YEAR FOUR: FINAL REPORT | JUNE 2022

# Improving the Health of South Dakotans through the Prevention and Management of Diabetes, Heart Disease, and Stroke

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*This project was completed in collaboration with the South Dakota Department of Health, supported by the Centers for Disease Control and Prevention of the U.S. Department of Health and Human Services under cooperative agreement # 1 NU58DP006526-01-11. The contents are those of the author(s) and do not necessarily represent the views of CDC or the U.S. Government.*

Executive Summary

## EXECUTIVE SUMMARY

Year Four of the five-year project to improve the prevention and management of patients with diabetes and cardiovascular disease (CVD) was a year of continued implementation and evaluation. More programs were expanded and launched, quality improvement continued throughout the year, and evaluation of data collected throughout implementation began. The team also worked with students to develop five posters: one was presented at the American Public Health Association (APHA) annual conference, two at the American Pharmacist's Association (APhA) annual conference, one at the South Dakota State University (SDSU) Fall convocation, and one at the SDSU faculty showcase. Additionally, two manuscripts were completed and submitted to journals for publication, four more manuscripts are in development, one article on the project was published in the South Dakota Cardiovascular Collaborative newsletter, and three news articles covering the first three years of the project were published on the SDSU website.

During Year Four, the Patient, Practitioner, and Payer Workgroups' efforts began to overlap. In response, the team elected to recombine the workgroups into a single team to best utilize resources to accelerate implementation and evaluation efforts. By working together, the project team continued to strategize ways to facilitate communication and relationships between patients, practitioners, and payers, relationships which are imperative to the success of this project. For any healthcare team to function, strong communication channels between these groups are necessary so that the healthcare team can work together to provide optimal care. The team also added Dr. Christopher Robbins as a co-investigator, whose background and expertise in health outcomes research and data evaluation will be useful to the continuation of this project.

The recombined team continued efforts to increase patient knowledge and awareness of pharmacy services through the "Your Pharmacist Knows" campaign in order to fill the gap in patient knowledge that was identified in Year One. Efforts were also made at each collaborating site to increase patient enrollment, including the implementation of QR codes, as well as other strategies. The team also continued efforts to work with pharmacists and other practitioners to establish, advance, and expand services offered through training sessions, assistance with service refinement, and helping collaborating sites have the resources needed for initial and continued service provision. Elicitation interviews with practitioners from one collaborator were evaluated and a brief was presented identifying barriers to care including social determinants of health, among other factors. A qualitative 'Patient Stories Report Tool' was also developed to help pharmacists document and share high impact patient stories and clinical outcomes from services provided in a community pharmacy setting with the goal to share best-practices for implementation into patient care. Finally, work with local health plans continued in order to provide documentation needed to demonstrate the impact and value of these services, as well as to measure the sustainability of the project.

## IMPLEMENTATION AND EVALUATION

In Year Four, the project team continued implementation that began in Year Three, initiated evaluation of collected data, and continued quality improvement. More APhA trainings for pharmacists were conducted, data from five collaborators were evaluated, and results from elicitation interviews with practitioners from another collaborator were evaluated.

### APhA Trainings

Four APhA training courses were offered to pharmacists serving patients of South Dakota: one in September; one in October, coinciding with SDSU's homecoming celebration to facilitate attendance for those who might be travelling for the event; one in December, which was cancelled due to a low number of participants; and one in May. The courses were facilitated by a combination of the SDSU team and pharmacists from collaborating partners who brought their personal experiences and expertise, enhancing the experience of the participants. The courses were advertised through emails, social media platforms, and with support from pharmacy partners, SDSU's College of Pharmacy and Allied Health Professions, and the South Dakota Pharmacists Association (SDPhA), with one training session conducted in partnership with the SDPhA annual conference. The courses were taken by pharmacists from three collaborating organizations. The SDSU team built upon methods developed in previous years of adapting to COVID-19 restrictions and recommendations in order to provide training to all who wished to participate. Given that all APhA training participants have been members of collaborating organizations, post-training efforts have been integrated into ongoing work and meetings.

