

# Chronic Disease Care in Vermont Pharmacy Settings

*Results of the 2022 Vermont Chronic Disease Pharmacy Services Assessment*

May 2024

This report was produced by the Vermont Department of Health with the support of the Vermont Pharmacists Association.

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## Introduction

Pharmacies are not only places where medication is dispensed, but also critical access points to support patients with disease prevention and management through a variety of services.<sup>1</sup> These services include, but are not limited to, medication therapy management (MTM), vaccination, chronic disease prevention counseling and screening, and referral to lifestyle change and self-management programs. Patients with chronic conditions are likely to have more frequent encounters with a pharmacist than their primary care or other healthcare provider.<sup>2</sup> This offers significant opportunities to provide patient care for chronic disease prevention and management.

## Methodology

A web-based survey, *Vermont Chronic Disease Pharmacy Services Assessment*, was designed by the Vermont Department of Health (VDH) using similar surveys conducted by other State Departments of Health to aid the VDH and VPA in deepening their knowledge of the degree to which pharmacists are already engaging in chronic disease treatment and prevention activities and what the level of interest is in beginning or growing the delivery of these services. These tools were modified and expanded for relevance to the Vermont pharmacy landscape with guidance from the Vermont Pharmacists Association (VPA). The results will highlight how VDH and VPA can better support pharmacists in providing these prevention and support services in the pharmacy setting.

All Vermont licensed pharmacists were invited to participate through an email sent on December 6, 2022. An email list of Vermont licensed pharmacists was obtained from the Vermont Board of Pharmacy. Dissemination additionally occurred through the Vermont Pharmacists Association's member directory as well as listservs from the Vermont Society of Health System Pharmacists and Vermont Retail Druggists. The survey design excluded the collection of personal identifiable information unless a respondent identified that they were interested in receiving information about training or resource needs. A follow-up email invitation was sent in January 2023. Data collection was completed by March 31, 2023.

### Sample and Response Rate

During the response period, 121 of the 1,383 pharmacists with an active Vermont license attempted to complete the survey. Of those, 62 were excluded from the analysis as they were not actively practicing in Vermont; the remaining 59 respondents that had active Vermont licenses and were practicing in Vermont constituted the final sample for analysis. According to the 2021 health care workforce pharmacists census,<sup>3</sup> as of July 2021 there were 587 pharmacists actively practicing in Vermont for 468.1 full-time equivalent (FTE) workers. Therefore, **the response rate for the Vermont Chronic Disease Pharmacy Services Assessment for Vermont licensed pharmacists actively practicing in the state was 10%.**

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<sup>1</sup> Bennett M, Goode JVR. Recognition of community-based pharmacist practitioners: Essential health care providers. *J Am Pharm Assoc*. 2016;56(5):580-583. doi:10.1016/j.japh.2016.04.566.

<sup>2</sup> Berenbrok LA, Gabriel N, Coley KC, Hernandez I. Evaluation of encounters with primary care physicians vs visits to community pharmacies among Medicare beneficiaries. *JAMA Netw Open*. 2020;3(7):e209132. doi:10.1001/jamanetworkopen.2020.9132.

<sup>3</sup> Vermont Department of Health. *Health Care Workforce Census Pharmacists, 2021*. August 2023. Accessed February 2, 2024. <https://www.healthvermont.gov/sites/default/files/document/HSI-stats-prov-pharm21-report.pdf>

Using the survey, the adjacent chart describes the workforce characteristics of respondents. The majority of respondents primarily work in a chain-based community pharmacy setting (36%). Seven percent of respondents had multiple primary worksites with combinations of outpatient hospital/clinic-inpatient hospital/acute care and independent community-long-term care/assisted living. Pharmacy type was not provided for three percent of respondents and none reported providing telepharmacy services.

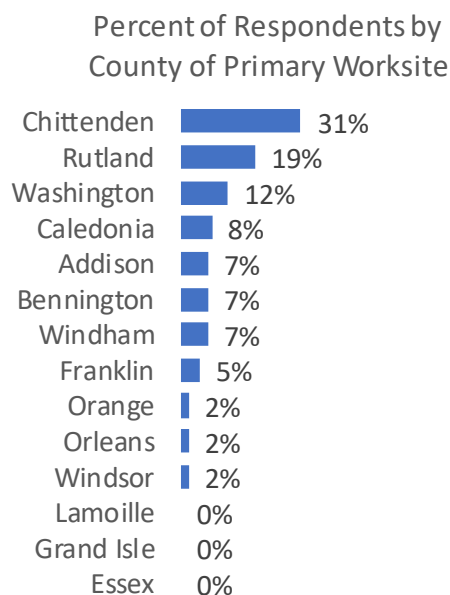
On a typical day, respondents on average worked with 2 pharmacists, 3 pharmacy technicians, 0 residents, and 1 student. As indicated by the ranges, this could vary widely.

Nearly an equal number of respondents reported that they were not the only pharmacist working on a typical day (44%) as were the only one working (42%). Fourteen percent reported that this varied. Of the 58% reporting that they were not the only pharmacist working or that this varied, an average (mean) of 63% of a standard shift was worked with another pharmacist, ranging from 10%-100%.

County representation of respondents was based off the reported town of respondents' primary worksite. Only a single response was allowed. For the 7% of respondents who reported having more than 1 primary worksite, they chose which to report. The majority of respondents were from Chittenden County (31%) followed by Rutland (19%) and Washington (12%). Less than 10% of respondents were from each remaining county. There were no respondents with a primary worksite in Lamoille, Grand Isle, or Essex Counties. Based on the last Pharmacist Workforce Census,<sup>4</sup> there were 0 pharmacist FTEs in Grand Isle or Essex Counties, making the zero percent in those counties unsurprising.

Worksite Characteristics	
Primary Work Setting	Percent*
Chain-Based Community	36%
Outpatient Hospital/Clinic	22%
Inpatient Hospital/Acute Care	20%
Independent Community	19%
Long-Term Care/Assisted Living	7%
Unknown	3%
Telepharmacy	0%
Average Number of Staff Pharmacists Work With During a Typical Day	
Job Type	Median (Range)
Another Pharmacist	2 (1-32)
Pharmacy Technician	3 (0-40)
Pharmacy Residents	0 (0-12)
Pharmacy Students	1 (0-10)
Pharmacist Overlap	
Usually the only one working	Percent
No	44%
Yes	42%
Variable	14%

\* Multiple responses could be provided if respondent had more than one primary worksite. Percentages are of total respondents (n = 59) and therefore the percentages within the category will add to more than 100%.



