears to be associated with behavioral intentions, potentially encouraging individuals to return to receive pharmaceutical care.[215,217]

The environmental quality domain of service quality was found to be comprised of three sub-domains: atmosphere, cleanliness, and tangibles. While environment has historically been considered an important component of service quality, the work by Mirzaei et. al. suggests environmental quality may be of lower importance for quality evaluations within the community pharmacy context. During qualitative interviews, environmental components or factors associated with pharmacy quality were infrequently mentioned unless prompted.

The administrative quality, although of potentially lower importance to patients when assessing pharmacy and service quality, was comprised of three domains: timeliness, organizational efficiency, and special services. Special services positively were identified as a factor contributing to the administrative domain of community pharmacy service quality, suggesting that special services may be inherently associated with quality. While the instrument was validated in Australia community pharmacies and may not directly transfer to community pharmacy services in the United States, the expanded *SERVQUAL* framework is well suited for specific community pharmacy service evaluation, such as Medicare Part D consultations. Importantly, the expanded model proposed by Mirzaei et. al. is included in Figure 3.

By combining domains known to be associated with service quality and emphasizing factors which may contribute to patient preference for these domains, high quality, patient-centered service offerings may be realized.

Figure 3. Model of community pharmacy service quality proposed by Mirzaei et. al.[60]



2.6 Factors Contributing to Community Pharmacy Medicare Part D Service Quality

Guided by the Service Quality Model and the iterations of the SERVQUAL framework proposed to evaluate health service and community pharmacy service quality, multiple factors that may contribute to perceived community pharmacy service quality. More specifically, service quality may be influenced by patient specific needs and factors, as well as patient-specific preferences for the interpersonal, technical, environmental, and administrative factors associated with service quality. Factors associated within each domain of health and community pharmacy service quality are likely to vary across and between individuals, as patient preference is likely to vary based on specific patient needs and service expectations. Further, patient preference may influence the intrinsic value of community pharmacy service value, as intrinsically valuable states are connected to our preferences being satisfied.[218] When considering service value in the context of patient-centered service design, services that provide clinically important outcomes as well as improve experiential outcomes may be considered higher value when compared to services that fail to accommodate both. When patient preferences for service attributes and service expectations align with the delivered service offering, these services are likely to be of higher value from the patient-centered view.

To better understand the contributions that each factor within existing service value models may contribute to community pharmacy Medicare Part D consultation services, it is necessary to consider the distinct categories of factors that may affect patient preferences for Medicare Part D consultation service offerings: patient-specific and service-offering specific. First, patient-specific factors contributing to patient preference and subsequently should be considered, specifically personal needs and experience with Medicare Part D consultation services offered in the community pharmacy setting.

2.6.1 Patient-Specific Factors and Past Service Experience

When considering the patient-specific factors associated with patient preference for and value of Medicare Part D consultation services, it is necessary to consider their experience with specific service as well as the needs, individual abilities, and preferences for the service

offering. Patient-specific factors are likely to influence preferences for service offerings and the specific attributes these services are comprised of.

2.6.2 Health Literacy and Health Insurance Literacy

Murry, Al-Khatib, and Witry found that patient preferences for Medicare Part D consultation service offerings may be influenced by patient ability to process complex health information.[21] Individual preferences for and ability to process complex Medicare Part D plan information is further emphasized as an important factor in the plan-selection experience by Han and Urmie, where greater information processing ability was positively associated with plan-switching behavior.[18] Information processing may be reflected in patient health literacy, or "the degree to which individuals have the ability to find, understand, and use information and services to inform health related decisions and actions for themselves and others."[219] This new definition of health literacy was proposed in August 2020 as a component of Healthy People 2030, and emphasizes that health literacy extends beyond patient understanding of health-related information but their ability to operationalize it.[220] Further, Healthy People 2030 has expanded on the idea of organizational health literacy, where organizations are responsible for providing information in a way that patients can both interpret and use to make informed health decisions.[220] Within the Medicare Part D context, it is clear that while patients may understand the insurance information they obtain, either independently or from a pharmacist, many patients continue to struggle use this information to change or select an optimal Medicare Part D plan.[18,32]

Historically, health literacy has focused on comprehension of complex health information, with a number of items and measurement tools developed to evaluate health literacy in a number of pharmacy and health-related contexts.[221-224] Perhaps most known are the Short and Original Test of Functional Health Literacy and Adults and the Newest Vital Sign, where individuals are required to interpret the nutritional content of ice cream.[225] While these tools have shown to accurately measure patient ability to comprehend and interpret health information, they fail to assess patient comfort and ability to use collected information to make an informed decision. Further, these items may not reflect health insurance literacy, as health insurance is equivocally complex with its own jargon and benefit design. Considering these

complexities, Paez et. al. developed and validated the Health Insurance Literacy Measure (HILM) using psychometric evaluation with a national probability sample of the adult, U.S population.[226] Despite its conceptualization well before Healthy People 2030 and newly defined health literacy terminology, this two-part scale focuses on operationalization of information based on two specific domains: *Choosing Insurance* and *Using Insurance*. While older populations have comprised a smaller percentage of the total sample in existing studies using the HILM, the HILM is the only existing measure of health insurance literacy which has been validated in the literature.[227-229] While the HILM has been discussed in the pharmacy literature, it has yet to be applied in a pharmacy-specific study.[230]

2.6.3 Sociodemographic Information and Past-Service Experience

Additionally, a number of studies have identified factors which may contribute to variations in patient experience when using a Medicare Part D consultation service in the community pharmacy setting.[8,21] Murry, Al-Khatib, and Witry identified that variations in income may contribute to community pharmacy Medicare Part D consultation service use, with lower-income individuals using community pharmacy services to select Medicare Part D plans.[21] Additionally, there may be gender-specific variations in service preferences, as women make approximately 80% of the health care decisions for their families, which is reflected in Medicare Part D plan-selection and service use literature.[231,232]

Further, varying degrees of patient activation and urbanicity may influence preferences for Medicare Part D consultation services, specifically the expectations the patient has in the role they play in the plan-selection process and the role of their pharmacy. Patient activation differs from patient engagement and is defined as: “a measure of an individual’s understanding, competence, and willingness to participate in care decisions and processes.” Patient activation is associated with health outcomes and patient perceptions of care experiences and has been linked to patient comprehension of health-related information.[233-235] Urbanicity may influence the preferences for community pharmacy service offerings in multiple ways. A recent narrative systematic review conducted by Howarth, Peterson, and Jackson identified that rural pharmacists are potentially more willing to adopt new professional roles and deliver higher levels of service. In a study evaluating practice differences between rural and urban pharmacies

located in Iowa and North Dakota, USA, there were significant variations in the types of services offered, with rural pharmacies offering a wider variety of enhanced services more frequently.[236] Additionally, rural patients were found to be more willing to seek advice and were willing to engage in encounters that were longer in duration.[237] Urbanicity has also shown to influence patient satisfaction with and priorities for their community pharmacies.[238] Past experience may have a significant effect on service attribute preference and expected service offerings, as patient preferences may change as service-naive individuals obtain greater exposure to service offerings.[239]

2.6.4 Service-Specific Factors to Service Quality

When considering the determinants of pharmacy quality which may be affected by service specific offerings, there are several determinants which may have relevance to the quality of Medicare Part D consulting service offerings. The identified dimensions of interpersonal quality and their contributions to service quality are consistent in other community pharmacy patient experience and consumer behavior literature. Key factors contributing to relationship commitment, or continued pharmacy patronage and service use, are patient trust and satisfaction. Further, low levels of trust in healthcare provider negatively affect service use. In the older Medicare Part D population specifically, the effects of trust on service experience and service quality are further amplified. When using existing Medicare Part D consultation services in the community pharmacy setting, the patient experience is heavily influenced by trust and additional interpersonal heuristics, especially when patients struggle to engage in and process complex health information. Further described in the persuasive messaging and theory literature, individual decision-making and persuasive messaging effectiveness depend on an individual ability to elaborate, or process complex health information.[240] When faced with challenging healthcare decisions and high-order elaboration requirements, the Medicare Part D population appears to struggle with information processing, and often resort to pharmacist attributes and heuristics like trust to make their Medicare Part D plan decisions. Further, older populations have trouble trusting information with financial implications.[43] Given that Medicare Part D plan selection information focuses heavily on

insurance benefit designs and cost-structures, community pharmacies may have difficulties presenting complex Part D benefit information in a way that elicits patient trust.

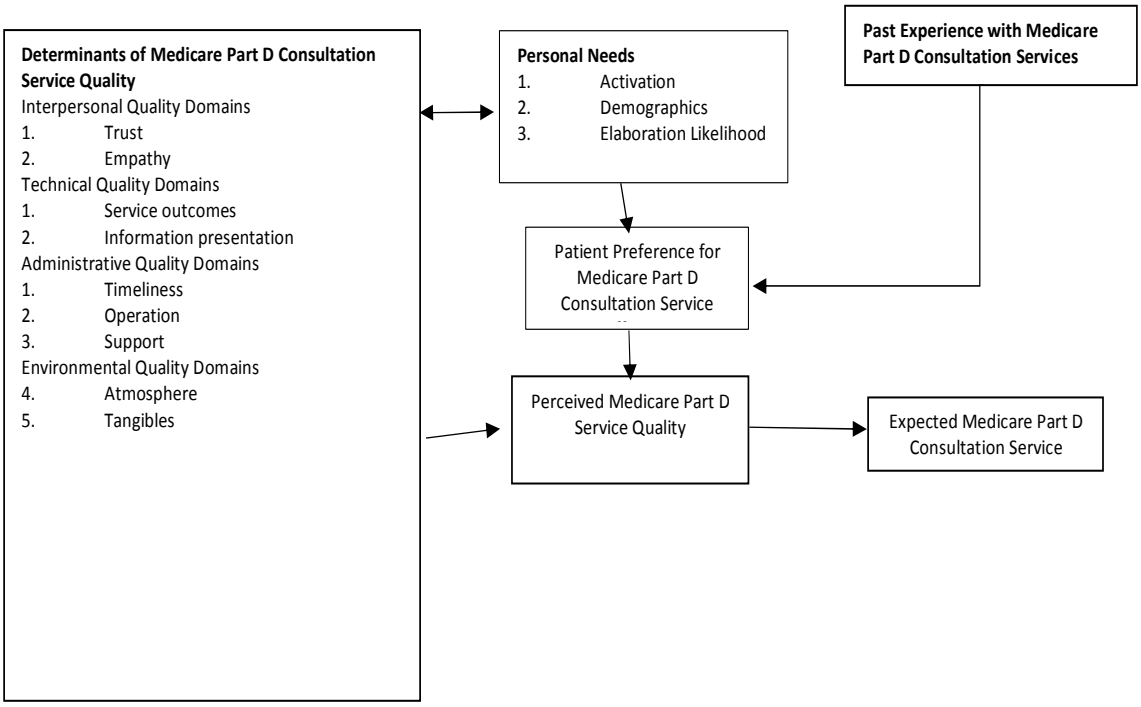
In existing Medicare Part D consultation service, there are factors within the technical quality domain that may vary across individuals and reflect service quality. Patients who use Medicare Part D consultation services appear to have different expectations surrounding the outcomes associated with the intervention as well as the types of information they receive. Existing community pharmacy services appear to emphasize specific plan attribute and cost information, including the cost of specific medication and premiums associated with a large number of available plans.[7,8,21] While some patients preferred the detailed and comprehensive information provided by this service offering, offering Medicare Part D consultation services in this capacity seems to be in direct contrast to patient preferences for plan-selection outcomes, decreasing convenience and increasing uncertainty. Further, patients varied in their preference for service outcome, with some individuals preferring that a Medicare Part D plan decision would be made for them, where others preferred to make the decision independently after receiving the consultations.

While less work has focused on the administrative and environmental quality domains within Medicare Part D consultation services and the potential effect on service quality, it is reasonable to assume that specific patient populations may identify elements within these quality domains they associate with service quality. Patients may have preferences for environmental quality domain components, with some patients potentially preferring in-person service offerings compared to telephonic offerings. Further, patients may vary in the amount of support they require at various stages in the Medicare Part D plan-selection process, as depicted in a study journey mapping the patient experience with the Medicare Part D plan-selection process.[21] Further, studies of other pharmacy services have identified variations in the preferences for service duration, in addition to the support provided after service completion.[241]

With clear implications to the Medicare Part D plan-selection experience and perceptions of service value, interpersonal quality as proposed by Mirzaei et. al. appears to be an appropriate guide for assessing patient perceptions of value associated with existing

Medicare Part D consultation services.[60] Patient-specific factors and preferences are important considerations for developing patient-centered services, which have historically been inadequately incorporated into evaluations of community pharmacy service quality. Figure 5 provides a proposed theoretical framework for how patient-specific factors and past service experience may influence patient preferences for Medicare Part D consultation offerings, with subsequent effects on their perceptions of service quality.

Figure 4. Proposed theoretical framework for factors contributing to perceived service quality of patient-centered Medicare Part D consultation services.



2.7 Evaluating Patient Preferences and Enhanced Pharmacy Service Quality to Inform Patient-Centered Service Design

To design patient-centered services, it is evident that patient preferences for service offerings and determinants of these preferences should be included in service evaluation. In addition to identifying determinants of patient preference, an essential component of patient-centered service design is quantifying the overall and relative importance of each service attribute. By evaluating both the determinants of preference and the relative preferences for

service attributes across patient-specific attributes, we are more likely to understand how service offerings can be adjusted on an individual patient level to accommodate a wide variety of patient needs.

In the healthcare context, patient preference has been referred to as the relative importance of one management option or outcome related to health over another.[242,243] Referring specifically to pharmacy service offerings, one could consider patient preferences to be the relative importance of one or more service offering attributes over another. Patients may have preferences for the types of information they receive, communication styles, and outcomes related to a pharmacy service offering. As patient preferences become increasingly important to successful service offerings and shared decision-making[244], gaining a better understanding for patient service preferences may have considerable implications to service use and quality perceptions.

When considering patient preference, there are two predominant types: stated preference and revealed preference. Revealed preference, as originally proposed by Samuelson, involves the exploration of preferences through actions.[245] Revealed preference is an indirect evaluation of preference, using actions within comparable markets to appreciate individual preference. Alternatively, individuals can be asked to report preferences in hypothetical markets, also known as "stated preference," techniques. Stated preference techniques may be favorable to revealed preference techniques in health service-related research for several reasons. First, as many aspects of healthcare are not explicitly traded and are heavily subsidized via health insurance and/or other payment mechanisms, it may not be possible to accurately assess patient preference through revealed preference. Additionally, the agency relationship between health service provider and patient is asymmetric, with the service provider having a better appreciation for the nature of the patient's health and potential outcomes of health care, preventing patient consumption decisions to be purely based on preference. Lastly, stated preference data provides information on current preferences and the scenarios and choice offerings can be controlled a priori, giving the researcher greater control over the theoretical model and its specifications.[246] The two best known methods for assigning

monetary estimates to patient preferences via stated preference techniques are contingent valuation methods (CVMs) and discrete choice experiments (DCEs).

Studies using CVM employ a choice-based approach to value benefits, where individuals are explicitly or directly asked to select a monetary value, they would be willing to pay (WTP) for specific goods or services. A 2018 systematic review identified 31 studies that have been completed using WTP methods to assess patient perception of quality of pharmacy services from 1999 to 2017. Of the 31 studies, 29 used contingent valuation survey methods to elicit levels of monetary valuation for non-market good or services. In contingent valuation studies, participants are presented with a detailed description of a good or service and asked to assign a specific hypothetical monetary value or value level.[247] Despite the prevalent use of CVM within health service and community pharmacy research, there are several known biases which limit the usefulness of CVM to assess value of a good or service as a whole. First, biased value measures within CVM means that responses are either under-sensitive to manipulations that should affect them (e.g., considerable changes to the good or service are not reflected in WTP values) or are too sensitive, with valuation affected too dramatically by relatively insignificant changes in levels or survey design elements such as question order or formatting. Further, assigning value to a health service may be particularly challenging to individuals naive to the health service or when the health service of intertest is poorly defined. Lastly, while CVM provide information about service or good valuation as a whole, they do not provide specific information about specific elements within the service offering. When ill-defined services without market standards and specific attribute levels are of interest, DCEs may be a more appropriate method for evaluating patient preference and service valuation.

Discrete Choice Experiments (DCEs) (with more historical variations in methodology referred to as conjoint analysis[242]) have been used to identify pharmacy and pharmacy service specific factors that explore patient preference and value for multiple combinations of service attributes.[69,77] In order to assess preference, patient may be asked to choose between two service offerings with variations in each offering, as a means to indirectly assess value across and between service attribute levels. DCEs may be of particular value when exploring which elements of a specific good or service patient's find valuable, relative to other attributes, given

that health care decisions are often complex and require patients to weigh a variety of factors such as benefits, costs, and uncertainties.[76,77,248-250] Further, DCE studies are often best used in situations where the market for a good or service is undeveloped, but there is a clear and consistent product available for consumption.[251] As previously noted, enhanced community pharmacy services are inconsistently offered and have varying benefits and service designs, making DCEs especially valuable for community pharmacy service evaluation.

2.7.1 DCEs in the Community Pharmacy Setting

Among the earliest studies using DCE methodology for value elicitation in the community pharmacy setting, Hong et. al. (2011) assessed patient preferences on Medicare medication therapy management (MTM).[252] Focusing on the specific service attributes, the authors explored patient preferences for service setting, provider geriatric experience, provider years of practice, provider type, number of drug therapy problems, service duration, and costs. More recently, a DCE was used by Porteous et. al. to assess the specific attributes of community pharmacies that patients preferred when dealing with a minor ailment, with the authors focusing on patient preferences for both interpersonal and service offering attributes.[75] DCEs have also been used to evaluate patient preferences for objective quality metrics in the community pharmacy setting[73] and payer preferences and WTP for genomic precision medicine.[72] Most recently, DCEs were recommended as a method to evaluate patient medication adherence in the community pharmacy setting.[253] As such, DCEs may be of particular use when evaluating patient preferences for pharmacy service attributes. While several contingent valuation studies have been performed to assign value to pharmacy services, there are many limitations inherent to contingent valuation studies, as well as specific study limitations, that must be addressed.

In the existing pharmacy service literature using a stated preference method such as CVM or DCE, few studies follow the specific guidelines recommended[254] for rigorous and valid stated preference WTP studies. Guidelines recommend several essential and often overlooked experimental design components to assure accurate and informative results: testing and accounting for scope, hypothetical bias, using polychotomous or dichotomous choice for WTP values, and thorough analysis of predictive variables on WTP values. WTP studies have received

the most criticism for failures to address and adjust for hypothetical bias. Hypothetical bias is the phenomena of individuals "overvaluing" a service due to the fact that they will not actually be paying for the good or service of interest, which frequently results in artificially high service valuation.[71] Along similar lines, contingent valuation studies have long been used to understand patient-specific factors that contribute to WTP, but have not resulted in consistent patient payment or policy allowing for continued billing of services by pharmacists in the community setting. Furthermore, contingent valuation studies successfully identify patient and environmental factors that may contribute to WTP but fail to accurately evaluate patient preference between different service or product attributes. As Medicare Part D and other community pharmacy enhanced services frequently vary across practice settings and pharmacist providing the service, evaluating one consistent set of service attributes may be less useful for evaluating a broad array of patient preferences and service attributes.

Despite the limitations in community pharmacy DCEs identified in the literature, addressing such limitations allows DCEs to provide exceptional information related to service attribute utility, patient preference, and perhaps most importantly, WTP. When cost estimates are included in the experimental design, by way of WTP, it is feasible to use these WTP estimates in cost-benefit and cost-utility analysis for comparative healthcare analysis.[78] Cost-benefit and cost-utility analysis remain as driving forces behind large-scale service uptake and payment[255-257], and may be an essential element of justifying reimbursement for community pharmacy enhanced services. In addition to overall WTP values, WTP may be treated as a continuous variable in DCEs[72], which is not recommended in contingent valuation studies. This allows for monetary value to be assigned for specific community pharmacy service attribute, potentially allowing pharmacy owners to more accurately evaluate opportunity cost and time required to offer specific elements of an intervention. Furthermore, DCEs provide more detailed information surrounding patient preferences than contingent valuation WTP studies, allowing for study results to be used pragmatically, refining, and developing new or existing interventions in need of improvement. Considering the inherent value in DCE methods for detailed evaluations of patient preference and quantifying service value and the recent developments and recommendations to address limitations in existing study methods, DCE

methods may be especially valuable to evaluate patient preferences for Medicare Part D consultation services offered in the community pharmacy setting.

2.8 Knowledge Gap and Contribution to the Literature

From the existing literature, there are several practical, theoretical, and methodological gaps in evaluations of community pharmacy service and patient-centeredness the proposed study will address. First, while there has been increased emphasis on designing and implementing patient-centered services because of federal policy and organizational recommendations, operationalizing patient-centered care in the community pharmacy setting has remained a challenge. This is due, in part, to inconsistencies in the definitions, theoretical constructs, and measurement tools used to assess patient-centered care. In existing evaluations of service quality and patient-centered evaluation, patient-centeredness is most frequently measured using patient reported measures of satisfaction. While satisfaction may be sufficient for exploratory or introductory evaluations of service quality, it often fails to capture the complexity of the patient experience with community pharmacy services. This study proposes a practical approach to consistently identify and evaluate patient-preferred service attributes associated with pharmacy service quality across a wide variety of patient factors.

Additionally, this study makes important theoretical contributions by expanding on existing frameworks for community pharmacy service quality evaluation. The proposed study emphasizes the importance of determinants of patient preference for service offering attributes, including activation, elaboration, and demographics. Existing frameworks emphasize the importance of service attributes on service quality, but inadequately assess the effect of patient preference on service quality. To assess patient-centeredness and perceived quality of pharmacy services more accurately, determinants of patient preference will be included with patient preferences for service quality assessed across all determinants. Expanding existing frameworks in this way allows for more detailed evaluation of the specific patient-specific factors which contribute to service quality, facilitating the development of service variations that accommodate a wide variety of patient needs.

Finally, this study proposes the use of a methodology for evaluating stated preference which has been infrequently used to evaluate patient preferences for community pharmacy

services. Of the existing studies using a DCE in the pharmacy setting, there are limitations that this study plans to address to inform future uses of DCE methods to evaluate patient preferences for community pharmacy services. Most notably, many DCE studies in the community pharmacy setting do use qualitative methods to identify specific factors or attributes which should be included in preference evaluations, despite the emphasis on the importance of intentional level selection in the existing DCE literature.[246,258] Using qualitative interviews to inform DCE development, this study will describe processes to perform quality mixed-methods evaluations of patient-centered care. A DCE survey adds an important methodological and practical component of the study. By quantifying patient preference using part-worth utilities and WTP, optimal pharmacy service bundles can be identified, and community pharmacies can develop service bundles that patients may be willing to pay for. This allows community pharmacies to identify an acceptable cost for enhanced pharmacy services, allowing them to recoup costs associated with service delivery and create additional opportunities for reimbursement by way of enhanced service offerings.

2.9 Research Objectives

The present study will employ mixed methodology to address the following objectives from qualitative and quantitative strands, respectively:

Qualitative Strand

Objective 1: Explore patient-centeredness and patient preferences for Medicare Part D consultation service offerings from the perspective of patients.

> **Rationale**: Current Medicare Part D consultation services appear to be misaligned with patient preference. To inform an evaluation of patient-centered pharmacy Medicare Part D consultation services, an exploration of existing services and patient preferences is required.

Quantitative Strand

Objective 2: Calculate part-worth utilities and willingness-to-pay (WTP) for specific service offerings as well as marginal willingness-to-pay (mWTP) for individual service offering attributes.

Hypothesis 1: Higher WTP values will be associated with service offerings that align with patient preferences.

Rationale: Part-worth utilities and Willingness-to-pay are ways to quantify patient preferences for specific service attributes. Using marginal willingness-to-pay (mWTP), preference for service attributes can be compared across different service attribute bundles, identifying optimal service attribute mix.

Objective 3: Evaluate the effect of patient-specific factors on optimal service offerings and patient preference for Medicare Part D services.

Hypothesis 1: Patient preferences for attributes surrounding Medicare Part D consultation services vary across patient-specific factors.

Rationale: Given that patients' preferences and needs are likely to vary across factors specific to each individual, different patient populations will have different preferences for service offering attributes.

Data Integration

Objective 4: Use qualitative and quantitative data integration to inform recommendations for Medicare Part D consultation services offered in the community pharmacy setting.

Rationale: With variability in the patient populations for qualitative and quantitative data collection, patients are likely to have varying degrees of service experience and expectations, which will result in differences in preference for Medicare Part D consultation services.

CHAPTER 3: METHODS

3.1 Study Overview and Use of Mixed-Methods

An exploratory sequential mixed-methods approach was used to address study aims, with qualitative interviews and post-interview surveys used to inform the development of a quantitative DCE and supplemental patient survey. Mixed-method studies require that data and analysis be used together, in a way that informs different components of the larger study.[259,260]The rationale behind using a mixed-methods approach for study design is multifaceted. Most notably, the use of qualitative and quantitative data to inform study elements offers a more complete picture of Medicare Part D service attributes that elicit value and utility than using qualitative or quantitative methods alone.[259,260] Furthermore, existing literature suggests that qualitative data collection and analysis is underused in DCE studies, with calls to increase attribute and preference selection for testing based on identified patient preference.[69,258]

As such, qualitative interviews and a post-interview quantitative survey allowed for the collection of data on Medicare Part D service offerings and service attributes from the patient perspective. These data were subsequently used to set relevant patient-centered attribute levels within the DCE survey.[69,258] Using interview and survey data assured that the attributes and patient-specific preferences tested were important and relevant from the patient perspective. These attributes were then included in a DCE survey, allowing for a comprehensive evaluation and quantification of patient attribute preference using part worth utilities and marginal willingness-to-pay (mWTP). Using a mixed-methods approach in this manner allowed us to collect and analyze data in a way that will provided pragmatic results, which may be used to inform community pharmacy enhanced service development and scale services with known benefit more efficiently.

3.2 Ethics Statement

The proposed study was submitted to The University of Iowa Institutional Review Board (IRB) for review prior to study initiation and data collection. All elements, aims, and procedures of the study were implemented and completed in accordance with IRB approval.

3.3 Qualitative Strand: Interviews and Post-Interview Surveys

To complete Objective 1 of the study, qualitative interviews and a post-interview quantitative survey were conducted with Medicare Part D beneficiaries who were currently patients at one of five community pharmacies in the state of Iowa, located in Cedar, Davis, Blackhawk, and Johnson County. These pharmacies were currently participating in the Community Pharmacy enhances Services Network (CPESN), an initiative designed to enhance and expand pharmacy practices and services across. Pharmacies were selected due to existing relationships that have been established with the research team prior to this study and to obtain a mix of rural and urban patient perspectives, as urbanicity has had significant effects on patient preference in previous community pharmacy DCE studies.[73] Two of the community pharmacies recruiting patients had existing Medicare Part D consultation services, facilitating data collection from the perspectives of both service users and non-users.

Community pharmacy patients were eligible to participate in in interviews and post-interview surveys if they met several inclusion criteria. Patients were required to be English-speaking, currently taking one or more prescription medications, and eligible for Medicare Part D insurance (65 years of age and older). Additional inclusion criteria were based on past Medicare Part D service use, with patients recruited who had both used and had not used a Medicare Part D consultation service offered in the community pharmacy setting. Interviews were theoretically driven by the SERVQUAL framework and focused on identifying and describing patient-specific factors and service attributes, processes, and outcomes that patients associate with service quality and value. Surveys were distributed to interview participants in addition to a monetary incentive after completing interviews. Interviews and survey data were anonymized, with distributed surveys receiving a numeric value that was the same for qualitative and quantitative data to link survey transcripts to survey responses. Data were

analyzed using a Template analysis approach to identify patient-specific factors used to inform domains and themes of patient preference and attribute levels.[261]

3.3.1 Interview and Post-Interview Survey Rationale

Interviews were determined to be the best option for qualitative data collection due to the ongoing COVID-19 pandemic as well as the need to discuss potentially sensitive information such as financial burdens or disease-specific medications. Initial interviews allow for each member to answer questions and report perspectives to the interviewer without interruption, and may be especially useful when homogenous and comfortable groups cannot be guaranteed.[259,260] While focus groups may facilitate more conversation surrounding attributes of Medicare Part D consultation service associated with value, it is likely that social distancing restrictions may limit the ability to collect data in this manner. Furthermore, telephone or video conferencing interviews provide the opportunity to collect rich and detailed information from a larger and more diverse population, allowing thematic analysis to accurately reveal service offering attributes associated with patient preference and value.

Post-interview surveys were considered the best method for collecting patient-specific information that is likely to contribute to patient preferences for Medicare Part D service consultations for several reasons. First, collecting patient-specific data after conducting interviews prevents interview responses from being biased because of alerting patients to factors that may be of interest when considering preference for Medicare Part D consultation services. Additionally, surveys allow patients to report specific factors that may be more difficult to disclose or would reflect poorly on their ability to process information and make decisions. Providing patients with the opportunity to disclose this information privately decreases the likelihood of social desirability bias.

Finally, while the completion of 14 interviews is sufficient for qualitative data collection, a comparable number of post-interview surveys would be considered a relatively small sample for traditional survey evaluations. In this study, the survey was intended to supplement qualitative interviews, providing additional details on the patient-specific attributes that likely contributed to their responses in the qualitative interviews. Survey data was not independently used to make causative statements or make larger generalizations but was linked to interview

responses to further explore differences in service preference and expectations between service user and non-user groups. As such, a smaller survey sample was sufficient for its intended use in mixed methods study design.

3.3.2 Participants and Recruitment

Interviews were conducted with community pharmacy patients telephonically. Patients were eligible for interview participation based on a number oof inclusion criteria. Patients were required to be English-speaking, currently taking one or more prescription medications, and eligible for Medicare Part D insurance (65 years of age and older). Further, both patients who had and had not used a Medicare Part D consultation service were recruited for participation based on recruitment methods described later. Based on existing studies in the pharmacy literature, saturation of concepts is frequently reached after approximately 12 interviews.[262,263] More recent studies with pharmacy payers set out to complete 27 interviews, and reportedly reached satisfactory data after 6th interview was completed.[73] As such, a minimum of 14 patients was deemed acceptable for recruitment from the community pharmacies of interest. As some patients may have previously received a Medicare Part D consultation, community pharmacists and screening questions were used to identify patients who have previously had a Medicare Part D consultation service. In total 7 patients who had previously received a community pharmacy consultation service and 7 patients who have not previously had a Medicare Part D consultation service were set as the minimum number to be recruited and interviewed. Patients with and without prior experience with Medicare Part D consultation services were included to capture differences in preference based on service experience.