Despite building upon successful methods learned in previous years, participation in APhA trainings was lower than the past two years. Feedback from collaborating sites included desire for pharmacists to complete trainings, but the continued and increasing high demand on pharmacists related to COVID-19 and other factors has limited the ability for pharmacists to attend trainings. The project team continues to work with collaborators to offer trainings that work for their pharmacists. In Year Five, the project team plans to expand the APhA training to pharmacists outside of collaborating sites. This expansion will improve access to MTM services in more pharmacies and strengthen relationships with pharmacies, ideally creating future opportunities to collaborate.

Table 1: Breakdown of APhA Trainings

| | Total Completed | Completed in Year 3 | Completed in Year 4 |
|---|---|---|---|
| **All Trainings** | 95 | 30 | 14 |
| **General MTM** | 58 | 21 | 11 |
| **CVD** | 18 | 4 | 0 |
| **Diabetes** | 22 | 5 | 3 |
| **MTMs completed for training** | 224 | 84 | 44 |

In October, APhA notified the team that they will no longer be offering the cardiovascular disease (CVD) training course. The team is exploring options to make this training available including creating their own ACPE-accredited training and/or collaborating with industry partners who already have training modules developed.

**Collaborator Data – Part 1**

During Year Four, pharmacies from one collaborating organization continued to offer and expand the number of pharmacists providing medication therapy management (MTM) services. This collaborator offers many of their MTM services through Outcomes MTM and Docstation. Through Outcomes MTM, 6235 MTM services were reported, an increase from Year Three of 3182 interventions (104.2%). The increase was in part due to pharmacists' time and focus shifting as the COVID-19 pandemic developed. This collaborator's pharmacies provided services through Outcomes MTM by 70 pharmacists at 31 locations across the state. The top three reasons for pharmacist encounters reported were: adherence checks (trained 62.1% vs. untrained 60.8%), comprehensive medication review for complex drug therapy (trained 8.8% vs. untrained 7.9%), and disease state education (trained 5.0% vs. untrained 7.3%), which remained constant from Year Three. Completion of MTM visits through Outcomes MTM was lowest during vaccination for COVID and Flu in September and January and highest from May to August. Many patients who were provided services had Medicare coverage. Such services are based on the calendar year and may have impacted increased completion of MTM visits seen between January and February. Similar to Year Three, the majority of MTM visits were completed by phone for both trained and untrained pharmacists, though some were completed face-to-face. This may have been impacted by COVID precautions and the growth of telehealth services provided by pharmacists over the past two years. Overall, most patient encounters with a reported time were completed in 10 minutes by both trained and untrained pharmacists, with few taking more than 30 minutes. The most common interventions made by trained and untrained pharmacists were preventing an additional prescription order and providing adherence support.

Additional MTM services were offered through Docstation. Data from June of 2019 (Quarter 1, Year 2) to December of 2021 (Quarter 3, Year 4) were collected (this data is separate from the Outcomes MTM data). In total, 32,593 MTM services were provided during that period. On average, 1051 MTM services were provided each month. During this time there were 66 pharmacists providing MTM services at 31 locations in Year Two, 68 pharmacists providing services at 36 locations in Year Three, and 50 pharmacists providing services at 40 locations in the first seven months of Year Four. In total, three major trends were identified: First, MTMs completed and average MTMs completed per month during the months of June to December trended up. Second, the number of pharmacy locations where MTMs were completed also trended up. Finally, total MTMs completed per year trended down during COVID but have now trended back upwards toward similar rates seen pre-COVID.

The Docstation program was discontinued December 31, 2021. However, many patients will continue to receive MTM services through their insurance carrier or were moved to the OutcomesMTM program. Additionally, patients will continue receiving point of care counseling through being enrolled in medication synchronization and adherence packaging services through this collaborator. The reduced number of pharmacists completing MTMs in Docstation is reflective of the Docstation program coming to an end and a shift in this collaborator's MTM strategy with more focus on completion of MTMs through OutcomesMTM. Overall, between the two programs, more pharmacists across more sites completed MTMs in Year Four.