<sup>4</sup> Vermont Department of Health. *Health Care Workforce Census Pharmacists, 2021*. August 2023. Accessed February 2, 2024. <https://www.healthvermont.gov/sites/default/files/document/HSI-stats-prov-pharm21-report.pdf>

## Limitations

Data from the Vermont Chronic Disease Pharmacy Services Assessment were not raked or weighted. Raking and weighting are common methods used with survey data to account for the inevitable non-random sample of non-respondents and normalize the sample distribution to the population of interest. As the Vermont Chronic Disease Pharmacy Services Assessment was a voluntary survey, selection bias may be present through the self-selection of willing participants. There are frequently alternate uses of some common terminology between fields. To minimize this issue, staff from VPA reviewed the full survey and worked with VDH to phrase questions so as to avoid any potential miscommunications. With a 10% response rate, the results may not be generalizable to all Vermont pharmacists or pharmacies. However, the distribution of respondents by county relatively closely matches the distribution of pharmacist FTEs by county, enhancing the potential generalizability of these results.

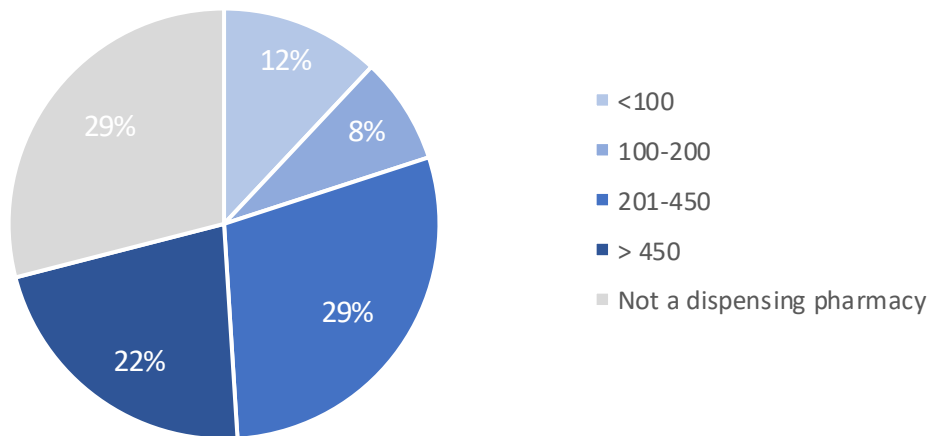
The focus of this report is to identify where and to what extent chronic disease services are being offered in the pharmacy setting and what barriers or needs pharmacists might have in engaging their patients in these services. The VPA and VDH will use these results to plan future activities and collaborations with the pharmacy partners and support any training needs they might have.

## Workflow and Health Information Technology (HIT)

This section summarizes responses to questions related to pharmacists' typical workflow and use of health information technology. Given the low response rate, it is possible that what follows underrepresents certain categories of prescription volume, communication methods, and the use of health information technology. Generalizations should be made with caution.

### Workflow

Pharmacists most commonly reported an average daily prescription volume of **201-450 prescriptions** (29%) or that they were **not a dispensing pharmacy** (29%). This was followed closely by an average of **more than 450 prescriptions** (22%) a day.



Pharmacists identified multiple ways of **communicating with patients** which can be seen in the left-hand table below. Among pharmacists who provided answers to this question, all (100%) indicated using multiple methods to communicate with patients. Other communication methods reported include secure messaging, nursing staff, letters and faxes.

Communication Method	Percent*
Face to Face	85%
Telephone	85%
Texting	49%
Email	41%
Other	17%
Videoconferencing	10%
Social Media	8%
Unknown	14%

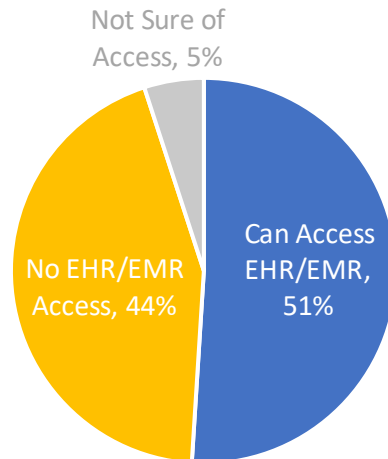
  

Other Communication Methods	
Secure messaging/patient portal	
Nursing staff	
Letters	
Faxes	

## Technology

This section summarizes responses to questions related to the use of health information technology tools for pharmacy clinical practice.

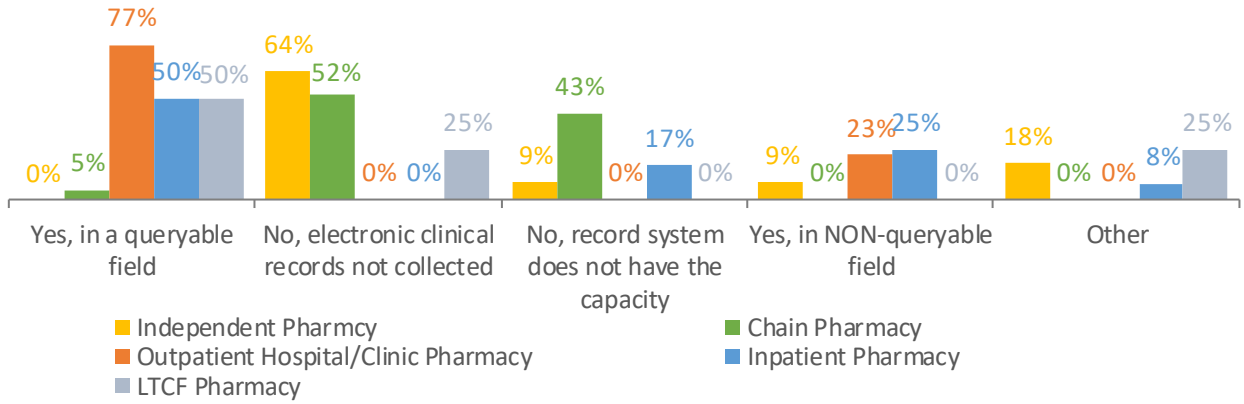
Slightly more pharmacists reported that they **had the ability** to access electronic health or medical records (EHR/EMR) for any patients (51%) than **did not have the ability** (44%).