To identify patients willing to participate, community pharmacies generated lists of patients eligible for Medicare Part D and following instructions provided by the research team, assigned each patient a number. Using a random number generator, the research team generated 20 numbers and informed participating community pharmacies of the numbers generated. The participating community pharmacies mailed patients informational letters created by the research team, informing them of the opportunity to participate in interviews and informing them to contact the research team if they were interested in participating. A recruitment guide was distributed to pharmacies (Appendix D) in addition to all materials

needed to distribute recruitment letters. A finalized recruitment letter can be found in Appendix E. Patients who contacted the research team to inquire about study participation were screened for eligibility using a study information and screening script (Appendix F), which was used to inform patients and to identify if they had previously received a Medicare Part D consultation service, assuring that required sampling sizes were met for both groups. After patents were informed of the study and screened for participation, an interview was either performed immediately or scheduled for a later date based on patient preference. All interviewees were assigned a number to maintain anonymity during data analysis, with interview data recorded and transcribed with participant consent. After the initial mailing, an inadequate number of participants were recruited, with two community pharmacies conducting a second mailing was performed, with one community pharmacy currently offering a Medicare Part D consultation service sending recruitment letters to 20 additional service users, and another community pharmacy sending letters to 20 additional Medicare Part D eligible patients, without knowledge of past service experience.

After interviews were completed, patients were asked to provide mailing addresses for the post-interview survey and participation incentive distribution. Surveys were distributed following methods outlined by Dillman[264,265], with multiple survey mailings and a reminder postcard sent to interview participants. Surveys were initially distributed in envelopes containing a survey cover letter, the survey itself, an envelope with postage, and a $25 gift card as financial incentive. The survey cover letter can be found in Appendix G. Surveys were sent to all interview participants within one week of completing the qualitative interview. A reminder postcard was mailed to participating patients one week after original survey distribution if the survey has not been returned (Appendix H). After a second week, an additional survey was mailed without incentive to maximize the opportunity to collect responses from all interview participants.

3.3.3 Interview Guide Development

To facilitate qualitative interviews, an interview guide was developed using the adapted *SERVQUAL* framework and existing literature describing patient preference for Medicare Part D plan selection experiences. Questions were incorporated to explore patient preferences for the

four domains of service quality: interpersonal, technical, administrative, and environmental. From existing literature, patients have specific preferences for the technical components of their Medicare Part D plans, in addition to the preferences individuals have for Medicare Part D consultation service offerings. A study by Stults et. al. identified that patients predominately focus on medication costs and prefer plans with the lowest associated costs.[266] Despite these preferences, a subset of patients tends to prefer a higher-cost plan with hopes that unforeseen medication changes or changes in health status may be proactively counteracted with a higher premium plan. In addition to preferring low-cost plans and plans that may accommodate the uncertainty in health status changes, patients place high value on plan reputation (i.e., how many years the plan has been offered or the familiarity with the plan sponsor) and convenience of their Medicare Part D plan, with considerable variation in the definition of plan convenience. Frequently, individuals reported convenience as the plan that required lower levels of effort for enrollment (i.e., less paperwork or less research). Additionally, convenience was associated with a minimization of stress or worry associated with a Medicare Part D plan selection.

To assess technical components of Medicare Part D service consultations, this study used interview questions focused on the delivery and outcomes associated with Medicare Part D consultation services offered in the community pharmacy setting to explore patient preferences for Medicare Part D service offering attributes. In addition to the technical components related to a Medicare Part D plan selection experience and consultation service, existing literature suggests that patients are likely to have specific preferences for interpersonal and administrative components of Medicare Part D service offerings. In a recent study by Murry, Al-Khatib, and Witry, the types of information and the way information is presented to patients surrounding a Medicare Part D plan were found to influence the service experience, as a Medicare Part D consultation service offered by a community pharmacy resulted in a less positive Medicare Part D plan-selection experience when compared to a group of individuals who did not use the service.[21] The pharmacy service offered emphasized specific plan attribute and cost information, including the cost of specific medication and premiums associated with a large number of available plans. While some patients preferred the detailed and comprehensive information provided by this service, many patients reported negative or

difficult service experiences after being overwhelmed with information and understanding thee complexity surrounding their Medicare Part D choice.[21] When community pharmacies offering Medicare Part D consultation services provide patients with large amounts of complex insurance information and multiple Part D plan options, they may not be accounting for individual ability or information preference. As a result, the specific Medicare Part D consultation service evaluated by the study authors seemed misaligned with patient preferences for plan-selection experiences and outcomes, decreasing convenience and increasing uncertainty.[21] To identify patient preferences for interpersonal and administrative components of service attributes, questions related to specific service features and attributes were developed.

Further, questions relating to environmental quality were included to evaluate the last domain of the SERVQUAL framework for a comprehensive evaluation of attributes which may contribute to patient perceptions of service value and quality. Additionally, questions pertaining to service cost were included to inform cost attribute levels within the DCE, an essential component of quantifying WTP and mWTP values which reflect overall quality of the pharmacy service but are technical components of the offering. Finalized interview guides for service users and service non-users are included in Appendix A and B, respectively.

3.3.4 Post-Interview Survey Development

The post-interview surveys focused on collecting data related to patient-specific factors that may contribute to preferences for Medicare Part D consultation service attributes and perceptions of Medicare Part D consultation service value. Sociodemographic and additional patient-specific factors and response options are presented in Table 3, with items informed by existing scales and measures used in Medicare Part D consultation service assessments or other pharmacy-specific patient preference studies.[8,21,73] To measure patient information processing, one of the two scales included in the Insurance Health Literacy Measure (HILM) was used, focusing on the confidence in understanding information and using a health insurance plan.[226] This scale was separated into two smaller subscales, measuring confidence in understanding Medicare Part D insurance information and confidence in using Medicare Part D insurance. Additionally, patients with varying degrees of activation may influence patient preference for

community pharmacy service preferences and was measured using a single item assessing patient confidence in managing their health.[267-269] A finalized survey to assess patient-specific factors which may influence preferences for community pharmacy service offerings is included in Appendix C.

Table 3. Sociodemographic and Patient-Specific Factors which contribute to patient preference.

Sociodemographic and Patient-Specific Factor	Measurement	Type of Data
Gender	Female, Male, Not Listed	Categorical
Age	Free Response	Continuous
Race	American Indian or Alaska Native, Asian, Black or African American, White or Caucasian, Hispanic or Latino, Non-Hispanic, Other[21]	Categorical
Household Annual Income	Under $25,000, $25,000 to $49,999, $50,000 to $74,999, $75,000 or more	Categorical
Highest Level of Education Completed	Some High School, High School or GED, Some College, Bachelor's Degree	Categorical
Health Insurance Literacy 9 items for 2 domains focusing on choosing health insurance[226,229]	Confidence in understanding Medicare Part D insurance information (5 items) Confidence in using Medicare Part D insurance (4 Items)	Continuous Continuous
Current Pharmacy Patronage	Chain Pharmacy; Independent Pharmacy, Grocery Pharmacy, Mass Merchandiser Pharmacy, Mail Order Pharmacy	Categorical
Pharmacies used in the Past 30 days	1, 2, 3 or more	Categorical
Number of current prescription medications	1, 2, 3, 4 or more	Categorical
Health Activation	Single-item for health confidence[267]	Continuous

3.3.5 Interview and Post-Interview Survey Data Analysis, Objective 1

After interviews were recorded and transcribed, transcription documents were uploaded into MAXQDA (VERBI, BERLIN 2013). A license for MAXQDA has been previously obtained and has been used in other qualitative research projects at The University of Iowa College of Pharmacy. MAXQDA allows for efficient transcription organization and coding methods to be applied. Template analysis informed by the SERVQUAL framework was used to complete qualitative data analysis.

3.3.6 Template Analysis

Template analysis is a relatively recent approach to qualitative analysis, providing a more structured methodology than earlier and potentially more exploratory methodologies such as Grounded Theory.[261] Template analysis encourages the use of a theory or framework to conceptualize an initial coding structure and guide analysis. Further, Template analysis allows for the use of inductive and deductive codes to corroborate and legitimize themes by grouping similar text and making necessary connections to theory. Three positions should be considered when beginning research and conducting Template analysis: 1) having pre-defined codes or a priori codes based on existing theory, 2) develop codes after initial exploration of data, 3) use both initial data and a priori codes to identify and categorize qualitative data.[261,270-273]

The formal process to Template analysis is well described by King and Brooks and King.[272,273] An initial template, often informed by a qualitative interview guide, should be constructed. When designing the initial template, it is especially important to use only a limited number of codes so as not to limit the researcher in the exploration of additional themes that emerge from the data. After the initial template is developed, several next steps have been proposed. Brooks, McCluskey, Turley, and King suggest that the researcher or researchers go through a subset of the initial transcripts to further inform and develop an initial template, adding in additional transcripts as preliminary codes become more defined.[271] After the initial template has been constructed, King recommends the full set of transcripts to perform four common code tasks: insertion, deletion, changing scope, changing higher-order classification. Insertion is the addition of new, emerging codes. Deletion is the removal of codes. Changing

scope refers to narrowing or expanding a code to reflect the qualitative data more accurately. Changing higher-order classification refers to the process of changing a sub-code or theme into a higher-order code. After template refinement the researcher or researchers should work to develop a final template, reading the qualitative transcripts a minimum of two times and seeking the advice of group members or experts outside of the research group.[270]

King suggests several advantages and disadvantages associated with using Template analysis for qualitative evaluations. The greatest advantage to Template analysis, according to King, is the flexibility that Template analysis offers to researchers. Template analysis is well suited for a wide variety of research questions and can accommodate a variety of different theoretical frameworks used to inform and design the template. Further, Template analysis works especially well when the aim of research is to compare the perspectives of different groups within a specific context and has been suggested for use in qualitative psychology[272], business and management[274], and healthcare research[273]. Finally, Template analysis demands the researcher structure their analysis around a formalized template, improving the clarity of analysis and interpretation of the data in the final report. Disadvantages of Template analysis include the paucity of literature on Template analysis to alternative forms of qualitative analysis such as Grounded Theory. Perhaps more importantly, balancing simplicity and complexity of the initial and final template can be especially challenging. To strike appropriate balance, the researcher or researchers must take great care to highlight the importance of individual transcripts while avoiding the urge to oversimplify or generalize.[261]

Given that interview guides and service quality evaluation was theoretically informed by the SERVQUAL framework, the third position to Template analysis as proposed by King was appropriate, where a priori codes provided by the SERVQUAL framework in addition to inductive codes were applied to qualitative data to identify Medicare Part D consultation service attributes that contribute to patient perceptions of service quality and inform further evaluation of service value.

Each interview transcript was read by one study author, with 1st order codes applied to text segments which seemed to describe Medicare Part D consultation value attributes. Code lists were updated regularly using an iterative process, as additional interview transcripts are

analyzed. After all transcriptions were coded with 1st order codes, summative codes and themes depicting service value were generated.[259,260] To assure accuracy in qualitative findings, the iterative process was discussed with experts in qualitative methods and content experts in community pharmacy research. After an initial template was developed, two additional study authors read a subset of transcripts, independently assigning first order codes, and categorizing these codes into the SERVQUAL framework. After three study authors had developed initial templates, templates were compared and discussed until consensus on overarching themes and summative codes was reached, with final themes, subthemes, and codes generated that identify key attributes of service value, with summary statements provided for each value attribute. These themes were compared to potential attributes associated with patient perceptions of pharmacy service value and quality in the existing literature and from survey responses, with emphasis on service attributes and characteristics of Medicare Part D consultation service offerings in the community pharmacy setting.

For post-interview survey data, frequencies and descriptive statistics were generated for categorical data. Further, frequencies and descriptive statistics were used to explore patient-specific factors potentially contributing to preferences for service attributes. Using an iterative interpretivist approach, patient preferences for service attributes and patient-specific factors were compared and used to inform early iterations of DCE attribute levels and the questions most useful in identifying variations in patient preference across patient-specific factors. This process was an important element in preparation for DCE survey design, due to limitations that exist related to the number of attributes that may be tested within a DCE and the statistical methods used to analyze DCE data.[73,242] A Template analysis guide for the study team and finalized Template analysis can be found in Appendix I.

Post-interview surveys were analyzed using STATA 17 (StataCorp. 2021. *Stata Statistical Software: Release 17*. College Station, TX: StataCorp LLC). Descriptive statistics and frequencies were reported for all responses, as well as for service user and non-user groups. Pearson chi-Square and Welch T-tests were used to determine significant differences between service user and non-user responses for categorical and continuous variables, respectively. The sum of the scores for health insurance literacy scales were calculated for both groups and a Welch T-test

was used to evaluate statistical significance between the scores for the two groups. Welch T-tests were determined to be the most appropriate test for significant difference in continuous variables between both groups due to the small number of responses and the difference in group sizes potentially contributing to unequal variance between responses.[275,276]

3.4 Quantitative Strand: DCE and Supplemental Survey

Once service attributes and patient-specific preference factors were identified in the qualitative phase, a DCE was developed and deployed to a Qualtrics research panel of English-speaking American adults (≥65 years) who are currently enrolled in a Medicare Part D or Medicare Advantage plan who have filled a prescription at a pharmacy, other than a mail-order pharmacy, within the last 12 months.

3.4.1 DCE Overview

The DCE, designed to address Aims 2 and 3 of the proposed study, assessed service attribute preference, utility, willingness-to-pay, and marginal willingness-to-pay across patient-identified attribute levels while considering patient-specific attributes that may contribute to patient preference. Marginal willingness-to-pay (mWTP) may be especially useful when assigning value to pharmacy services, as it provides the opportunity to assign value to features or attributes of the Medicare Part D consultation service offering. To assess mWTP, a cost attribute must be included as an attribute in the DCE design. Including a cost attribute and calculating mWTP has several benefits. First, mWTP allows for a consistent measure of service attribute value, but also provides an overall value of a specific service offering.[277] As a result, mWTP and WTP values can be compared between different studies to determine value of enhanced community pharmacy services relative to each other. This type of comparison may facilitate service offering comparison and optimization, helping to establish a framework and process for evaluating patient preferences for services and assist community pharmacies in focusing their service offerings. Additionally, using mWTP is considered an indirect approach to estimating WTP, which considerably reduces the focus on price.[278] Historically, WTP studies in pharmacy practice research have emphasized WTP values as a measure of patient preference, despite relatively low realized payments for enhanced service offerings.[279] To more accurately

assess preference and value, mWTP can be used to observe relative preference for service offerings, which may be more useful in determining how to offer services and what services to offer.

3.4.2 Rationale for DCE

A DCE survey was selected in favor of contingent valuation WTP methods and best-worst scaling methods for several reasons. DCE methods allow for evaluation of a wide variety of attributes and provide valuable insight when designing patient-centered services and service environments.[73,248-250] Contingent valuation studies are most useful when service attributes are known to align with patient preference and are consistent across all similar services. Due to the nature of Medicare Part D consultation services, attributes of these services have not been shown to align with patient preference and the offerings, processes, and outcomes associated with Medicare Part D consultation services vary based on personnel, service, and environment factors. Furthermore, DCEs allow detailed analysis of utility, with part-worth utilities assigned to each attribute of a service or good.[73,248] DCEs allow WTP and mWTP to be assessed for a number of attributes, assigning monetary value to service attributes, which may be particularly useful when considering service elements that patients may be most willing to pay for.[72] A more recent WTP and patient preference method, best-worst scaling (BWS), has respondents select their most preferred and least preferred items in a choice question. While BWS studies may reveal more information about strength of preference and could reduce response error, less literature exists on studies performed in the pharmacy setting, suggesting that additional exploratory work should be performed on BWS experimental methods in pharmacy settings prior to widespread use.[69]

3.4.3 DCE Design Considerations

When considering general design considerations for a DCE survey, there are a number of recommendations to consider which reflect optimal choice designs.[246] First, level balance should be considered, with levels for each attribute occurring with equal frequency. Second, the levels of each attribute should vary independently of each other, often referred to as *orthogonality*. Third, the attribute levels should have minimal overlap, with the probability of

attribute levels repeating in multiple choice sets made to be as small as possible. Lastly, options within a choice set should be equally attractive to respondents, representing *utility balance* across choice bundles. All considerations are essential components of optimal choice designs and were considered when determining attribute and level assignment.

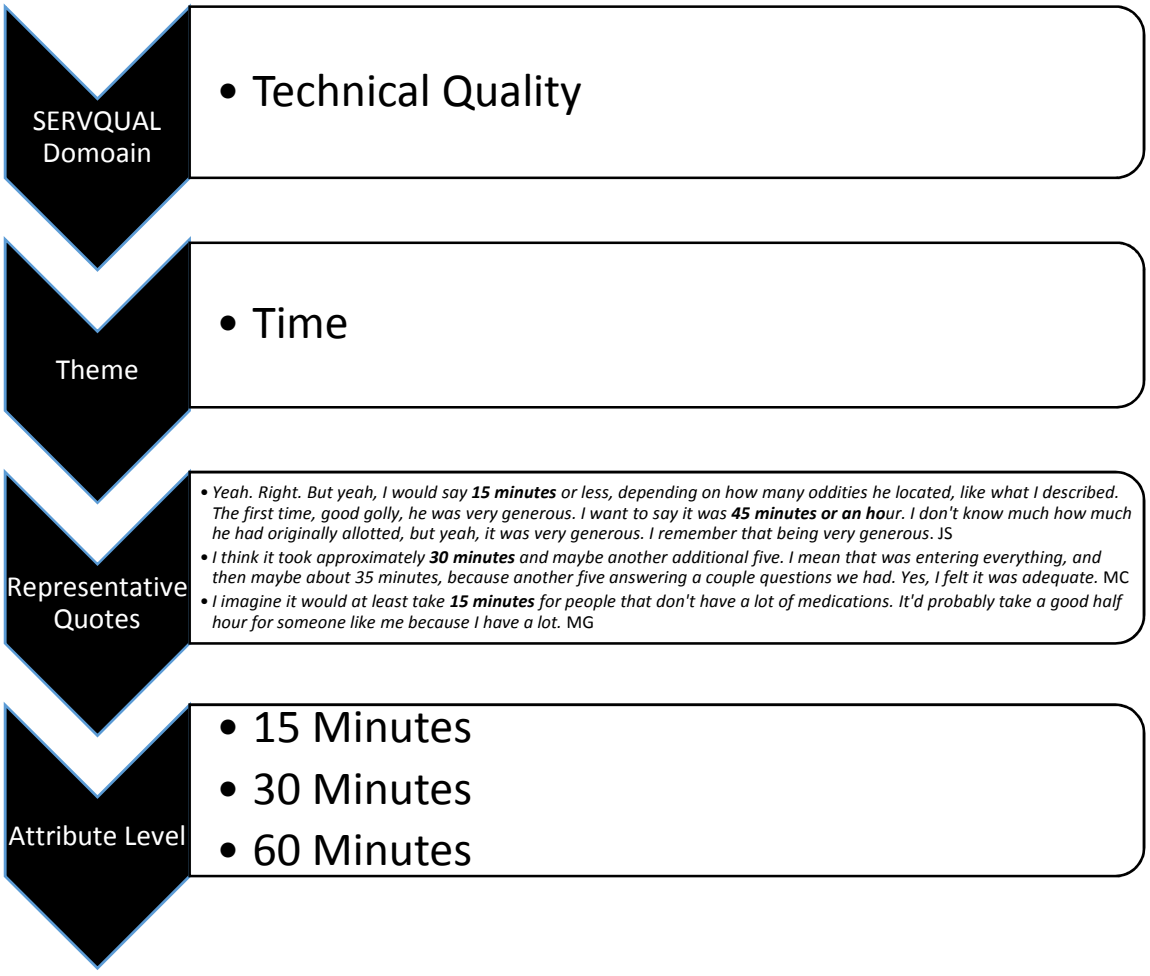
3.4.4 Attribute and Level Assignment

The DCE survey instrument was developed using results derived from interviews conducted during the qualitative phase of the proposed mixed-methods study. In DCE survey development, identified attributes are customarily assigned "levels" allowing for attribute importance to be accurately assessed based on presence or absence in the service or good.[73,280] Potential attributes and associated levels to be included came from service elements that patients find valuable as well as existing factors identified as important to patient value and service use previously identified in the literature. First, qualitative themes within each of the SERVQUAL domains were reviewed, evaluating them for inclusion as DCE attributes based on a number of factors. To be considered for DCE attribute inclusion, attributes were required to be both actionable, meaning that an attribute developed from a theme needed to be focused on specific quantifiable elements of a Medicare Part D service offering that could be implemented by a community pharmacy. Additionally, given the difficulties and challenges experienced by pharmacists and community pharmacies in providing patient-centered care, attributes were considered favorably if they were service-design rather than pharmacy-staff focused, meaning that the service could be evaluated based on the features of its administration rather than the administrator. Further, potential service attributes were considered based on recommendations provided by the International Society for Pharmacoeconomics and Outcomes Research (ISPOR). Levels for each attribute were required to be equally spaced when possible, with attributes measured numerically having the same numeric change between levels (i.e. $0 vs $25 vs $50). Additionally, attributes and associated levels were evaluated for preference dominance, meaning that attributes were considered for inclusion if qualitative data suggested there was considerable variation in preferences for service offerings (i.e. length of service, service offering location). Themes and attributes derived from themes which had little variation in preference were not considered for DCE attribute inclusion. Finally, attributes and levels

were evaluated for inclusion based on a balance of themes from SERVQUAL domains, with attributes included to reflect multiple domains of the SERVQUAL framework.

In accordance with ISPOR guidelines and common practices in pharmacy DCE[69,73,242], five attributes were included in the survey design: the information provided to patients, the time associated with the service, the location of the service, the provider of the service, and the service cost. An example of how attributes and level selection was performed using qualitative data is depicted in Figure 5.

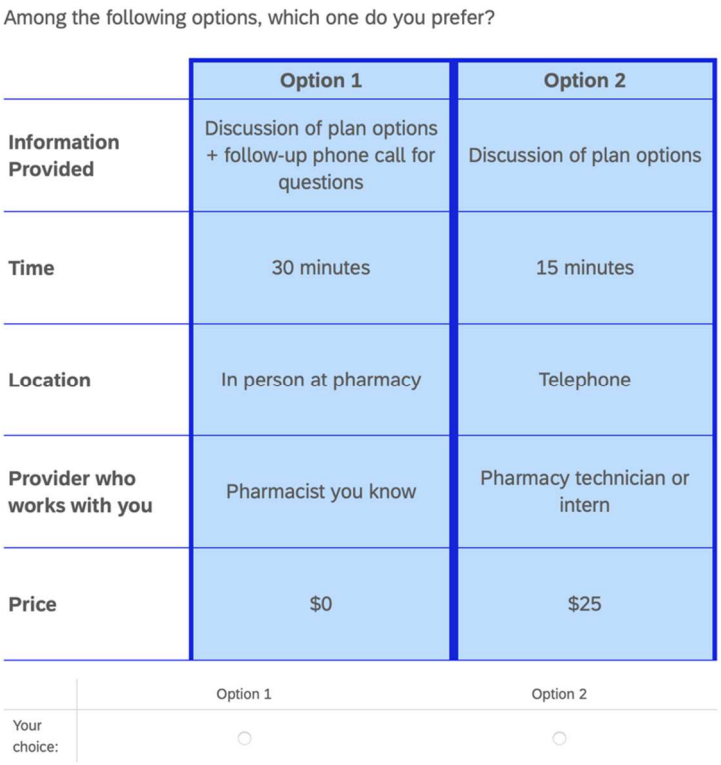
Figure 5. Example of Attribute and Level Selection for DCE



A cost attribute was included in favor of an additional patient-identified attribute for the purposes of assessing WTP and mWTP associated with different levels of patient-identified service attributes. The cost attribute was assigned three levels, based on the estimated time required to complete a Medicare Part D consultation and estimated pharmacist hourly wage.[281] Based on previous literature on Medicare Part D consultation services, the time required to complete an appointment-based consultation is approximately 45 minutes.[7] At an hourly rate of $55 USD per hour, a cost of $41.25 would be required to compensate the pharmacist for their time. Given that DCEs and survey instrument design recommends equal intervals between response items[69,77,280], levels of $0 USD, $25 USD, and $50 USD were included as levels for the cost service attribute, which reflected qualitative responses.

Existing pharmacy-specific DCE studies and ISPOR recommendations have emphasized the importance of minimizing attributes and attribute levels to six, with 2 to 5 attribute levels included for each.[73,242,282] Additionally, these studies have presented participants with a wide variety of choice tasks to complete, with more recent studies ranging from 10 to 32 choice tasks.[73,282] Within the proposed study, participants received 12 choice tasks included in the DCE using randomized blocking, as this was the largest number of choice tasks identified in the recent pharmacy-specific DCE literature.[282] Limiting choice tasks and number of attributes is important to the accuracy of stated preference evaluations to minimize cognitive load, with high levels of cognitive load potentially influencing the accuracy of stated preference results.[70,242,243]

Figure 6. Example of choice task in a DCE for Medicare Part D consultation services from the Qualtrics survey.



3.4.5 Survey Introduction and Example Materials

To introduce participants to the survey instrument, an example choice task and description of the choice task activity was created for patient reference and education. Due to the complex nature of DCE surveys, information describing the service of interest is recommended by method experts[283] and has been successfully used in previous DCE experiments.[72,248-250] Providing brief but detailed descriptions of choice tasks and instructions on DCE survey completion help to assure that survey participants have good understanding of their task, increasing their ability to accurately and consistently select the attribute bundles that are of actual value.[280] Despite their complexity, DCEs have been successfully conducted in pharmacy practice research using web-based data collection techniques to collect DCE survey responses. In recent pharmacy-specific literature, DCEs have used web-based modalities to collect survey responses from older populations surrounding preferences of objective community pharmacy quality measures, where 35% of the respondent population was aged 55

years or older.[73] Additionally, patient preferences for pharmacist provided diabetes medication management services in community health centers and hospitals in Indonesia, where 43.05% and 52.07% of DCE respondents were older than 60 years of age or older, respectively.[241] With this study collected data from respondents in-person, the sample population further emphasizes that older populations can complete complex DCE surveys. Studies not specific to pharmacy but within the healthcare sector have also successfully completed patient preference evaluations of older populations using web based DCE survey methods. Most recently, a study published by Buchanan et. al. a study evaluated patient preferences for medical consultations from online providers in the UK used web-based survey data from 158 individuals 65 years of age and older to draw conclusions about patient preference, with the 65 years of age and older population accounting for the largest sampling group at 22%.[284]

3.4.6 Survey Design

A fractional factorial design was used to create bundled attribute scenarios. Participants were presented with multiple comparisons with varying attribute bundles, asking participants to choose between two Medicare Part D consultation service scenarios. While full factorial designs allow for testing all potential attribute combinations, doing so is methodologically challenging and costly, given even simple DCE evaluations yield increasingly large attribute combinations.[242,258,280]

An important development in DCEs is the use of variance-covariance (VC) matrices when estimating maximum likelihood in statistical models, referred to as D-optimal designs. In addition, attribute priors are required to assure accurate utility and WTP estimates, and until recently were infrequently used in community pharmacy DCEs.[69,73] Software packages may be used to generate optimally efficient designs (D-optimal design) and values for attribute priors. Sawtooth Lighthouse Studio (v9.2; Orem, UT), a web-based application specializing in DCE design, was used to create a D-optimal design as it is available to students pursuing a Master's or PhD degree at no-cost through an internal grant funding application, with recent use in the community pharmacy space.[73] As such, Sawtooth Lighthouse Studio was used to assign profiles for a total of 120 random choice tasks. The profiles were generated using complete enumeration, which focuses on an efficient DCE design with the greatest amount of level

variation within each choice task. This variation is especially useful when considering design efficiency and accuracy of main effects interpretation. No prohibitions were included in the original design, as all scenarios were practical and attainable, without obvious dominating service offering bundles. Blocking was performed to increase the total number of choice tasks that could be included in the DCE, with 10 blocks of DCE choice tasks generated. Blocking in DCE experimental DCE design lowers the number of tasks each respondent is exposed to, which decreases fatigue while maintaining efficiency. A summary of design efficiency statistics generated by Sawtooth for each of the originally proposed models is included in Table 4. Overall, using complete enumeration resulted in a 14% increase in D-Efficiency.

Table 4. D-Optimal Design Comparison from Sawtooth Software.

Model Specifications	Range of Attribute Level Standard Errors	Design Strength
10 random tasks w/ 2 concepts per task Complete Enumeration based on 12 versions 6 attributes per task	0.02451-0.0244	1917.15699
10 random tasks w/ 2 concepts per task Balanced Overlap based on 12 versions 6 attributes per task	0.02524-0.02776	1678.15892

The profiles of two additional choice tasks were created separately for the assessment of internal validity. A dominant scenario was created based on results from the qualitative strand, with patient descriptions of existing and optimal service offerings considered to develop a scenario with universally preferred attribute levels. This scenario was included in all DCE blocks as an introduction to choice tasks. Additionally, the same dominant choice task was presented after DCE items had been completed, with varying degrees of price associated with the dominant choice (Option 1) with a follow-up question gauging the likelihood of purchasing

the option chosen above. These two choice tasks and with the addition of 12 random choice tasks resulted in each participant completing 14 choice tasks.

To reduce the potential for bias, attribute randomization was used to randomize the presenting order of choice tasks within each block. Qualtrics software allows for advanced randomization, which allowed each choice task to be randomized within a block while maintaining the ability for the choice task to remain on an individual page. While choice tasks were randomized within each block, the attribute level presentation remained consistent within each choice task, which is consistent with ISPOR recommendations.

3.4.7 Supplemental Survey: Sociodemographic, Activation, and Motivation Items

In addition to the attribute and level assignments, an additional section of the DCE survey was designed to identify patient-specific factors which may influence patient preference for Medicare Part D service offerings and was carried over from the the-post interview survey in the qualitative strand, which can be found in Appendix B. Sociodemographic questions were included to assess the effects of patient-specific factors on WTP values.[73]

3.4.8 Survey Creation in Qualtrics

In order to generate the DCE survey items in Qualtrics, processes outlined by Weber were used.[285] The D-optimized experimental design was exported from Sawtooth software and imported into STATA 17 (StataCorp. 2021. *Stata Statistical Software: Release 17*. College Station, TX: StataCorp LLC). Attribute and level names were assigned to the 120 choice tasks generated by Sawtooth. After attribute and level name assignments, the newly created CSV file containing choice tasks and blocks with attribute and level names was imported into R, which was used to create an advanced text file of all choice tasks and blocks. This process allowed for the advanced text file to be imported into Qualtrics, generating the DCE choice tasks. This process is unlike DCE item generation and survey development previously performed in other healthcare and pharmacy settings, as previous studies required survey respondents to leave Qualtrics to complete DCE survey items in third-party software. Given the older population of the study, generating the DCE in Qualtrics was thought to minimize the burden on participants and improve the overall quality of the data collected. After the survey was developed in

Qualtrics, 90 survey responses were randomly generated to evaluate data collection for completeness and to assure choice experiment responses would be collected as desired. Additionally, the 90 survey responses were used to establish a data structuring process to facilitate analysis.