In May, one APhA training course was specifically advertised and offered through this collaborator Eight pharmacists employed by this collaborator completed the training and the customization of the course encouraged great dialogue and increased questions asked during the session. Over the course of the year, 18 of the 70 pharmacists completed the APhA trainings offered by SDSU with five pharmacists completing all three trainings (MTM, Cardiovascular Disease [CVD], and Diabetes), one completing two trainings, and 12 completing only the MTM training. The APhA-trained pharmacists completed 30.9% of the patient interactions through OutcomesMTM (1929 out of the 6235). This accounted for 107 interactions per trained pharmacist compared to 83 per untrained pharmacist.

Additionally, pharmacists employed by this collaborator participated in the testing of a tool for reporting patient success stories, which is discussed below.

The project team continued to work with this collaborator to enhance the robustness of the model through continuous quality improvement efforts and expansion of the model to new locations and new target patient groups. Most of the pharmacists providing MTMs were pulled to the front lines for providing COVID immunizations or having to take on more responsibilities due to loss of staff or technicians. This caused an increased demand for pharmacists' time thereby potentially risking the opportunities to offer services. Therefore, an enhancement to the model was deemed necessary. The strategy implemented was to designate a pharmacist at a central pharmacy who was responsible for dedicating time to implement the model, provide feedback, and facilitate implementation and development of the model at their site, as well as for other sites. Their efforts have been key to the success of the project. The project team continued to help this collaborator expand their medication packaging and synchronization program and utilize data to specifically target patients most likely to receive benefit from the program, including those with diabetes and/or CVD, with the goal of improving medication adherence through a combination of MTM services and easy-to-use packaging delivered to the patient.

This collaborating organization contacted all eligible patients on the initial report; in addition, they re-ran the report to identify newly eligible patients to contact for enrollment in the project. In total, 43 patients have enrolled, and 25 patients have completed the six-month follow-up survey on patient reported outcomes (PRO) measured. The 25 follow-up PRO surveys showed a non-significant difference in physical or emotional quality of life and medication adherence trended positively but was not statistically significant possibly due to the small sample size at this point. Finally, the surveys indicated a significant improvement in patient satisfaction, showing that patients are happy with the MTM services they received. Overall, three major trends were identified through preliminary data analysis: First, A1C (an indicator of blood glucose levels) trended toward improved levels with patients at goal (<8%) maintaining below their goal level and patients above goal trended downward. Second, systolic blood pressure trended toward improvement and more patients at goal for their blood pressure (<140/90 mmHg). Finally, BMI (body mass index) also trended down but total cholesterol trended up.

**Collaborator Data – Part 2**

We have continued facilitating the process by which a pharmacist is integrated into the healthcare team at one collaborating site for two half days per week to provide MTM and other pharmacist services to patients enrolled in the Medicaid Health Home program. Service utilization data continues to be assessed to evaluate the types of services needed and offered by the ambulatory care pharmacist on-site. Formulary/prior authorization, medication reconciliation/review, and drug information services have continued to be the majority of general services provided. Just over half of these services provided were through a “curbside consult” meaning the nurse or prescriber stopped by to talk with the pharmacist about a patient in an unscheduled manner, demonstrating value in having the pharmacist on-site in the ambulatory care setting.

During the project period, the pharmacist has completed 64 patient encounters, seven of which were for Medicaid Health Home patients. Overall, the key diabetes indicators were positive: currently, about 50% of patients had A1C under 9%, 25% had an eye exam, 70% had a foot exam, and over 80% had nephropathy screening. For cardiovascular disease, over 80% were on statin therapy and over 60% were controlling their high blood pressure. Finally, recruitment into the program has been difficult as 26 eligible patients are not English speaking. While staff are equipped to provide care to patients who do not speak English, at the present time our project is limited to English speaking individuals. The team is working on options to create materials that include patients who do not speak English in future projects.

Additionally, this site participated in the testing of a tool for reporting patient success stories, which is discussed below.

**Collaborator Data – Part 3**

In response to low recruitment numbers, the project team began working with one collaborator to get IRB (Institutional Review Board) approval to call patients for recruitment for MTM services. The team received approval in February and in April received a list of 602 eligible patients for recruitment. Work to recruit and enroll patients from this list is ongoing.