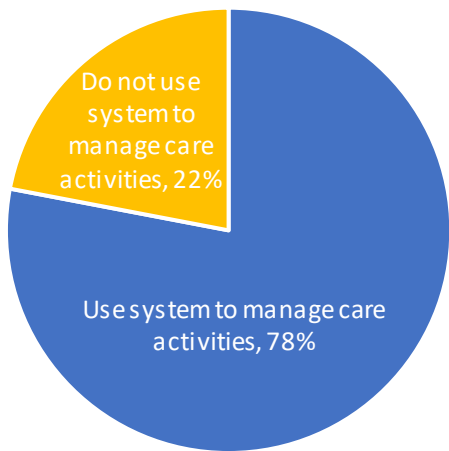
Overall, two in five (42%) pharmacists have the ability to **electronically track clinical measures**, such as blood pressure and hemoglobin A1c. A third (32%) could do so in a manner that allows their system to run queries on the information. Another third (32%) of pharmacists reported that this information is not collected. Conversely, one in five (20%) reported that their system does not have the capacity to collect such information. Of those reporting an 'other' ability, pharmacists cite the ability to access clinic EHR/EMRs and that their pharmacy's system has the ability but these types of features were not added.

Proportion of pharmacists' with systems having the ability to electronically collect and track clinical measures	
Ability to Track Clinical Measures	All Pharmacists
Yes, in a queryable field	32%
No, electronic clinical records not collected	32%
No, system does not have the capacity	20%
Yes, in a NON-queryable field	10%
Other	5%

The ability to track clinical information differs by pharmacy type. **Having data collected and stored in a queryable field was skewed towards more formalized clinical pharmacy settings** (outpatient hospital/clinic, inpatient, LTCF) compared to community pharmacy settings.



Nearly four in five (78%) pharmacists report **using their electronic system to manage patient care activities** outside of what is collected for dispensing records. While there is some variation by pharmacy type, this pattern is relatively consistent among them except for LTCF pharmacists.



Pharmacy Type	Use System to Manage Patient Care Activities	
	Yes	No
Independent	82%	18%
Chain	71%	29%
Outpatient Hospital/Clinic	92%	8%
Inpatient	92%	8%
LTCF	50%	50%



## Disease Testing and Screening

This section describes clinical services that Vermont pharmacists are currently offering or that they would like to begin offering, such as disease screenings and vaccinations, and collaborative practice agreements. Generalize with caution. Due to the low response rate, it is possible some information over- or underestimates the value among all Vermont pharmacists.

### Clinical Services Offered

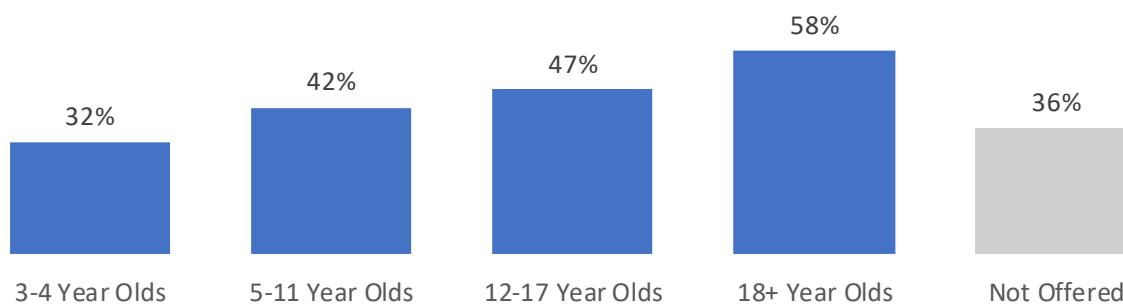
Service	Currently Offer	Would Like to Offer
<b>Diabetes Screening</b>		
Blood Glucose Testing	19%	22%
A1c Testing	10%	22%
Foot Screening	10%	8%
Prediabetes Risk Test	7%	24%
<b>COVID-19</b>		
Vaccination	63%	N/A
Testing	31%	N/A
<b>Other Common Vaccinations</b>		
Influenza	63%	14%
Pneumonia	59%	14%
Shingles	59%	N/A
Hepatitis B	51%	N/A
Other Service	19%	24%

N/A = not a response option for interest in beginning to offer service.

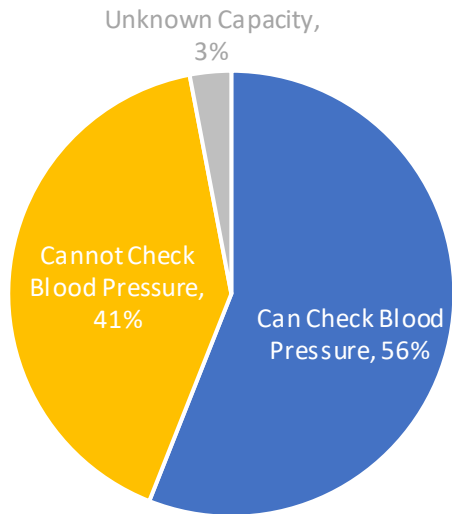
<b>Other Services Offered*</b>	
Point of Care International Normalized Ratio (INR) blood test	
Rabies Vaccination	
Tdap Vaccination	
Anticoagulation	
Counseling and education	
*Numerous inpatient pharmacists noted that all services mentioned were offered by the hospital but not the pharmacy.	
<b>Other Services Would Like to Offer</b>	
Point of Care INR	
Medication Management	
Testing for flu, RSV, strep	
Bone density scans	
Vaccinations (e.g., Hep B, COVID-19)	

Nearly a third (31%) of pharmacists reported that they would like to add additional services to their practice, but do not have the capacity. One in 5 (19%) reported that they did not have any interest in adding new services to their practice.

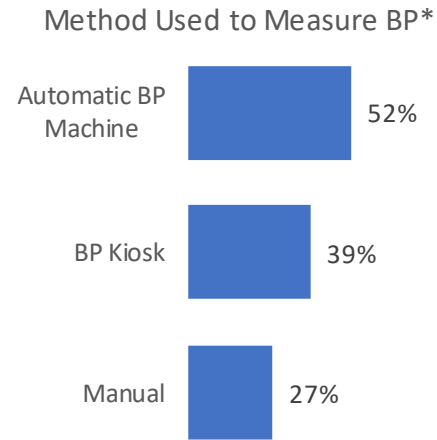
**Pharmacist administered vaccinations** increase with advancing age with almost three in five (58%) offering vaccinations to adults 18 and older. Only a third (32%) of pharmacists offer vaccinations to 3-4 year olds and over a third (36%) of pharmacists do not offer vaccinations.