3.4.9 Survey Pretesting

Initial survey pretesting was completed by Medicare Part D content experts and individuals familiar with DCE design at The University of Iowa College of Pharmacy. After the initial round of survey pretesting, changes were made to improve the quality of the DCE. Prohibitions were added to eliminate dominant choice tasks associated with cost. Choice tasks comparing the highest cost and lowest cost service options were eliminated to prevent cost-dominant scenarios from being presented to participants, with the intent of decreasing cost attribute bias where individuals only select the lowest-cost service option. Additionally, the lowest cost option was prohibited from being presented with the 60-minute service length attribute level and the information attribute level where patients received a follow-up phone call after discussion of plans. These prohibitions were included to eliminate scenarios that would be clearly dominant, as well as more challenging to offer in a community pharmacy setting given the cost/time tradeoff. Further, the attribute for number of plans compared was eliminated due to difficulty appreciating the difference in these comparisons. The print-out of plan information level was eliminated and standardized in the description of the baseline service offering, decreasing the number of information delivery attributes to two. The language of pharmacy support person was changed to pharmacy technician or intern to better reflect the differentiation between a pharmacist providing this service and an alternative individual. After the changes from the initial survey pretesting, Sawtooth was used to include prohibitions and eliminate levels and attributes prior to the generation of an additional survey design. To maintain levels of 0.05 for all attributes, an additional 2 DCE survey items were required to be completed by study participants. While this change increases the cognitive burden and potential for survey fatigue, it was required to maintain statistical efficiency and accuracy of main effect interpretation. Adjustments to the DCE and supplemental survey were made as necessary using an iterative process throughout the pretesting process, with final adjustments

made using the International Society for Pharmacoeconomics and Outcomes Research (ISPOR) guidelines to assure the appropriate number of attributes were considered to balance the need for sufficient variation in responses while reducing cognitive burden.[242]

After the first round of pretesting, the survey was further pretested using purposive convenience sampling, with Medicare Part D eligible and enrolled patients. Due to the complexity of DCEs, cognitive interviewing techniques were used during the pretesting process. Cognitive interviewing is a process used in survey pretesting where individuals are asked to "think out loud" while completing survey items, vocalizing their thoughts and how they ultimately make a response choice.[260] Cognitive interviewing was important to understand how comparisons between bundled scenarios were made and if attribute nonattendance consistently occurred for specific attribute items. Pretesting and pilot of survey instruments is an essential component of sound survey design and is often overlooked when performing DCEs in community pharmacy settings.[69,258-260] The final attribute levels for the DCE survey are included in Table 5.

Table 5. Finalized attributes and levels for DCE administration.

SERVQUAL Domain	Attribute	Levels
Administrative Quality	Information Delivery	Paper copy of plan information + discussion of plans = 1 Paper copy of plan information + discussion of plans + follow-up phone call = 2
Environmental Quality	Service Location	In person at home = 1 In person at pharmacy = 2 Telephone or virtual = 3
Technical Quality	Service Provider	Pharmacist you know = 1 Any pharmacist = 2 Pharmacy technician or intern = 3
Technical Quality	Time	15 minutes = 1 30 minutes = 2 60 minutes = 3
WTP	Cost	$0 = 1 $25 = 2 $50 = 3

3.4.10 DCE Survey Piloting

After the DCE and supplemental survey were finalized, the survey was pilot tested with a convenience sample of 15 individuals who were currently enrolled in Medicare Part D. Cognitive interviewing was performed by two members of the research team with participants, with 13 individuals receiving $25 gift cards as incentive for participation. Only two of the 15

individuals declined their incentive, allowing for the additional two pretests to be completed. After pretesting and cognitive interviewing was completed, several survey changes were made to improve the survey instrument. First, the introductory material for the DCE was changed to clarify the task that survey participants were required to perform, highlighting the different attributes and the way service offerings were presented and how the survey participants should consider them. Additionally, all ranking questions using a slider for response selection were changed to inform individuals that the slider was how their response would be recorded. Finally, the final block of the Qualtrics survey consisted of many items on a single page requiring individuals to scroll down to find additional survey items. Multiple page breaks were inserted to minimize scrolling, presenting individuals with more pages with fewer questions on each page.

3.4.11 Participants, Piloting, and Administration of the DCE Survey to the Qualtrics Panel

After initial survey piloting and survey refinement, a Qualtrics research panel was used for additional piloting and for final survey administration. Qualtrics recruits individuals for research panels using a double opt-in process. Individuals register with Qualtrics, providing basic participant and demographic information. When surveys are created the participant would be eligible for, they receive a notification via email and are invited to participate in the study for a given incentive. Incentives are most often given on a point system, with compensation averaging between 20-40% of the total cost per survey complete. Compensation is distributed to those who complete the entire survey and provide a quality response throughout the entire survey. Participants who fail an attention check will get screened out of the survey, thanked for their time but not compensated and are made aware of this process upon registering. Qualtrics clients do not pay for the participants that are screened out.

For this study, Qualtrics recruited participants based on several inclusion criteria. To be eligible, participants were required to be English-speaking American adults (≥65 years) who are currently enrolled in a Medicare Part D or Medicare Advantage plan and have filled a prescription at a pharmacy, other than a mail-order pharmacy, within the last 12 months. The survey was initially distributed to 50 respondents for piloting. After piloting was completed, data was analyzed to identify missing responses and to assure responses could be analyzed appropriately. Further, a median time to completion was calculated to screen out poor quality

responses from the final survey administration. After discussion with Qualtrics, the item associated with patient age was moved earlier in the survey and used as a screening item to eliminate individuals younger than 65. Further, an open-ended item was added as the last item of the survey to collect any remaining thoughts survey participants had surrounding their Medicare Part D plan-selectin experience.

After piloting and survey refinement was completed, the survey was administered with a recruitment target of 500 quality responses. Currently, there are considerable inconsistencies on sample size determinations for DCEs within health care and beyond.[70,286] Based on existing studies and ISPOR recommendations, a total sample size of 500 respondents has been considered sufficient in community pharmacy and health service DCEs,[73,242,248] with recent DCE analysis in healthcare using sample sizes of 200 to 500 to perform latent class analysis.[248-250,282,287] In addition to existing recommendations, existing literature has suggested that DCE sample sizes of 500 or larger yield precise parameter estimate, with sample sizes over 100 considered acceptable for latent class analysis.[73,288]

3.4.12 Part-Worth Utilities, Attribute Importance Values, and WTP Analysis

For Objective 2, sample characteristics were reported using descriptive statistics generated using STATA 17 (StataCorp. 2021. *Stata Statistical Software: Release 17*. College Station, TX: StataCorp LLC), with continuous variables presented as means (SD) and categorical variables presented as proportion of respondents for each group. R Statistical Software (v4.1.2; R Core Team 2021) was used to conduct a mixed logit mode (MXL)[280], also known as a random parameter model, to estimate individual part-worth utilities for all attribute levels of a community pharmacy Medicare Part D consultation service. The model was built and analyzed using the "gmnl" package.[289] For the primary MXL analysis, only main effects were considered, and preferences were estimated using effects coding[70,243,290] with the following model:

$$U_{ijc} = B_{1i}InformationProvided_{isj} + B_{2i}Time_{isj} + B_{3i}ServiceLocation_{isj} + B_{4i}ServiceProvider_{isj} + B_{5i}Price_{isj} + Eisj; i = 1, \dots, N; s = 1, \dots, S; j = 1, \dots, J;$$

This model specifies the utility that respondent *I* derives from choosing alternative *j* in choice scenario *s,* where there are N decision-makers choosing amongst *j* alternatives across *s* scenarios. The part-worth utilities for each attribute-level coefficient are represented by *B1* to *B5* based on the individual *i* choosing amongst the alternative *j* across *s* scenarios. Finally, $eisj$ is the error term representing characteristics not included in the model. Estimated regression coefficients were subsequently expressed as part-worth utilities. Levels that are strongly preferred by respondents are assigned higher utility score; levels that perform poorly (in comparison) are assigned lower scores.

To enhance interpretation, attribute importance values and marginal willingness-to-pay (mWTP) values were calculated. Attribute importance - the importance of an attribute relative to the other attributes - was calculated as the difference between the highest and lowest utilities (range) of each attribute divided by the total sum of all attributes' ranges.[291] To calculate mWTP, mixed logit model was estimated in the preference space treating "price" attribute as continuous variable, and all other attributes included as reference-coded categorical variables.[292,282,284] mWTP for an attribute level is calculated as the ratio of the coefficient estimate for that attribute level, and the coefficient estimate for the price attribute. It is interpreted as the 'implicit price' that respondents are willing to pay for a change in that attribute level, relative to the baseline level. Historically, only positive mWTP and WTP values have been considered when associating price with consumer goods or new service development, however, more recent trends have emphasized the importance of negative WTP values indicating negative valuation of a good or service which are reflective oof consumer sentiments and concens.[293,294] As such, both positive and negative WTP values for service attributes will be considered in the analysis.

Finally, the dominant choice tasks varying across price attribute was used to compare WTP values to purchase intention. Frequencies and descriptive statistics for dominant choice selections were calculated, and mean response for likelihood of purchasing the chosen scenario was calculated for each of the choice bundles varying across price.

3.4.13 Subgroup and Latent Class Data Analysis

For Objective 3, the effects of patient-specific factors on preferences for Medicare Part D consultation service attributes were described. To understand potential sources of Medicare Part D consultation service attribute preference heterogeneity, subgroup analysis were performed using joint models, which were estimated using interaction terms between service attributes and patent-specific factors.[295]

Additionally, a latent class model (LCM) was built and analyzed using the "gmnl" package in R Statistical Software (v4.1.2; R Core Team 2021) to evaluate patient preference across patient-specific factors.[296] The LCM requires pre-specification of potential segments, with 2 to 10 segments chosen for initial evaluation. The number of segments which best described the data was determined by the evaluation of the Akaike's Information Criterion (AIC), with the smallest value and/or an inflection point in the AIC representing the appropriate number of segments to be considered.[297] One the optimal solution was selected, groups were described using group-sizes, part-worth utilizes, and attribute importance values were estimated and reported for each segment.

3.4.14 Analysis Rationale

DCE data are most often analyzed using a conditional logit model, as developed by McFadden.[298] A mixed logit model was used rather than a conditional logit model to account for limitations of conditional logit in this context, specifically, the assumption of homogenous utility weights across all individuals.[280] Further, MXL makes it possible to model repeated choices per respondent.[299] The variation in individual choice is quantified by a random parameter characterized by a mean (β) and standard deviation of the error term (η) to capture the parameter's distribution. If the standard deviation is significantly different from zero, this is interpreted as evidence of significant preference heterogeneity for the attribute/level in the sample. Hence, we estimate a mixed logit model allowing all attributes to vary assuming normal distribution. A conditional logit model has several limitations in the use of DCE coefficient estimation and was used as an internal validity check, assuring that the direction and value of attribute level estimates was consistent across the two logit models. Conditional logit models

are limited in that they assume homogenous choice across the respondent sample and are based on the assumptions of independence of irrelevant alternatives (IIA).[300] As such the MXL model does not make the IIA assumption, eliminating a major limitation of the conditional logit model and allows for choice heterogeneity across respondents.[300]

A latent class model was deemed appropriate and subsequently chosen for analysis for several reasons. Mixed logit models provide information on how heterogeneity is distributed relative to each attribute, while a latent class model identifies heterogeneity among subgroups of respondents. Both models are important to consider given the variation in preferences which is likely to exist between and across groups, with mixed logit and latent class models used in conjuncture in existing health service research.[296,301] Given the known variations in preference for Medicare Part D consultation service offerings, there are likely to be notable variations in preference across several patient-specific factors, making the latent class model particularly useful. Further, a mixed logit model was chosen due to recent consideration for nonattendance bias in DCEs, which suggests that individuals do not consider all service or good attributes when making decisions.[74,302] While this may have potential implications to WTP and mWTP estimates, analytic techniques that accommodate preference heterogeneity appears to eliminate this concern.[74,302]

CHAPTER 4: RESULTS

4.1 Qualitative Strand: Interviews and Post-Interview Surveys

In total, five Iowa CPESN community pharmacies agreed to participate in the study. Materials for patient recruitment were distributed in September 2021 with letters distributed to patients from September to November of 2021. A total of 120 letters were distributed to CPESN patients who met the inclusion criteria, with 50 letters distributed to patients who had no prior experience with pharmacy-led Medicare Part D consultation services and 50 letters distributed to patients who had prior experience with a pharmacy-led Medicare Part D consultation service during the initial mailing. After one month, an additional twenty letters were distributed by one community pharmacy to only patients who had previously received a Medicare Part D consultation service in order to gain additional responses from this population and to balance the responses. In total, seventeen patients contacted the research team to participate in interviews. Patient current pharmacy and service use information is included in Table 6.

Table 6. Patient current pharmacy and service use information.

Pharmacy	# of Patients	Service Users (Non-Users)
1	9	8 (1)
2	1	0 (1)
3	4	0 (4)
4	3	0 (3)
5	0	0

4.2 Qualitative Interviews

Interviews were conducted with seventeen CPESN patients, with nine interviews completed with individuals who did not have prior service experience and eight interviews completed with individuals who had previously received a Medicare Part D consultation service offered by their community pharmacy. Service experience was confirmed with the pharmacy responsible for patient recruitment. Interviews lasted from 20 to 60 minutes and were informed by qualitative interview guides, which were adapted after each interview was

completed to improve language and add additional questions to elicit additional information from participants. Interviews were recorded and transcribed using a professional transcription service (Rev.com). After initial Template analysis coding using the SERVQUAL framework, patient preferences for Interpersonal, Technical, Environmental, and Administrative service components were identified in addition to emergent themes.

4.2.1 Template Analysis

The final template consisted of five themes, four of which were identified a priori based on the SERVQUAL framework (Technical, Interpersonal, Environmental, and Administrative Quality) and one of which was inductively identified after template analysis was completed (Willingness-to-Pay). A finalized template and associated quotations can be found in Appendix D. Within each theme, subthemes were identified and are presented with associated representative quotations in the following sections.

4.2.2 Technical Quality

For Technical Quality, five themes were identified from Template analysis that fit within the Technical Quality domain of the SERVQUAL framework: Pharmacist Expertise, Time, Cost Outcomes, Service Availability, and Scheduling Appointments.

4.2.3 Service Users Technical Quality

Pharmacist Expertise

Patients who used the Medicare Part D consultation service provided by their community pharmacist noted specific skills and abilities that the pharmacist had that led to positive service experiences. They specifically noted that the pharmacist was often aware of the number of plans available, making specific recommendations to the patient based on their specific needs. Further, patients were aware that pharmacists had specific medication expertise which was valuable for identifying lower-cost medications and plans that would cover them.

> *I think working with the pharmacist... The pharmacist showed us many more plans that were out there, not that the gentleman at Viridian was trying to lead us one way or the*

other, but he only was aware of a certain number in 2019, where the pharmacist that we visited with last year, she told me about several different plans, different options, different ways I could go, reviewed my medications, and that helped her give me more options on which would be the most cost effective for me." CA

That a lay person that wasn't a pharmacist wouldn't be able to advise me to say, "This is $110 medicine. You might want to have a conversation with your eye doctor about..." Does that make sense? And these aren't the right milligrams, but he prescribed, I think 300 milligrams. But if I got the 250 milligram version, it was $5. If I got the 300 milligram version, it was a hundred bucks. It was crazy, the difference of over five milligrams. And so he said, you might want to ask your neurologist, if he's okay with writing it for five milligrams difference or whatever. Kind of on a medication for that, and that's what my neurologist did, because the neurologist doesn't know the cost of the medicine. JS

Patients who used the service often wanted to look over the information provided by the pharmacist on their own to make their plan decision, but some patients preferred to have minimal information, deferring plan selection to the pharmacist.

I think it would vary by person. For me, I want to do my own homework and then maybe use them as a resource to validate what I'm thinking or what it looks like to me. I'm sure other people would be the other way around, they might want to say, "Well, I don't want to try and cipher through all this stuff, I don't want to get onto the Medicare website and try to figure it all out." So, other people may want to go the other way and just say, "Can you come to me and recommend what you think I should do this year? CM

Nope. I think it's great the way it is, for myself. The less information I have the better. MEW

Time

Patients who used the pharmacy service had consistent experiences and expectations with the time required to receive a Medicare Part D consultation service. Frequently, 45 minutes to an hour was deemed sufficient, but most patients stated that more time would be expected or warranted if the patient needed it. One individual who wanted less information and wanted the pharmacist to assist in plan selection reported that five minutes or less would be sufficient.

I think it took approximately 30 minutes and maybe another additional five. I mean that was entering everything, and then maybe about 35 minutes, because another five answering a couple questions we had. Yes, I felt it was adequate. MC

Yeah. Right. But yeah, I would say 15 minutes or less, depending on how many oddities he located, like what I described. The first time, good golly, he was very generous. I want to say it was 45 minutes or an hour. I don't know much how much he had originally allotted, but yeah, it was very generous. I remember that being very generous. JS

Cost-Outcomes

When thinking about the outcomes expected from the service, overall cost of the Part D plan was described as most important. In addition, the specific information related to medication costs such as medication tiers.

In thinking through all that, the most important was the annual bottom line. I'm on a fixed in income, so I wanted to know, yes, I'd have to know what I was going to have to pay for that Part D plan, but I also wanted to know what was the prospect of the medications that I'm on, how much is that going to cost me over a year? I mean, I have to plan on that sort of thing what I have to pay out of pocket. And we did some comparison with the plan that I had before and the one I ended up going with last year, and there was a significant difference financially in that year when we looked at a year's cost with it. CA

Well, cost, number one. Two, are the drugs that I am taking presently covered? If so, what tier will they be in? What is used to meet the qualifications of the first original $400 deduction that you have to pay? How soon might I get there? MC

Service Availability

Service users reported that the service would be most helpful during the open-enrollment period and that receiving the service annually would be optimal. Despite this preference, one patient noted that the uncertainty surrounding health and medication changes makes the service or consultation valuable at different times throughout the year.

I would say once a year. And maybe even once every couple of years for somebody whose drugs have not changed much, and for me, I might not need to talk to them, but once every couple years or something like that, but somebody who's maybe starting out with new medical issues, they might want to be yearly. CM

It all depends on your health record and what issues are changing in your life and your health. If my prescriptions were changing after some health issue and many drugs were changed, then I would want to review everything with the pharmacist again. But it's depended upon age and health and what your needs are at the given time of the year. Now, if it's not during the open enrollment period, then the service would be very nice. MC

Scheduling Appointments

Service users consistently suggested that the appointment-based model was most convenient, especially when scheduling the appointment was easy.

> *Okay. First off, I called early during the month to request a time that was convenient for me. I set up an appointment, which I feel is respectful of both myself and the pharmacy*. MC

> *Okay. To do it on my own would've been very confusing, so it was very easy to set up an appointment at [PHARMACY].* JS

4.2.4 Service Non-Users Technical Quality

Pharmacist Expertise

Although service naive, individuals who had not previously used a Medicare Part D consultation service were aware that pharmacists might have specific skills and knowledge about selecting an insurance plan. One patient highlighted that a family member had discussed their Medicare Part D plan with a pharmacist and this assistance was useful. Another patient was aware that medication dosages and the different dosage forms may have an effect on insurance coverage, highlighting that pharmacists would be well equipped to assist in acquiring these medications.

> *Oh, I don't know. I really don't know on that one. I leave it up to PHARMACIST and he even done a thing for my mom. She had SilverScript and he found out that her meds weren't going to be paid very good on that. He talked to her and he got her on Cigna and her Cigna, she has no co-pay or anything and her Cigna was actually cheaper than her SilverScript and it's taken right out of her social security. So he's very good and very... he's at the top of the list as far as I'm concerned. He knows everything that's going on.* CT

> *Because they're pharmacists and they know the medications and they can see if, I take Wellbutrin, well, I take 450 milligrams of that. In order to get 450 milligrams, I have to take a 300 and 150, I cannot get a prescription that will allow me to take 3, 150s in a day, that is not available. A pharmacist would know that, a regular insurance agent is going to have no idea. They're just going to put in, okay, she takes Wellbutrin, she takes, just a second. Sorry about that. She takes Wellbutrin, she takes 450 milligrams a day, we'll just put that in. Well, what you really need to do is you really need to put in the 150 and the 300.* MD

Time

Like individuals who used the pharmacy service, patients who had no experience with a pharmacy-led Medicare Part D consultation service expected the service to last anywhere from 15 minutes to an hour, emphasizing that they would be willing to spend as long as necessary to make sure the patient ultimately felt comfortable with their choice.

> *I imagine it would at least take 15 minutes for people that don't have a lot of medications. It'd probably take a good half hour for someone like me because I have a lot.* MG

> *Well, I guess it's dependent on how much time it took. I'm 68, so I'm able to grasp what we're talking about fairly easily and understand it, but not all seniors are. So again, it might take longer for my parents who are in their 80s to understand, they might need a little bit longer. I guess as far as time wise, I can't really give you a specific time. But what it takes, I guess it depends on the person and their cognitive abilities, but for me, probably wouldn't take as long as some other people maybe, but whatever it would take*. YB

Cost-Outcomes

Overall, service non-users had similar expectations from a pharmacy service, focusing on overall cost. Additionally, these patients were also aware of and interested in information related to specific insurance benefits and designs such as deductibles and medication tiers.

> *The information I would expect would be information on prices and the best value. And I think they would give that to me.* CW

> *So, that's the information, those are the things that I think we need to know, is the drugs, the tiers, what it's going to cost, if it's covered, and the monthly, the deductible too, and the monthly costs, those are all things that you need to know in making a decision on Part D.* YB

Service Availability

Patients who did not have prior service experience suggested that the Medicare Part D consultation offered by a community pharmacy would be optimal immediately before or during the open-enrollment period.

Right, you just wouldn't want to do it too early because they may add a medication on there, and then if you do it too early then that's not going to be in your decision making process. So, you're not going to have that information. So, not too early, no earlier than September, that even maybe a little early, but from middle of September on. I know that makes it hard when you got all these people that need to talk at the same time and get all that information, but I don't think you want it too early. YB

Well, I think maybe if they could start it, let's see, this is October, if they could start at the end of August for an October signup, you'd have a little more time to do research on your own if you wanted to, to make that decision to not have everybody crowded into two weeks trying to get the same thing done. So I'd say middle to end of August. To whatever the Medicare cut off is, probably December 7th, 10th, something like that. MD

Scheduling Appointments

One service non-user realized that the pharmacist's time may be limited when considering a Medicare Part D consultation service, and wondered if an appointment or scheduled time might work better for individuals with varying circumstances.

Well, I tell you, it all depends upon your circumstances and if you have further questions. Now, can you call him and ask him those questions at any time, or is there certain times you need to set an appointment or whatever. So, he's a busy man as a pharmacist and so taking on this, is his time going to be cut short? LN

4.2.5 Interpersonal Quality

For the Interpersonal quality domain, two sub-themes emerged: 1) Familiarity with Relationship, Continuity, and Trust and 2) Pharmacist Characteristics.

4.2.6 Service Users Interpersonal Quality

Familiarity with Relationship, Continuity, and Trust

For service users, individuals felt that the relationship they had established with their community pharmacy and their community pharmacies familiarity with their medications were important when considering their Part D plan section. Additionally, patients felt their community pharmacy worked with them and for them. Finally, one patient noted that while they had done some of the plan-selectin work independently, they used the pharmacy as a reference to assure the plans they had independently identified were correct.

I did quite a bit of research on my own looking through the medicare.gov site, looking for an insurance company that I thought would work, knowing that I wanted to stick with [PHARMACY], if at all possible to support the local, we've dealt with them all these years, didn't really want to switch to a big name pharmacy, and anyway, like I say, I had picked out several plans and then just went in and kind of shared what... Well, obviously they know my medication, and just had them step to and make sure that I was seeing the same options that were available to me and what they would recommend based on their experience and stuff. CM

I think because with the pharmacy, that's where we've ordered our drugs for a couple years now, so any of the pharmacists that I talk to there, they know what drugs I'm on, how often I take them, and all the different aspects of that, which was helpful. CA

Pharmacist Characteristics

Patients who used the pharmacy service expected specific characteristics of the pharmacist providing the service that focused on both communication skills and expertise. More specifically, many patients expected the pharmacist to be patient with the consultation, especially knowing the challenges associated with the Medicare Part D insurance selection experience and the associated information.

Oh. Very knowledgeable, very well prepared, very ready and willing to... Pretty much took as much time as it needed for me to go through all those complexities. And he sent home some written stuff or whatever, with me. At one point, actually I think, thought of something based on our conversation and took a little couple minutes to go look something up on his computer so that he could give me the best answer. And so, I want to say he went above and beyond what one might expect of a review of Plan D. JS

I would expect them to be very knowledgeable, I would expect them to be a people-oriented person and very patient. When you first get started with Medicare, and all the plans, and everything that goes on with the government, and your Medigap, and your Medicare Advantage, and all that, it is kind of a confusing mess, so you really need somebody that's very patient and somebody that knows how to explain things to all different levels of people. My parents and my husband's parents are both deceased now, but if you were somebody that did not have a spokesperson for you and were elderly, like I'm going to say 80s or even somebody with Alzheimer's, or something like that, you need somebody that can work with you, and help you, and come down to your level of knowledge and comprehension, and not all people can do that. CM

4.2.7 Service Non-Users Interpersonal Quality

Familiarity with Relationship, Continuity, and Trust

For patients who did not use a community pharmacy service, patients often reported familiarity and trust with an individual who had previously assisted them in their Medicare Part D plan selection. Further, having familiarity and trust appeared to be facilitated by companies or businesses. Further, having an opportunity for follow-up and contact information appeared to help individuals trust the help they had received, providing the necessary reassurance to make the decision.

> *First of all, I knew him, so I already trusted him. I wasn't real sure about the guy that I'd gone with before for the Medicare advantage plan, he had told one thing and something else had happened and he told me, I'll take care of it, and he didn't get back to me, and so the trust factor was real huge. I'd heard of the company that he was talking about, Physicians Mutual, that was a big thing. I hadn't necessarily heard of what this other guy was going with, from what I see now, it was a decent plan, but it wasn't exactly for me. And he did not go into alternatives where Mike did, Mike said, you can do this, at that time I was already on the Advantage plan and he said, you can stay with what you've got, but these are the differences and what you might want to consider. And so we looked at it and we talked it over and we said, yeah, I think we're going to go with that, we'll see, yeah, Medicare Supplement.* MD

> *He has part of it in my car, but he even gave me his card. Sometimes, if I have questions like ... Last year, something came out. Someone wanted me to switch or something, and I called him. He goes, "No. Remember? You're on that best plan that you can get.* MG

Pharmacist Characteristics

Service non-users expected the pharmacist offering the service to be relaxed and knowledgeable, emphasizing the importance of open and timely communication.

> *Definitely in a professional manner. Be open about being available. I know that I can call rights all and ask them a question, I know I can call Mike and ask him a question. So just the fact that they are able and willing, they make it perfectly clear that yes, we'll communicate with you however you need to communicate.* MD

> *Just the way he shows the information and he communicates with us, and I just like to be able to talk to him and you can just talk to him straight forward and everything. And he takes it from there.* LN

4.2.8 Environmental Quality

For Environmental Quality, three themes were identified: Service Location, Customer Service Across Employees, and Private Consultation Space. Both service users and nonusers reported a variety of preferences for service offering location, from telephone to in-person consultations. One place where service users and non-users had different expectation was in the private consultation space, as those who had not used a service were unfamiliar with what the specific service offering may look like or how it was provided in other pharmacies.

4.2.9 Service Users Environmental Quality

Service Location

Individuals with prior service experience preferred having the first time receiving a Medicare Part D consultation service in person, followed by more flexibility in how the service was offered. In special circumstances, patients preferred that the service be offered at home or by telephone due to difficulties traveling to the community pharmacy or for convenience.

> *I would say first time in office, other than that, over the phone because I can get on and I can be on the Medicare site just like what they are and we can do it just on a phone conversation. CM*

> *Either in person at the pharmacy, in one of their side offices, or I would be willing to do it by Zoom. I've gotten acquainted with Zoom. So, at least that's still a video interaction. It's still possible to share screens with data, and so forth. Yeah. The face-to-face is important. I wouldn't do it in my home. That's a unnecessary... In my circumstances I can drive and I'm close to the pharmacy. So in my circumstances, it's an unnecessary burden on the other party to come to me. JS*

> *The situation for me right now, coming to the house wouldn't be bad. I have had some surgery that has made it harder for me to get around. For me to go in and sit and visit right now is not very comfortable. I suppose over the phone is fine too but it is better for me to see the options than someone just telling me about them. A lot of people aren't really computer literate for a Zoom or something like that. VP*

Customer Service Across Employees

For individuals who had previously used a pharmacy service, positive past experiences were driven by customer service. While most participants reported positive customer service experiences with the community pharmacist, the overall impression of customer service extended to additional pharmacy personal. For some individuals, this customer service was enough to maintain their patronage despite potential cost-savings at alternative pharmacy locations.

> *Well, customer service is a big thing, there's a lot of places that I've been in to that has lousy customer service, which is one reason why we've stuck with PHARMACY is because it doesn't make any difference whether it's a pharmacist, whether it's a tech, whether it's the person that checks us out at the cash register, they're always very pleasant, always ask, depending on the circumstances, naturally, if there's any questions, anything that they can help us with. And I think that's one of the things that's lacking in our society right now, and I think PHARMACY is a place that has all that excellent customer service no matter who they are, what job title they have in the store at the pharmacy, or who comes in.* CA

> *Right. And having already been a customer at PHARMACY and having already been a customer at another place I won't name, that's a bigger name, I know the value of customer service, which PHARMACY has. So I would... If it was two or $300 more a year, I would probably still stay with PHARMACY. It wasn't I don't think, but if it had been I would've.* JS

Private Consultation Space

For individuals who used the service, the availability of a private consultation space was consistently an important element of the positive service experience. In addition to the consultation space, patients appreciated that the process was streamlined and individualized, allowing for a stress-free experience.

> *When I arrived, we were taken into a separate little room, closed the door and just my husband and myself and Rob the gentleman that did it. Started the interview and found out all the pertinent information, name, address, phone numbers, et cetera. Then he said, "Please hand me the drugs one at a time and I will enter him into the computer and the dosages.", which he did. He completed that with all, I think at that time, 10 drugs I was taking.* MC

> *Kind of having a... I don't want to call it a stress free interaction, but kind of a... Yeah. I would say that. Having opportunity to go over the information in a not rushed way, and*

having it be organized, and presented in a way I could understand, have it be done in a private space that... Yeah. And really having him have set aside that portion of his day or that number of however many... I don't know how long we were together, but that amount of time for me. Does that make sense? JS

4.2.10 Service Non-Users Environmental Quality

Service Location

Similar to service users, there was a wide variety in how patients would like to receive the service. While many patients reported at home or by telephone might be easiest, a few patients wanted a visual and an in-person discussion to talk about the specific type of information.

If people can drive, he might be able to set up appointments so he can really sit down and talk to them one on one if they have questions. MG

I would either do in person or on the phone, either one. Yeah, I'd do either one, in person or on the phone. YB

Well, I'll tell you for me, it'd either be over the phone or in the home because I don't get out much. (LN)

"Definitely not phone. I want to go in. For that type of information I may need to take some notes myself. I am a visual and physical person." EB

Customer Service Across Employees

Both service users and non-users had an appreciation for the general customer service they received at the community pharmacy, highlighting that customer service across employees dramatically improved their experiences.

Well, customer service is a big thing, there's a lot of places that I've been in to that has lousy customer service, which is one reason why we've stuck with PHARMACY is because it doesn't make any difference whether it's a pharmacist, whether it's a tech, whether it's the person that checks us out at the cash register, they're always very pleasant, always ask, depending on the circumstances, naturally, if there's any questions, anything that they can help us with. And I think that's one of the things that's lacking in our society right now, and I think PHARMACY is a place that has all that excellent customer service no matter who they are, what job title they have in the store at the pharmacy, or who comes in. CA

Right. And having already been a customer at PHARMACY and having already been a customer at another place I won't name, that's a bigger name, I know the value of customer service, which PHARMACY has. So I would... If it was two or $300 more a year,

I would probably still stay with PHARMACY. It wasn't I don't think, but if it had been I would've. JS

4.2.11 Administrative Quality

Template analysis identified 4 subthemes within Administrative Quality: Tailoring Information to the Patient and Information Delivery, Comparison and Choice, Experience with other services and Trust, and Information Print-Out and Explanation.

