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It's a good idea, but are they willing? Assessing pharmacist willingness to deliver colorectal cancer screening

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Abstract

Background: Accessibility, expanding scope of practice, and a rapidly changing policy landscape make US community pharmacies a promising delivery setting for colorectal cancer (CRC) screening. It is not clear, however, whether community pharmacists are willing to incorporate CRC screening into their pharmacy practice, what potential drivers of willingness are, and, if unwilling, under what conditions pharmacists would be willing to provide PharmFIT™.

Methods: From September 2022 to January 2023, we surveyed 578 currently practicing community pharmacists. We assessed willingness to provide a pharmacy-based CRC screening program (PharmFIT™). We used multiple linear regression to identify correlates of perceived implementation complexity and multiple logistic regression to explore overall willingness to implement PharmFIT™

Results: Most pharmacists (80%) were willing to implement PharmFIT™. The most common reasons for unwillingness were that results needed to be reported to the patients' PCPs (52%), that appropriate training in delivering CRC screening be provided (48%) and that care coordination with PCPs be clear (46%). Perceived complexity of the intervention decreased as years in practice increased (β= 0.013; $CI_{95\%}$: 0.01–0.02) and as level of knowledge about CRC screening increased (β= 0.085; $CI_{95\%}$: 0.01–0.16). Respondents' willingness to implement PharmFIT™ increased as perceived complexity decreased (OR:5.68, $CI_{95\%}$: 3.96–8.15).

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Conclusions: Most community pharmacists in the US would be willing to integrate PharmFIT™ into their current workflows. Training in how to deliver FIT and preparation for the coordination of test results and follow up care should be completed prior to implementing PharmFIT™.

Impact: Community pharmacies are a viable venue for delivering CRC screening.

Keywords

Pharmacy; Colorectal cancer screening; CRC screening; fecal immunochemical test; Cancer prevention; Preventive medicine; Diffusion of innovation

1. Introduction

Community pharmacies are the most accessible healthcare settings in the United States (US) (1) and could greatly expand the reach of critical preventive care services.(2,3) Pharmacies are widely distributed geographically and do not typically require patient appointments.(1) Patients visit pharmacies more frequently than they do primary care providers (PCPs),(4) and, as such, pharmacies hold the potential to greatly reduce access barriers to patient care services. These services include vaccinations, tobacco cessation, and screenings and testing for chronic or infectious diseases.(5) With rising rates of colorectal cancer (CRC), unequal access to primary care cancer screening services,(6–9) and unrealistic demands on primary care(10), there is a need to evaluate novel delivery settings for CRC screening services. Fecal immunochemical testing (FIT) can be distributed without an order from a physician; in fact, patients can order their own FIT kits from community laboratories such as LabCorp or even Amazon (https://www.ondemand.labcorp.com/at-home-test-kits/colofit-colon-cancer-test, https://www.amazon.com/s?k=fecal+immunochemical+test+fit), although without any interactive counseling or patient education services. Pharmacies may be able to deliver FIT kits and provide robust patient counseling services.

Pharmacy-based CRC screening is an innovative approach to delivering screening services, with the potential to circumvent the over-stuffed primary care agenda(10) and expand access to this preventive service. Willingness to adopt this innovation, which we call PharmFIT™, may be influenced by an individual's perception of its complexity. For this study, we defined complexity similarly to Diffusion of Innovation (DOI) Theory, as the degree to which an innovation is perceived as difficult to understand and implement. Our previous formative work has established general support for a pharmacy-based FIT kit distribution program. Patients have voiced willingness to obtain FIT kits from their pharmacists and confidence in their capacity to support CRC screening, provided direct communication with their PCPs. (11–13) Similarly, providers were accepting of pharmacists delivering FIT kits given proper training; PCPs also stipulated that test results would be communicated back reliably and that a clear understanding of responsibility for follow-up care would be established.(14) It is not clear, however, if pharmacists are willing to provide such services and, if unwilling or somewhat unwilling, their stipulations for willingness.

1.1 Objective

This study aimed to understand pharmacists' willingness to provide FITs for CRC screening through their pharmacy, potential drivers of willingness, and to explore their stipulations for

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willingness. The results of this study will help to inform program development and training needs for implementation of PharmFIT™.