Over half (56%) of pharmacists reported that patients **could have their blood pressure (BP) checked** at their pharmacy.



Among pharmacies where patients can have their BP checked, over half (52%) could do so using automatic BP machines.

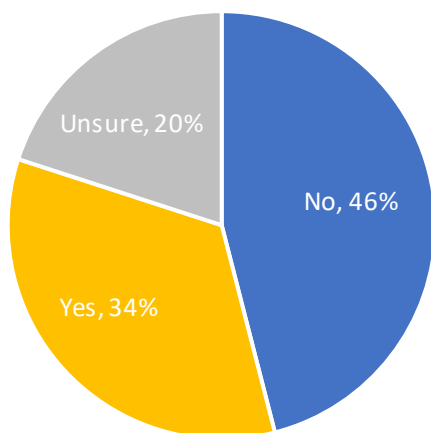


\* Multiple responses could be provided, therefore the percentages will add to more than 100% indicating multiple methods are available at some pharmacies.

### Collaborative Practice Agreements

Collaborative practice agreements are formal agreements in which a licensed healthcare provider diagnoses, supervises care, and refers patients to a pharmacist under a protocol that allows the pharmacist to perform certain clinical functions.

Close to half (46%) of pharmacists reported that their workplace **did not have** a collaborative practice agreement, with a third (34%) **having one** and one in five (20%) **unsure** whether they did.



Purpose of Collaborative Practice Agreements
Ambulatory pharmacy services
Anticoagulation management
Chronic disease management
Diabetes condition/medication management
Medication/vaccination substitutions
Medication management
Dispensing of Narcan, Paxlovid, Plan B
Prescribing biologics and laboratory tests
COVID-19 testing
Prescribing on behalf of other providers

## Medication Therapy Management (MTM) and Disease State Management (DSM)

This section discusses pharmacy clinical services provided by Vermont pharmacists during patient interactions, such as MTM and DSM. Due to the low response rate, generalize with caution it is possible some information over- or underestimates the value among all Vermont pharmacists.

Overall, half (54%) of pharmacies offer traditional MTM services (e.g. opportunities generated by Outcomes, Mirixia, etc.). Over a quarter (27%) offer other medication management services (e.g., collaborative drug therapy management, etc.) and one in five (20%) offer some other form of MTM/DSM. Variability in the type of MTM/DSM offered varied by pharmacy type. Traditional MTM was more common in less formal clinical settings (independent/chain pharmacies and LTCF pharmacies) while other forms of medication management and MTM/DSM were more common in more formalized clinical settings (inpatient, outpatient hospital/clinic).

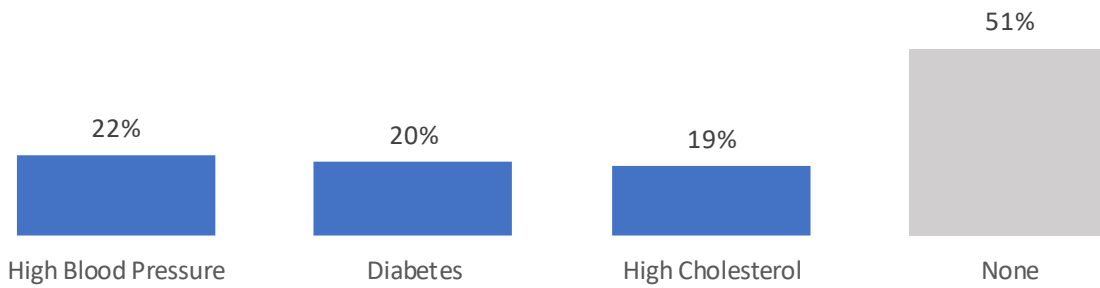
Pharmacy Type	Traditional MTM	Other Medication Management	Other Type of MTM/DSM
<b>Independent</b>	91%	27%	9%
<b>Chain</b>	81%	5%	5%
<b>Outpatient Hospital/Clinic</b>	15%	69%	23%
<b>Inpatient</b>	8%	33%	42%
<b>LTCF</b>	75%	25%	50%
<b>All Pharmacies</b>	54%	27%	20%

Among pharmacies offering an 'other' type of MTM/DSM they identified the following types of MTM/DSM services

Antibiotic stewardship	Facility developed program
Metabolic screening	Adherence packaging
Record review	AIMS testing
Medication reconciliation	International Normalized Ratio (INR) testing
Lifestyle medicine	MARR reviews
Meds to Beds Triage	No MTM/DSM offered
Non-traditional MTM from health plans	

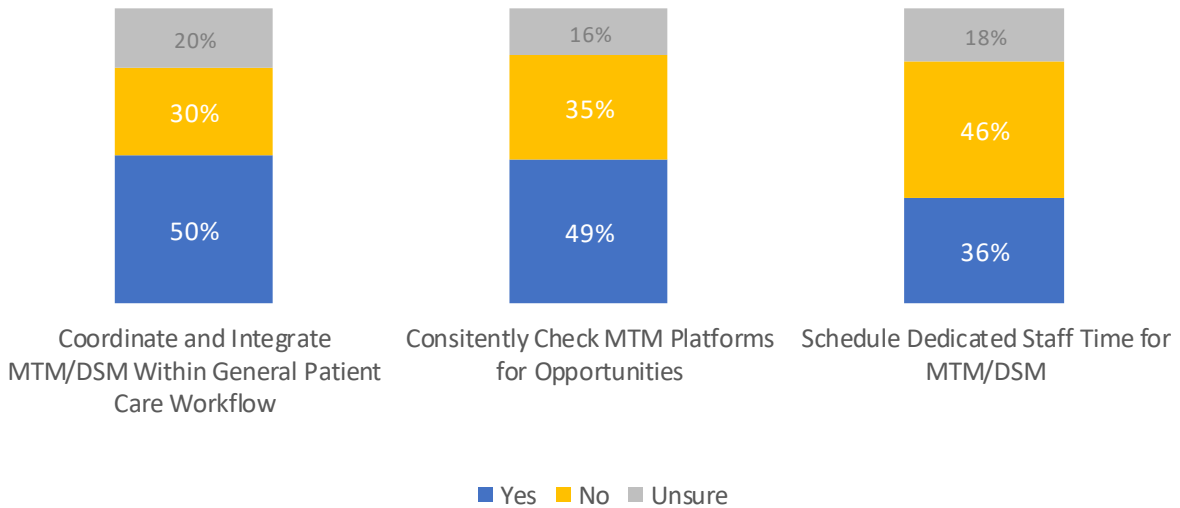
When providing MTM/DSM, pharmacists **developed written self-management plans and provide condition monitoring** at similar rates for high blood pressure, diabetes, and high cholesterol. Half of pharmacists (51%) reported that written self-management plans and condition monitoring **were not offered**.