Overall, this collaborating organization has 18 clinical pharmacists seeing patients and providing MTM services at 15 locations, an increase of three pharmacists and two sites. Reports were delayed due to updates to information technology systems but have been received. Between January 1 and September 2, 2021, pharmacists employed by this collaborator provided 2649 MTM services across 15 clinics. The top three intervention types were the same as in Year Three: medication dose changes (43.8%), patient education (16.9%), and helping patients who were starting on new medications (12.5%). Preliminary analysis among 33 patients with uncontrolled diabetes seen by pharmacists in January through October 2021 showed there was an average decrease of 2.9% in A1C and 73% of patients had achieved an A1C of less than 8%, with a time to the target A1C level of 8% of four months. Though these outcomes are reported as overall data for the MTM services provided by pharmacists employed by this collaborator, they can be tied to the work being done through the project.

**Collaborator Data – Part 4**

In Year Four, recruitment strategies were developed to increase enrollment at another collaborating site. Utilizing QR (quick response) codes and direct enrollment in the project has increased enrollment completion and numbers of participants. Additionally, the project team began to further expand the recruitment list to include patients with diabetes and CVD who would benefit from MTM services, including those facilitated through programs like medication synchronization and adherence packaging.

Over the course of the year, some key staff members at this collaborating site were out for various reasons, but the staff is now back to operating at full staff capacity which allows for more attention to the provision of MTM services. Additionally, SD HealthLink has been implemented into MTM workflow at this site. Staff have reported it has been helpful in facilitating the provision of services.

A total of 31 patients completed baseline MTM visits and PRO surveys. Overall, the patients were satisfied with the pharmacist indicating an average of 3.11 on a 4-point scale with 4 being the most satisfied. Additionally, the patients indicated a high level of adherence and reported an average of only missing medications some of the time. The patients also had slightly below average physical health (PCS) and mental health (MCS) ranking below national averages. We will continue to monitor the data and compare every six months to identify trends.

**Collaborator Data – Part 5**

The two pharmacists from another collaborating site that had not yet completed the APhA General MTM training were able to attend the training in September. Following the training, both pharmacists began offering MTM services to patients, in addition to the lead pharmacist who completed APhA General MTM training in Year Three; however, the pharmacy had significant staffing challenges for several months which decreased the ability to dedicate time to offering services. Another unique challenge for this group is that many of the patients are transient. Seven patients have expressed interest in enrolling in the project, but none have currently completed enrollment. Given the success

seen at another collaborator site that was utilizing the QR code for enrollment, this collaborator implemented the use of the QR code at the end of Year Four.

**Practitioner Interviews**

In Year Four, the project team completed a thematic analysis, wrote and presented a brief, and developed a manuscript based on elicitation interviews completed with practitioners from another collaborator in Year Two. The goal was to identify practitioner perceptions of facilitators and barriers to provision of chronic care management to patients of Urban Indian Health Centers (UIHCs) in the state. Interview questions addressed current services offered and barriers to improving outcomes among patients with diabetes and CVD at South Dakota UIHCs. Through the elicitation interviews, the project team identified three themes: 1. Barriers to accessing healthcare, 2. Challenges related to limited technological connectivity, and 3. Challenges adhering to treatment plans.

First, practitioners reported that access to healthcare services was a major barrier for many patients. Reasons for this included transportation issues, limited access to specialty appointments, inability to pick up medications, and lack of attendance at follow-up visits. Second, limited technological connectivity is also a barrier to patients receiving the care that they need. Practitioners noted the increased use of telemedicine over the course of the COVID-19 pandemic, but many patients, including many American Indian/Alaska Native households do not have access to broadband and other technology necessary to access those services. Finally, practitioners noted three factors leading to challenges adhering to treatment plans including limited access to healthcare services, difficulty acquiring and affording medications, and living conditions and other social determinants of health.

Results emphasized the importance of understanding the role of social determinants of health on patients' ability to manage their conditions and receive the treatment that they need. Community pharmacists, as a more accessible member of the healthcare team, are uniquely positioned to provide services to patients who may be unable to access other healthcare professionals.

A brief was developed and presented to leadership from this collaborator who responded positively to the findings and recommendations. A manuscript was also developed and has been submitted for publication.