2. Materials and Methods

2.1 Participants and procedures

We conducted a national survey of community pharmacists in the US between September 2022 and January 2023. The survey included pharmacists who were members of three different online survey market research panels contracted with QualtricsXM (Provo, UT; https://www.qualtrics.com), an online survey research company. Members of panel 1 were pharmacists nation-wide who doubled opted-into the panel, and all members were verified through their official state-issued pharmacist license. Members of panel 2 were members of American Medical Association (AMA) database who identified as pharmacists, double opted-into panel membership, and whose credentials were verified by a panel management team. Finally, the members of panel 3 were pharmacists who were recruited into the panel (internal referrals, social media posts, or were from purchased lists from other panels contracted with QualtricsXM).

We recruited participants using purposive sampling methods. Eligible participants were licensed pharmacists who were practicing in community pharmacies across the US, including US territories (as pharmacy practice is governed similarly to US states), and approximately half (+/− 10%) were women. QualtricsXM contacted potential participants via email and sent email reminders to them. Respondents were compensated by Qualtrics. Non-mutually exclusive sampling quotas were applied so that half of our sample was female (+/− 10%) and a third worked in independent pharmacy practice.(15) Qualtrics pilot tested the survey with 63 pharmacists to ensure our survey's functionality. No data from pilot respondents was retained. A total of 1,452 pharmacists accessed our survey. After excluding ineligible respondents based on our inclusion criteria and survey data quality checks (n=474), we had a final sample of 578 pharmacists who completed the survey, yielding a survey response rate of 59% (578/978) (Supplementary File Figure S1).(15) Retained respondents came from 41 states in the US, Washington D.C., and Puerto Rico.

2.2 Ethical approval

The University of North Carolina Institutional Review Board approved this study (IRB# 18–1337).

2.3 Measures

The PharmFIT™ National Pharmacist Survey was developed by a multidisciplinary team comprising health services researchers, physicians, pharmacists, and other research staff. It consists of 81 items adapted from past publications and newly developed items.(12,16,17) In this study, we focus on pharmacists' willingness to provide PharmFIT™ and their perception of the complexity of providing PharmFIT™. The entire survey can be accessed online: [https://dataverse.unc.edu/dataverse/cpcrn-4cnc-pharmfit]

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Complexity of PharmFIT™. Four survey items assessed respondents' perceived complexity of PharmFIT™, as defined by the Diffusion of Innovation (DOI) Theory.(18) The survey prompted respondents: "**Now, tell us how you would feel about providing FIT kits from your pharmacy to your patients. Say how much you agree or disagree with the following statements"-: 1) providing FIT kits from my pharmacy would be clear and understandable to me; 2) providing FIT kits from my pharmacy would be easy for me to do; 3) providing FIT kits from my pharmacy would be challenging for me to do; and 4) it would be complicated for us to provide FIT kits for our patients from my pharmacy.** Items 3 and 4 were reverse coded to ensure consistency in the scale and its interpretation. All items were assessed using a five-point response scale ranging from "Strongly Disagree" (1) to "Strongly Agree" (5), which demonstrates decreasing perception of complexity. The complexity measure demonstrated adequate internal consistency reliability (Cronbach's alpha = 0.83).

Willingness to provide PharmFIT™. Six survey items assessed respondents' willingness to provide each of the steps of PharmFIT™, with the prompt: "**Now that you have thought about providing FIT kits from your pharmacy and facilitating follow-up care, say how much you agree or disagree with the following statements. Follow-up care may include communicating test results, completing future FIT kits and facilitating referrals.**" The items assessed pharmacist willingness to: 1) have a discussion with patients about their eligibility to get a FIT kit; 2) provide instructions to patients about how to use a FIT kit; 3) remind patients to complete their FIT kits; 4) talk about FIT test results with a patient; 5) make a referral for a colonoscopy after a patient's positive FIT result; and 6) overall willingness to provide FIT kits and follow-up from the pharmacy. All items had a five-point response scale ranging from "Strongly Disagree" (1) to "Strongly Agree" (5). The willingness measure demonstrated adequate internal consistency reliability (Cronbach's alpha = 0.90).