4.2.12 Service Users Administrative Quality

Tailoring Information to the Patient and Information Delivery

Patients who used the service had appreciation for the way that the community pharmacy provided information that most accurately reflected their specific information needs and abilities, focusing on the complexity and amount of information needed for their specific situation. Patients reported that one community pharmacy providing the service provided a printed version of the information, which the patient could review independently.

Some people like a 90 year old might need someone to explain in a child arena, but yet not all of us need that. So, you need somebody that can adapt to whoever the client is that's coming in and working with them. CM

From my recollection, that would be the name of the plan or the insurance provider. I believe also whether it was their first year that they were providing this Plan D or if they'd been in business a while doing this. Of course the cost, which would've been the monthly premium, and my copay amounts for the various levels of medications, because I have medications that fall into all of the levels, probably, of pricing. And then, I overall expected out of pocket total for the whole big year that I could expect for that upcoming year based on if I continued to take the same medications and so forth. There was one medication with eyedrops that were going to be over a hundred bucks, which he pointed out to me. He also pointed out another medication for my gynecologist and also priced that for me specifically. And so, I was then able to take that information back with me, discuss it with my fiancé, who's now my husband, and then with my doctors make the decision on buying those medications or not. Because they fell more in an optional category rather than a strictly life and death necessary. JS

Comparison and Choice

For individuals who used a Medicare Part D consultation service, choice was an important factor in their service experience. All patients were aware of the large number of available plan options and appreciated that the service presented them with a fewer number of plans to compare. Patients reported the opportunity to compare multiple different plans and consider the various coverage options for their prescription medications.

> *Choice is the most important thing to me. I am willing to pay a bit more for more choice, and I find you get less choice with your cheapest option.* JF

> *I think working with the pharmacist... The pharmacist showed us many more plans that were out there, not that the gentleman at Viridian was trying to lead us one way or the other, but he only was aware of a certain number in 2019, where the pharmacist that we visited with last year, she told me about several different plans, different options, different ways I could go, reviewed my medications, and that helped her give me more options on which would be the most cost effective for me.* CA

> *Well, I think what makes people feel most comfortable is they know when you go in there with your prescriptions and your bottles and the drug dosages and everything, and you go in there and give it to them and they enter that, you know they are comparing the right drug for you. Then, you also get to find out what tier, and at that time you also ... like the one I did myself ... gave the whole year's price of the drugs and you can compare them across, like for Walmart, Humana… You can get all three of them compared out and do your comparisons. I like that.* MC

Experience with other services and Trust

Patients who used a Part D service had numerous other experiences with additional services their pharmacy provided. While some individuals had experience with their pharmacy correcting insurance issues or identifying more cost-effective medication options, some services were tertiary to medications and medication costs, like medication synchronization. These services appeared to facilitate positive relationships with the community pharmacy, with patients appreciating the additional services and the help they received.

> *They helped me the one time, and I think this was actually before I went on Medicare and I don't know if we followed up afterwards as far as trying to request that the drug company, the Part D, Medigap company would consider a lower price. I take thyroid me, and to try and get a lower price because I have tried the generic and it didn't work for me when I started taking the thyroid medicine, it wasn't as effective as what the doctor wanted. And so, we switched to brand, and now I don't want to go off of that, and they*

did try to help me at one time kind of get records together to request. And like I say, this was before Medicare, the insurance company I was with wouldn't do anything. CM

We had an issue with my mother and her prescription drug plan and we had to go in there and they had cancelled her drug plan. So he worked with us on that and did a really good job. VP

Oh. They have friendly and knowledgeable staff. They will promptly fill a new prescription. Especially if you have... It's like a pain medicine, you had surgery or whatever, they'll actually kind of, I don't know, expedite for lack of a better word, a prescription of that nature. They offer a sync, that's what I call it. A med sync, I think is that what they call it? Which all my prescriptions, I pick up prescriptions once a month and they take care of. If there's no refills, they automatically contact the doctor's office through their system, and it's seamless for me, unless the doctor comes back and says, "Oh, I need to see her before then," or whatever, but they communicate that as well. And they actually synced it then additionally, between my husband and myself, so that's cool. JS

Information Print-Out and Explanation

Another important component of the service user experience was a print-out or visual for patients to consider when evaluating their Part D plan choice. Patients who used the service not only wanted a print out or visual, but appreciated that the pharmacist could discuss the plan options and allow them time to process the information before making their decision.

Well, he basically took the printout, went through one by one and said, okay, your premium for this particular plan would be this, the basic deductible, like the $448 or whatever it is this year, $450, whatever, he discussed that. Then he discussed how each drug, the different tier it was in, whether it was tier one, two, or three and what the copays and et cetera would be on those, and how tiers one, two and three would be covered at the different copayment amount. I can't remember the exact amounts now, but say one was three and one was five and one was seven I'm using. He discussed all that. MC

That was really big. I mean, he could have just done a print out and gone, "Here you go." And he didn't. Especially because I had those other complexities, optional medicines, getting married, changing medical plans, with a qualifying event mid-year that was going to affect my overall costs. So, all of that would've been overwhelming to me if he hadn't addressed each of those things. JS

Having somebody talk to me about it, but also having it on a computer screen and then a printout where I could take it with me and digest everything. Just somebody telling me

isn't thorough enough, I want to see it too, and then I to have access so I can see everything about it. CA

4.2.13 Service Non-Users Administrative Quality

Tailoring Information to the Patient and Information Delivery

Patients who had not previously used the consultation service reported that their pharmacist was consistently able to provide medication and other information in a way that they were comfortable with and could process, specifically not "overloading" them with information.

> *No, he gives me what I need to know and it's something he thinks I need to remember or whatever, he'll do me a printout or he'll... Especially, if it's a new drug or something or whatever, he'll give me a full printout, which a lot of times some of them just give you the medicine and you go on because you've been on it so long. But he's real good about making sure everybody knows he doesn't over overload you with it and if there's a question I call him.* CT

Comparison and Choice

When individuals used other resources for their Medicare Part D consultation, they still preferred to have multiple plan options to choose from. Often, the individual assisting patients with their Part D plan selection was an insurance agent or representative from an insurance company.

> *And he started explaining the differences between them, and I said, well, maybe it's not quite what I want. Just a second here. Excuse me. So he went over, he happens to be an agent for Physicians Mutual, and he went over what Physicians Mutual had and how to go about getting a Part D and I switched to Physicians Mutual. And as I said, he gave me the, this is where you go on the website, you decide what you want and I'll sign you up type thing.* MD

> *Well, I tell you what, he just showed me. Matter of fact, he showed me four or five plans, and then he explained each one of them. And the one that I took, he was not an agent for, but he said that would been the best one. He looked at all my medication and said, that would be the best one for me.* LN

Experience with other services and Trust

Patients who had not used a Medicare Part D consultation service did have experience with other community pharmacy services. Their experiences with these services positively influenced the relationship the patient had with the pharmacy and enhanced patient trust.

> *Well, it was these shots for the COVID. Now, he was very well explaining that. And I had had gone through some hospitalization because of some of that. And so he was always careful when he, if the doctor recommended a different type of medicine, but I knew how it might affect me. That helped make our decision on which shots to take, and it would be most effective for us. And the problems we deal with that we have might be a little bit different with the shots. LN*

> *I trust him overall because he does a really good job. He gets it ... He does that program where they come up every month, and they just refill it, and they call and let you know. MG*

Information Print-Out and Explanation

Much like those who used a Part D service provided by their pharmacy, individuals who obtained the information independently or used an alternative source of information preferred having a print-out or visual to reference and discuss. When considering using a service provided by a community pharmacy, patients wanted to be presented with this information and have ample time to make their decision.

> *Well, I want a printout, I want something that I can take home and I can sit down and look at and review, look at the cost, look at which medications are covered because not all medications are covered. We found out through that process, my husband was on a medication that once he went and got a Part D none of the Part Ds would cover. So, then that gave us the information about that so he could also discuss it with his doctor because it's an expensive medication also, but for some reason, part Ds don't cover it. So for me, it's having them run that, give us a printout so that we can sit down and discuss it and have enough time to make that decision before we actually have to make the final decision.* YB

4.2.13 Service Users Willingness-to-Pay (WTP)

Perceptions of WTP

Both service users and service non-users expressed willingness-to-pay for Medicare Part D consultation services offered in the community pharmacy setting. Service users had an appreciation for the time and resources required to provide the service. For individuals who were more comfortable with their Part D decision-making process, WTP values were generally lower. Individuals who did not enjoy the process reported higher WTP values.

> *Oh, well, if it were a reasonable amount, and I'm trying to think it's about an hour that we'd be with them, 30 to $50 to me for that hour period, because I know that the pharmacist has to get paid, the computer system, they have to pay for their computer system and they have to pay for the programs that they have so they can have access to all the different plans that are available in our area. I would think that that would be a reasonable cost, and yes, I would be willing to pay that if I had to in order to get the service. CA*

> *I don't want to say ability, that's not the word. Once again, back to your 80 year old that didn't have anybody else helping them, like a $10 charge or a $25 charge once a year might be good peace of mind for them. For me, I don't think it would be at my age yet. And I've also got kids to bounce things off of too, so I think that would be one of those things whether somebody would pay for the service or not, I don't know. CM*
>
> *In my case, no more than $20, but I probably wouldn't pay that because I know I can do it on my own. MC*

> *Oh, Hmm. Probably $50…[Well] 'cause I don't like doing that stuff. MEW*
>
> *Somewhere between $50 and $100. JS*
>
> *I would put $45 to $50 I suppose. The time, it took a while. VP*

4.2.14 Service Non-Users Willingness-to-Pay (WTP)

Perceptions of WTP

Service non-users were receptive to the idea of payment for service, but with no experience with the service had greater difficulty quantifying the value of the service. Further, individuals who had worked with other individuals such as insurance agents to select plans in the past thought that pharmacists providing these services were eligible for the same financial benefits as insurance agents.

I would prefer that it be free, particularly since if the pharmacy does it they're probably going to end up getting either a percentage of the premium or business out of it or whatever. I presume [PHARMACY] gets a portion of the premium or gets some type of compensation for signing people up. MD

I don't object to paying for the service to do it, I don't know what all is entailed, I'm not sure what is entailed, but $15 is certainly not very expensive, so that's reasonable. YB

20 bucks (10 at the pharmacy). MG

Okay. I would say not over $50 now that's for an hour's worth, let's say, so anywhere zero to $50. LN

4.2.15 Summary of Qualitative Results

From the qualitative interviews, there were several similarities and differences between service users and non-users when considering patient preference and value associated with a Medicare Part D consultation service. Regarding technical quality, both service users and non-users appreciated that pharmacists had specific training and skills that would make them especially well-equipped to help individuals select Medicare Part d plans that accounted for personal medication and health needs. Individuals who had previously used a Medicare Part D consultation service offered by a community pharmacy had more specific expectations of the service, highlighting specific service elements they associated with value, such as an appointed-based service model. Conversely, individuals without prior service experience had more varied expectations of a pharmacy providing this service, but frequently based their expectations based on Medicare Part D assistance they received from an individual outside of the pharmacy setting. For both groups, overall Medicare Part D cost savings and identifying the lowest-cost plan were the most important outcomes expected of a Medicare Part D consultation service.

For interpersonal quality, patients who used the service appeared to have developed considerable trust with their community pharmacy from several factors. Both relationship continuity and experience with pharmacy services appeared to increase patient trust in their community pharmacy, potentially increasing the likelihood of using a community pharmacy Medicare Part D consultation service and deriving value from the information and outcomes associated with it. From existing community pharmacy Medicare Part D literature, trust appears

to be an important component in service experience. Although levels of trust increase with age, information related to cost and finances decreases trust in older populations. Patients who received a community pharmacy Medicare Part D consultation service and their overall service experience may have benefited from increased levels of trust previously established through relationship continuity and prior service experience. Individuals who did not use the service reported positive experiences with their Medicare Part D plan selection experience, specifically those who used an insurance agent or alternative source of information to inform their decision. For these individuals, trust was also important but derived from different means. These individuals relied on a refutable brand or company to help them determine they could trust the information provided.

For environmental quality, both service users and non-users emphasized the potential need for a variety of service offering locations. For service users, they suggested receiving the service at the pharmacy would be best the first time, and future year services could be received remotely. In addition to service location, patients in both groups noted the importance of customer service within the pharmacy, which extended beyond the pharmacy staff. Patients had a great appreciation for how support persons such as cashiers and other pharmacy staff improved their experiences when using the pharmacy to acquire prescription medications and receive additional services. For service users, the private consultation space and amenities provided by the pharmacy (sitting area, restroom) were important components of the service experience and perceptions of service quality, which was not present from service nonuser perspectives.

Perceptions of administrative quality was perhaps the most similar across service user and nonuser groups, with patients emphasizing the importance of their pharmacist tailoring information to them. Further, both groups emphasized the importance of being presented with multiple plan options by whoever was assisting them with their plan selection and that prior service experience with their community pharmacy increased the levels of trust they had with their community pharmacy providing additional service and subsequent consideration of using these services. Finally, both groups wanted a print-out of plan information to make their

decision, with service users placing additional emphasis on the importance of the opportunity to see the specific information related to each plan.

Finally, WTP values were similar across both groups, although generally higher for those who had previously used a Medicare Part D consultation service. Service users were aware of the amount of time and resources that were required to provide the consultation, allowing them to apply more specific WTP values to the service. Individuals who had not previously used the service often opted for a WTP range, which frequently included a free or no-cost option for the service.

4.3 Post-Interview Quantitative Surveys

All 17 interview participants returned quantitative surveys for a response rate of 100%. Participants were predominately female (75.5%) with a median age of 73. The mean for the single item of health activation was 8.18 ± 1.67. Most patients completed some college (8) and were taking four or more prescription medications (14). The means for the two scales measuring confidence in insurance information and confidence in insurance use were 21.53 ± 5.32 and 13.71 ± 4.41, respectively. Descriptive statistics for all survey items can be found in Table 7 and Table 8. After analyzing the responses from service users and non-users, there were no statistically significant differences between the two groups. Descriptive statistics for service users and non-users can be found in Table 9 and Table 10.

Table 7. Descriptive Statistics for Patient-Specific Factors for all respondents.

Item	Frequency (%)
Gender	Male =4 (23.5) Female = 13 (76.5)
Education	High School or GED = 5 (29.4) Some College = 8 (47.1) Bachelor's degree or advanced graduate work = 4 (23.5)
Pharmacy Patronage	Chain = 1 (5.9) Independent = 12 (70.6) Mass Merchandiser = 1 (5.9) Multiple = 3(17.6)
Different Pharmacies Used in the Last 30 days	1 = 12 (70.6) 2 = 5 (29.4)
Prescriptions Currently Taking	1 = 1 (5.9) 2 = 2 (11.8) 4 or more = 14 (82.4)
Annual Household Income	Under $25,000 =4 (23.5) $25,000 to $49,000 = 4 (23.5) $50,000 to $74,999 = 4 (23.5) $75,000 or more = 5 (82.4)

Table 8. Age, Health Activation, and Summative Score for Overall Health Insurance Literacy Measure for all respondents.

Item	Min, Max, Range	Mean $\pm$ SD (Median)
Age[a]	65, 74, 9	71.84 $\pm$ 7.67 (73)
Health Activation[b]	6, 10, 4	8.18 $\pm$ 1.67 (8)
Confidence in Information[c]	9, 28, 19	21.53 $\pm$ 5.32 (21)
Confidence in Use[d]	2, 18, 16	13.71 $\pm$ 4.41 (16)

aOpen-ended response item
bSingle item scale, with 1 being Least Confident and 10 being Most Confident in controlling and managing health problems.
c5 item scale with four response options ranging from Not Confident At All to Very Confident, total score possible is 20.
d4 item scale with four response options ranging from Not Confident At All to Very Confident, total score possible is 16.

Table 9. Descriptive Statistics for Patient-Specific Factors for all respondents.

Item	Frequency (%)	
	Service Users (n = 8)	Service Non-Users (n=9)
Gender	Male =2 (25) Female = 6 (75)	Male = 2 (22.22) Female = 7 (77.78)
Education	High School or GED = 3 (37.5) Some College = 2 (25) Bachelor's degree or advanced graduate work = 3 (37.5)	High School or GED = 2 (22.22) Some College = 6 (66.67) Bachelor's degree or advanced graduate work = 1 (11.11)
Pharmacy Patronage	Chain = 0 (0) Independent = 6 (75) Mass Merchandiser = 1 (12.5) Multiple = 1 (12.5)	Chain = 1 (11.11) Independent = 6 (66.67) Mass Merchandiser = 0 (0) Multiple = 2 (22.22)
Different Pharmacies Used in the Last 30 days	1 = 6 (75) 2 = 2 (25)	1 = 6 (66.67) 2 = 3 (33.33)
Prescriptions Currently Taking	1 = 1 (12.5) 2 = 1 (12.5) 4 or more = 6 (75)	1 = 0 (0) 2 = 1 (11.11) 4 or more = 8 (88.89)
Annual Household Income	Under $25,000 =1 (12.5) $25,000 to $49,000 = 1 (12.5) $50,000 to $74,999 = 2 (25) $75,000 or more = 4 (50)	Under $25,000 =3 (33.33) $25,000 to $49,000 = 3 (33.33) $50,000 to $74,999 = 2 (22.22) $75,000 or more = 1 (11.1)

Table 10. Age, Health Activation, and Summative Score for Overall Health Insurance Literacy Measure for all respondents.

Item	Mean ± SD	
	Service Users (n = 8)	Service Nonusers (n = 9)
Age[a]	71.25 ± 7.17	72.56 ± 8.47
Health Activation[b]	7.75 ± 2.05	8.56 ± 1.24
Confidence in Information[c]	20.42 ± 5.50	22.0 ± 5.57
Confidence in Use[d]	13.71 ± 4.41	14.44 ± 4.95

aOpen-ended response item
bSingle item scale, with 1 being Least Confident and 10 being Most Confident in controlling and managing health problems.
c5 item scale with four response options ranging from Not Confident At All to Very Confident, total score possible is 20.
d4 item scale with four response options ranging from Not Confident At All to Very Confident, total score possible is 16.

4.4 Quantitative Strand: DCE and Supplemental Survey

Of the 642 participants who started the survey, 540 (84.1%) completed the DCE and supplemental survey questions. The median time to survey completion was 6.35 minutes. For the initial choice task designed as a dominant scenario, 481 respondents (89.07%) selected the dominant choice. Overall, individuals who completed the survey had an average age of 71.3 years. Most respondents were female (60%), lived in a Suburban area (56%), used one pharmacy in the past 30 days (76%), were currently taking four or more prescription medication (51%), had previously used a pharmacy service outside of traditional medication dispensing (60%), and most frequently used a chain pharmacy (51%). Overall, self-reported health activation was high with an average of 7.52 1.92. The average scores for the subcomponents of the adapted Medicare Part D health insurance literacy items were 13.9 4.1 and 13.81 2.57, respectively. Descriptive statistics for all demographic and patient-specific factors are included in Table 11.

Table 11. Descriptive statistics for all demographic and patient-specific factors for DCE participants.

Characteristic	N = 540[1]
Age	71.3 (5.2)
Gender	
Female	324 (60%)
Male	214 (40%)
Non-binary / third gender	1 (0.2%)
Prefer not to say	1 (0.2%)
Education	
Some high school	5 (0.9%)
High school or GED	94 (17%)
Some college	195 (36%)
Bachelor's degree or advanced graduate work	246 (46%)
Residence	
Rural	108 (20%)
Small Town	59 (11%)
Suburban	300 (56%)
Urban	73 (14%)
Income	

Characteristic	N = 540[1]
Under $25,000	79 (15%)
$25,000 to $49,999	178 (33%)
$50,000 to $74,999	109 (20%)
$75,000 or more	173 (32%)
<missing>	1
Table 11-Continued : 30 days	
1	408 (76%)
2	114 (21%)
3 or more	18 (3.3%)
Number of prescription medications currently taking	
1	82 (15%)
2	72 (13%)
3	108 (20%)
4 or more	278 (51%)
Used any services provided by pharmacy[2]	325 (60%)
Taking difficult to afford prescription medication[3]	114 (21%)
Chain pharmacy (i.e. CVS)	273 (51%)
Grocery (i.e. Kroger)	102 (19%)
Mail order pharmacy	142 (26%)
Independent pharmacy	66 (12%)
Mass Merchandiser (i.e. Walmart)	116 (21%)
Health Activation[3]	7.52 (1.92)
Health Insurance Literacy- Confidence in Medicare Part D insurance information[5]	13.9 (4.1)
Health Insurance Literacy-Confidence in Medicare Part D insurance use[6]	13.81 (2.57)

[1]Mean (SD); n (%)
[2] Yes or No item, with Yes responses reported.
[3] Yes or No item, with Yes responses reported.
[4]Single item scale, with 1 being Least Confident and 10 being Most Confident in controlling and managing health problems.
[5]5 item scale with four response options ranging from Not Confident At All to Very Confident, total score possible is 20.
[6]4 item scale with four response options ranging from Not Confident At All to Very Confident, total score possible is 16.

4.4.1 DCE Mixed Logit Model Results

The part-worth utilities for attribute levels are included in Table 12. All attribute levels were statistically significant, and the standard deviation of the random parameters specified in the MXL model were significant for most of the attribute levels indicating significant preference heterogeneity across respondents. Overall, study participants had the strongest preferences for interventions that were shorter in duration, with 15 minutes associated with the highest utility for the intervention duration attribute (0.392). Patients preferred a discussion of plan

information and follow-up phone call (0.069), a service offered in the community pharmacy (0.328), a service provided by a pharmacist they knew (0.578), and a price of $0 USD (3.382).

Table 12. Attribute levels and part-worth utilities from a mixed logit model using effects coding.

Attribute	Levels	Utility	SE
Information			
	Discussion	-0.069	0.044
	Discussion and Follow-up phone	0.069	0.044
Location			
	In person at home	-0.307	0.064
	Telephone	-0.021	0.053
	In person at pharmacy	0.328	0.052
Provider			
	Pharmacy Technician or Intern	-0.438	0.055
	Any pharmacist	-0.139	0.044
	Provider-Pharmacist you know	0.578	0.052
Time			
	15 minutes	0.392	0.052
	30 minutes	0.175	0.043
	60 minutes	-0.567	0.057
Price			
	$0	3.382	0.202
	$25	0.000	0.054
	$50	-3.382	0.201

In the main model for the overall population of survey responses, price was the attribute with the highest relative importance (71.11%). This was followed by Service Provider (10.68%), Time (10.09%), Service Location (6.67%), and Information Provided (1.45%). A full list of attribute importance values and rankings for the overall model can be found in Table 13.

Table 13. Attribute Importance Values (AIV) for the overall model.

Attribute	Importance Value	Rank
Information Provided	1.45%	5
Service Location	6.67%	4
Service Provider	10.68%	2
Time	10.09%	3
Price	71.11%	1

4.4.2 Willingness-to-Pay (WTP) and mWTP

With respect to WTP, mWTP was highest for a service provided by a pharmacist the patient knew ($8.42). Services lasting 30 minutes and 60 minutes were associated with negative mWTP values of -$1.77 and -$8.03, respectively. All mWTP values for service attribute levels can be found in Table 14.

Table 14. Willingness-to-pay values for service attributes

Attribute	Level	MWTP
Information		
	Discussion	-
	Discussion and Follow-up phone	1.78
Location		
	In person at home	-
	Telephone	3.01
	In person at pharmacy	5.24
Provider		
	Pharmacy Technician or Intern	-
	Any pharmacist	3.02
	Pharmacist you know	8.42
Time		
	15 minutes	-
	30 minutes	-1.77
	60 minutes	-8.03

For the repeated dominant choice task with variation in price items, likelihood of purchase was similar across all price variations, with the highest mean for the choice option with a $15 price and the lowest mean likelihood for the $35 choice option. Further, the largest number of individuals selected Choice option 1 when it was associated with a $5 price value

(103, 93.7%) and the fewest when it was associated with a $50 price value (30, 27%). Across all price increases, there was a similar decrease in Choice 1 selection. An example of the dominant choice task with a price variation level of $35 can be found in Figure 6, with a table of respondent choice descriptive included in Table 15.

Figure 7. Example of dominant choice task varying across price ($35)

	Option 1	Option 2
Information Provided	Discussion of plan options + follow-up phone call for questions	Discussion of plan options
Time	30 minutes	15 minutes
Location	In person at pharmacy	Telephone
Provider who works with you	Pharmacist you know	Pharmacy technician or intern
Price	$35	$25

	Option 1	Option 2
Your choice:	○	○

Finally, how likely are you to purchase the Medicare Part D consultation service you chose to pick a plan next year? Please move the slider to your choice.

0 = Not Likely At All 10 = Very Likely

0 1 2 3 4 5 6 7 8 9 10

Table 15. Descriptive statistics for responses to dominant choice tasks varying across price levels

Price for Option 1 (Dominant Choice Bundle)	Price for Option 2	Number of Participants Selecting Each Option	Likelihood of Purchasing Selected Choice Option (1 = Not Likely At All and 10 = Very Likely) Mean (SD)
$5	$25	Option 1 = 103 Option 2 = 7	4.71(3.27)
$15	$25	Option 1 = 92 Option 2 = 15	4.96 (3.33)
$25	$25	Option 1 = 76 Option 2 = 31	4.66 (3.47)
$35	$25	Option 1 = 41 Option 2 = 64	4.12 (3.19)
$50	$25	Option 1 = 30 Option 2 = 81	4.57 (3.48)

4.4.3 Subgroup Analysis Results

Subgroup analyses resulted in differences part-worth utilities between patient-specific and demographic factors. Males had less utility for telephone services relative to in person at home compared to females. Individuals who received some college or a Bachelor's degree or Advanced Graduate Work had a larger part-worth utility for a 30 minute service compared to those who had completed High School or a GED. There was a statistically significant difference in price utility between individuals with a household income of $25,000 to $49,000 and individuals making less than $25,000, with patients having a higher income reporting a lower utility. Individuals who made $75,000 or more had a higher utility for the 30 minutes service length compared to individuals who made $25,000 or less. Individuals making $75,000 or more had a higher utility for a 30-minute intervention compared to individuals making under $25,000. Individuals residing in a small town had a larger utility for a 30-minute intervention and had higher utility associated with both the $25 and $50 USD price attribute levels when compared to individuals residing rurally. Individuals residing in an Urban setting had a larger utility for a telephone intervention. Individuals taking 2 prescription medications had higher utility for a telephonic service compared to those who taking one prescription medication.

Further, patients taking 3 medications had higher utility for a service provided by a pharmacist they knew, or any pharmacist compared to individuals taking one prescription medication. Individual who reported difficulties affording prescription medications preferred a telephone service compared to those who did not have difficulty affording prescriptions medications. Individuals who had experience with a pharmacy service had larger utility values for a service offered via telephone and in person at the pharmacy compared to individuals who had not used a pharmacy service. As health activation increased, there was a statistically significant association with utility for the attribute level of "Any Pharmacist" providing the Medicare Part D consultation service. There was a statistically significant association between confidence in health insurance use and part-worth utility in the $50 price attribute, with increased levels of confidence in health insurance use associated with a decrease in utility in the $50 price attribute. All part worth utilities estimated by joint model analysis can be found in Appendix K, Tables K.1 to K.19.

4.4.4 Latent Class Analysis Results

The Akaike Information Criterion (AIC) and Consistent Akaike's Information Criterion (CAIC) values were compared between latent class solutions, with the lowest AIC associated with the four-class model. The AIIC and CAIC values are presented in Table 35. Based on the revealed preferences of the respondents in each class, the four classes were termed the "Efficiency Class," "Cost Class," "Relationship Class," and the "Convenience Class." The probability of respondents belonging to the Cost Class was highest (49.2%), followed by the Relationship Class (25.5%), the Efficiency Class (15.7%), and the Convenience Class (9.4%). The part-worth utility values for each service attribute level across the four identified classes are presented in Table 36. The relative importance of each attribute within each class are presented in Table 37 and Figure 7.

From the results of the LC model, there were statistically significant differences in part-worth utilities for multiple service attribute levels. Individuals in the Efficiency class reported negative part-worth utility (-0.4) for discussion and follow-up phone call compared to discussion alone (0.4), while all other classes reported positive part-worth utility for discussion and follow-up phone call. Additionally, the Efficiency Class had no differences in part-worth

utility for attribute levels associated with Location and Provider attribute levels. The Cost Class and the Convenience Class had significant differences in part-worth utilities for Location attributes, with higher part-worth utilities for Telephone and In-person at pharmacy relative to in-person at home. The Relationship Class had a negative part-worth utility for the Telephone service attribute (-0.36) compared to the in-person at home attribute level. Apart from the Efficiency Class, all classes had the highest part-worth utility value for the in-person at pharmacy attribute. For the Provider attribute category, both the Cost Class and Relationship Class had part-worth utilities which were largest for the Pharmacist you know attribute level, which was significantly different from the Pharmacy technician or intern. Only the Efficiency Class and Cost Class had statistically significant differences in the Time attribute level. The Efficiency Class had lower part-worth utilities for 30 and 60-minute service lengths (0.4 and -1.45, respectively), which was significantly different from the 15-minute level. For the Cost Class, only the 60-minute service length had a significant different part-worth utility compared to the 15-minute level, with the 60-minutes level having a negative part-worth utility (-0.43). Across all classes, there was a statistically significant difference in part-worth utilities for the Price attribute, with lower utility associated with both the $50 and $25 level compared to the $0 level. There was negative part-worth utility associated with the $50 price level in all classes.

The Efficiency Class had the greatest utility for service with plan discussion (0.4) compared to a discussion and follow-up phone call (-0.4), offered by telephone (0.24), provided by a pharmacist they knew (0.26), lasting 15 minutes (1.04) and at no-cost (1.22). The most important attributes for individuals in the Efficiency Class, as identified by AIV value, were Price (37.5%) and Time (37.4%). The Cost Class had the greatest utility for discussion and follow-up phone call (0.07), offered in-person at the pharmacy (0.17), provide by a pharmacist they knew (0.32), taking 15 minutes, and offered at no-cost (3.98). The service attributes with the highest AIV for the Cost Class were for Price (81.65%) and Time (7.21%). The attribute levels with the highest utility for the Relationship Class were a discussion and follow-up phone call (0.07), provided in-person at pharmacy (0.17), provided by a pharmacist they knew (0.32), taking 15 minutes (0.02), and offered at no-cost (1.04). The Relationship Class had the highest AIV for Price (41.3%), Provider (32.12%), and Location (19.06%). Finally, the convenience class had the

highest utility for a service offered in person at the pharmacy (0.95), provided by a pharmacist they knew (0.19), and offered at no-cost (1.04). The Convenience Class had the highest AIV values for Location (47.45%) and Price (38.84%).

When assessing the differences of the individual patient-specific factors and demographics between the latent classes, statistically significant differences were found for only gender and difficulty affording prescription medications (p-value <0.050). The percentage of individuals who reported difficulty affording prescription medications was highest in the Cost Class. The percentage of females compared to males was lowest in the Relationship Class (p-value <0.05).