## IMPACT

By improving the health, behavior, and environment of community members, pharmacist-provided MTM services can improve the health of and reduce costs for targeted populations such as patients with cardiovascular disease and diabetes, thus decreasing the disease burden on the population.

### Health

Pharmacist-provided MTM services help patients by not only reviewing medications to ensure they receive the appropriate medications for their disease states, but by also providing the patient an opportunity to engage with the pharmacist on needs and struggles with their regimen. Guidelines are routinely utilized by the pharmacists to ensure medication regimens align with outcomes data to improve the long-term health of the patients engaging in the MTM services. Additionally, engagement with the pharmacist enables patients to address issues between their clinic appointments or otherwise encourages patients to be seen more quickly if the need arises prior to their next appointment such as monitoring for adverse effects or therapeutic benefits of new or changed therapy.

### Behavior

In addition to having patients on optimized medication regimens that improve their health and long-term outcomes, patients can work with their pharmacist to improve their quality of life through regimen changes. For example, a patient may be experiencing a side effect that could be eliminated through a medication use behavior change such as adjusting the time of day it is taken or taking it with food. Alternatively, a patient struggling to remember to take a medication twice a day may be switched to a medication that is only needed daily, thus improving medication adherence. Other services that aid the patient include motivational interviewing techniques that help guide the patient through the shared decision-making process to explore and implement changes.

Another way pharmacies can improve a patient's quality of life is through medication synchronization and medication packaging programs that allow patients to receive all medications from their pharmacy at the same time every 30 or 90 days, decreasing the number of trips to the pharmacy and facilitating the pharmacist proactively reaching out to patient and provider to resolve medication-related issues before the patient completely runs out of their medication. This program may also increase medication adherence as patients receive all their medications at once, reducing the risk of patients forgetting to pick up their various medications at different times throughout the month/quarter.

### Environment

In addition to improving a patient's health and encouraging positive health behaviors, engaging in MTM services allows patients to become more aware of the services pharmacists can offer. During the MTM visit, pharmacists recommend appropriate services for patients, such as immunizations they are eligible for, ways to reduce medication costs, or additional educational opportunities and community resources for patients. This interaction expands the patient's perception of the pharmacist's role and how they can help with their needs in ways previously unknown to them. Patients can then share their experience with their peer group, expanding their knowledge as well. Additionally, the "Your Pharmacist Knows" campaign in Years Three and Four has reached many South Dakotans, increasing awareness of pharmacist services for patients throughout the state.

### Patient Stories Reporting Tool

One way to measure the effectiveness of the implementation of pharmacists and MTM services into the healthcare team, as well as to improve care, is to understand the patient's story and especially note things that worked well. However, there are no practical online tools currently in place to help

pharmacists document and share patient stories. In response, the project team developed the Patient Stories Reporting Tool (PSRT). The tool is designed to help pharmacists document highlights of successful clinical impacts or interventions which they believe have contributed to improve patient outcomes and quality of life. These accounts can then be shared within and outside these organizations to demonstrate the impact of pharmacist-provided services on individual patients, thereby adding a unique perspective and providing more context to outcomes collected by traditional data streams.

Pharmacists can fill out the PSRT at their convenience after a successful intervention. Questions within the PSRT include the collection of qualitative and quantitative data. All questions within the tool are voluntary responses to provide ease of documentation and help the pharmacist record only the most important information.

In a pilot program, the PSRT was tested by a number of pharmacists over a period from September 2021 to January 2022. While the testing pool was limited, results yielded three key recommendations for ways to improve patient care through medication therapy management:

1. Cost Reduction – pharmacists should communicate to patients strategies to adjust treatment to utilize more affordable options while maintaining the efficacy of the treatment plan;
2. Medication Synchronization – pharmacists should recommend monthly or weekly synchronization and medication regimen packaging to make adherence easier; and
3. Continuous Glucose Monitoring (CGM) – pharmacists should use samples or manufacturer discounts to provide CGM to high risk patients with diabetes.

The PSRT shows potential to yield additional results with further implementation.