Respondents who disagreed or neither agreed or disagreed with the item assessing overall willingness to provide PharmFIT™ were asked an item assessing what stipulations were needed for them to be willing to implement PharmFIT™, termed "stipulations for willingness." Respondents could select multiple stipulations, which included: 1) The patients have an established healthcare provider; 2) The healthcare provider referred patients to the pharmacy for a FIT; 3) FIT results be reported back to healthcare providers; 4) The pharmacist be properly trained on FIT kits provision; 5) The pharmacist could efficiently communicate FIT results to healthcare providers; 6) The pharmacy had a semi-private or private place to discuss FITs; 7) The pharmacy had adequate space to store FIT kits; 8) The pharmacist had a relationship with patients receiving FIT; 9) Patients would not need to make appointments to receive FIT; 10) Little to no out-of-pocket costs for patients; 11) The pharmacy will not lose money by offering PharmFIT™ and ; 12) PharmFIT™ be well integrated into the pharmacy workflow. These selections of stipulations were informed by our previous research(11,13,14,19) and related surveys of pharmacy-based preventive services.(20)

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Pharmacist demographics and pharmacy characteristics. The survey assessed respondents' characteristics including age, race, ethnicity, and gender, pharmacy staffing role, pharmacy education, practice experience, time spent on non-dispensing activities. The survey also assessed the respondents practice environment, including pharmacy structure, pharmacy location, pharmacy operating days, prescription volume, type of insurance accepted, type of healthcare services provided, and the type of electronic patient record system used. Because pharmacists may work in multiple settings, we asked respondents to consider the pharmacy where they work most often.

2.4 Statistical analyses

We used descriptive statistics to characterize our survey sample. We described the proportion of respondents willing to implement each step of PharmFIT™ as well as PharmFIT™ overall in three groups: "Strongly Disagree" or "Disagree"; "Neither Agree nor Disagree"; and "Agree" or "Strongly Agree". To analyze perceived complexity, we calculated a mean score for the scale.(11) Higher scores indicated lower perceived complexity of PharmFIT™ provision. We used multiple linear regression with complete case analysis (n=503; data missingness due to non-responses to survey item assessing if the pharmacy provided non-dispensing services (Supplementary File Figure S1)) to identify correlates of respondents' perceived complexity of providing PharmFIT™. Perceived complexity, which asks individuals to consider how difficult it would be to integration an innovation, like PharmFIT™, into existing practice, is associated with professional and practice setting characteristics.(18) Thus, our model adjusts for professional and practice setting characteristics.

We used multiple logistic regression with complete case analysis (n=563; data missingness due to non-responses to survey item assessing respondents' years of practice (Supplementary File Figure S1)) to identify correlates of respondents' overall willingness to provide PharmFIT™. For the logistic regression model, we dichotomized the overall willingness item, classifying "Strongly Disagree," "Disagree," and "Neither Agree Nor Disagree," as being unwilling and "Agree," and "Strongly Agree" as being willing to provide PharmFIT™ as responses were not normally distributed. Willingness to provide PharmFIT asks individuals to consider how willing they would be to provide PharmFIT™ based on both their personal characteristics (e.g., being an early adoptor or a laggard(18)) as well as their professional and practice setting; thus, we adjusted for both in this model.

We conducted all analyses using STATA 16.1 (Stata Corp, College Station, TX) and all test statistics were two-tailed with a critical alpha=.05.

2.5 Data availability statement

The data generated in this study are available upon request from the corresponding author.

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3. Results

3.1 Demographic characteristics

The average age of the final sample was 47 years, about half was female, and majority identified as Non-Hispanic White. The average years of practice was 21 years, about two third of respondents practiced in independent or national chain pharmacies, and most practiced full-time (Table 1).

3.2 Willingness to provide the different steps of PharmFIT™

Overall, most pharmacists (80%) were willing to provide PharmFIT™ for their patients (Figure 1). Most were willing to discuss FIT eligibility with their patients (79%) and provide instructions on how to complete a FIT (83%). Over two-third of pharmacists were willing to remind patients about completing a FIT (68%) and discuss FIT test results with patients (68%). About half of pharmacists were willing to refer patients for a colonoscopy after a positive FIT result (50%).