Percent of Pharmacists Offering Written Self-Management Plans and Condition Monitoring

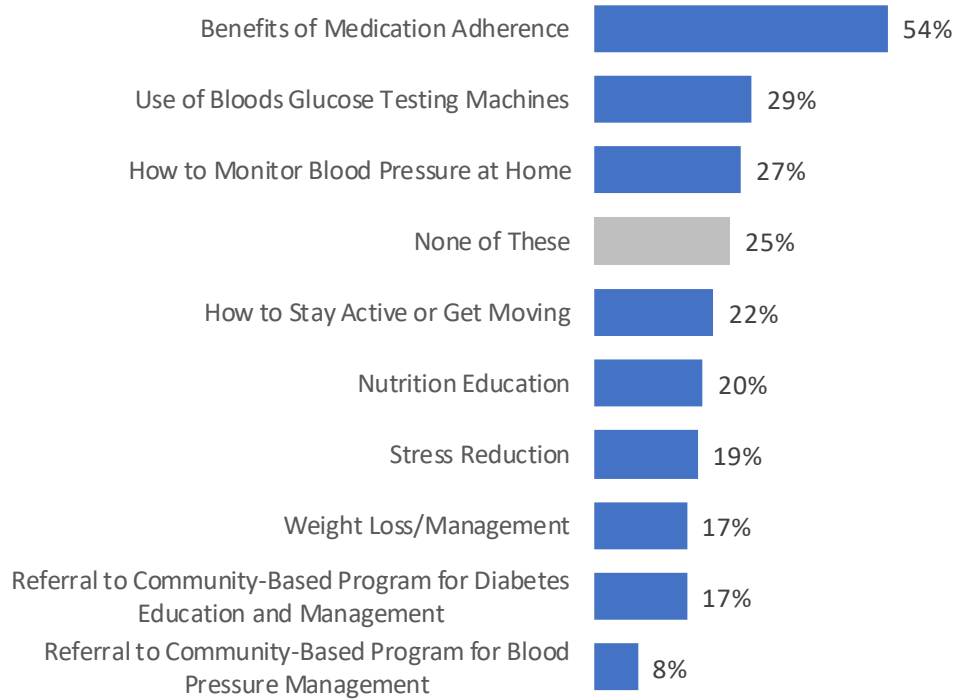


Half of pharmacists reported that their pharmacy coordinates and integrates MTM/DSM within the general patient care workflow (50%) or consistently checks MTM platforms for opportunities (49%). A third of pharmacists reported that their pharmacy schedule dedicated staff time for MTM/DSM (36%).

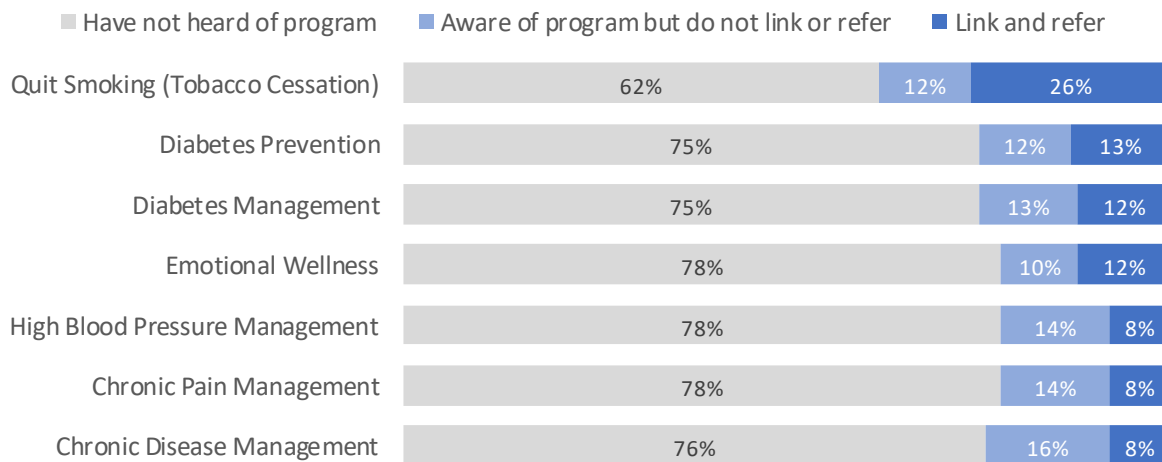
Proportion of Pharmacists Integrating MTM/DSM into Practice of Care



During MTM/DSM, or other patient interactions, pharmacists most commonly took the opportunity to provide patient education on the benefits of medication adherence (54%). Over a quarter demonstrate how to use blood glucose testing machines (29%) or how to monitor blood pressure at home (27%). Fewer provided other types of patient education ranging from 8% to 22%. A quarter (25%) of pharmacists did not provide any patient education during encounters.



Most pharmacists **have not heard of** MyHealthyVermont's (MHVT) suite of community-based self-management and prevention programs. Pharmacists who are aware of these programs most commonly **linked and referred to** the **Quit Smoking** workshop (26%) with an additional 12% **aware of but not linking or referring** patients to that workshop.

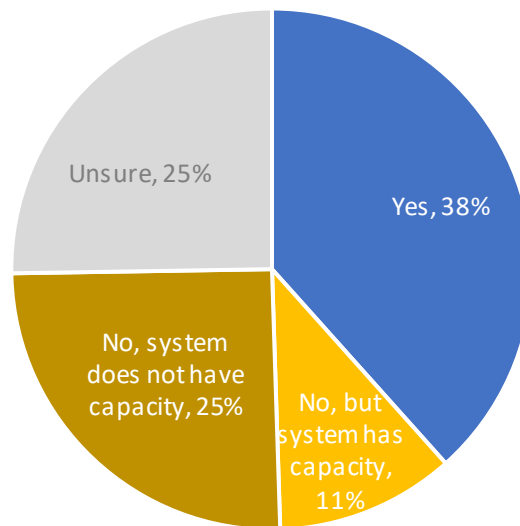


Nearly two-thirds (63%) of pharmacists reported that their pharmacy **reported results and recommendations back to other healthcare providers**. Almost a quarter (22%) do not currently have a way of doing this while 2% were unsure. Pharmacist-provider communication method/capacity is unknown for 14% of respondents.