Table 16. Latent Class AIC Results.

Number of classes	Akaike's Information Criterion	Consistent Akaike's Information Criterion
2	5890.629	5890.747
3	5755.693	5755.963
4	**5708.945**	**5709.429**
5	5729.286	5730.048
6	5658.673	5659.776
7	5584.522	5586.029
8	5587.448	5589.423
9	5561.284	5563.791
10	5614.079	5617.182

Table 17. Part-Worth Utility Values for Latent Classes.

Attribute	Level	Segment 1 N = 85 (15.7%) Efficiency Class	Segment 2 N = 266 (49.2%) Cost Class	Segment 3 N = 138 (25.5%) Relationship Class	Segment 4 N = 51(9.4%) Convenience Class
Information					
Discussion[a]		0.4 (0.19)	-0.07 (0.06)	-0.09 (0.06)	0 (0.11)
Discussion and Follow-up phone		-0.4 (0.19) *	0.07 (0.06)	0.09 (0.06)	0 (0.11)
Location					
In person at home[a]		-0.03 (0.12)	-0.24 (0.09)	0.1 (0.06)	-1.73 (0.26)
Telephone		0.24 (0.12)	0.07 (0.08) *	-0.36 (0.07) *	0.77 (0.15) *
In person at pharmacy		-0.21 (0.13)	0.17 (0.08) *	0.26 (0.07)	0.95 (0.18) *
Provider					
Pharmacy Technician or Intern[a]		-0.09 (0.11)	-0.2 (0.08)	-0.47 (0.06)	-0.22 (0.12)
Any pharmacist		-0.17 (0.1)	-0.13 (0.08)	-0.1 (0.05) *	0.03 (0.11)
Pharmacist you know		0.26 (0.1)	0.32 (0.08) *	0.56 (0.06) *	0.19 (0.12)
Time					
15 minutes[a]		1.04 (0.24)	0.27 (0.1)	0.02 (0.05)	0.06 (0.12)
30 minutes		0.4 (0.14) *	0.16 (0.08)	0.01 (0.05)	0.15 (0.12)
60 minutes		-1.45 (0.34) *	-0.43 (0.1) *	-0.03 (0.06)	-0.21 (0.14)
Price					
$0[a]		1.22 (0.34)	3.98 (0.32)	0.64 (0.14)	1.04 (0.29)
$25		0.06 (0.16) *	-0.08 (0.17) *	0.05 (0.06) *	0.11 (0.13) *
$50		-1.28 (0.31) *	-3.9 (0.34) *	-0.69 (0.14) *	-1.15 (0.32) *

* Significance level < 0.05

[a] Reference values

Table 18. Attribute Importance Values Across Latent Classes

	Efficiency Class		Cost Class		Relationship Class		Convenience Class	
Attribute	Importance Value	Rank	Importance Value	Rank	Importance Value	Rank	Importance Value	Rank
Information	11.96556	3	1.456917	5	5.887205	4	0.037046	5
Location	6.758043	4	4.292301	4	19.06644	3	47.45705	1
Price	37.50203	1	81.64674	1	41.29771	1	38.84194	2
Provider	6.362522	5	5.398985	3	32.1165	2	7.215215	3
Time	37.41184	2	7.205054	2	1.63214	5	6.448748	4

Figure 8. Latent Class Analysis Results, Attribute Importance Scores, by Segment

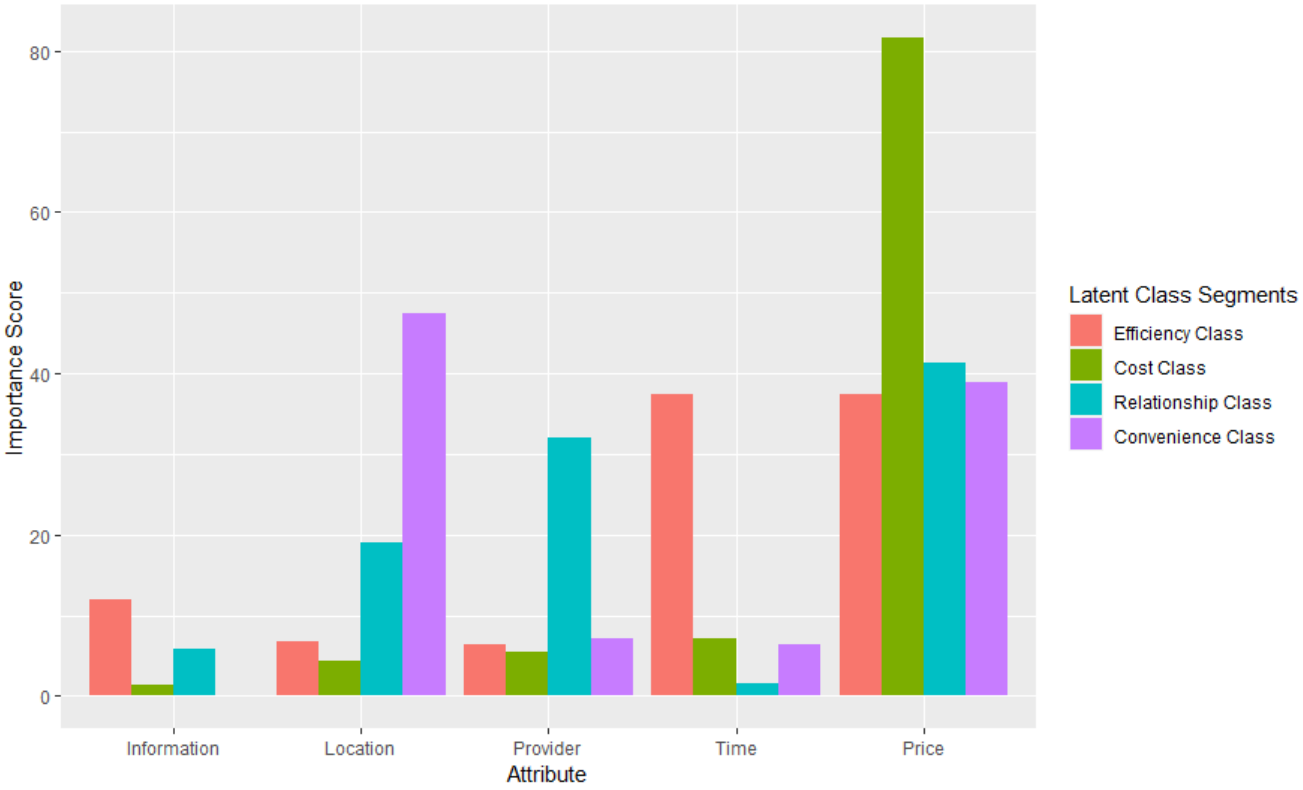


Table 19. Demographics and patient-specific factors across latent classes

Characteristic	Efficiency Class, N = 84[1]	Cost Class, N = 262[1]	Relationship Class, N = 137[1]	Convenience Class, N = 50[1]	p-value[2]
Age	71.5 (4.6)	71.2 (4.9)	71.2 (5.7)	71.5 (5.5)	0.6
Gender**					0.040
Female	53 (17%)	167 (52%)	68 (21%)	32 (10%)	
Male	31 (15%)	95 (45%)	69 (32%)	18 (8.5%)	
Education					0.5
High school or GED	13 (14%)	46 (49%)	28 (30%)	7 (7.4%)	
Some college	34 (18%)	96 (49%)	51 (26%)	13 (6.7%)	
Bachelor's degree or advanced graduate work	37 (15%)	120 (49%)	58 (24%)	30 (12%)	
Residence					0.2
Rural	22 (21%)	50 (47%)	27 (25%)	7 (6.6%)	
Small Town	12 (21%)	32 (55%)	8 (14%)	6 (10%)	
Suburban	45 (15%)	144 (48%)	79 (27%)	29 (9.8%)	
Urban	5 (6.9%)	36 (50%)	23 (32%)	8 (11%)	
Income					0.5
Under $25,000	12 (15%)	43 (55%)	17 (22%)	6 (7.7%)	
$25,000 to $49,999	32 (18%)	84 (49%)	46 (27%)	11 (6.4%)	
$50,000 to $74,999	15 (14%)	57 (53%)	23 (21%)	13 (12%)	
$75,000 or more	25 (14%)	78 (45%)	50 (29%)	20 (12%)	
<missing>	0	0	1	0	
Confidence (1-10 scale) - control and manage most health problems	7.29 (1.81)	7.56 (1.93)	7.66 (1.97)	7.34 (1.83)	0.2
Different pharmacies used in last 30 days					0.9
1	62 (15%)	200 (50%)	103 (26%)	38 (9.4%)	
2	20 (18%)	52 (46%)	29 (26%)	12 (11%)	
3 or more	2 (12%)	10 (59%)	5 (29%)	0 (0%)	
Number of prescription medications currently taking					0.3
1	7 (8.5%)	47 (57%)	23 (28%)	5 (6.1%)	
2	14 (20%)	33 (46%)	15 (21%)	9 (13%)	
3	20 (19%)	44 (41%)	31 (29%)	13 (12%)	
4 or more	43 (16%)	138 (51%)	68 (25%)	23 (8.5%)	
Past service experience	42 (13%)	167 (52%)	83 (26%)	28 (8.8%)	0.15
Taking difficult to afford prescription medication**	16 (14%)	59 (52%)	36 (32%)	3 (2.6%)	0.024
Chain pharmacy (i.e., CVS)	35 (13%)	136 (50%)	68 (25%)	31 (11%)	0.14
Grocery (i.e., Kroger)	16 (16%)	52 (51%)	25 (25%)	8 (7.9%)	>0.9
Mail order pharmacy	27 (19%)	72 (51%)	33 (24%)	8 (5.7%)	0.2
Independent pharmacy	9 (14%)	24 (38%)	25 (39%)	6 (9.4%)	0.066
Mass Merchandiser (i.e., Walmart)	21 (19%)	62 (55%)	23 (20%)	7 (6.2%)	0.2
Confidence in Health Insurance Selection	13.5 (4.0)	14.1 (4.1)	14.0 (4.2)	13.9 (3.7)	0.7
Confidence in Health Insurance Use	13.96 (2.42)	13.86 (2.61)	13.72 (2.54)	13.66 (2.52)	0.8

[1]Mean (SD); n (%)
[2]Kruskal-Wallis rank sum test; Pearson's Chi-squared test; Fisher's exact test
** denotes statistical significance

CHAPTER 5: DISCUSSION

This study used a patient-centered approach to identify and explore patient preferences for attributes associated with a Medicare Part D consultation service offered by community pharmacies. From patient interviews informed by the SERVQUAL framework and study team expertise, five measurable and actionable attributes were determined to be important to Medicare Part D consultation service quality: information provided, time, service location, service provider, and service cost. After identifying service attributes and levels, the DCE survey results revealed that highest utility was associated with a service bundle comprised of the following attributes: 15-minute duration, plan discussion and follow-up phone call, a service provided by a pharmacist the patient knew, a service offered in-person at the community pharmacy, and a service offered at no-cost. The latent class analysis revealed four distinct survey respondent classes: Efficiency Class, Cost Class, Relationship Class, and Convenience Class. While price consistently had a high AIV value across classes, different classes placed high importance values on service attributes in addition to price. While few statistically significant differences between patient-specific factors and demographics existed between classes, patients who reported difficulty affording prescription medications were more likely to be in the Cost Class. As a result of this study, there are several considerations for community pharmacies offering Medicare Part D consultation services pertaining to how patients consider, define, and assign service quality and value for enhanced community pharmacy services.

5.1 Objective 1: Patient Perceptions of Medicare Part D Consultation Services from Qualitative Interviews

The first objective of this study was to explore patient-centeredness and patient preferences for Medicare Part D consultation service offerings. After qualitative interviews were completed and analyzed, information, location, price, provider, and time were identified as service attributes which were important to patients when considering using and assigning value to a Medicare Part D consultation service provided by community pharmacies. These service attributes, included in the DCE survey, were consistent with other DCE studies evaluating patient preference for pharmacy service attributes. In a study by Radley, van der Pol,

and Dillion evaluating patient preferences for a hepatitis C testing service, the attributes that were identified were: *Time, Distance, Money Received, Provider, and Dignity and Respect.*[303] Additionally, a recent study by Raghunandan et. al. evaluated public preferences for pharmacist prescribers in primary care in New Zealand, identifying the following attributes for DCE inclusion: *Location, Waiting Time, Cost, Type of Service Covered, Type of Consultation, and Prescribing Service Operating Hours.*[304] Similar to other healthcare DCE studies, this study included attributes in the final DCE instrument that reflected tangible service attributes which could be pragmatically operationalized to improve or alter a service.

From qualitative interviews, several similarities and differences in patient preferences for Medicare Part D consultation service attributes existed. These differences were largely influenced by service experience and associated expectations of the community pharmacy and the services they provide. Past experience may have a significant effect on service attribute preference, expected service offerings, and trust, as patient preferences may change as service-naive individuals obtain greater exposure to service offerings.[239]

5.1.1 Service Expectations, Service Experience, and Pharmacy Service Quality and Value

In each of the SERVQUAL categories contributing to service quality, patients who used a pharmacy service suggested areas where their expectations were met, but also areas where the community pharmacy offering the service exceeded their expectations. Service expectations being met or exceeded became especially noticeable when comparing interview data between SERVQUAL categories for individuals who did and did not use a Medicare Part D consultation service. Service users and non-users both had similar expectations of interpersonal quality, with an appreciation for how pharmacists should interact with patients when providing Medicare Part D consultation services. Despite the similarities between service users and non-users for perceptions of interpersonal quality, service users had clearer preferences for and expectations of administrative, environmental, and technical quality. The differences in preference and expectations were likely influenced by the receipt of a Medicare Part D consultation service.

Within the Technical Quality SERVQUAL domain, service users reported scheduling appointments contributed to their perceptions of service value, which was reflective of the

service they had previously experienced. These individuals also expected a specific plan-comparison experience, with only a few of the best plans presented and information on each of the plans presented visually and discussed. Conversely, individuals without prior service experience had more varied expectations of a pharmacy providing this service, but frequently based their expectations on Medicare Part D assistance they received from an individual outside of the pharmacy setting. For environmental quality, both service users and non-users emphasized the potential need for a variety of service offering locations. For service users, they suggested receiving the service at the pharmacy would be best the first time, and future year services could be received remotely. Individuals who did not use a service were receptive to a wide variety of service locations, For service users, the private consultation space and amenities provided by the pharmacy (sitting area, restroom) were important to exceeding their expectations of the service experience and perceptions of service quality, which was not present from service non-user perspectives. Although administrative and interpersonal expectations of service attributes were similar across both groups, these expectations were driven by past service experience and/or interactions with their community pharmacy. Further, individuals who did not use a pharmacy-led service had experience with a service offered by another individual, subsequently driving their expectations of a pharmacy-led service. Despite differences in expectations, patients who had received assistance of any type had an idea of what a Medicare Part D consultation service of high value would look like.

Within the existing community pharmacy service research and as noted in the literature review, the relationship between service quality, patient preferences, patient expectations, and willingness-to-pay is complex. In a study by AlShayban et. al. patients with previous experience with medication counseling services were more likely to be satisfied with their medication counseling experience.[305] Further, the authors found that patients were more willing to pay for counseling services if they were satisfied with the counseling time duration and were able to get counseling without difficulty.[305] Service attributes of time and attaining counseling without difficulty were reflective of expectations being met or exceeded, and resulted in increased service value and willingness to pay. Similarly, this study identified several service attributes that reflected patient expectations being met or exceeded, which varied across service use and

experience. When service attributes reflected patient preference for the service offering, the attribute resulted in a larger mWTP value. Another study by Guhl, Blankart, and Stargardt tested the relationship between service quality, perceived customer value, and customer loyalty.[306] Similar to this study, perceived customer value was informed by domains from the SERQUAL framework. The authors found a strong positive relationship between perceived customer value, customer satisfaction, and customer loyalty, suggesting that individual perception of service value informs customer satisfaction as well as customer loyalty. This relationship is especially important when considering repeated use of enhanced pharmacy services, with customer loyalty directly related to perceived service value.[306] To increase service initial and repeated use, increase patient perceptions of service value, and increase the likelihood that patients will pay for community pharmacy services, it is essential to align service offerings with patient expectations, which are likely to change as patients have additional service experiences. In this study, patient expectations were important to perceptions of service offering value as there were considerable differences in qualitative interview responses between service users and non-users, suggesting service experience contributes to expectations of service offerings.

In addition to patient expectations of a service contributing to service value, patient awareness of enhanced community pharmacy services and pharmacist abilities may also contribute to service expectations and value. In a study by King, Martin, and Betka, the authors found that while baseline awareness and use of an inpatient medication education service was low, marketing inpatient pharmacy services to patients resulted in a seven times increase in the likelihood that a patient would request a pharmacy service.[307] In a study by Low, See, and Lai evaluating understanding and expectations of pharmaceutical care, 75% of consumers were unaware that pharmacists are trained to provide additional services outside of traditional dispensing roles. Despite the lack of awareness with enhanced pharmacy services, 63% of consumers expected personalized services, suggesting that consumer expectations of community pharmacies have expanded beyond dispensing-only models with minimal awareness that enhanced or expanded pharmacy services are offered.[308] Similarly, awareness and use of Medicare Part D consultation services in the community pharmacy setting remains

low.[8,21] In this study, a large number of patients had previous experience with an enhanced pharmacy service. Experience with enhanced community pharmacy services is likely to contribute to patient perceptions of service value, including increasing part-worth utilities and mWTP for service attributes. One potential way to increase patient perceptions of service value is to increase patient awareness of enhanced community services through service marketing and make expectations consistent across comparable enhanced community by standardizing Medicare Part D consultation services to consistently meet or exceed patient experience and expectation with the service.

Finally, qualitative interviews identified that patients who had previous experience with enhanced community pharmacy services, Medicare Part D consultation or otherwise, appeared to be more receptive to the idea of receiving and paying for a Medicare Part D consultation service offered in the community pharmacy setting. Further, past experiences with a community pharmacy service influenced patient service expectations and perceived service value. These findings are similar to those in a study by Patterson et. al. identified that quality previous pharmacy experiences were associated with increased pharmacy service use.[309] To increase the use, awareness, and value of Medicare Part D consultation service, community pharmacies could explore techniques employed outside of the pharmacy setting, specifically, the bundling of Medicare Part D consultation service with existing enhanced community pharmacy services which patients already have familiarity with and value. While little is known about the effects of bundling on patient perceptions and valuation of healthcare services, bundling has been an effective strategy in a diverse range of industries to increase service and product consumption and increase perceptions of value.[310] In a study by Naylor and Frank evaluating the effect of price bundling on consumer perceptions of value for spa/resort bundles, perceptions of value were higher for all-inclusive resort bundles, despite the higher cost associated with the bundle. Further, value for first-time guests in this study was significantly influenced by expectations in the form of disappointment/delight. For first time guests, value was informed by expectation of the service bundle offered. First time users who had their expectations met reported higher levels of bundle value than those whose expectations were not met.[311] In a study by Derdenger and Kumar, bundling of both hardware

and software of video game consoles increased total sales and prevented delays in purchasing.[310] In this study patients who reported previous experience with both Medicare Part D consultation services and/or other enhanced community pharmacy services had clearer expectations of a community pharmacy service and the attributes associated with service value. For patients with positive experiences and more clearly defined expectations with enhanced services other than Medicare Part D consultation services, bundling enhanced community pharmacy services may be a way to increase value and use of less familiar enhanced services.

5.1.2 Trust and Pharmacy Service Quality

In addition to service experience and expectations as a factor potentially influencing enhanced community pharmacy service value, trust was identified as an important component of both administrative and interpersonal service quality. For interpersonal quality, patients who used the service appeared to have developed considerable trust with their community pharmacy. Both relationship continuity and experience with pharmacy services appeared to increase patient trust in their community pharmacy, potentially increasing the likelihood of using a community pharmacy Medicare Part D consultation service and deriving value from the information and outcomes associated with service use. Individuals who did not use the service reported positive experiences with their Medicare Part D plan selection experience, specifically those who used an insurance agent or alternative source of information to inform their decision. For these individuals, trust was also important but derived from different means. These individuals relied on a refutable brand or company to assure that they could trust the information provided.

From existing community pharmacy Medicare Part D literature, trust appears to be an important component in service experience.[21] Although older individuals have increased levels of trust, information related to cost and finances decreases trust in older populations, which is often the focus of Medicare Part D consultation services.[312] Further, large amounts of technical information and the way information is presented may impact patient experience and trust within a Medicare Part D consultation service experience.[21] In this study, patients who used the pharmacy service infrequently reported cost and cost-savings as the emphasis of the consultation encounter, which is potentially different from other Medicare Part D consultation

service offerings in the community pharmacy setting.[8,21] The emphasis on plan information rather than cost-savings reported by patients who received a Medicare Part D consultation service may have resulted in increased levels of trust within the service experience. Additionally, patients who received a community pharmacy Medicare Part D consultation service and their overall service experience and service outcomes may have benefited from increased levels of trust previously established through relationship continuity and prior service experience.[313] Previous research emphasizes the importance of trust in difficult medical decisions. In work evaluating the patient experience with a Medicare Part D consultation service conducted by Murry, Al-Khatib, and Witry, the service experience was heavily influenced by trust, with positive service experiences reflected by patients with stronger trust and relationships with the individual providing the service.[21] In addition to perceptions of service experience, trust may be an important contributor to patient perceptions of service outcomes. In a meta-analysis by Birkhauer et., al. patient trust in healthcare provider was correlated with self-reported health outcomes.[314] Further, the authors identified a strong correlation between trust and patient satisfaction with treatment. These results suggest that trust may be an important facilitator in not only service experience, but the reported outcomes resulting from these experiences. In this study, interview participants were generally more receptive to receiving and paying for Medicare Part D consultation service offerings when they had higher levels of trust with their pharmacy. Trust is further identified as an important component of a Medicare Part D consultation service from the results of the DCE survey, with the largest utility within the Provider attribute associated with the level of Pharmacist I know, compared to Any Pharmacist or Pharmacy Technician or Intern.

From post-interview quantitative surveys, there were no statistical differences between service user and non-user groups. Despite the small sample size, health insurance information confidence and health insurance use confidence responses were high in both the service user and non-user groups, with considerable range in these scores in both the post-interview survey and DCE supplemental survey. The range in these scores suggests there are notable variations in individual Medicare Part D health insurance literacy. As such, prescreening individuals for health insurance literacy and optimizing Medicare Part D insurance information may be

especially valuable for patients with lower health literacy when optimizing the information presented and the overall experience of a Medicare Part D consultation service.

5.2 Objective 2: Quantifying Patient Preferences for Medicare Part D Consultation Services

The second objective of this study was to calculate part worth utilities and willingness-to-pay (WTP) for specific service offerings as well as marginal willingness-to-pay (mWTP) for individual service offering attributes. This was accomplished using a DCE survey administered electronically and analyzed using a MXL model. To understand the results and their applicability to the general Medicare population, it is important to consider the respondents in this study to the Medicare population.

5.2.1 DCE Survey Respondents compared to the 2019 Medicare Population

In 2019, 49.6% of all Medicare enrollees were between the ages of 65-74 and 36.7% were 75 and older.[315] In this study, 77.2% of respondents were between the ages of 65-74 and 22.8% were 75 years of age or older. The variation in age is likely a result of inclusion and exclusion criteria, including only individuals 65 years of age and older, as individuals younger than 65 may be eligible for Medicare due to disabilities or medical diagnosis.[315] Additionally, the difference in age between the study population and the overall Medicare population may be attributed to the web-based survey format, with younger individuals potentially more likely to be signed up for and receive a Qualtrics survey distributed electronically. For the 2019 Medicare enrollee's education status, 52.1% of Medicare enrollees attended college with, 32.3% completing high school or vocational school, and 14% reporting less than high school.[315] In this study, 46% of respondents completed a Bachelor's degree or advanced graduate work, with 36% completing some college. These results suggest that our study population may have received more formal education than Medicare enrolled population in 2019. The percentage of males and females are comparable to the overall Medicare enrollee population in 2019, with females making up 54.6% of enrollees and males making up 45.4% in 2019.[315,316] In this study, 60% (324) of respondents were female and 40% (214) were male. Overall, the study population appears to be comparable to the general Medicare population in 2019, although the Qualtrics panel may have recruited individuals who had higher levels of education and were older in age.

5.2.2 DCE Mixed Logit

From the results of the MXL, patients had the highest utility for Medicare Part D services offered with the following attributes: discussion and an opportunity for follow-up via telephone, offered in person at the pharmacy, provided by a pharmacist with whom the patient has an established relationship with, lasting 15 minutes. From the main effects model, Price was clearly the most important attribute associated with a Medicare Part D consultation service, as indicated by the AIV value (71.11%) and the part-worth utility associated with the $0 USD attribute level (3.382). While cost-savings were an important outcome reported in qualitative interviews, the cost of the service was infrequently reported as an important consideration for service use, with both service users and non-users reporting a wide variety of hypothetical values they would be willing to pay for a Medicare Part D consultation service. Interestingly, results from the DCE further differed from interview results, where patients with past service experience suggesting that a longer intervention was preferred to a shorter one. In this study, one of the community pharmacies assisting in patient recruitment and currently offering a Medicare Part D consultation service allocated an hour to each patient who signed up for and subsequently used the service. While patients who had received the service suggested longer durations for service offerings were required, the DCE results contradicted this result. This is perhaps another instance where prior service experience is driving service expectation, with community pharmacies committing amounts of time to all Medicare Part D consultations that may not reflect patient preference.

While differences between interviews and the DCE results were found, the results of the DCE corroborate the interview results in several ways. First, patients had higher part-worth utility and mWTP for a discussion and follow-up phone call. Patients in interviews reported they needed time to process the information about their Part D plan independently and wanted access to the pharmacy as a resource for questions or concerns after the initial consultation was completed. Additionally, some individuals who did not receive the service reported receiving a business card with contact information facilitated their trust with the information they received. The highest part-worth utilities and mWTP in the Location and Provider attributes were for services offered in person at the pharmacy and provided by a pharmacist

the patient knew. Interview participants reported that while they appreciated that some circumstances made an at-home or telephone service more appealing, they generally preferred to go into the pharmacy and have a face-to-face encounter. With patient preferring a service provided by a pharmacist they knew; trust appears to be an important element of service offerings. Patients who participated in interviews frequently reported the importance of trust when considering service offering value and service use, which was quantified in the DCE results. Trust, in this instance indicated by the preference for a pharmacist the patient knew providing the service, resulted in a mWTP of more than double that associated with a service provided by any pharmacist ($8.42 vs $3.02).

When considering service sustainability and how additional services are delivered, it is unlikely that patients would have positive part-worth utilities or higher mWTP values for a service provider other than a pharmacist. While the roles of technicians, pharmacy interns, and community health workers are expanding in community pharmacy practice settings, a service provider other than a pharmacist was associated with the lowest part-worth utility and mWTP. Despite the preference for a pharmacist providing this service, it is important to consider sustainability as it relates to cost and pharmacist time. While a service provided by a pharmacist the patient knew was associated with the highest part-worth utility and mWTP for all attributes in the Provider class, a pharmacy intern or technician providing this service would likely be a more sustainable approach. In a recent study by Mattingly and Boyle, pharmacy technicians in the state of Maryland had a median salary of $15.10 USD/Hour.[317] Further, a study by McKee and Zimmerman identified that the expansion of technician roles in pharmacy practice has the potential to result in significant cost savings, as pharmacy technicians involvement in a tech-check-tech program resulted in the elimination of 0.5 pharmacist FTEs, an $83,576 USD cost-savings.[318,319]

As such, pharmacies should consider the potential mWTP and patient preference for a pharmacist-led service ($8.42) relative to the cost of providing the service. Given that patients often focus on service cost, pharmacies may be able to provide service offerings with service attributes that are not associated with the highest part-worth utilities and mWTP, provided that these services remain at no-cost. Pharmacies should consider how best to engage patients and

offer these services while considering the sustainability and trade-offs associated with service offering attributes.

5.2.3 Cost in Pharmacy and Healthcare DCE Studies

Additional DCE studies performed on community pharmacy services found similar results, with patients having substantive negative part-worth utilities for increasing cost attribute levels and large AIVs for cost attributes with enhanced pharmacy services.[320,321] Despite the emphasis on the price attribute in this and other DCE studies, the inclusion of a price attribute has not altered patient preference for healthcare service in other DCE studies. A study by Essers et.al. compared the results of two DCEs, with one of the DCEs including a cost attribute while evaluating patient preference for basal cell carcinoma surgery.[322] The authors found that while individuals preferred the lower-cost option, the preferences in other attributes was unaffected by the inclusion of a cost attribute. Further, additional studies suggest that the addition of a cost attribute acts as any other attribute level, suggesting that patient stated preference for other attributes is unaffected by cost, despite the importance of cost within the DCE.[323,324]

5.2.4 Variation in Price for Dominant Choice Scenario

The responses to the dominant choice scenario varying across price for the dominant choice revealed that the likelihood of purchasing a Medicare Part D consultation service was relatively low, regardless of price. The highest mean for likelihood of purchasing a Medicare Part D consultation service was at the $15 value for the dominant choice scenario (4.96). This mean likelihood was larger than for the same dominant choice scenario at the $5 price level. The increase in likelihood of purchase response may be a result of question randomization, with different groups of respondents reporting higher likelihood of purchasing after the exposure to the choice blocks they received. Alternatively, price may be influencing perceptions of service quality and subsequently increasing purchasing intent. Existing studies focusing on the relationship between price and quality of medications identified that patients had negative perceptions of medication quality when the medications were available at no charge.[325,326] This phenomenon may be present within a community pharmacy service, where a slight increase in

price increases perceptions of quality and subsequently, increases purchasing intent. Further, when prices between the dominant and alternative choice bundles were equal, the majority of respondents still preferred the dominant choice task, however, a larger number of individuals chose the non-dominant option. This increase in selecting the non-dominant choice may be a result of preferences for attributes included in Option 2 that were previously ignored due to the difference in price. Once Option 2 became the less expensive option, we see a larger number of individuals selecting Option 2, the non-dominant choice scenario. Again, some individuals continued to select the dominate choice scenario despite the increased price, suggesting there are attributes that are potentially more influential to their decision than price.

5.3 Objective 3: Service Offerings Preferences for Patient Subgroups

The third and final objective of this study was to determine the effect of patient-specific factors on optimal service offerings and patient preference for Medicare Part D services. The subgroup and latent class analysis provide several insights on the heterogeneity in patient preference within a relatively homogeneous Medicare Part D population.[327] Most notably, there were significant variations in preference for length of a Medicare Part D consultation based on patient-specific factors and demographics. While the main effects model resulted in the 15-minute service length attribute level having the largest part-worth utility and mWTP value, there was perhaps the most variation in this preference within subgroup and latent classes. Individuals with more formal education, residing in a small town, and having a household income of $75,000 or more preferred a 30-minute intervention compared to their respective reference levels (High School or GED, Rural, less than $25,000). While we might expect individuals with higher incomes and level of education may prefer shorter consultations due to their ability to access alternative sources of Medicare Part D consultation services and may be better equipped to navigate complex health insurance terminology, this was not the result of this study. It may be that patients with higher levels of income prefer longer consultations due to increased awareness of the complexity of the Medicare Part D decision-making process, or that they are more risk averse when it comes to decisions with financial implications, resulting in the need for a longer, and potentially more comprehensive, Medicare Part D plan consultation with their community pharmacy.