A minority of pharmacists (20%, 115/578) indicated that they either disagreed or strongly disagreed for the item assessing overall willingness to provide PharmFIT™ in their pharmacy (Table 2). Over half of these respondents indicated that they would be willing to provide this program if the FIT results be reported to the patient's healthcare provider (60/115, 52%). Around half of respondents stipulated that if they receive adequate training to properly deliver FIT (55/115, 48%) or that the PharmFIT™ service be well integrated in their pharmacy workflow (53/115, 46%) for them to be willing. Fewer respondents rated the other stipulations as important design characteristics to address prior to being willing to provide PharmFIT™. Very few respondents (4/115; 4%) indicated that none of these stipulations would alter their willingness to provide PharmFIT™. Addressing the top three stipulations among this group of responders (accounting for unique responses only; n=87) would increase overall pharmacist willingness to provide PharmFIT to over 95% (550/578).

3.3 Correlates of respondents' perceived complexity to provide PharmFIT™

Between 62%-80% of pharmacists indicated that PharmFIT™ would not be complex to provide for their patients (mean=3.8; SD=.74; scale ranging from 1–5). Correlates of PharmFIT complexity are shown in Table 3. Pharmacists who have been in practice longer indicated lower complexity of providing PharmFIT™ (β= 0.013; $CI_{95\%}$: 0.01–0.02). Pharmacists who had higher levels of CRC screening knowledge indicated lower complexity of providing PharmFIT™ (β= 0.085; $CI_{95\%}$: 0.01–0.16). Finally, pharmacists who practiced in independent pharmacies indicated lower complexity of providing PharmFIT™ compared to those practicing in national chain pharmacies (β= 0.265; $CI_{95\%}$: 0.06–0.47).

3.4 Correlates of respondents' willingness to provide PharmFIT™

Correlates of pharmacists' willingness to provide PharmFIT™ to their patients are reported in Table 4. As pharmacists' appraisal of PharmFIT™ complexity decreased, they were more likely to report being willing to provide PharmFIT™ (OR:5.68, $CI_{95\%}$: 3.96–8.15). As the number of patient care services offered the pharmacy increased, pharmacists were more willing to provide PharmFIT™ (OR: 1.18, $CI_{95\%}$: 1.01–1.39).

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4. Discussion

Community pharmacies are a highly accessible health care delivery setting(3) and general attitudes and perceptions among pharmacists and pharmacy patients of pharmacy-delivered preventive services are positive.(21) In the PharmFIT™ National Patient Survey, we established that US adults were highly willing to participate in a pharmacy-based CRC screening program provided there is care coordination with PCPs.(11) Expanding CRC screening to community pharmacies aligns with the general trends in pharmacy practice towards more whole patient care, however, our goal in this survey was to establish general willingness amongst pharmacists to expand their scope of practice to include this service. Our findings reveal that pharmacists are, indeed, highly willing to add CRC screening to their practice, but also highlight implementation considerations that must be included in a robust pharmacy-based CRC screening program to increase pharmacist willingness: better care coordination, training on screening, and using implementation champions.

4.1 Care coordination

First, careful preparation of both data flow and care coordination between the pharmacy and PCP must be established prior to implementing PharmFIT™ to ensure patient safety. Pharmacists responding to this survey who indicated unwillingness to provide PharmFIT™ cited these two areas as caveats for willingness. Findings from this survey are corroborated by our previous formative research of patients, pharmacists, and PCPs cited similar implementation considerations.(11–14,19) Further, in the collaborative design of the PharmFIT™ pilot implementation studies,(22) careful consideration was placed on the care coordination component.(23) The literature has consistently shown that coordinated care leads to better patient outcomes and lower health care costs.(24–26) And further, there is potential for coordinated care to expand patient perception of who is part of their “care team.” For example, cancer screening patient navigation, in which a dedicated person (the navigator) works one-on-one with a patient to address barriers to care, is known to improve adherence to cancer screening across multiple cancers.(27,28) Studies that have integrated the navigator into the patients’ clinical care delivery, both physically and virtually, with electronic access to patient records, have shown increased programmatic success due, in part, to patients perceiving the navigator as part of the care team.(29,30) Future iterations of PharmFIT™ should ensure a coordinated approach to CRC screening services delivered in the pharmacy to maximize the likelihood of successful implementation.