Proportion of pharmacists using communication method for reporting results and recommendations to providers			
Contact method	Pharmacists working at pharmacies using method		Other communication methods reported
Mail/Fax/Phone	74%		Medication reconciliation on admission
EHR	29%		Secure messaging
Other	8%		

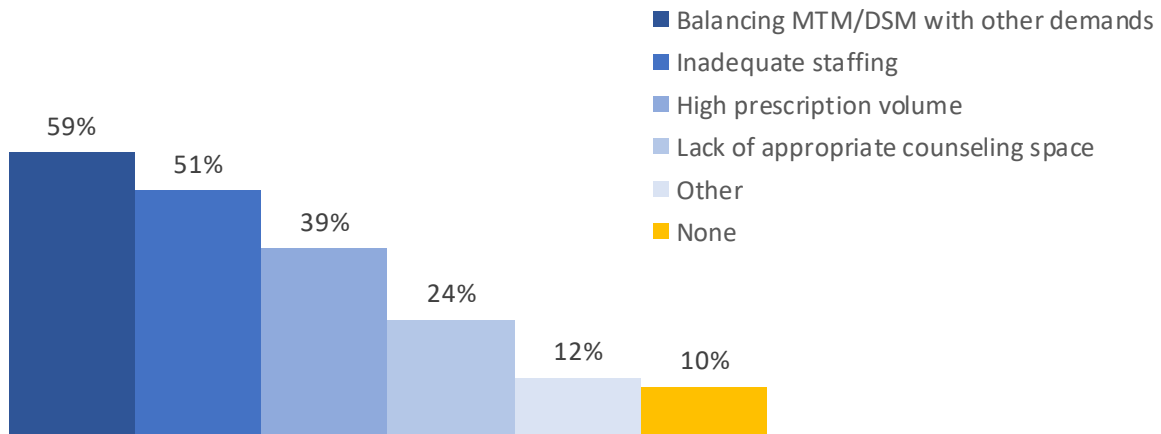
Over a third (38%) of pharmacists work at a pharmacy that **calculates medication adherence rates**. An additional 11% of pharmacists worked at a pharmacy that **do not calculate medication adherence rates but have a system with the capacity** to calculate them while a quarter (25%) **do not calculate them and do not have a system with the capacity**.

Proportion of pharmacists working at a pharmacy currently calculating medication adherence rates



## Challenges Related to MTM/DSM

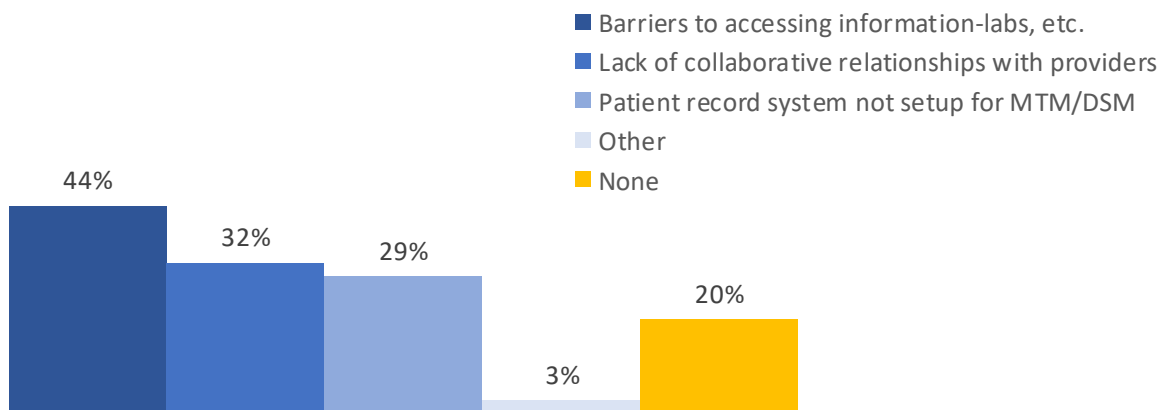
The most common physical challenges related to MTM/DSM that pharmacists experience at their pharmacy are **balancing it with other demands** (59%) and **inadequate staffing** (51%). One in ten (10%) pharmacists reported **no physical challenges** related to MTM/DSM.



Pharmacists Experiencing Physical Challenges Related to MTM/DSM

Other Physical Challenges to MTM/DSM
Pharmacy size limits amount of staff that can be hired
Device/medication access

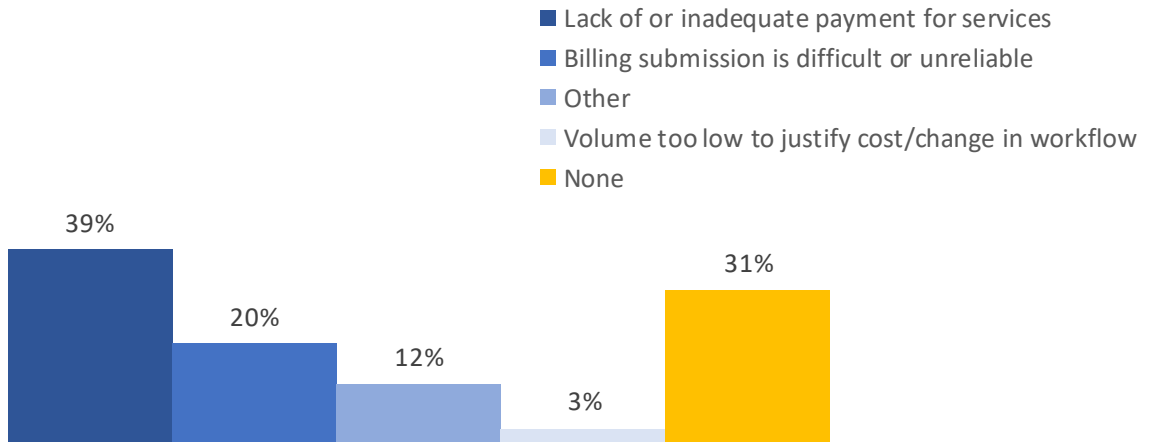
The most common **systems challenges** pharmacists reported that their pharmacy experiences related to MTM/DSM is **barriers to accessing information** (44%). One in five (20%) pharmacists reported **no systems barriers**.