Additionally, individuals residing in a small town had a higher utility for price level attributes of $25 and $50 USD compared to those residing rurally. One potential reason for the variation in service preference amongst these groups is access to enhanced pharmacy services and service experiences. Individuals residing in a small town are more likely to have access to a community pharmacy and pharmacy services compared to those who reside rurally.[328] Patients taking 3 medications had a higher part-worth utility for a service provided by a pharmacist they knew compared to those individuals taking one prescription medication, which could potentially be explained by patient perception of medication complexity, uncertainty in year-to-year costs, and trust in their provider. Despite this significance, there was no significant difference in part-worth utilities for provider for individuals taking 4 or more medications compared to those taking one medication, suggesting that the significance may be spurious.

As individual's level of health activation increased, there was a significant associated increase in the part-worth utility derived from the "Any Pharmacist" attribute. Similarly, there was a statistically significant relationship between Health Insurance Literacy-Confidence in Use scale scores and the part-worth utility associated with the $50 service price attribute, with decreasing part-worth utility with increased Health Insurance Literacy score. This may be explained by individual efficacy decreasing the need for patient-centered care provided by a trusted pharmacist.

From the results of the Latent Class analysis, there was heterogeneity in patient preference for Medicare Part D service consultation offerings best described by a four-class model. The statistically significant difference in responses to the yes/no item for difficulty taking prescription medications across classes is important, with 59 (52%) of respondents in the Cost Class reporting difficulty affording prescription medications. This is compared to 16 (14%), 36 (32%), and 3 (2.6%) in the Efficiency, Relationship, and Convenience class, respectively. Individuals in the Cost Class had the highest AIV for the price attribute, with the greatest part-worth utility associated with the $0 USD price attribute level. While emphasizing the service price, individuals in the cost class had statistically significant differences in part-worth utilities for a service provided by a pharmacist they knew and offered in person at the pharmacy.

Looking at a visualization of AIC across classes (Figure 7), the differences in attribute importance becomes more apparent. Individuals in the Cost Class have an AIV value for Price that is double or nearly double that of all other classes. Further, the Convenience Class had the largest AIV value for Location, which was comparable to their AIV for price. The Relationship Class had similar AIV values for Price and Provider, and the Efficiency Class had similar AIV values for Price and Time.

5.4 Objective 4: Data Integration for Practical Recommendations to Community Pharmacies and Enhanced Service Offerings

From the qualitative and quantitative results of this study, there are several practical implications for community pharmacies offering or planning to offer Medicare Part D consultation services. When developing Medicare Part D consultation services or changing existing services, community pharmacies should focus on providing consultations at the pharmacy, with discussion of plans and a follow-up phone call. These services provide the greatest utility when provided by a pharmacist whom the patient has an existing relationship with and are offered at no-charge, however, offering services in this way may not be sustainable. The results of this study suggest there are service offering attributes which may be considered to develop sustainable Medicare Part D consultation service offerings. As an example, while patients had the highest part-worth utility for a no-cost service (3.4), there was a neutral part-worth utility (0.00) for a service offered at $25, suggesting there may be an opportunity to charge for a service without having a negative effect on overall utility, especially when combined with attributes with larger part-worth utilities such as shorter duration and provided by a pharmacist they patient knows. Additionally, while patients may prefer a pharmacist providing the service, offering a service at no-cost but provided by a pharmacy technician or intern may be a more financially sustainable model, while still providing a service with high levels of overall utility.

Qualitative interviews and the quantitative DCE both identified the potential for subgroups of patients to have different preferences for service offerings. Qualitative interviews identified that individual's with past service experiences with their community pharmacy may be more likely to use and pay for a Medicare Part D consultation service. From latent class

analysis, additional subgroups were identified, with subsets of patients focusing on cost, relationships, convenience, and efficiency. Additionally, patients who had difficulty affording prescription medications were more likely to focus on cost than other individuals. Community pharmacies may benefit from focusing on a diverse array of marketing materials, emphasizing components of Medicare Part D consultation services that patients find valuable such as service convenience, efficiency, cost, and the importance of the pharmacist-patient relationship.

Quantitative DCE results diverged from qualitative interview data when considering the length of the service preferred by patients and the WTP values reported by patients. In the qualitative results, service users and non-users reported a wide variety of preferred service lengths, ranging from fifteen minutes to an hour. Individuals who had previously experienced a service reported that they expected the service to last anywhere from 30 minutes to an hour, which was reflective of the service offering they had previously experienced. From the results of the DCE, patients were less likely to have received a Medicare Part D consultation service in the past, and subsequently did not have service-length expectations informed by their experience. As a result, the highest part-worth utility for the Time attribute in the DCE was associated with the 15 minute level. The difference between qualitative interview data and quantitative DCE data suggests that past service experience is an important component of patient preference, with pharmacies potentially offering longer services than necessary to maximize patient utility. Community pharmacies should consider developing new interventions and altering existing interventions to accommodate for this preference, which may have a considerable impact on intervention sustainability and scalability.

When considering WTP values, the majority of service users and non-users identified the time and resources required to provide a Medicare Part D consultation service, suggesting WTP values that reflected these efforts. Only a few interviewees reported they would prefer the service be free, suggesting that the pharmacy is likely receiving compensation from insurance companies for providing this service. From the DCE study, the highest utility was derived from a service offered at no-cost, a result considerably different from qualitative interviews. These differences may have existed due to the underlying differences in the patient populations between qualitative and quantitative study elements. Patients who participated in qualitative

interviews were patients at CPESN pharmacies and reported favorable relationships and experiences with their pharmacies. These relationships, experiences, and expectations may have increased their WTP for services compared to individuals completing the DCE survey, who largely reported chain and mass-merchandisers as their current pharmacy type.

While not formally tested in the DCE survey, several additional practical considerations rose from qualitative interviews. Patients had expectations regarding elements of service quality aligned with the SERVQUAL framework. To maximize technical quality, community pharmacies considering offering Medicare Part D consultation services should focus consultations on service outcomes, helping patients to identify cost-effective Medicare Part D plans. Additionally, pharmacies should consider additional ways to meet and exceed patient expectations for the service, such as offering appointments and making signing-up and using a Medicare Part D consultation service as accessible as possible. For environmental quality, community pharmacies should provide services in a private consultation space with access to restrooms and a sitting area. To maximize service quality related to administrative quality, community pharmacies should consider how information is delivered, providing information in a way that patients can easily comprehend and in a way that allows them to view the information both during the consultation and review independently once the consultation has been completed (e.g., information print-out).

Further, with service expectation, service experience, and provider trust being important components of service value and quality, pharmacies could consider marketing these services to those who have had previous experience with other enhanced pharmacy services and more continuous relationships with their community pharmacy more directly. Targeting the population who is more likely to engage in and value a Medicare Part D consultation service may result in increased service use and increased probability that service users would be willing to pay for an enhanced community pharmacy service. In addition to marketing these services to specific patient populations, pharmacies may benefit from bundling services that are less familiar to patients such as Medicare Part D consultation services with services which patients have more familiarity. While bundling of services or goods is uncommon in the pharmacy and

healthcare literature, it has shown to be a successful technique of increased consumption and increased perceptions of product value in consumer and business research.[310,311]

5.5 Limitations and Future Research

5.5.1 Methodological Limitations

This study is subject to several limitations. While DCE participants recruited for this study were eligible for and enrolled in Medicare, they may have had a variety of different experiences with Medicare Part D plan selection, including their resources used and assistance received when making their selection. While past experiences with Medicare Part D plan selection is likely to influence patient preference for Medicare Part D consultation services, past service experience was not formally evaluated in this study. While past Medicare Part D consultation service experience was not evaluated in this study, 60.2% of respondents had experiences with other community pharmacy services, suggesting they were aware of and had experiences with services outside of medication dispensing, but still potentially limited to more traditional community pharmacy services such as immunization delivery and medication prepacking. While the majority of community pharmacy offer additional services extending beyond medication dispensing, independent community pharmacies are more likely to offer expanded clinical and cognitive services like Medicare Part D consultation services.[329] While the majority of participants were likely to experience some form of additional enhanced service (i.e. immunization delivery), fewer individuals were likely to receive less-common enhanced service, as only 66 (9.4%) of participants reported using an independent pharmacy.

Additionally, the DCE omitted the option for individuals to select the status quo, or in this instance, a no service option. While eliminating the status quo option improves overall design efficiency, it prevents individuals from opting out of the service when they would not select it. In addition to the omission of a status quo option, omission bias may be present as not all important and relevant attributes and levels could be included in the DCE tasks. Omission bias was addressed by including the most pertinent attributes and levels identified by qualitative data and author expertise, focusing on attributes that community pharmacies could consider when implementing pragmatic Medicare Part D consultation services. Additionally,

attributes and factors important to patients that were more difficult to measure or quantify were included in the supplemental survey to allow for class analysis.

Further, while cost appears to have minimal effects on DCE results and interpretations, it is important to consider that the Cost attribute may behave differently than other attributes within a DCE.[330,331] From consumer research, price has the potential to act as both a constraint as well as an indicator of quality. As a constraint, the price of a good or service has the ability to affect an individual's ability to purchase alternative, potentially increasing the weight of price on an individual's purchasing decisions, when compared to other attributes.[331] Additionally, there is a reciprocal relationship between price and quality, with higher-priced good perceived as higher quality and high-quality goods perceived to be high price. As a result, price may independently drive perceptions of service quality (e.g. a service bundle with a higher price may inflate the value of other attributes within the service choice bundle).[330] Alternatively, price attributes may have an effect on behavioral intent, with price having a strong negative influence on probability of purchase for high-priced goods.[330] Given this information, considerations should be made for how price influences perceptions of quality and value within a DCE, as well as how price differs from other attributes included within a DCE.

This study may also be limited based on the past service experiences and expectations that patients have of and with their community pharmacies. While data was captured on past community pharmacy service experience, no information was collected on past Medicare Part D consultation service use. Despite this limitation, Medicare Part D consultation services continue to be limited in both offering and consumption in the community pharmacy setting, minimizing the potential for past Medicare Part D consultation service experience to impact patient preferences and expectations for a service offering.

Finally, this study evaluated main effects of the mixed logit model only. While evaluating main effects alone is the most common form of DCE analysis and minimizes the number of choice tasks required to be completed by each participant for an efficient design, the main effects model assumes that interaction terms are not statistically significant different from 0. To minimize the potential for bias by not including interaction terms, interviews, pilot testing, and expert review were used to identify attributes that may be highly correlated, with attributes

removed and prohibitions added to minimize these choice scenarios. Despite these efforts, bias introduced by inter-attribute correlation may still exist.

There are several limitations inherent to stated preference evaluation techniques such as DCEs. Most notably, the external validity of health-related choice experiments related to patient-decision making may be limited when asking patients about services they may or may not be familiar with. If patients have not had exposure to the service being evaluated, it may be unlikely that their responses reflect real-world preference or purchasing intent. Despite this limitation, stated preference studies allow for the evaluation of a good or service prior to widespread offering and use, allowing for organizations such as community pharmacies to more intentionally develop service offerings that align with patient preference and value. As Medicare Part D consultation services in the community pharmacy setting become more prevalent, results of this study should be compared with patient-decision-making and realized patient behavior.

Additionally, the external validity of this DCE may be limited by the population of individuals recruited by the Qualtrics panel. Given the electronic distribution of the survey, the Qualtrics panel may have only captured the perspectives and preferences of those individuals who are sufficient at using web-based survey technologies, with higher levels of education and income. Given that the population of interest is older (65 years of age and up), the DCE data may not represent the population. Despite this potential limitation; the level of technology comfort may be increasing across the older population because of more exposure in the workplace and the COVID-19 pandemic, suggesting this limitation may not be as immediately impactful.

5.5.2 Future Research

This study highlights several areas for future research. First, while the results of the DCE survey identified some attributes of a Medicare Part D consultation service that patients found valuable, additional attributes could not be tested due to the nature of DCE survey designs. Additional work should be done to explore the utility and mWTP of additional attributes of a Medicare Part D consultation service not tested in this study.

Further, there were several attributes that patients found important but are difficult to measure within a DCE due to their abstract nature, more specifically trust and service expectations. Future studies should focus on exploring and quantifying the relationship between trust and service value and quality. Additionally, more work is required to establish consistent measures of patient trust within the context of enhanced community pharmacy services, exploring the effects of trust on willingness-to-pay for pharmacy services and the importance of trust relative to service offering attributes.

Given the importance of expectations and experience with community pharmacy services and perceptions of Medicare Part D consultation service value, further work should explore the types of services individuals have previously received from their community pharmacy, how these services are offered, and the effect of these services on perceptions of additional enhanced community pharmacy services. Additionally, further studies should be conducted to explore how service value is affected by bundling new or less familiar enhanced pharmacy services with services that patient have more familiarity with, as service bundling may be an avenue for increasing service use and perceptions of service value.

Future research should explore other patient-specific factors and demographic information which may contribute to patient-preference in community pharmacy services, specifically identifying the contributing factors to the variation in AIV and part-worth utilities across latent classes. While gender and difficulty affording prescription medications varied significantly across classes, no other variables were statistically significant, suggesting that there are likely other factors which are contributing to variation in preference outside of what was measured in this study.

Finally, future research should continue to explore alternative ways to evaluate and expand enhanced community pharmacy service offerings using patient-centered approaches. Best-worst scaling could be used similarly to a DCE for the evaluation and quantification of patient preferences for Medicare Part D consultation services, allowing for a comparison of preferences across preference elicitation methods. This comparison would be useful to emphasis the external validity of elicitation methods for Medicare Part D consultations, which are both infrequently offered and used in the community pharmacy setting despite potential

benefits. This type of empirical comparison has been encouraged for health and health-related choice experiments.[332-334]

5.6 Conclusions

In conclusion, this study used a patient-centered approach to explore preferences for attributes of Medicare Part D consultation services offered in the community pharmacy setting. For the first study objective, qualitative interviews informed by the SERVQUAL framework identified several service attributes which were important to patient perceptions of Medicare Part D consultation service quality in the community pharmacy setting. These attributes included: Information Delivery, Service Locations, Service Provider, Time, and Price. Further, patient quotations and elements within each of these attributes highlighted the importance of patient service experience, expectations, and trust. Service expectations and provider trust are important components of service value but are difficult to identify using quantitative methods alone. Qualitative investigation of patient preferences for community pharmacy services was an important components of service evaluation, as it identified service elements that are immediately actionable, as well as more abstract concepts which pharmacies should consider when marketing services and contacting potential service users.

The results from the DCE survey suggests that patients preferred Medicare Part D consultation services that were shorter in duration, included a discussion of plan information and a follow-up phone call, was offered in the community pharmacy by a pharmacist they knew, and was free-of-charge. The most important service attribute to patients was Price, followed by Service Provider, Time, Service Location, and Information Provided. A service provided by a pharmacist the participant knew was associated with the largest mWTP value at $8.42. Participants had negative mWTP values for services lasting 30 (-$1.77) and 60-minutes (-$8.03), respectively. Quantifying patient preference for service attributes using both part-worth utilities and mWTP helps to provide pharmacies with information needed to design service offerings that find a balance between patient preference and sustainability. Pharmacies should consider the attribute bundles that may allow them to charge for a Medicare Part D consultation service while optimizing patient utility.

Finally, the latent class analysis revealed that gender and difficulty affording prescription medications were associated with class grouping, with latent classes having statistically significant differences in preferences for Medicare Part D consultation service attributes. Patients in the Cost Class had the largest AIV value for Price, with strong preference for a no-cost service offering. While other classes had high AIV values for price, other service offering attributes were additionally important. As such, individuals who have difficulty affording prescription medications may be more inclined to use and associate higher value with services offered at no-cost. When considering how much and who to charge for Medicare Part D consultation services, community pharmacies would benefit from evaluating potential service users' ability to afford prescription medications. Overall, these findings highlight and quantify patient preferences for Medicare Part D consultation services offered in the community pharmacy setting, providing information on how existing services or new service offerings may be developed to account for patient service preferences and patient-specific factors which may contribute to these preferences.

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APPENDIX A. QUALITATIVE INTERVIEW GUIDE-SERVICE USERS

Moderator: Hello and welcome. I'd like to thank you for your willingness to participate in an interview focused on Medicare Part D plan selection assistance provided by community pharmacists. My name is Logan Murry, I grew up in West Branch, Iowa and am a graduate student and pharmacist at The University of Iowa College of Pharmacy.

I would like to get your thoughts on how pharmacists should be providing Medicare Part D plan-selection assistance. Specifically, what you think about these services, how you think pharmacies and improve these services and what would encourage you to use them.

The information you share with us will help us understand how community pharmacies can support patients making difficult insurance decisions.

Expectations
I'd like to tell you what to expect from today's interview.

We'll be here for about an hour. During that time, I will ask you a few questions. There are no right or wrong answers to these questions. You are the expert, and we're here to learn from *you*.

1. Your comments and suggestions will be used for improving community pharmacy services to help patients select Medicare Part D insurance plans.
2. You can pass on any question that you prefer not to answer, and you don't have to answer any questions at all, if you choose. In addition, if you do not have anything to share about a particular question then you may pass.
3. Please describe your experiences as candidly as possible. Your comments will only be used to improve the quality of these services. We won't personally identify you with anything you say.
4. We have plenty of time, but since we have a lot of topics, we may have to leave one topic to go forward to the next.
5. We will take some notes and use a tape recorder just to make sure we get all your comments, but the tapes will be erased after they are transcribed.
6. You can ask for clarification at any time, and you can stop the interview at any time.

Before we get started do you have any questions for me? Is it ok if I record the interview?

Question 1
Describe your past experience with selecting a Medicare Part D plan.
Question 2
Describe your past experience with using a pharmacy Medicare Part D plan review service.
Question 3
What aspects of the service did you like about the service?
Question 4

When thinking about your experience with [pharmacy name here] Medicare Part D plan review what was most important to you?

Question 6: *SERVQUAL* Domains

Interpersonal Quality

When thinking about how pharmacists could help patients with Medicare Part D plan selection, who should provide the service. How would you expect that person to behave or communicate?

Technical Quality

When thinking about the outcomes of the Medicare Part D help, what would you expect to get out of the service?

- What type of information would you want?
- Who would make your plan decision?
- How much should the service cost?

Administrative Quality

How much time should Medicare Part D help take?

When should this service be available?

How often would you want to get this type of service?

Environmental Quality

Where would you prefer to receive Medicare Part D assistance? In-person or over the telephone?, at home or in the pharmacy?

What are the most important parts of Medicare Part D help provided by a community pharmacy?

APPENDIX B. QUALITATIVE INTERVIEW GUIDE-SERVICE NON-USERS

Moderator: Hello and welcome. I'd like to thank you for your willingness to participate in an interview focused on Medicare Part D plan selection assistance provided by community pharmacists. My name is Logan Murry, I grew up in West Branch, Iowa and am a graduate student and pharmacist at The University of Iowa College of Pharmacy.

I would like to get your thoughts on how pharmacists should be providing Medicare Part D plan-selection assistance. Specifically, what you think about these services, how you think pharmacies and improve these services and what would encourage you to use them.

The information you share with us will help us understand how community pharmacies can support patients making difficult insurance decisions.

Expectations

I'd like to tell you what to expect from today's interview.

We'll be here for about an hour. During that time, I will ask you a few questions. There are no right or wrong answers to these questions. You are the expert, and we're here to learn from *you*.

1. Your comments and suggestions will be used for improving community pharmacy services to help patients select Medicare Part D insurance plans.
2. You can pass on any question that you prefer not to answer, and you don't have to answer any questions at all, if you choose. In addition, if you do not have anything to share about a particular question then you may pass.
3. Please describe your experiences as candidly as possible. Your comments will only be used to improve the quality of these services. We won't personally identify you with anything you say.
4. We have plenty of time, but since we have a lot of topics, we may have to leave one topic to go forward to the next.
5. We will take some notes and use a tape recorder just to make sure we get all your comments, but the tapes will be erased after they are transcribed.
6. You can ask for clarification at any time, and you can stop the interview at any time.

Before we get started do you have any questions for me? Is it ok if I record the interview?

Question 1

Describe your past experience with selecting a Medicare Part D plan.

Question 2

What would you expect from a Medicare Part D plan review service offered by your community pharmacy?

Question 3

If you were to use a Medicare Part D plan review service from a community pharmacy, how would you expect them to make the process better?

Question 4

When thinking about using a Medicare Part D plan review service, what would be most important to you?

Question 5: *SERVQUAL* Domains

Interpersonal Quality

When thinking about how pharmacists could help patients with Medicare Part D plan selection, who should provide the service. How would you expect that person to behave or communicate?

Technical Quality

When thinking about the outcomes of the Medicare Part plan review service, what would you expect to get out of the service?

- What type of information would you want?
- Who would make your plan decision?
- How much should the service cost?

Administrative Quality

How much time should Medicare Part D help take?

When should this service be available?

How often would you want to get this type of service?

Environmental Quality

Where would you prefer to receive Medicare Part D help? In-person or over the telephone?, at home or in the pharmacy?

Question 6

What are the most important parts of Medicare Part D help provided by a community pharmacy?

APPENDIX C. POST-INTERVIEW QUANTITATIVE SURVEY

Section 1. Expectations and Preferences for Community Pharmacies

Please circle the number that reflects your level of agreement with each statement, with 1 meaning Strongly Disagree though 6 meaning Strongly Agree.

	Strongly Disagree					Strongly Agree
1. I expect my pharmacist to work with me to achieve my health goals.	1	2	3	4	5	6
2. Only a few pharmacists have the skills to meet my specific health needs.	1	2	3	4	5	6
3. I rarely seek the help of my pharmacist for health issues or concerns.	1	2	3	4	5	6
4. I expect my pharmacist to help me explore or understand decisions related to my health.	1	2	3	4	5	6
5. When working with a pharmacist, the pharmacist's expertise and abilities are the most important things to me.	1	2	3	4	5	6
6. I expect my pharmacist to make decisions about my medications or health goals for me.	1	2	3	4	5	6
7. All pharmacists have the same set of skills needed to help me with my health goals.	1	2	3	4	5	6
8. I seek the help or advice of my pharmacist for all types of health issues or concerns.	1	2	3	4	5	6
9. I expect my pharmacist to inform me of the best health decisions unique to me.	1	2	3	4	5	6
10. When working with a pharmacist, quick and low-cost interactions are the most important things to me.	1	2	3	4	5	6
11. I have one specific pharmacist who is best at meeting my unique health needs.	1	2	3	4	5	6

12. I seek the help of my pharmacist only when I have a specific concern related to my medications.	1	2	3	4	5	6
13. I prefer to make decisions about my health goals without the help from my pharmacist	1	2	3	4	5	6
14. When working with a pharmacist, having the chance to work together on a health plan and share my health concerns are the most important things to me.	1	2	3	4	5	6
15. I expect my pharmacist to provide the important information related to my medications and nothing more.	1	2	3	4	5	6

Section 2. Medicare Part D Insurance Selection Experience
The following questions pertain to your insurance selection experience. Please check the box that most accurately reflects your experience choosing and comparing insurance plans.

How confident are you that you…

1. Know how to estimate what you would have to pay for your prescription medications in the next year?
[ ] Not Confident At All
[ ] Slightly Confident
[ ] Moderately Confident
[ ] Very Confident

2. Know what questions to ask to choose the best Medicare Part D plan for you?
[ ] Not Confident At All
[ ] Slightly Confident
[ ] Moderately Confident
[ ] Very Confident

3. Know where to find the information you need to choose a Medicare Part D plan?
[ ] Not Confident At All
[ ] Slightly Confident
[ ] Moderately Confident
[ ] Very Confident

4. Understand Medicare Part D insurance terms.
[ ] Not Confident At All

[ ] Slightly Confident
[ ] Moderately Confident
[ ] Very Confident

5. You would choose the Medicare Part D plan that is best for you?
[ ] Not Confident At All
[ ] Slightly Confident
[ ] Moderately Confident
[ ] Very Confident

When comparing health plans how likely are you to…

1. Check to make sure all your medications are covered by your Medicare Part D plan?
[ ] Very Likely
[ ] Likely
[ ] Unlikely
[ ] Very Unlikely

2. Understand what you would have to pay for all your prescription medications?
[ ] Very Likely
[ ] Likely
[ ] Unlikely
[ ] Very Unlikely

3. Find out if you have to meet a deductible for prescription medications?
[ ] Very Likely
[ ] Likely
[ ] Unlikely
[ ] Very Unlikely

4. Look to see which pharmacies are covered by my Medicare Part D plan?
[ ] Very Likely
[ ] Likely
[ ] Unlikely
[ ] Very Unlikely

Section 3. Demographic Information

1. **How confident are you that you can control and manage most of your health problems?**

1 2 3 4 5 6 7 8 9 10

Not Confident At All **Extremely Confident**

2. What is your age? _____

3. To which gender identity do you most identify?
[ ] Male
[ ] Female
[ ] Not Listed:_____

4. Highest Education Level Completed?
[ ] Some high school
[ ] High school degree or GED
[ ] Some college
[ ] Bachelor's degree

5. Which type(s) of pharmacy do you currently use to fill prescription medications? [Check all that apply]
[ ] Chain (i.e., CVS)
[ ] Independent Pharmacy
[ ] Grocery Pharmacy (i.e. Kroger)
[ ] Mass Merchandiser Pharmacy (i.e., Walmart)
[ ] Mail Order Pharmacy

6. How many different pharmacies have you used in the past 30 days?
[ ] 1
[ ] 2
[ ] 3 or more

7. How many prescription medications are you currently taking?
[ ] 1
[ ] 2
[ ] 3
[ ] 4 or more

8. Annual household income?
[ ] Under $25,000
[ ] $25,000 - $49,999
[ ] $50,000 - $74,999
[ ] $75,000 or more

APPENDIX D. RECRUITMENT PROTOCOL FOR COMMUNITY PHARMACY PATIENT RECRUITMENT

In order to recruit patients from your community pharmacy, please follow the following steps:

1) Generate a report of all Medicare-eligible patients, preferably as an Excel file, where each patient has a corresponding number (John Smith-1, Doris Smith-2, etc.)
2) Send the total count of eligible patients (e.g. 87 patients) to the research team at logan-murry@uiowa.edu
3) The research team will generate a list of numbers and return them to your pharmacy, at which point you will identify the patient associated with each number.
4) Using the provided business reply envelopes and postage, address the recruitment letter to the identified patient.
5) After 14 days of initial mailing, notify the research team of participants who returned recruitment letter and opted out of participating. At this time, provide patient name, phone number, and address to the research team to schedule and conduct interviews.
6) If additional recruitment is required, a second round of random numbers will be generated from the total patient number. Repeat steps 3 to 5.

Should you have any questions or concerns related to study recruitment please contact logan-murry@uiowa.edu or 319-325-9055

APPENDIX E. INTERVIEW RECRUITMENT LETTER

IOWA
PHARMACY

Project Title: **Patient Preferences and Willingness-To-Pay for Medicare Part D Consultations Offered in a Community Pharmacy Setting**

Principal Investigator: Logan Murry, PharmD
Dear

We invite you to participate in a research study being conducted by investigators from The University of Iowa. The purpose of the study is to better understand how community pharmacies can help patients with Medicare Part D insurance plan selection.

Logan Murry is a pharmacist and PhD student from West Branch, Iowa, is interested in interviewing you about your Medicare Part D plan selection experience. The interview will take approximately 45 minutes to complete. Interview participants will receive a $25 gift card for completing the interview. After interviews are complete, you will be sent a brief survey collecting demographics and your expectations of your community pharmacy in addition to your $25 gift card.

Your name and address will be collected only for the purpose of distributing your $25 gift card and a brief survey. Your name and address will be securely stored within The University of Iowa College of Pharmacy and will be deleted after the gift card and survey are distributed. No other identifiable personal information will be collected.

Taking part in this research study is completely voluntary. If you do not wish to be further recruited for this study, please return this letter to [insert pharmacy name] in the provided envelope. If there is no response, your community pharmacy will contact you to assure you received this letter.

If you would like to participate in this study, please contact:
Logan Murry
Phone: 319-325-9055
Email: logan-murry@uiowa.edu
If you have questions about the rights of research subjects, please contact the Human Subjects Office, 105 Hardin Library for the Health Sciences, 600 Newton Rd, The University of Iowa, Iowa City, IA 52242-1098, (319) 335-6564, or e-mail irb@uiowa.edu
We encourage you to ask questions. If you have any questions about the research study itself, please contact Logan Murry by phone at 319-325-9055 or by email at logan-murry@uiowa.edu
Thank you very much for your consideration of this research study.

Sincerely,
Logan Murry, PharmD

APPENDIX F. INTERVIEW PARTICIPANT SCREENING AND RECRUITING SCRIPT

Hello [PATIENT NAME],

My name is Logan Murry and I am a pharmacist and PhD candidate at the University of Iowa College of Pharmacy. I grew up in West Branch, IA and am doing a research project to help community pharmacies to improve the services they provide their patients. Just to be sure that I am getting responses from people with different Medicare Part D perspectives, have you previously received a Medicare Part D consultation service provided by your community pharmacy? I am calling today to follow-up on a letter you received from your pharmacy a week ago, asking if you would be interested in participating in an interview on Medicare Part D consultation services and selecting a Medicare Part D plan. The interview will take place either by phone or at your community pharmacy, whichever is easiest and most comfortable for you. The interview will last about an hour and will focus on your Medicare Part D plan selection experience and how your pharmacy can assist you in this process.… After the interview is complete you also will be mailed a brief survey that we ask you to complete and return to us in a postage paid envelope. As a thank you for your time, after completion of the interview you will be mailed a $25 gift card. Do you have any questions about the letter you received or about the interview process?

Are you willing to participate?

Do you have time now to do the interview? If now does not work for you, I would be happy to call back another day this week.

APPENDIX G. SURVEY COVER LETTER

[Pt Name]
[Address]

I am writing to follow-up on our telephone conversation and to ask for your help completing a brief survey on your experiences with your community pharmacy. This survey is a follow-up to the interview you completed in the past few weeks.

Results from this survey will be used to help your local community pharmacy better meet your needs and develop additional services which can benefit you and others in your community. For community pharmacies across Iowa to improve the care they offer to patients, your responses to this survey are essential.

Your answers are completely confidential, and your name and other identifiable information will not be released in any final report. When you return your completed survey, your name will be deleted from the mailing list. This survey is voluntary. However, your participation will be very helpful in improving community pharmacy services across the state of Iowa. If you prefer not to respond, please notify us by returning the blank survey in the enclosed stamped envelope.

We have enclosed a $25 gift card as thanks for your participation in the study.

If you have any questions or comments about this study, we would be happy to talk with you. Please call 319-325-9055 or you can write to us at the following address:

Attn: Logan Murry
The University of Iowa College of Pharmacy
180 S. Grand Ave
Iowa City, IA 52242

Again, thank you for helping with this important study.

Sincerely,

Logan T. Murry
Pharmacist and PhD Candidate

APPENDIX H. REMINDER POST-CARD

Reminder Post-Card
Postcard Reminder Message

[Date]

Last week, a survey asking about your experiences with your community pharmacy and selecting a Medicare Part D plan was mailed to you.

If you have already completed and returned the survey to us, we would like to thank you for taking the time to respond and greatly appreciate your input. If you have not yet completed and returned the survey, please do so today. We are especially grateful for your responses, as we hope to understand how community pharmacies can better serve their communities.