4.2. Training

Second, training and education for pharmacists to build an understanding of colorectal cancer and screening prior to implementing PharmFIT™ is critical. Most of our pharmacist respondents were highly willing to implement PharmFIT™, but among those initially unwilling, proper training in the provision of FIT kits was among the top caveats. Baseline knowledge around CRC and screening is variable, as revealed in both our qualitative(19) and quantitative(31) work. Our previous analysis revealed that just 5% of pharmacist respondents correctly answered all knowledge questions about CRC, CRC screening, and FIT, reinforcing the need for consistent, comprehensive training and education around CRC screening prior to implementing PharmFIT™. Moreover, in qualitative interviews with

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patients who were eligible for CRC screening, patient trust in their healthcare provider was critical, underpinned by the provision of knowledgeable communication and counseling around this patient care service.(13) Like many other professionals, pharmacists are required to complete a certain amount of continuing education credits annually to maintain licensure. For example, in North Carolina, 15 hours are required annually.(32) Prior to implementing PharmFIT™, it is critical that nationally-available, accredited trainings in CRC, screening, and provision of FIT specifically be developed and disseminated.

4.3 Implementation champions

Implementation champions, defined as people within an organization who have both interest in a particular intervention as well as knowledge and drive to make it happen, will be critical for successful implementation of PharmFIT™.(33) For widespread adoption, it's crucial that certain programmatic stipulations are met, as our data demonstrate that many pharmacists may not support the program otherwise. A champion can help address these stipulations and remove barriers. Identifying potential champions, however, can be challenging and the lack of a champion, or the lack of an effective champion, can be impactful on the success of the intervention.(34,35) While much of the research into implementation champions has been in more traditional healthcare delivery settings(36,37), our findings support some takeaways. Pharmacists with more years in practice and greater knowledge of CRC and screening find PharmFIT™ to be "less complex" to implement; these senior pharmacists, who are likely to be in or closer to leadership in their organizations, may be more successful champions for PharmFIT™ implementation. Organizations considering implementing PharmFIT™ should focus on the identification of a strong champion and should consider more senior pharmacists with some leadership or connection to leadership to serve in this role.

4.4 Implementation setting

Our findings highlight two additional considerations around implementation setting. The first is in the role of primary care in PharmFIT™. In this survey study, the most reported stipulation for willingness to implement PharmFIT™ was that results would be appropriately reported to the PCP. In our previous formative research, we found that all key partners in PharmFIT™, patients, pharmacists, and PCPs, all reported a desire for a clear, defined, and agreed upon role in implementation.(11,13,14,19) This is consistent with a broad literature showing that patients who have more access to primary care complete CRC screening at higher rates.(38–40) To achieve the goal of increasing access to CRC screening, real-world implementation of PharmFIT™ should include consideration for a PCP safety-net, i.e., a PCP or primary care practice in close proximity to a pharmacy implementing PharmFIT™ that is willing and able to take in patients participating in the program who do not have established primary care.

The second implementation setting consideration is in the type of community pharmacy (e.g., chain, independent). All pharmacists, regardless of practice setting, are highly trained medical professionals with the capability to counsel patients on a wide variety of health services.(5) However, practice setting, that is chain versus independent pharmacy, can impact capacity to implement new patient care workflows. What chain pharmacies have

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over independently owned pharmacies in available resources they may lack in terms of capacity to test out novel interventions.(41) Pharmacists in independent pharmacies tend to have more flexibility in terms of testing out new patient care services, like PharmFIT™, and may be more comfortable with non-medication dispensing services.(42) We observed this in our study with pharmacist respondents practicing in independent pharmacies viewing PharmFIT™ as less complex than respondents in chain pharmacies. Likely, establishing an evidence-base for PharmFIT™ and for the potential return on investment in this intervention will need to be accomplished in smaller independent pharmacies before the chain pharmacies would be willing to adopt it.

4.5. Pharmacies as a healthcare destination

In the broader context of cancer screening implementation, our findings here, paired with those of our related work(11,13,14,19), suggest that shifting this and other similar cancer prevention and control (CPC) activities to pharmacies may be an important venue to improve access to cancer screening services. Pharmacies have many advantages over primary care in this context. First, they are more evenly geographically distributed; over 90% of Americans live within 5 miles of a pharmacy(1) and visit their pharmacy 2–3 times as often as their primary care provider.(1) Second, most pharmacies do not require appointments and have more convenient hours than physician offices. And third, although pharmacist encounters have historically focused on medication dispensing, they are perceived as trusted members of the health care team and, in recent years, have substantially expanded their scope of practice to include many preventive services.(1,43) FIT is particularly well-suited for pharmacy implementation as it can be distributed without physician prescription. Other promising services include a PharmFIT™-adjacent program to distribute the newly FDA approved Teal Health HPV self-collection test or a pharmacist-led educational and referral program to promote other procedure-based cancer screening tests (e.g., prostate cancer screening or lung cancer screening).