Pharmacists Experiencing System Challenges Related to MTM/DSM

Other Systems Challenges to MTM/DSM
Incompatibility of different dispensing systems
Prescribers not responsive to pharmacist recommendations and requests

The most common **financial challenges** pharmacists reported that their pharmacy experiences related to MTM/DSM is **lack of or inadequate payment for services** (39%). Nearly a third (31%) of pharmacists reported **no financial barriers**.

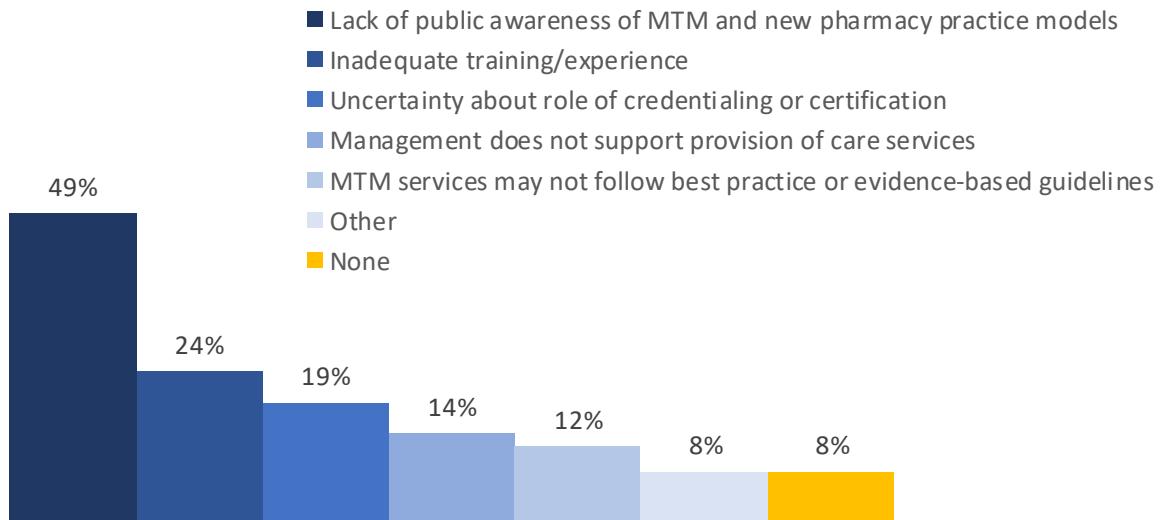


Pharmacists Experiencing Financial Challenges Related to MTM/DSM

Other Financial Challenges to MTM/DSM
Cumbersome credentialing process
Inability to bill for clinical services
Need to improve financial mechanisms to increase clinical pharmacy
Script reimbursement is dangerously low
Leadership does not believe in the return-on-investment MTM can show
Cost of doing business does not allow to broaden services available
Obstacles from Medicaid that do not align with all other insurances
Funding for staff time



**Other challenges** pharmacists reported that their pharmacy faced in the implementation of MTM/DSM are shown in the chart below. The most common other challenge reported was a **lack of public awareness of MTM and new pharmacy practice models** (49%). Fewer, a quarter or less, reported different challenges. Less than one in ten (8%) pharmacists reported experiencing **no other barriers**.



Pharmacists Experiencing Other Challenges Related to MTM/DSM

Other Additional Challenges to MTM/DSM
Other pharmacists not participating in the MTM program
Providers are initially unaware how skilled clinical pharmacists can be
Lack of knowledge regarding reimbursement models and billing for services
Lack of provider acceptance of pharmacists' role

Almost three in ten (28%) pharmacists indicated that they were **interested** (20%) to **very interested** (8%) in learning more about MTM/DSM and receiving technical assistance to provide/expand MTM/DSM for their pharmacy. Two in five (39%) were **not sure** and four percent had **no interest** (4%). The level of interest was **unknown** for 28% of respondents.

Proportion of Pharmacists Interested in Learning About or Receiving Technical Assistance with MTM/DSM



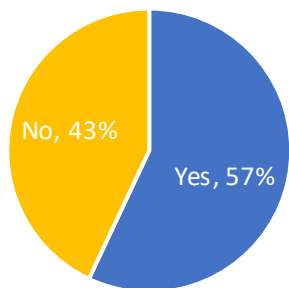
Interest in this did not differ significantly by pharmacy type with similar proportions of pharmacists reporting the same levels of interest between groups.

## Tobacco Cessation

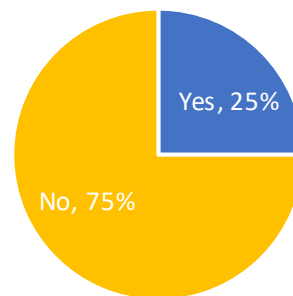
The following section summarizes pharmacists' awareness of recent billing changes that provide pharmacists greater autonomy in administering and being reimbursed for tobacco cessation services and barriers to referring to quit resources. Generalize with caution. Due to low response rates, it is possible that some information is under- or overestimated in relation to all Vermont pharmacists.

Prior to taking this survey, over half (57%) of pharmacists were **aware** of the recent Vermont law changes allowing them to **prescribe pharmacotherapies for tobacco cessation** including nicotine replacement therapy (NRT), bupropion, and varenicline. However, the majority (75%) were **not aware** of the **Medicaid billing rules change** allowing pharmacists to bill and be reimbursed for tobacco cessation counseling before taking this survey.

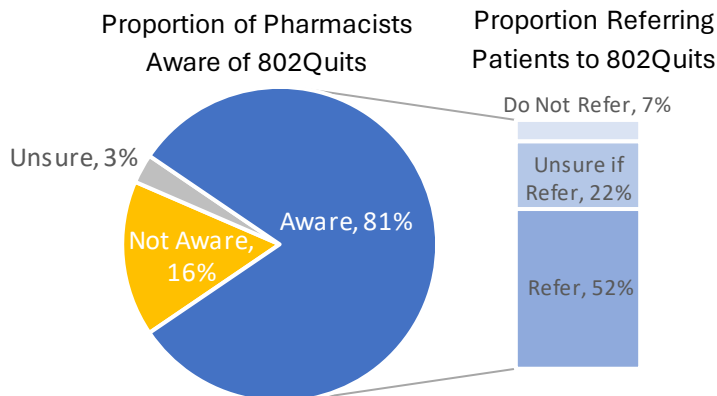
Proportion of Pharmacists Aware of Tobacco Cessation Prescribing Law Change



Proportion of Pharmacists Aware of Medicaid Billing Rule Change



Four in five (81%) pharmacists **are aware** of 802Quits while 16% **were not aware** of the service. Over half (52%) of pharmacists **actively refer** to 802Quits.