If you did not receive a questionnaire, or if it was misplaced, please call us at 31-325-9055 and we will send another one in the mail.

Logan T. Murry, Pharmacist and Graduate Student
Department of Pharmacy Practice and Science
The University of Iowa College of Pharmacy
Iowa City, IA 52246

APPENDIX I. INSTRUCTIONS, FINALIZED TEMPLATE, AND QUOTATIONS FOR QUALITATIVE ANALYSIS

Template Analysis Codebook

To perform the qualitative analysis, Template Analysis will be used, where researchers start with a theory informed model as a guide to analysis. First, assign open codes to the five qualitative interview transcripts. Next, compare open codes to theoretical codes provided from the Health Services Quality Domains (Interpersonal, Technical, Environmental, Administrative Quality). With template analysis, additional domains outside of those informed by theory are allowed when a predetermined domain does not accurately reflect the open code. Finally, group open coded qualitative data into theoretical categories and create additional domains as necessary.

The following domains are from Dagger, Sweeney, and Johnson's Health Service Quality Model.

Health Service Quality Model Domains	Descriptions
Interpersonal Quality	Reflects the relationship and the dyadic interplay between service provider and user.
Technical Quality	Outcomes achieved and the technical competence of a service provider.
Environmental Quality	Complex mix of environmental features that shape consumer service perceptions.
Administrative Quality	Facilitation of a core service while adding value to the customer's use of the service.

Technical Quality		
	Pharmacist Expertise	I think working with the pharmacist... The pharmacist showed us many more plans that were out there, not that the gentleman at Viridian was trying to lead us one way or the other, but he only was aware of a certain number in 2019, where the pharmacist that we visited with last year, she told me about several different plans, different options, different ways I could go, reviewed my medications, and that helped her give me more options on which would be the most cost effective for me (CA) I think one of the things that I really liked was the thoroughness of the pharmacist. She knew what she was talking about with all the different drug plans and any questions that I had of several different plans that we reviewed that I would qualify for, any questions that I asked about any of them she had an answer. There were some things that are just really hard to explain and she'd say that, she said, "I'm not real sure how that would affect you," that type of thing. (CA) Obviously I want to know what Medigap... Well, I want to say the experience they have with the Medigap, and in a sense that's true, if there's

		a Medigap company that does not deal well with them, I would hope that they would then steer you away from that particular company, or maybe not steer you away, but at least explain the reason that, "Okay, this company may give you a lower price, but they've also got more restrictions or more whatever." So, for some reason they may not, even though it looks on the surface to be a good option, give me enough reason to know that I need to... And I know they can't look at everybody because we have to be proactive for ourselves, but in some cases, for some people it be handy if they would actually, and I know this is a big ask, is to review all of their clients' records and come to us and say, "Well, you really should consider switching to a different Medigap company based on this and this and this happening this year." (CM) I think it would vary by person. For me, I want to do my own homework and then maybe use them as a resource to validate what I'm thinking or what it looks like to me. I'm sure other people would be the other way around, they might want to say, "Well, I don't want to try and cipher through all this stuff, I don't want to get onto the Medicare website and try to figure it all out." So, other people may want to go the other way and just say, "Can you come to me and recommend what you think I should do this year? (CM) Well, when your prescription goes through, and they pay whatever you pay and you pay what you pay. Nothing happened. It was just as usual. Then every year they look at it and tell me what I should do again. They sign me up right there at the drugstore. So that's a great service. (MEW) Nope. I think it's great the way it is, for myself. The less information I have the better. (MEW) That a lay person that wasn't a pharmacist wouldn't be able to advise me to say, "This is $110 medicine. You might want to have a conversation with your eye doctor about..." Does that make sense? And these aren't the right milligrams, but he prescribed, I think 300 milligrams. But if I got the 250 milligram version, it was $5. If I got the 300 milligram version, it was a hundred bucks. It was crazy, the difference of over five milligrams. And so he said, you might want to ask your neurologist, if he's okay with writing it for five milligrams difference or whatever. Kind of on a medication for that, and that's what my neurologist did, because the neurologist doesn't know the cost of the medicine. (JS) I would want to know basically whether I can, like I say, one of the things we've talked to them about recently was the difference if I drop down to a 30 day supply versus a 90. Is cheaper than the other, why doesn't make sense to me, but having them share information like that with me, or if they recommend going from one generic to another generic, or even if they would suggest going from the brand to a generic, them having the

		knowledge to know the side effects of the generic so would you feel comfortable talking with your doctor about making a change to the generic. (CM) He actually went above and beyond because there was a medication I was considering with my doctor to take. So he, additionally, for lack of a better word, priced that, or took that into consideration. And I was also at the point of losing one type of coverage and getting a different type of coverage. And so, he took that into consideration as well, if that makes sense. (JS) He was able to provide some additional recommendations outside of just, "Here are the plans," but also, "Here are the plans based on your medicines and here are some recommendations about the medicines that you could potentially change to save some money and still get the same amount of therapeutic benefit." (JS) Well, number one is they have access to all the programs at the pharmacy on their computer system, and I know I would probably have access to some of them, but there's no guarantee that I would be able to get all the different ones that would be available, and I don't want to risk it, I'd rather go in and speak with someone that's knowledgeable about the drug plans and can show me the different drug plans with the computer system, plus give me the paper copy. (CA) Right, and for them to be able to warn you, help you with the... You hear all this on Medicare Advantage, there are pros and there are cons to it, it works for some and not for others, but to have somebody help you understand that so you don't get blindsided would be a good thing, because I'm probably one of the few that actually read the Medicare book when it came every year. (CM)
	Time	I think we were there 45 minutes to an hour, and I think whenever any of the pharmacists schedule anyone to come in and do a review for drug plans, they schedule for an hour. And then if you need more time, naturally, they give the individual more time (CA) I think, if I could recall, I'd probably say it was about 30 minutes. For me, that was the right amount of time because I had already done my homework, it wasn't like they were teaching me everything from the beginning. So, for me half an hour was a good amount of time. And also, I'm not on a lot of drugs either, so that makes a big difference. If you're taking a lot of different drugs, I could see where it would be more cumbersome and take longer. (CM) I think it took approximately 30 minutes and maybe another additional five. I mean that was entering everything, and then maybe about 35 minutes,

		because another five answering a couple questions we had. Yes, I felt it was adequate. (MC) Oh gosh, not very long at all. Trouble is I'm 74 now and I was 65 then. I don't know, five minutes. (MEW) Yeah. Right. But yeah, I would say 15 minutes or less, depending on how many oddities he located, like what I described. The first time, good golly, he was very generous. I want to say it was 45 minutes or an hour. I don't know much how much he had originally allotted, but yeah, it was very generous. I remember that being very generous. (JS)
	Cost Outcomes	In thinking through all that, the most important was the annual bottom line. I'm on a fixed in income, so I wanted to know, yes, I'd have to know what I was going to have to pay for that Part D plan, but I also wanted to know what was the prospect of the medications that I'm on, how much is that going to cost me over a year? I mean, I have to plan on that sort of thing what I have to pay out of pocket. And we did some comparison with the plan that I had before and the one I ended up going with last year, and there was a significant difference financially in that year when we looked at a year's cost with it. (CA) Well, cost, number one. Two, are the drugs that I am taking presently covered? If so, what tier will they be in? What is used to meet the qualifications of the first original $400 deduction that you have to pay? How soon might I get there? (MC) The total annual out of pocket costs where I would have to be paying for the Part D as well as what I'd have to be paying for my medications. (CA) The most important parts were the options of how to economize or get the best deal, if you will, for my money. To not spend any more money than I had to, to get the medications that I needed. (JS) No, I wouldn't say total cost is the most important because I like supporting the small pharmacies, the personal relationship that we have with them over the years, them knowing our drugs, so cost comes into play, but obviously it's not the complete decision because obviously we probably would not have stuck with PHARMACY simply because some prescriptions cost more because of the way the government is allocating things and doing things, I'm going to blame it on the government. (CM)

	Service Availability	Well, most useful would be during the open enrollment period, but the service is available to us anytime we'd ask year round. If we have any questions about anything regarding our medication plan we can go in there and ask, and a pharmacist would sit down with it and then go over things.(CA) I would say once a year. And maybe even once every couple of years for somebody whose drugs have not changed much, and for me, I might not need to talk to them, but once every couple years or something like that, but somebody who's maybe starting out with new medical issues, they might want to be yearly. (CM) It all depends on your health record and what issues are changing in your life and your health. If my prescriptions were changing after some health issue and many drugs were changed, then I would want to review everything with the pharmacist again. But it's depended upon age and health and what your needs are at the given time of the year. Now, if it's not during the open enrollment period, then the service would be very nice. (MC) I became aware that he offered it and asked for it, at the time. Probably, yeah, during open enrollment would be a good time. Maybe even a couple weeks before for people that need longer, or for the pharmacy not to be so booked, the last couple days when people go, "Ooh, there's a deadline." (JS) Well, like mine fell in February, so it was not open enrollment time, so you've got to be able to have staff that can do that any time of the year, but definitely more during the Medicare open enrollment timeframe, you'll have more people interested then I would say. (CM) Well, October 15th to December 7th. When the enrollment period starts. (MC) I would say once a year. And maybe even once every couple of years for somebody whose drugs have not changed much, and for me, I might not need to talk to them, but once every couple years or something like that, but somebody who's maybe starting out with new medical issues, they might want to be yearly. (CM)
	Scheduling Appointments	Okay. First off, I called early during the month to request a time that was convenient for me. I set up an appointment, which I feel is [inaudible 00:00:27] and respectful of both myself and the pharmacy. (MC)

		Well one, that you could set up an appointment time. We didn't have to go and sit and wait for a long period of time. (MC) Okay. To do it on my own would've been very confusing, so it was very easy to set up an appointment at PHARMACY. (JS) I think the fact that we could actually set up an appointment, so it was allocated time, I knew I had a contact that I talked to on the phone and actually talked to her when I was in there, it was a female, and then turned around and could call back and ask additional questions if I wanted to clarify what I thought I'd heard, stuff like that. So, it wasn't a long session, it was very to the point, "These are what we see as the options," and yet I could still call back and talk to the same person I had dealt with before. (CM)
Interpersonal Quality		
	Familiarity w/ Relationship, Continuity, and Trust	I think because with the pharmacy, that's where we've ordered our drugs for a couple years now, so any of the pharmacists that I talk to there, they know what drugs I'm on, how often I take them, and all the different aspects of that, which was helpful. (CA) I would just say the fact that [PHARMACY] is a small pharmacy that knows me, knows what our experience with them have been in the past, so it's kind of like a history, and they're able to work with us and work for us.(CM) I did quite a bit of research on my own looking through the medicare.gov site, looking for an insurance company that I thought would work, knowing that I wanted to stick with [PHARMACY], if at all possible to support the local, we've dealt with them all these years, didn't really want to switch to a big name pharmacy, and anyway, like I say, I had picked out several plans and then just went in and kind of shared what... Well, obviously they know my medication, and just had them step to and make sure that I was seeing the same options that were available to me and what they would recommend based on their experience and stuff. (CM)
	Pharmacist Characteristics	I would expect them to be very knowledgeable, I would expect them to be a people-oriented person and very patient. When you first get started with Medicare, and all the plans, and everything that goes on with the government, and your Medigap, and your Medicare Advantage, and all that, it is kind of a confusing mess, so you really need somebody that's very patient and somebody that knows how to explain things to all different levels of people. My parents and my husband's parents are both deceased now, but if you were somebody that did not have a spokesperson for you and were elderly, like I'm going to say 80s or even somebody with Alzheimer's, or something like that, you need somebody that can work with you, and help you, and come down to your level of knowledge and comprehension, and not all people can do that. (CM)

		Oh. Very knowledgeable, very well prepared, very ready and willing to... Pretty much took as much time as it needed for me to go through all those complexities. And he sent home some written stuff or whatever, with me. At one point, actually I think, thought of something based on our conversation and took a little couple minutes to go look something up on his computer so that he could give me the best answer. And so, I want to say he went above and beyond what one might expect of a review of Plan D. (JS)
Environmental Quality		
	Service Location	I prefer in person in the pharmacy (CA) I would say first time in office, other than that, over the phone because I can get on and I can be on the Medicare site just like what they are and we can do it just on a phone conversation. (CM) I would say most people would be able to do it that way. I think it's like your older people might prefer more because they're not techy savvy, they don't work with computers enough, or they hate computers, and then the personal one on one interface is probably the best way to go. (CM) Well, I'm going to answer this way. A lot of people cannot get there on their own so it would be nice to offer it to individuals who are unable to come into the pharmacy to discuss with you. It would be nice to come to your home, but those that are [inaudible 00:24:18] coming to the pharmacy and bringing their medicine with them and et cetera, I feel that it's a respectful thing to do to provide ... to have the pharmacist there to provide you with the information, and it saves them time so they, again, can run their business more efficiently, do more coverages, let's say, than having to go to a home. (MC) Yeah. I like, one, a restroom to be available, which they have. Two, I like a place to sit down and wait, which they provide. That's the two things that are important to me because I cannot stand for long periods of times. I have a walker and I take my walker most places. If I don't have a place to sit, I've got my walker to sit on. (MC) And I was expecting to have to sit down and go over all these lists and he just pulled it up and then he pulled something else up and he goes, "Oh, here. This will be better for you this year." It's like, wow. That's great. They're quick and efficient and obviously they haven't made any mistakes. Well, I wouldn't know I guess if they did. (MEW)

		Well, I always do it in pharmacy, but I suppose there comes a point if you're incapacitated and can't get out, I suppose you would have to do it over the phone. (MEW) Either in person at the pharmacy, in one of their side offices, or I would be willing to do it by Zoom. I've gotten acquainted with Zoom. So, at least that's still a video interaction. It's still possible to share screens with data, and so forth. Yeah. The face-to-face is important. I wouldn't do it in my home. That's a unnecessary... In my circumstances I can drive and I'm close to the pharmacy. So in my circumstances, it's an unnecessary burden on the other party to come to me. (JS) “The situation for me right now, coming to the house wouldn’t be bad. I have had some surgery that has made it harder for me to get around. For me to go in and sit and visit right now is not very comfortable. I suppose over the phone is fine too but it is better for me to see the options than someone just telling me about them. A lot of people aren’t really computer literate for a Zoom or something like that.” (VP)
	Customer Service Across Employees	Well, customer service is a big thing, there's a lot of places that I've been in to that has lousy customer service, which is one reason why we've stuck with PHARMACY is because it doesn't make any difference whether it's a pharmacist, whether it's a tech, whether it's the person that checks us out at the cash register, they're always very pleasant, always ask, depending on the circumstances, naturally, if there's any questions, anything that they can help us with. And I think that's one of the things that's lacking in our society right now, and I think PHARMACY is a place that has all that excellent customer service no matter who they are, what job title they have in the store at the pharmacy, or who comes in. (CA) Right. And having already been a customer at PHARMACY and having already been a customer at another place I won't name, that's a bigger name, I know the value of customer service, which PHARMACY has. So I would... If it was two or $300 more a year, I would probably still stay with PHARMACY. It wasn't I don't think, but if it had been I would've. (JS)
	Private Consultation Space	When I arrived, we were taken into a separate little room, closed the door and just my husband and myself and Rob the gentleman that did it. Started the interview and found out all the pertinent information, name, address, phone numbers, et cetera. Then he said, "Please hand me the drugs one at a time and I will enter him into the computer and the dosages.", which he did. He completed that with all, I think at that time, 10 drugs I was taking.(MC)

		And when I arrived, the person, I believe it was [PHARMACIST] himself, met with me in a private office, and he was fully prepared. (JS) Kind of having a... I don't want to call it a stress free interaction, but kind of a... Yeah. I would say that. Having opportunity to go over the information in a not rushed way, and having it be organized, and presented in a way I could understand, have it be done in a private space that... Yeah. And really having him have set aside that portion of his day or that number of however many... I don't know how long we were together, but that amount of time for me. Does that make sense? (JS)
Administrative Quality		
	Tailoring Information to Patient	Some people like a 90 year old might need someone to explain in a child arena, but yet not all of us need that. So, you need somebody that can adapt to whoever the client is that's coming in and working with them. (CM) Obviously I want to know what Medigap... Well, I want to say the experience they have with the Medigap, and in a sense that's true, if there's a Medigap company that does not deal well with them, I would hope that they would then steer you away from that particular company, or maybe not steer you away, but at least explain the reason that, "Okay, this company may give you a lower price, but they've also got more restrictions or more whatever." So, for some reason they may not, even though it looks on the surface to be a good option, give me enough reason to know that I need to... And I know they can't look at everybody because we have to be proactive for ourselves, but in some cases, for some people it be handy if they would actually, and I know this is a big ask, is to review all of their clients' records and come to us and say, "Well, you really should consider switching to a different Medigap company based on this and this and this happening this year." (CM) However, in my particular case, it did not offset the cost of the premium difference so I stayed with what I had. Then he moved on, I guess, and talked about the other two and the comparisons in them. But overall, we ended up with ... because I was already enrolled and been in this plan for about three years now or four, I think we're going on almost six now, but I stayed with the Humana plan. (MC) Because they just look at all of them and say here, this is it. This is what's better this year. It's kind of like instant gratification. Instant knowledge of. What the choices are. And I don't have to make that choice. (MEW)

		From my recollection, that would be the name of the plan or the insurance provider. I believe also whether it was their first year that they were providing this Plan D or if they'd been in business a while doing this. Of course the cost, which would've been the monthly premium, and my copay amounts for the various levels of medications, because I have medications that fall into all of the levels, probably, of pricing. And then, I overall expected out of pocket total for the whole big year that I could expect for that upcoming year based on if I continued to take the same medications and so forth. There was one medication with eyedrops that were going to be over a hundred bucks, which he pointed out to me. He also pointed out another medication for my gynecologist and also priced that for me specifically. And so, I was then able to take that information back with me, discuss it with my fiancé, who's now my husband, and then with my doctors make the decision on buying those medications or not. Because they fell more in an optional category rather than a strictly life and death necessary. (JS)
	Comparison and Choice	I think working with the pharmacist... The pharmacist showed us many more plans that were out there, not that the gentleman at Viridian was trying to lead us one way or the other, but he only was aware of a certain number in 2019, where the pharmacist that we visited with last year, she told me about several different plans, different options, different ways I could go, reviewed my medications, and that helped her give me more options on which would be the most cost effective for me. (CA) On her computer screen, she would bring up different plans and she could show a couple of them side by side so I could visualize, so I could see what my co-pays would be, how much it would cost me per month, any of the other financial aspects of having a drug plan, because there's deductible, there's co-pays, different tiers of drugs, and depending on the tier would depend on how much it costs, depending also not just on the tier, but what drug plan we were looking at. Some paid more for certain tiers and some paid less. (CA) And what was nice that she figured out in a year's time the annual fee that I would have to pay, the monthly cost times 12 naturally, and then a good average of what I would have to be paying out of pocket in a year. And she did that with several plans so I could see those numbers what's most beneficial for me. There was some that with certain drugs I may have to pay a little bit more for the first four to six months a year, but then I would be paying less, so at the end of the year my out of pocket would be less than other drug plans. So, that was a nice comparison, and that helped me decide which plan I wanted to go with, and I could see all those numbers in a year's time. (CA)

		Choice is the most important thing to me. I am willing to pay a bit more for more choice, and I find you get less choice with your cheapest option. (JF) I don't ever see a screen or anything and that's okay with me. I don't want to. I want them to do all the work. That's what they get paid for. (MEW) I had multiple options. I'm trying to remember, but he was also able to isolate, so that it wasn't like, okay, here's 10 bazillion choices. Which is what you start out with if you do it on your own. I want to say he brought it down to two or three of the best choices all the way around, and then kind of explained the rationale briefly about how he arrived at picking those, if that makes sense. (JS) Well, I think what makes people feel most comfortable is they know when you go in there with your prescriptions and your bottles and the drug dosages and everything, and you go in there and give it to them and they enter that, you know they are comparing the right drug for you. Then, you also get to find out what tier, and at that time you also ... like the one I did myself ... gave the whole year's price of the drugs and you can compare them across, like for Walmart, Humana… You can get all three of them compared out and do your comparisons. I like that. (MC)
	Experience w/ Other Services facilitates Trust	Anytime we've had any questions about anything, anytime either my husband or I have had to start new medications, they want to make sure that we understand the potential side effects, what to watch for, et cetera, and that's one reason why we went to them to review drug plans. (CA) No, I can't say... They helped me the one time, and I think this was actually before I went on Medicare and I don't know if we followed up afterwards as far as trying to request that the drug company, the Part D, Medigap company would consider a lower price. I take thyroid me, and to try and get a lower price because I have tried the generic and it didn't work for me when I started taking the thyroid medicine, it wasn't as effective as what the doctor wanted. And so, we switched to brand, and now I don't want to go off of that, and they did try to help me at one time kind of get records together to request. And like I say, this was before Medicare, the insurance company I was with wouldn't do anything. (CM) I think just being willing to work, like I say, when I wanted to see if I could get the insurance companies to go pay more on the brand name, their willingness to do that was a positive. Well, obviously some of them know us personally, but they're very face to face, they can put a name on you, we can put a name on them, that also is important. They've just always been there, the hours work out well, they've given all kinds of options in the COVID as far as delivery, "We'll meet you at the car door," all of that type of stuff. So, I think they just go above and beyond, and I'm probably biased

		because I have not used a CVS and a Walgreens, so I'm probably biased.(CM) Number three, it's just a good ... how am I going to say ... a good pharmacy that is dedicated to the business they are in. They aren't trying to handle every other aspect, but they're very good at their pharmaceutical and their compounding. I have had compound requirements that I've needed and I've taken it to PHARMACY and had very good luck. (MC) Nope. They don't. And I don't care. I don't want to see them. I guess I'm going on trust and once in a while, they'll go, "Well, do you really need this medication?" I say, "Well, yeah, it really helps" ‘cause that would be one that's more expensive. They work with me with what I take and what works where. (MEW) But I just stayed locally that way they know who you are and he had some problems. We are probably in a little more difficult situation 'cause we go out of town for four or five months a year. We used to have our prescriptions sent to a Walgreens down here and then last year I think they volunteered to mail them. So that's worked really well. (MEW) Oh. They have friendly and knowledgeable staff. They will promptly fill a new prescription. Especially if you have... It's like a pain medicine, you had surgery or whatever, they'll actually kind of, I don't know, expedite for lack of a better word, a prescription of that nature. They offer a sync, that's what I call it. A med sync, I think is that what they call it? Which all my prescriptions, I pick up prescriptions once a month and they take care of. If there's no refills, they automatically contact the doctor's office through their system, and it's seamless for me, unless the doctor comes back and says, "Oh, I need to see her before then," or whatever, but they communicate that as well. And they actually synced it then additionally, between my husband and myself, so that's cool. (JS) I think that consistency is a factor. I consistently know that they are on top of the meds sync. So I'm going to get a text message a week before that says, "We're going to fill it on this day. If you have any changes or questions, here's a number." And then, like clockwork, they're providing that and texting me to say, "They're ready." I realize some of that's automated, but it's very... There's a human being that's actually doing the work, and the consistency in the staff being knowledgeable and proficient and pleasant. And yeah, I think building that trust... I can't really think of anything else. I think for the bigger name brands, if you frustrate the customer too much, they're gone. (JS)

		“We had an issue with my mother and her prescription drug plan and we had to go in there and they had cancelled her drug plan. So he worked with us on that and did a really good job.” (VP)
	Information Print Out + Explanation	Well, I mean, they do actually print out if it's a new drug, they print out the information for you that gives you some overall details about the drug, which is good because you can take that back home and read it and hopefully not scare yourself with it. (CM) That was really big. I mean, he could have just done a print out and gone, "Here you go." And he didn't. Especially because I had those other complexities, optional medicines, getting married, changing medical plans, with a qualifying event mid-year that was going to affect my overall costs. So, all of that would've been overwhelming to me if he hadn't addressed each of those things. (JS) Well, he basically took the printout, went through one by one and said, okay, your premium for this particular plan would be this, the basic deductible, like the $448 or whatever it is this year, $450, whatever, he discussed that. Then he discussed how each drug, the different tier it was in, whether it was tier one, two, or three and what the copays and et cetera would be on those, and how tiers one, two and three would be covered at the different copayment amount. I can't remember the exact amounts now, but say one was three and one was five and one was seven I'm using. He discussed all that. (MC) We looked at several different options, and she printed out any of the ones I asked her to print out, so I could come home and digest everything in my own time to review everything. And then all I had to do was call her and say, "This is what I'm going to go with." And she handled making sure that I got signed up for that particular drug plan. (CA) Having somebody talk to me about it, but also having it on a computer screen and then a printout where I could take it with me and digest everything. Just somebody telling me isn't thorough enough, I want to see it too, and then I to have access so I can see everything about it. (CA)
Willingness to Pay	Perceptions of WTP	Oh, well, if it were a reasonable amount, and I'm trying to think it's about an hour that we'd be with them, 30 to $50 to me for that hour period, because I know that the pharmacist has to get paid, the computer system, they have to pay for their computer system and they have to pay for the programs that they have so they can have access to all the different plans that are available in our area. I would think that that would be a reasonable cost, and yes, I would be willing to pay that if I had to in order to get the service. (CA)

		I would say it probably wouldn't make any difference to me, if they charge for it, it's like, "Okay, that's fine." Especially, it would be nice if they could save me more money in a year's time, but if it showed that what I'm currently on for a drug plan is the most-Well, yeah, and on my part it's realistic to think that they may have to at some time, they don't right now, but maybe someday they would to have this service. I mean, after all, I pay for somebody to do my dry cleaning when I take it in, that's service. So, along the same kind of apples and oranges when we're talking about clothes and medications, but it's the same idea, I'm paying for a service. (CA) That's a very good question. I don't know, if I had to pay for this service, would I go to them for like a yearly review? I don't know if I would. (CM) I don't want to say ability, that's not the word. Once again, back to your 80 year old that didn't have anybody else helping them, like a $10 charge or a $25 charge once a year might be good peace of mind for them. For me, I don't think it would be at my age yet. And I've also got kids to bounce things off of too, so I think that would be one of those things whether somebody would pay for the service or not, I don't know. (CM) In my case, no more than $20, but I probably wouldn't pay that because I know I can do it on my own. (MC) Again, in regard to the cost, if it were a home cost, then maybe the price should be increased to cover the expense of time and expense to get there, the gas and et cetera. Maybe it should be $35 or $40 instead of just $20 in that respect. (MC) Oh, Hmm. Probably $50…[Well] 'cause I don't like doing that stuff. (MEW) Somewhere between $50 and $100. (JS) “I would put $45 to $50 I suppose. The time, it took a while.” VP

Service Non-Users

Technical Quality		
	Pharmacist Expertise	Oh, I don't know. I really don't know on that one. I leave it up to PHARMACIST and he even done a thing for my mom. She had SilverScript and he found out that her meds weren't going to be paid very good on that. He talked to her and he got her on Cigna and her Cigna, she has no co-pay or anything and her Cigna was actually cheaper than her SilverScript and it's taken right out of her social security. So he's very good and very... he's at the top of the list as far as I'm concerned. He knows everything that's going on. (CT) Because they're pharmacists and they know the medications and they can see if, I take Wellbutrin, well, I take 450 milligrams of that. In order to get 450 milligrams, I have to take a 300 and 150, I cannot get a prescription that will allow me to take 3, 150s in a day, that is not available. A pharmacist would know that, a regular insurance agent is going to have no idea. They're just going to put in, okay, she takes Wellbutrin, she takes, just a second. Sorry about that. She takes Wellbutrin, she takes 450 milligrams a day, we'll just put that in. Well, what you really need to do is you really need to put in the 150 and the 300. (MD)
	Time	Whatever he needed. If he needed an hour, I'd talk an hour. If he needed 10 or 50 minutes, that would be fine. I've got him on a pretty high plateau.(CT) So I would say 30 to 45 minutes. (MD) I imagine it would at least take 15 minutes for people that don't have a lot of medications. It'd probably take a good half hour for someone like me because I have a lot. (MG) Well, I guess it's dependent on how much time it took. I'm 68, so I'm able to grasp what we're talking about fairly easily and understand it, but not all seniors are. So again, it might take longer for my parents who are in their 80s to understand, they might need a little bit longer. I guess as far as time wise, I can't really give you a specific time. But what it takes, I guess it depends on the person and their cognitive abilities, but for me, probably wouldn't take as long as some other people maybe, but whatever it would take. (YB)

		It was about 45 minutes. (LN)
	Cost-Outcomes	The improving your life is better. Money is important too. Money is important to me. But if he was ... He knows my health is important. Anybody's health is important. If he could better it ... He's like, "Hey, I think I can better your life here. Would you give me the time to sit down and talk about it?" (MG) So, that's the information, those are the things that I think we need to know, is the drugs, the tiers, what it's going to cost, if it's covered, and the monthly, the deductible too, and the monthly costs, those are all things that you need to know in making a decision on Part D. (YB) Well, I'd want to know how much the ... For instance, Eliquis is a very expensive pharmaceutical and I would want to know how much that was going to cost me or what my deductible was on that. That was one of the thing. And the others don't make much difference because they're all minimum, they're covered with a four or five dollar copay. Oh, I see. I see. Well, I don't know how long. I wouldn't be that interested in all the details other than the final cost. I think our drug programs are pretty well regulated aren't they, by National, as far as quality is concerned? So it's just price is the main thing with me. (JH) Well, I just need to know that my prescriptions are taken care of.(LN) Yeah, it's helping with the deductible and not deductible, but they're part of their payment plan.(LN) “The information I would expect would be information on prices and the best value. And I think they would give that to me.” (CW)
	Service Availability	Well, I think maybe if they could start it, let's see, this is October, if they could start at the end of August for an October signup, you'd have a little more time to do research on your own if you wanted

		to, to make that decision to not have everybody crowded into two weeks trying to get the same thing done. So I'd say middle to end of August. To whatever the Medicare cut off is, probably December 7th, 10th, something like that. (MD) Well, the service is going to be necessary all year long for people whenever they turn 65, for the people who are already on Medicare, then just going into the open enrollment time is really the only time we need it at this point. But obviously for somebody who's just turning 65, then they're going to have to make that decision. (YB) Well, you don't want to do it too early because things might change too, but you don't want it at the last minute. I just now am getting my information about what my plans are going to cost and cover for next year. So, I think starting in September would be early enough, you wouldn't want to do it any earlier than that because there can always be changes in your situation. So, wouldn't want it the last minute, like I said, it's almost impossible to talk to people other than pharmacists, when you get into October, you can't get appointments to meet with anybody. So, I wouldn't say any earlier than September. (YB) Right, you just wouldn't want to do it too early because they may add a medication on there, and then if you do it too early then that's not going to be in your decision making process. So, you're not going to have that information. So, not too early, no earlier than September, that even maybe a little early, but from middle of September on. I know that makes it hard when you got all these people that need to talk at the same time and get all that information, but I don't think you want it too early. (YB) I do it October, November, so before the deadline.(LN) Definitely. Couple three months is a real good lead time, and I'm glad that normally, for Doug then they started in June saying, okay, you need to start looking at this stuff. And I'm glad that they give you that lead time so that you can do that, and I just did it on my own. I didn't have anybody to help me, and so I did not fully understand the differences between the Supplement and the Advantage plan. (MD) Right, you don't want to be under pressure, I mean, there's enough pressure as it is. I mean, we're paying... I don't know what

		the percentage is, more money every month now for health insurance costs than we did before I retired. So, it's a substantial amount of money, so there's enough stress involved that you really... And you can't really change that, you can't change that until the next open enrollment, so that's a full year. If you pick the wrong plan, then you're going to be paying for it for the rest of the year, for a full year before you can change it. So, I want it early enough that I can sit down and maybe even discuss it a couple of times before a final decision is made. So, early in the process and in paper so that we can take it home.(YB) Well, I make it as soon as I find out what their monthly ... See, I wait and see what the next year is going to be. They have to tell you that. I think it's by the end of, or by the 15th of October, they have to tell you what the price is going to be the following year. So you can make arrangements if you wanted to switch. And I start thinking about it then and when they finalize the price and say, this is going to be X number of dollars, then I decide. I either go looking for something more reasonable or I forget it. I just save with them.(JH)
	Scheduling Appointments	Well, I tell you, it all depends upon your circumstances and if you have further questions. Now, can you call him and ask him those questions at any time, or is there certain times you need to set an appointment or whatever. So, he's a busy man as a pharmacist and so taking on this, is his time going to be cut short? (LN)
	Alternative Service Providers	I could talk to anybody [about my Medicare Part D plan selection] because they all go through PHARMACIST, PHARMACIST got it to where they know their limits, "Well, just a minute, I'll go check with PHARMACIST. Now that he's got his mom there, whatever she says I go right with it because she knows the ropes, she's been in there longer than PHARMACIST. And she's more the people person along with filling prescriptions, where PHARMACIST he does all that too, but he's more into how the operation runs and how the business is going, and what he can do to better it and what he can do to make things work better for people and yet still do everything that everybody else is doing. (CT) Well, in our experience, it's been actually dealing with the pharmacist. We know two of the pharmacists in this pharmacy very well and have gotten prescriptions from them for a long time. So, I really think that the information needs to come from the pharmacist. (YB)
Interpersonal Quality		