4.6 Strengths and limitations

Strengths and limitations of the larger survey have been outlined elsewhere.(31) Relevant to this analysis, a notable strength is that this survey is the first to assess, in a national sample of community pharmacists, willingness to implement a CRC screening intervention. Additionally, the findings are strengthened by the fact that our survey was developed by a multidisciplinary team representing several of the key partners (pharmacists, PCPs) and other stakeholders (health services researchers).

Limitations relevant to this analysis include the potential lack of representation of certain subgroups of pharmacists. As previously noted,(31) we did not receive responses from pharmacists in all 50 states, meaning that our results may not be nationally representative. However, respondents do represent all *regions* of the United States. Additionally, the characteristics of our sample are very similar to that of the pharmacist workforce. Thus, the responses and our conclusions are likely to be similar to that of the larger pharmacist workforce.(44)

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4.7 Conclusions and next steps

This study demonstrates that pharmacists are willing to implement CRC screening as an expanded pharmacy service. These findings, including the caveats of proper training and care coordination, are supported by our other formative work and pilot implementation(11–14,19,22,23), and supplement other literature supporting the potential for expanded pharmacy services on access to care.(2,3) With appropriate pharmacist training and care coordination planning, testing PharmFIT™ in a larger randomized controlled trial is now warranted to estimate its potential impact on CRC screening access and uptake.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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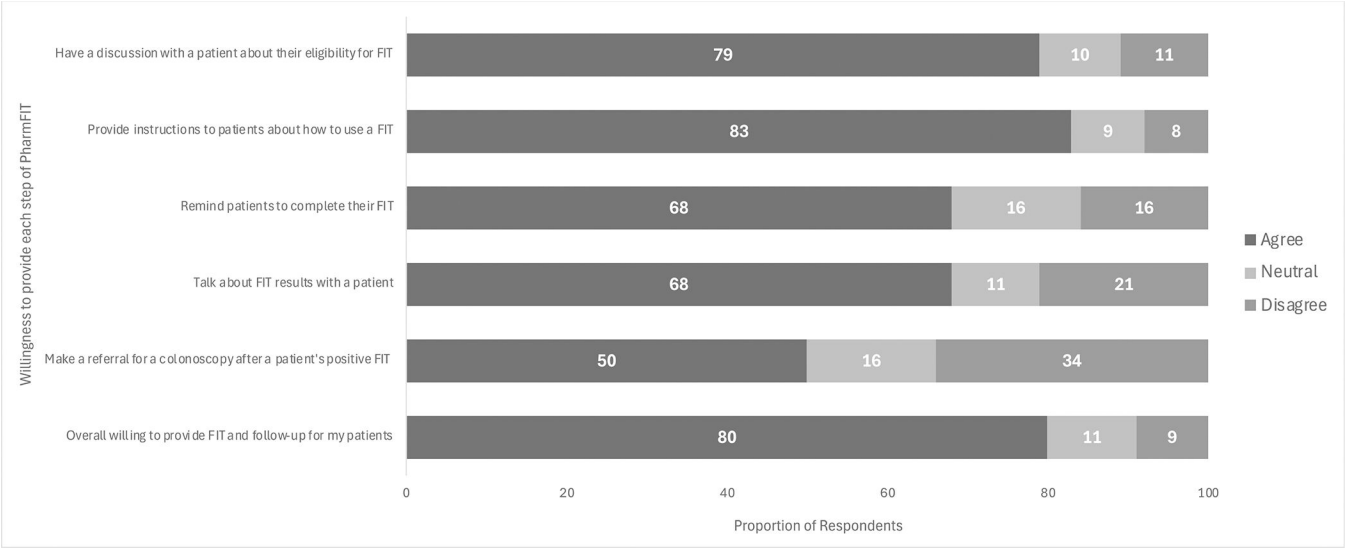


Figure 1. Willingness to provide the steps of PharmFIT™ steps (N=578)

Proportion of survey responders who agreed or disagreed to be willing to provide the different steps of PharmFIT™.