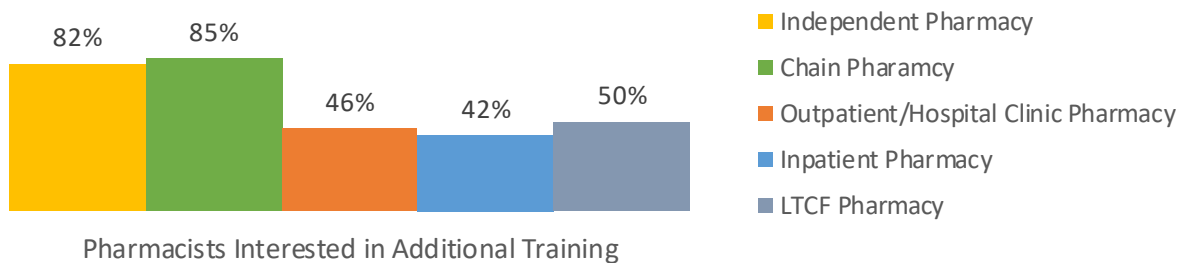
Among pharmacists who do are not aware or unsure of their awareness and do not refer to 802Quits, the table below summarizes the leading barriers impacting their ability to refer.

Referral Barrier	Proportion Reporting Barrier
Not sure what resources 802Quits can provide	82%
Do not have time or capacity	27%
Patient reluctance	9%
802Quits information is not readily available to share with patients	0%
Referral process is too time consuming	0%
Other	0%

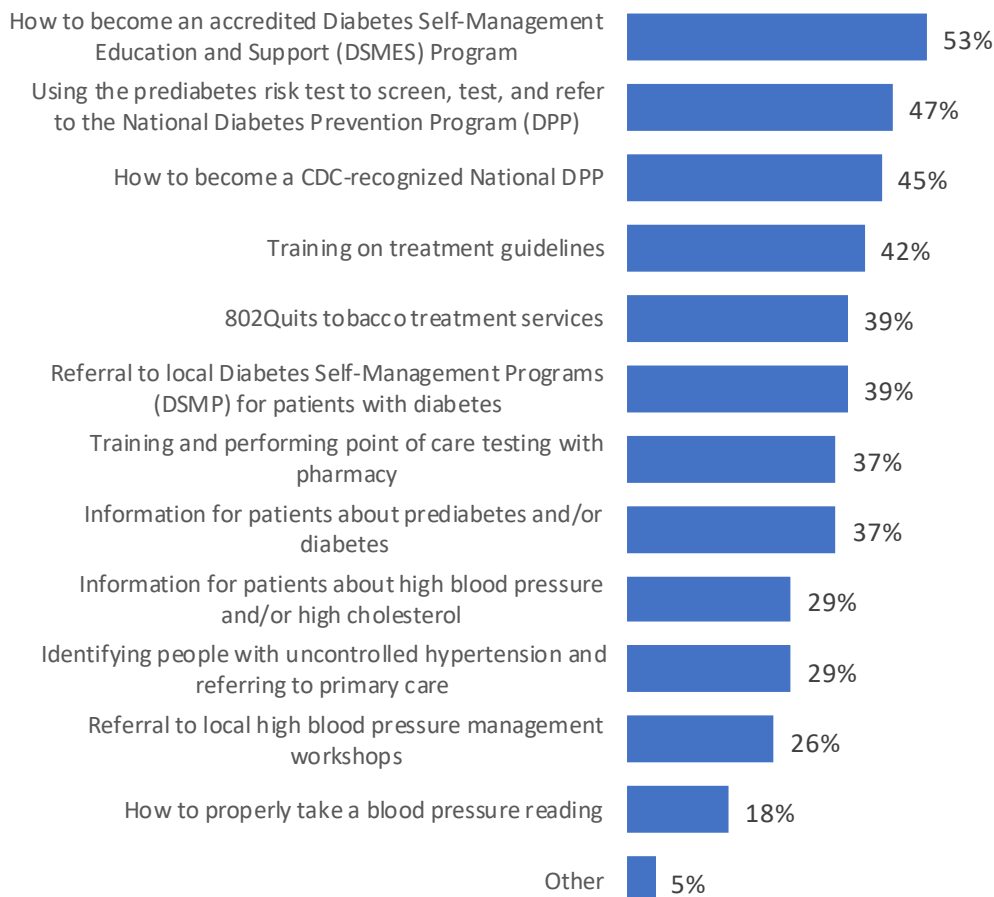
## Training and Resources Needs

Two-thirds of pharmacists (66%) indicated that they were interested in additional training and resources related to chronic disease prevention and management services. Generalize with caution. Due to the low response rate, it is possible that some information may under- or overestimate the value among all Vermont pharmacists.

Interest in receiving additional training and resources related to chronic disease services was more common among pharmacists working in chain pharmacies (85%) and independent pharmacies (82%). Half or fewer pharmacists working in LTCF pharmacies (50%), outpatient/hospital clinic pharmacies (46%), or inpatient pharmacies (42%) were interested in additional training or resources.



### Specific Topics Pharmacists Are Interested in Receiving Resources For or Learning More About



## Contact Information

For more information *on this report*, contact Paul Meddaugh, MS, Vermont Department of Health ([paul.meddaugh@vermont.gov](mailto:paul.meddaugh@vermont.gov); (802) 951-0133).

For more information on chronic disease prevention and support strategies from VDH or My Healthy Vermont workshops contact Rebecca O'Reilly ([rebecca.oreilly@vermont.gov](mailto:rebecca.oreilly@vermont.gov)) or visit <https://www.myhealthyvt.org/>.

For more information or support from VPA on MTM/DSM, contact Lauren Bode ([Lauren.Bode@uvmhealth.org](mailto:Lauren.Bode@uvmhealth.org)).