	Pharmacist Characteristics	If something's changing or something's not going to work or whatever, he'll go ahead and call the doctor and say, "Well, we're not putting you on this. We're putting you on that." I'll say, "How come." He'll say, "Well, I talked with the doctor, it's the same thing but this is better for you," because the other one may have had this in it that I couldn't have or whatever. He's just very knowledgeable about everything that's going on.(CT) He knows if there's a copay, he'll let me know immediately. And normally I don't have any, I have any had any for several years now. And if I get one I'm supposed to call my Iowa Total Care provider, she lives right here in Bloomfield, I'm supposed to let her know but it doesn't even go that far. PHARMACIST gets it and takes care of it before anything else, most of mine are covered. I don't have any that I can think of that aren't covered. (CT) Definitely in a professional manner. Be open about being available. I know that I can call rights all and ask them a question, I know I can call Mike and ask him a question. So just the fact that they are able and willing, they make it perfectly clear that yes, we'll communicate with you however you need to communicate. (MD) Just the way he shows the information and he communicates with us, and I just like to be able to talk to him and you can just talk to him straight forward and everything. And he takes it from there.(LN) Well, really, relaxed and knowledgeable and I don't know, [PHARMACIST] is somebody that's easy to talk to anyway. (LN) Well, you pretty well ask him about anything and he'll tell you, or, if you don't ask, he'll tell you if he thinks it's something you need to know. (LN)
	Familiarity w/ Relationship, Continuity, and Trust	I had this guy that came to my house. He went over all my medications and stuff, and he said it was the best to do. He actually came to my house, and he sat down. I'm very leery about my medications and drug plans and all that, because I really don't ... I'm on an IV, and I have to be careful. I gave him all my list of my medication, and he went through it to make sure it was all covered and checked it all out. And he's like, "This is the best coverage for you," and I said okay. I said I don't trust very many

		people, but you took time out. You came to my house. You walked me through it. You assured me, so I said I'll do it. (MG) So we kind of knew the family when she said, "Well, PHARMACIST going to open up a store, he's going to do this, going to do that." And I said, "Okay, we'll be there." Went to the open house, met a lot of the people, it's just as common as can be. He was very understanding if something went on or, "Hey, PHARMACIST, what's this for? Or what can I take for that? Or what can I without having to run to the doctor all the time." He's just very good. I trust him a hundred percent. (CT) It's just kind of a family home town place to go, you go in, they know your name, they know you, they know if I can't go in and get my meds, because I am disabled, my mom will go in and get them and they know she's coming in to pick up my meds and it's not a big hassle, "Well, he's got to come and get them." They already know mom can get them, they already know my daughter's my executor and if she needs to come in, she can come in, they all know everything. And it's just really helpful to have that on your side when you're worrying about a lot of the other things that are going on, you don't have to worry about pharmacy. (CT) First of all, I knew him, so I already trusted him. I wasn't real sure about the guy that I'd gone with before for the Medicare advantage plan, he had told one thing and something else had happened and he told me, I'll take care of it, and he didn't get back to me, and so the trust factor was real huge. I'd heard of the company that he was talking about, Physicians Mutual, that was a big thing. I hadn't necessarily heard of what this other guy was going with, from what I see now, it was a decent plan, but it wasn't exactly for me. And he did not go into alternatives where Mike did, Mike said, you can do this, at that time I was already on the Advantage plan and he said, you can stay with what you've got, but these are the differences and what you might want to consider. And so we looked at it and we talked it over and we said, yeah, I think we're going to go with that, we'll see, yeah, Medicare Supplement. (MD) I knew the name of the company he was representing. I was familiar with that, I knew that it was a good solid company. Both my husband and I have insurance backgrounds in property occasionally in life and health, so that was important to us that it was something that we recognized. The fact that he was willing to look at what I already had and look at what he had and say, okay,

		there is advantages here, this is advantage here, this is the advantage on my side, you choose. It wasn't a pressure sale.(MD) Not really, other than he was unhurried and, like I say, call me anytime, willing to listen, willing to answer questions. The experience that we had with the other agent for the other company was not near as pleasant. It was more high pressure and I felt like it was a, oh, let's get this done, and we'll just go on and no, I don't need to tell her anything, she didn't just live with what we've got. (MD) He has part of it in my car, but he even gave me his card. Sometimes, if I have questions like ... Last year, something came out. Someone wanted me to switch or something, and I called him. He goes, "No. Remember? You're on that best plan that you can get." (MG) Yeah, and that's what he does. I think a lot of times he goes beyond the call of duty. (MG) I said, "You need ... You got to stand up for your health." I think PHARMACIST would be wonderful at being able to ... When you come in, I need you to bring all your medications. He might be able to help them set up a pill bottle. Even in the home, if he would go to their home, I need all your medications, whether it's pharmacy or not. Because some people just need that little extra help on ... And that's how he can gain the trust too. (MG) Because I trust PHARMACIST, he's always head of everything, when I ask him questions and everything, I think he'd be the same with that.(LN) He could do good at anything he did because of his personality and the way he fulfills what he says he is going to do.(LN) Well, he [PHARMACIST] was looking out for her best interests, so she wouldn't have to pay a lot of money because he knew she didn't have a lot. (CT)
Environmental Quality		
	Service Location	I do a lot over the phone. It's easier because I don't walk very well, but usually when I go in its whatever we're doing, "How are you doing? How's stuff going? How's the new business?" It's not just all

		pertains to pharmacy, we're still there to pick up pharmacy stuff, but it's a family friendly place to go into when I do go in. Or same on the phone, "How you doing today?" Whatever. I've had PHARMACIST even answer the phone and say, "What you need today?" And I'm like, "Oh I need some refills." "What you got," he'll say and I'll just read them off. He's like, "Okay, we'll have them tomorrow for you." And it's just like if there's a problem, he'll call me, so I don't worry about it. (CT) But I like the in person because I like seeing him and the feedback just in person always I think is better, but in my case it doesn't always happen.(CT) Well, I'd expect them to be able to sit down with me and look at various plans and come up with at least two if not three that looked like they might be acceptable and then help me narrow down what would be the best for myself. I realize now that it is not a one size fits all, Doug and I both have Physicians Mutual, but we have different Part D plans, and that's because we take different medications and different amounts of medication. (MD) If people can drive, he might be able to set up appointments so he can really sit down and talk to them one on one if they have questions. (MG) Me, it's within my home. Or in person. Mainly in person. Mine's in person. Honestly.(MG) But honestly, going face to face, to me, means more than anything. You're taking the time out to see if I could have a better life.(MG) Talking on the phone. At 16, I started as a telephone operator and my father told me that that is the worst thing that ever happened because then I was always wanting to talk on the phone. So I'm very comfortable talking on the phone. (MD) I have done it in person. I would prefer to do it in person. (MD) Just because, well, I say in person when I want counseling, when I want somebody to walk me through it, I'm planning on looking at the government website and picking my own for 2022. I feel like I can do that now that I've been through mine and through Doug's, I

		feel like I can do that and say, okay, this is what I want, sign me up. (MD) I would either do in person or on the phone, either one. Yeah, I'd do either one, in person or on the phone. (YB) Well really, I don't know what to tell you. I just, excuse me, expect the best prices and quality product. That's all that I'm concerned. I don't know that much about pharmaceuticals.(JH) Well, I'll tell you for me, it'd either be over the phone or in the home because I don't get out much. (LN) "I would prefer to do it at the pharmacy…unless I couldn't get there then over the phone. I like to talk fac-to-face when I am talking about things." CW "Definitely not phone. I want to go in. For that type of information I may need to take some notes myself. I am a visual and physical person." EB.
	Customer Service Across Employees	There's him, there's [PHARMACIST] who works in there with him, she's very good. She's does a lot of this stuff with the doctors and stuff getting things approved or whatever. But he's got a really good staff and now he's even got his mom working for him. (CT) I don't know. I've always trusted him. When he started that medication process, it helped because he hired [EMPLOYEE], and I knew her. (MG)
Administrative Quality		
	Tailoring information to the patient	No, he gives me what I need to know and it's something he thinks I need to remember or whatever, he'll do me a printout or he'll... Especially, if it's a new drug or something or whatever, he'll give me a full printout, which a lot of times some of them just give you the medicine and you go on because you've been on it so long. But he's real good about making sure everybody knows he doesn't over overload you with it and if there's a question I call him. (CT) He would have to ... Which he could do. He would have to tell me if all my medications were covered under it. (MG)
	Comparison and Choice	Well, the selection of the Medicare Part D plan wasn't too difficult, but the selection of finding out that I was going to do the Medicare Part D as opposed to having one of the all-inclusive, they're not supplements, what are they called? Advantage plans. Was where I had a problem. After I decided that I was going to do the Medicare supplement, the gentleman that was helping us, Mike Antonelli, he's an agent for Physicians Mutual said, go in, look up who you want to have for your prescription drug providers. And so we made sure that we got Rexall on that list and had about three plans come up and compared them and went with the one that looked the most economical for us. (MD)

		And he started explaining the differences between them, and I said, well, maybe it's not quite what I want. Just a second here. Excuse me. So he went over, he happens to be an agent for Physicians Mutual, and he went over what Physicians Mutual had and how to go about getting a Part D and I switched to Physicians Mutual. And as I said, he gave me the, this is where you go on the website, you decide what you want and I'll sign you up type thing. (MD) Well, I tell you what, he just showed me. Matter of fact, he showed me four or five plans, and then he explained each one of them. And the one that I took, he was not an agent for, but he said that would been the best one. He looked at all my medication and said, that would be the best one for me. (LN) "Which one would be the best for me." And he'd say, "Well, I'd recommend maybe this one, this one does a little more of this, this one does a little less than that." He would tell me right there and then I'd say, "Well, put me with whoever has to be the best." Like I said mine hasn't changed for quite a while.(CT) I know PHARMACIST. I would trust him. If he would tell me, "Hey, this is the best option," I would probably go with it. (MG) Well, again, I think I go back to, for me, I'm not sure I want recommendations from the pharmacist on any specific plan, in my position at this point. And that's not what we've gotten, so I guess I have not thought of that, they've not given us any suggestions, they just give us the information for us to process and make our own decision. So, I guess it would depend on if it is an older person that needs that kind of recommendation... I don't know that I could put a dollar sign on it, every little bit helps if you're living on a fixed income. So, honestly, I don't know that I could answer that. (YB) I have to call the insurance company when I make up of my mind. I just go right with his decision. He knows more about the insurance than I do. (LN)
	Experience w/ Other Services Facilitates Trust	He is a hometown guy so I thought, let’s give him a shot. Then when he did all the COVID shots people really appreciated him being so interested and taking care of that by offering clinics and such. (CW) Well, it was these shots for the COVID. Now, he was very well explaining that. And I had had gone through some hospitalization because of some of that. And so he was always careful when he, if the doctor recommended a different type of medicine, but I knew how it might affect me. That helped make our decision on which shots to take, and it would be most effective for us. And the problems we deal with that we have might be a little bit different with the shots. (LN)

		I trust him overall because he does a really good job. He gets it ... He does that program where they come up every month, and they just refill it, and they call and let you know. (MG) That makes a big difference yes because I don't have a lot of money being on disability and I live with my mom, so I try to help her out with rent and the things that I feel like I've used to... we keep food and stuff and that. It's important to me just to have a place that if I have a problem I can go and say, "PHARMACIST, I don't know what to do." He's been really good with our flu shots. He was good with our tetanus shots. He's good with our, let's see what else have we had, we've had two COVID and a booster already. We've had the flu shot this year. He's been really good... on top of everything. And I know that the Moderna really hasn't been... I guess they're talking on TV, like the booster hasn't been what, totally okay. (CT) I trust him because not all doctors [inaudible 00:13:10] if medication does not ... If they would counteract, he would call and let us know. (MG)
	Information Print Out	Well, I want a printout, I want something that I can take home and I can sit down and look at and review, look at the cost, look at which medications are covered because not all medications are covered. We found out through that process, my husband was on a medication that once he went and got a Part D none of the Part Ds would cover. So, then that gave us the information about that so he could also discuss it with his doctor because it's an expensive medication also, but for some reason, part Ds don't cover it. So for me, it's having them run that, give us a printout so that we can sit down and discuss it and have enough time to make that decision before we actually have to make the final decision (YB) So, I don't want to get the sheet of paper and then that's when I'm supposed to ask questions, because I want to go back, I want to look at it, I want to be able to compare them, I want to take a little time to do it, and then if I'm going to have questions, then I want to ask them later at a different time. (YB)
Willingness to Pay for Service	Perceptions of WTP	I would prefer that it be free, particularly since if the pharmacy does it they're probably going to end up getting either a percentage of the premium or business out of it or whatever. I presume [PHARMACY] gets a portion of the premium or gets some type of compensation for signing people up. (MD) Right. I would probably pay up to $25.(MD) 20 bucks (10 at the pharmacy). (MG) I don't object to paying for the service to do it, I don't know what all is entailed, I'm not sure what is entailed, but $15 is certainly not very expensive, so that's reasonable. (YB)

		Okay. I would say not over $50 now that's for an hour's worth, let's say, so anywhere zero to $50. (LN) “I just don’t have any money. I could probably pay 20 bucks or something maybe.” (TB)

APPENDIX J. QUALTRICS SCREENSHOT FOR DCE RECRUITMENT LETTER

Project Title: Patient Preferences and Willingness-To-Pay for Medicare Part D Consultations Offered in a Community Pharmacy Setting

Principal Investigator: Logan Murry, PharmD

We invite you to participate in a research study being conducted by investigators from The University of Iowa. The purpose of the study is to better understand how community pharmacies can help patients with Medicare Part D insurance plan selection. Logan Murry, a pharmacist and PhD student at The University of Iowa College of Pharmacy is interested in your preferences for a Medicare Part D plan selection service offered by community pharmacies. The survey will take approximately 20 minutes to complete. After completing the survey, you will receive an incentive provided by Qualtrics.

None of your personal information will be collected or recorded outside of your responses to the survey items. The survey is anonymous and taking part in this research study is completely voluntary.

If you have any questions about the survey, please contact: Logan Murry Phone: 319-325-9055 Email: logan-murry@uiowa.edu

If you have questions about the rights of research subjects, please contact the Human Subjects Office, 105 Hardin Library for the Health Sciences, 600 Newton Rd, The University of Iowa, Iowa City, IA 52242-1098, (319) 335-6564, or e-mail irb@uiowa.edu We encourage you to ask questions. If you have any questions about the research study itself, please contact Logan Murry by phone at 319-325-9055 or by email at logan-murry@uiowa.edu

Thank you very much for your consideration of this research study. Sincerely, Logan Murry PharmD

APPENDIX K. TABLES FOR SUBGROUP ANALYSIS RESULTS

Table K.1. Subgroup Results, Utility by Age

Attribute	Level	Estimate	SE	p
Information				
	Discussion			
	Discussion and Follow-up phone	-0.01	0.02	0.59
Location				
	In person at home			
	Telephone	0.01	0.02	0.60
	In person at pharmacy	0.00	0.01	0.89
Price				
	$0			
	$25	0.03	0.02	0.23
	$50	0.00	0.04	0.93
Provider				
	Pharmacy Technician or Intern			
	Any pharmacist*	-0.03	0.01	0.02
	Pharmacist you know	-0.02	0.01	0.20
Time				
	15 minutes			
	30 minutes	0.00	0.01	0.83
	60 minutes	-0.00	0.02	0.94

*Denotes statistical significance

Table K.2. Subgroup Results, Utility by Gender (Reference = Female)

Attribute	Level	Estimate	SE	p
Information				
	Discussion			
	Discussion and Follow-up phone	0.18	0.21	0.39
Location				
	In person at home			
	Telephone*	-0.45	0.17	0.01
	In person at pharmacy	-0.11	0.16	0.50
Price				
	$0			
	$25	0.28	0.25	0.26
	$50	0.33	0.47	0.49
Provider				
	Pharmacy Technician or Intern			
	Any pharmacist	0.13	0.14	0.37
	Pharmacist you know	0.09	0.15	0.54
Time				
	15 minutes			
	30 minutes	-0.08	0.13	0.56
	60 minutes	0.09	0.19	0.64

*Denotes statistical significance

Table K.3. Subgroup Results, Utility by Some College (Reference = High School or GED)

Attribute	Level	Estimate	SE	p
Information				
	Discussion			
	Discussion and Follow-up phone	-0.43	0.32	0.19
Location				
	In person at home			
	Telephone	-0.09	0.26	0.74
	In person at pharmacy	0.06	0.25	0.83
Price				
	$0			
	$25	0.43	0.40	0.27
	$50	0.24	0.74	0.74
Provider				
	Pharmacy Technician or Intern			
	Any pharmacist	-0.10	0.22	0.64
	Pharmacist you know	0.08	0.23	0.73
Time				
	15 minutes			
	30 minutes*	0.54	0.20	0.01
	60 minutes	0.17	0.29	0.57

*Denotes statistical significance

Table K.4. Subgroup Results, Utility by Bachelor's Degree or Advanced Graduate Work (Reference = High School or GED)

Attribute	Level	Estimate	SE	p
Information				
	Discussion			
	Discussion and Follow-up phone	-0.24	0.35	0.50
Location				
	In person at home			
	Telephone	0.21	0.29	0.47
	In person at pharmacy	0.22	0.27	0.41
Price				
	$0			
	$25	0.43	0.42	0.31
	$50	1.02	0.79	0.19
Provider				
	Pharmacy Technician or Intern			
	Any pharmacist	-0.33	0.24	0.18
	Pharmacist you know	0.13	0.26	0.61
Time				
	15 minutes			
	30 minutes*	0.64	0.22	0.00
	60 minutes	0.30	0.31	0.34

*Denotes statistical significance

Table K.5. Subgroup Results, Utility by Income of $25,000 to $49,000 (Reference = Under $25,000)

Attribute	Level	Estimate	SE	p
Information				
	Discussion			
	Discussion and Follow-up phone	0.49	0.39	0.21
Location				
	In person at home			
	Telephone	0.23	0.31	0.45
	In person at pharmacy	0.26	0.30	0.39
Price				
	$0			
	$25	-0.84	0.48	0.08
	$50*	-1.94	0.90	0.03
Provider				
	Pharmacy Technician or Intern			
	Any pharmacist	-0.01	0.27	0.96
	Pharmacist you know	0.04	0.28	0.90
Time				
	15 minutes			
	30 minutes	-0.19	0.25	0.45
	60 minutes	-0.01	0.34	0.98

*Denotes statistical significance

Table K.6. Subgroup Results, Utilities by Income of $50,000 to $74,999 (Reference = Under $25,000)

Attribute	Level	Estimate	SE	p
Information				
	Discussion			
	Discussion and Follow-up phone	0.39	0.26	0.13
Location				
	In person at home			
	Telephone	-0.21	0.22	0.34
	In person at pharmacy	0.13	0.20	0.52
Price				
	$0			
	$25	-0.25	0.31	0.42
	$50	-0.88	0.59	0.13
Provider				
	Pharmacy Technician or Intern			
	Any pharmacist	0.17	0.18	0.36
	Pharmacist you know	0.01	0.19	0.95
Time				
	15 minutes			
	30 minutes	0.05	0.16	0.74
	60 minutes	0.31	0.23	0.18

*Denotes statistical significance

Table K.7. Subgroup Result, Utility by Income: $75,000 or more (Ref: Under $25,000).

Attribute	Level	Estimate	SE	p
Information				
	Discussion			
	Discussion and Follow-up phone	0.26	0.35	0.46
Location				
	In person at home			
	Telephone	0.11	0.29	0.70
	In person at pharmacy	0.12	0.28	0.65
Price				
	$0			
	$25	0.04	0.42	0.93
	$50	-0.85	0.78	0.28
Provider				
	Pharmacy Technician or Intern			
	Any pharmacist	0.23	0.24	0.33
	Pharmacist you know	0.09	0.26	0.73
Time				
	15 minutes			
	30 minutes*	0.57	0.22	0.01
	60 minutes	0.41	0.31	0.19

*Denotes statistical significance

Table K.8. Subgroup Results, Utility by Residence: Small Town (Ref: Rural)

Attribute	Level	Estimate	SE	p
Information				
	Discussion			
	Discussion and Follow-up phone	-0.36	0.34	0.28
Location				
	In person at home			
	Telephone	0.10	0.27	0.72
	In person at pharmacy	-0.01	0.26	0.97
Price				
	$0			
	$25*	1.04	0.41	0.01
	$50*	1.56	0.76	0.04
Provider				
	Pharmacy Technician or Intern			
	Any pharmacist	-0.20	0.23	0.38
	Pharmacist you know	0.21	0.24	0.39
Time				
	15 minutes			
	30 minutes*	0.56	0.21	0.01
	60 minutes	0.22	0.30	0.47

*Denotes statistical significance

Table K.9. Subgroup Results, Utility by Residence: Suburban (Ref: Rural)

Attribute	Level	Estimate	SE	p
Information				
	Discussion			
	Discussion and Follow-up phone	-0.34	0.29	0.24
Location				
	In person at home			
	Telephone	0.32	0.24	0.18
	In person at pharmacy	-0.01	0.23	0.96
Price				
	$0			
	$25	-0.22	0.35	0.53
	$50	-0.27	0.65	0.68
Provider				
	Pharmacy Technician or Intern			
	Any pharmacist	0.04	0.20	0.82
	Pharmacist you know	0.15	0.21	0.48
Time				
	15 minutes			
	30 minutes	-0.31	0.18	0.09
	60 minutes	-0.38	0.27	0.16

*Denotes statistical significance

Table K.10. Subgroup Results, Utility by Residence: Urban (Ref: Rural)

Attribute	Level	Estimate	SE	p
Information				
	Discussion			
	Discussion and Follow-up phone	-0.16	0.30	0.59
Location				
	In person at home			
	Telephone*	0.48	0.24	0.05
	In person at pharmacy	-0.08	0.23	0.71
Price				
	$0			
	$25	-0.51	0.36	0.16
	$50	-0.51	0.66	0.44
Provider				
	Pharmacy Technician or Intern			
	Any pharmacist	0.28	0.20	0.17
	Pharmacist you know	0.20	0.21	0.36
Time				
	15 minutes			
	30 minutes	-0.17	0.18	0.34
	60 minutes	-0.05	0.27	0.86

*Denotes statistical significance

Table K.11. Subgroup Results, Utility by Number of prescription medications currently taking: 2 (Ref: 1)

Attribute	Level	Estimate	SE	p
Information				
	Discussion			
	Discussion and Follow-up phone	0.34	0.37	0.36
Location				
	In person at home			
	Telephone*	0.73	0.31	0.02
	In person at pharmacy	0.00	0.29	0.99
Price				
	$0			
	$25	-0.20	0.45	0.65
	$50	-0.80	0.87	0.36
Provider				
	Pharmacy Technician or Intern			
	Any pharmacist	0.21	0.25	0.39
	Pharmacist you know	0.11	0.27	0.69
Time				
	15 minutes			
	30 minutes	-0.03	0.23	0.89
	60 minutes	0.03	0.33	0.93

*Denotes statistical significance

Table K.12. Subgroup Results, Utility by Number of prescription medications currently taking: 3 (Ref: 1)

Attribute	Level	Estimate	SE	p
Information				
	Discussion			
	Discussion and Follow-up phone	-0.06	0.35	0.87
Location				
	In person at home			
	Telephone	0.25	0.28	0.38
	In person at pharmacy	0.15	0.27	0.58
Price				
	$0			
	$25	0.30	0.41	0.47
	$50	0.84	0.79	0.29
Provider				
	Pharmacy Technician or Intern			
	Any pharmacist*	0.57	0.23	0.02
	Pharmacist you know*	0.49	0.25	0.05
Time				
	15 minutes			
	30 minutes	-0.04	0.21	0.87
	60 minutes	-0.17	0.32	0.60

*Denotes statistical significance

Table K.13. Subgroup Results, Utility by Number of prescription medications currently taking: 4 or more (Ref: 1)

Attribute	Level	Estimate	SE	p
Information				
	Discussion			
	Discussion and Follow-up phone	0.08	0.30	0.80
Location				
	In person at home			
	Telephone	0.19	0.25	0.44
	In person at pharmacy	-0.06	0.24	0.79
Price				
	$0			
	$25	-0.04	0.37	0.91
	$50	-0.20	0.70	0.78
Provider				
	Pharmacy Technician or Intern			
	Any pharmacist	0.26	0.20	0.19
	Pharmacist you know	-0.10	0.22	0.66
Time				
	15 minutes			
	30 minutes	-0.05	0.19	0.78
	60 minutes	-0.18	0.28	0.52

*Denotes statistical significance

Table K.14. Subgroup Results, Utility by Taking difficult to afford prescription medication: Yes (Ref: No).

Attribute	Level	Estimate	SE	p
Information				
	Discussion			
	Discussion and Follow-up phone	0.04	0.26	0.88
Location				
	In person at home			
	Telephone*	-0.46	0.21	0.03
	In person at pharmacy	-0.35	0.20	0.07
Price				
	$0			
	$25	0.12	0.31	0.71
	$50	0.04	0.58	0.95
Provider				
	Pharmacy Technician or Intern			
	Any pharmacist	-0.24	0.17	0.16
	Pharmacist you know	0.03	0.19	0.86
Time				
	15 minutes			
	30 minutes	0.20	0.16	0.21
	60 minutes	0.18	0.23	0.45

*Denotes statistical significance

Table K.15. Subgroup Results, Utility by 2 or more Pharmacies Used in the past 30 days (Ref = 1)

Attribute	Level	Estimate	SE	p
Information				
	Discussion			
	Discussion and Follow-up phone	-0.18	0.24	0.44
Location				
	In person at home			
	Telephone	0.27	0.20	0.17
	In person at pharmacy	0.08	0.18	0.65
Price				
	$0			
	$25	0.05	0.29	0.87
	$50	0.00	0.54	1.00
Provider				
	Pharmacy Technician or Intern			
	Any pharmacist	0.23	0.17	0.16
	Pharmacist you know	-0.15	0.17	0.38
Time				
	15 minutes			
	30 minutes	0.06	0.15	0.66
	60 minutes	-0.15	0.22	0.48

*Denotes statistical significance

Table K.16. Subgroup Results, Utility by Past Experience with a pharmacy service (ref = No Service)

Attribute	Level	Estimate	SE	p
Information				
	Discussion			
	Discussion and Follow-up phone	0.22	0.21	0.28
Location				
	In person at home			
	Telephone*	-0.33	0.17	0.05
	In person at pharmacy*	-0.55	0.16	0.00
Price				
	$0			
	$25	-0.32	0.25	0.20
	$50	-0.66	0.46	0.15
Provider				
	Pharmacy Technician or Intern			
	Any pharmacist	-0.20	0.14	0.15
	Pharmacist you know	-0.04	0.15	0.80
Time				
	15 minutes			
	30 minutes	0.01	0.13	0.91
	60 minutes	0.24	0.18	0.18

*Denotes statistical significance

Table K.17. Subgroup Results, Utility by Health Activation[1]

Attribute	Level	Estimate	SE	p
Information				
	Discussion			
	Discussion and Follow-up phone	0.01	0.06	0.92
Location				
	In person at home			
	Telephone	-0.07	0.05	0.12
	In person at pharmacy	0.05	0.05	0.29
Price				
	$0			
	$25	0.10	0.07	0.17
	$50	0.16	0.13	0.24
Provider				
	Pharmacy Technician or Intern			
	Any pharmacist*	-0.08	0.04	0.04
	Pharmacist you know	-0.05	0.04	0.22
Time				
	15 minutes			
	30 minutes	-0.00	0.04	0.97
	60 minutes	-0.00	0.05	0.94

*Denotes statistical significance

[1]Single item scale, with 1 being Least Confident and 10 being Most Confident in controlling and managing health problems.

Table K.18. Subgroup Results, Utility by Medicare Part D Insurance Literacy-Confidence in Plan Choice[1]

Attribute	Level	Estimate	SE	p
Information				
	Discussion			
	Discussion and Follow-up phone	-0.01	0.03	0.75
Location				
	In person at home			
	Telephone	-0.00	0.02	0.85
	In person at pharmacy	0.01	0.02	0.55
Price				
	$0			
	$25	0.04	0.04	0.30
	$50	0.00	0.07	0.94
Provider				
	Pharmacy Technician or Intern			
	Any pharmacist	0.00	0.02	0.81
	Pharmacist you know	0.03	0.02	0.25
Time				
	15 minutes			
	30 minutes	-0.01	0.02	0.47
	60 minutes	-0.02	0.03	0.37

*Denotes statistical significance

[1]5 item scale with four response options ranging from Not Confident At All to Very Confident, total score possible is 20.

Table K.19. Subgroup Results, Utility by Medicare Part D Insurance Literacy-Confidence in Using Insurance[1]

Attribute	Level	Estimate	SE	p
Information				
	Discussion			
	Discussion and Follow-up phone	0.04	0.05	0.42
Location				
	In person at home			
	Telephone	-0.01	0.04	0.71
	In person at pharmacy	-0.01	0.04	0.67
Price				
	$0			
	$25	-0.10	0.06	0.09
	$50*	-0.21	0.10	0.04
Provider				
	Pharmacy Technician or Intern			
	Any pharmacist	0.03	0.03	0.30
	Pharmacist you know	0.04	0.03	0.20
Time				
	15 minutes			
	30 minutes	-0.04	0.03	0.18
	60 minutes	-0.04	0.04	0.38

*Denotes statistical significance