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Table 1.

Pharmacist and Pharmacy Characteristics (N=578)

Pharmacist characteristics	n (%) or Mean (SD)
Age	47 (11)
Years in practice	21 (11)
Gender	
Male	293 (51)
Female	280 (48)
Non-binary	5 (1)
Race	
White	446 (78)
Black or African American	24 (4)
Asian	74 (13)
Other or multiracial	30 (5)
Ethnicity	
non-Hispanic	551 (95)
Hispanic	27 (5)
Pharmacist role	
Staff pharmacist	298 (52)
Pharmacist-in-charge or manager	243 (42)
Pharmacy owner	35 (6)
Education	
Doctor of Pharmacy (PharmD)	365 (63)
Bachelor or Masters in Pharmacy	211 (37)
Residency or fellowship training	
No	517 (90)
Yes	59 (10)
Board certification in pharmacy specialty	
No	505 (87)
Yes	73 (13)
Additional credentials or training	
Vaccination only	330 (59)
Vaccination and other certification	233 (41)
Full-time pharmacy practice	
No	212 (37)
Yes	366 (63)
Time spent in non-dispensing activities	
None	225 (44)
Half-day to a day	247 (48)
Full day or more	43 (8)
US region of practice	
Northeast	148 (26)

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Pharmacist characteristics	**n (%) or Mean (SD)**
South	231 (40)
Midwest	142 (24)
West	57 (10)
Level of CRC screening knowledge	3(1.1)
Perception about PharmFIT™ complexity	4(0.9)
Willingness to do PharmFIT™	
Yes	463 (80)
No	115 (20)
Pharmacy characteristics	
Pharmacy ownership structure	
Independent community pharmacy[A]	181 (31)
Small group of community pharmacy[B]	49 (8)
Regional chain community pharmacy[C]	56 (10)
National chain community pharmacy[D]	209 (36)
Supermarket pharmacy	83 (14)
Metropolitan area [E]	
Yes	471 (81)
No	107 (19)
Operating days	
Monday - Friday (weekdays)	533 (100)
Saturday	470 (88)
Sunday	327 (61)
Number of Prescriptions per Week	
Low volume (0 – 999)	188 (33)
Medium volume (1000 – 2499)	285 (50)
High volume (2500+)	102 (18)
Mail order services	
No or unsure	397 (69)
Yes	178 (31)
Home delivery services	
No or unsure	132 (23)
Yes	446 (77)
Patient care services	
Vaccinations	528 (91)
Medication synchronization	432 (75)
Point of care testing (COVID-19, strep, influenza, HIV, HgA1c)	309 (53)
Chronic disease management and education	280 (48)
Smoking or tobacco cessation	234 (40)
Multidose compliance packaging	196 (34)
Travel medicine	182 (31)
Urgent care	63 (11)

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Pharmacist characteristics	n (%) or Mean (SD)
Other patient care services	33 (6)
Genetic testing	24 (4)
Accepted insurance types	
Private or commercial health	569 (98)
Medicare	553 (96)
Medicaid or any kind of government-assistance plan	546 (94)
Tricare or other military healthcare	377 (65)
VA healthcare	139 (24)
Indian Health Service	42 (7)
Other	21 (4)
Availability of pharmacy eCare plan	
No	493 (85)
Yes	85 (15)

Other certification or training included: certified pain management, diabetes therapy, tobacco cessation, contraceptive prescribing, travel health, etc. Other patient care services included: home medical equipment, compounding, etc.

[A] Fewer than 4 stores under the same ownership

[B] 4 to 10 stores under the same ownership

[C] More than 10 stores under the same ownership, primarily located in a specific state or region

[D] More than 10 stores under same ownership with stores located across the country

[E] Metro area was classified based on Rural-Urban Commuting Area (RUCA) Codes.

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Table 2.

Stipulations for willingness to provide PharmFIT™ (n=115)

I would be willing to provide FIT kits and follow-up from my pharmacy for my patients to complete their colorectal cancer screening, only if*	**n (%)**
The FIT results are reported back to my patients' healthcare providers	60 (52)
I have been trained to properly provide FIT kits to my patients	55 (48)
This screening service can be well integrated into my pharmacy workflow	53 (46)
My patients have established healthcare providers	46 (40)
My pharmacy will not lose money by offering this service	44 (38)
My pharmacy has adequate space to store FIT kits	43 (37)
My patient's healthcare provider referred them to my pharmacy for FIT	35 (30)
My pharmacy has a semi-private or private place to discuss FITs with patients	33 (29)
I can efficiently communicate FIT results to my patients' healthcare providers	31 (27)
There is little to no out-of-pocket costs for my patients	25 (22)
My patients do not have to make an appointment in advance	9 (8)
I know the patients to whom I am providing FIT kits	8 (7)
Other	7 (6)
None of these	4 (3)

*Responses are not mutually exclusive

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Table 3.

Correlates of perceived complexity to provide PharmFIT™

	Beta Coefficients ($CI_{95\%}$)
Years of practice	.013 (.01, .02)*
Pharmacist role	
Pharmacy owner	Ref
Staff pharmacist	−.044 (−.20, .11)
Level of CRC screening knowledge	.085 (.01, .16)*
Time spent in non-dispensing activities	
None	Ref
Half day to a day	.143 (−.02, .31)
Full day or more	.245 (−.05, .54)
Type of community pharmacy	
National chain	Ref
Independent practice	.263 (.05, .47)*
Small group	.084 (−.22, .39)
Regional chain	−.066 (−.34, .21)
Supermarket	−.206 (−.44, .02)
Number of prescriptions filled per week	
Low volume (0 – 999)	Ref
Medium volume (1000 – 2499)	−.112 (−.30, .07)
High volume (2500+)	−.072 (−.32, .17)
Number of patient care services offered	.018 (−.03, .06)
Availability of eCare plan	
No	Ref
Yes	.021 (−.20, .24)
Metro Area	
Yes	Ref
No	.124 (−.08, .33)
US region	
North	Ref
Midwest	−.093 (−.31, .13)
South	.007 (−.19, .21)
West	−.106 (−.39, .18)

Notes.

* indicate p values <0.05

Beta estimates are unstandardized. Complexity outcome was a continuous variable, where higher scores indicated lower appraisals of complexity for PharmFIT™ provision. A positive Beta coefficient indicates a direct relationship with the variable (i.e., lower appraisal of complexity of PharmFIT™).

Metro area was classified based on RUCA codes

CRC: colorectal cancer

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Table 4.

Correlates of the willingness to provide PharmFIT™

	n/N or Mean (SD)	Odds Ratio ($CI_{95\%}$)
Years of practice	21 (11)	.98 (.95, 1.01)
Pharmacist role		
Pharmacy owner	225/278	Ref
Staff pharmacist	237/298	1.42 (.80, 2.52)
Full time practice		
No	167/212	Ref
Yes	296/366	1.66 (.91, 3.05)
Complexity in delivering PharmFIT™	4 (1)	5.68 (3.96, 8.15) *
Level of CRC screening knowledge	3 (1)	1.04 (.82, 1.33)
Type of community pharmacy		
National chain	163/209	Ref
Independent practice	156/181	1.01 (.49, 2.09)
Small group	43/49	.97 (.33, 2.85)
Regional chain	46/56	1.01 (.39, 2.59)
Supermarket	55/83	.59 (.29, 1.22)
Number of prescriptions filled per week		
Low volume (0 – 999)	159/188	Ref
Medium volume (1000 – 2499)	222/285	.60 (.31, 1.16)
High volume (2500+)	81/102	.51 (.22, 1.20)
Number of patient care services offered	4 (2)	1.18 (1.01, 1.39) *
Availability of eCare plan		
No	393/493	Ref
Yes	70/85	.77 (.35, 1.71)
Metro Area		
Yes	369/471	Ref
No	94/107	1.75 (.82, 3.71)
US region		
North	122/148	Ref
Midwest	116/142	.93 (.44, 1.98)
South	186/231	.92 (.46, 1.82)
West	39/57	.49 (.20, 1.23)

Notes.

* indicate p values <0.05

Willingness outcome was dichotomous, with 0 coded as “not willing” and 1 as “willing.” An odds ratio greater than 1 indicates a direct relationship with the variable (i.e., greater odds to be willing to offer PharmFIT™).

Metro area was classified based on RUCA codes

CRC: colorectal cancer