Qualitative information is important for understanding the patient's story through the lens of the pharmacists and a tool is needed to assist with the collection of this qualitative information. By hearing patient stories and sharing them with other pharmacists, other members of the healthcare team, and stakeholders or other decision-makers, pharmacists can improve rural pharmacy and healthcare practice and more consistently provide patients with the care that they need.

**Patient Awareness**

In Year Three, the patient awareness campaign was launched. The campaign involved a variety of distribution methods including posters, brochures, business cards, newspaper ads, and a 30-second commercial, each of which linked to the campaign website where visitors can access educational information related to the "Your Pharmacist Knows" campaign. Overall, a total of 340,000 impressions were made to South Dakotans.

In Year Four, the campaign relaunched with the Fall 2021 campaign, which ran from October 18, 2021, to December 6, 2021. The campaign consisted of airing the 30-second commercial developed in Year Two, as well as a newspaper advertisement which ran in 123 newspapers across the state of South Dakota for six weeks beginning on November 1, reaching 61 of the 66 South Dakota counties and stretching across all corners of the state. Both the commercial and the newspaper ad contained a link to the website containing a repository of information. The "Your Pharmacist Knows" website can be accessed at https://www.sdstate.edu/your-pharmacist-knows

A patient awareness survey was conducted in Years Three and Four. In total, 172 pre-campaign and 43 post-campaign surveys were completed. Data from these surveys were evaluated and provided results measuring Attitude, Subjective Norms, Perceived Control, and Knowledge using demographic variables including age, gender, race, college education, geographic population density, and insurance status. The most consistent predictor for positive change in attitude through all four models was college education followed by female gender when adjusting for age, race, geographic density, and insurance status. Women in general are considered caregivers for the family and often take the lead in

identifying resources for themselves or family members living with chronic conditions. They can also set an excellent example for their family using resources and services offered through pharmacies across the state. Overall, the results showed that the campaign can positively influence health behavior regarding pharmacy services in South Dakota through knowledge, attitude, norms, and perceived control constructs.

The team has begun developing a manuscript from the results of the patient awareness campaign and surveys. Additionally, results will also be used for the development of an educational tool to increase awareness and encourage further implementation of pharmacy services. The project team is working on initiating a focus group session to gain more insight into continued needs across patient communities in the state. Additionally, plans are currently underway for capturing patient testimonials from those who have seen the impact pharmacists can have on their life and the lives of others in their family/community.

## DISCUSSION

Year Four was a year of continued implementation, evaluation of efforts, and quality improvement in all areas. Given the infrastructure and model implementation of MTM services is still young in South Dakota, it is important to continue the expansion of the model to new locations and patient groups/disease states and to continually evaluate the effectiveness of the model where it has already been implemented. Another area of work in which pharmacy staff could improve access to services is by reviewing the social needs of patients and additional educational and wellness programs that pharmacists could provide to their community. Additionally, continuing to embed pharmacists into ambulatory care clinics and accountable care organizations (ACOs) will be important to improve the patient experience and outcomes and to aid other practitioners with their medication expertise. This is especially important given the physician shortage throughout the state. Finally, though this was not a primary outcome of this project, the consistent feedback of the value provided by having an embedded pharmacist warrants further exploration on how to capture the value proposition and reimbursement models to support expansion and sustainability of embedded pharmacists.

Major trends in data show the number of MTMs completed increasing and the number of pharmacies that provide MTM services increasing. The patient reported outcomes or humanistic data shows trends towards improved patient satisfaction and medication adherence. Early clinical data in this project show overall improvements in outcomes and mimics currently available evidence that suggests pharmacists having positive improvement on patient outcomes.[1–4] While the number of patients evaluated is still low and do not generally reflect statistical significance, they do represent clinical impact made. The project team should continue to work with collaborating sites on processes needing improvement and building upon the trends for project completion and evaluation of outcomes.

Year Four was not without barriers to improvement. Reports from the network of payers were delayed due to the implementation of new technological programs, but the reports have been received and the team is prepared to evaluate them in Year Five. Finally, while COVID continues to require attention from pharmacists and other members of the healthcare team, the amount of time required is decreasing, allowing pharmacists and others to focus their attention elsewhere, including on MTM-related projects. Additionally, with this being the first project of its kind in the state, the focus was limited to English speaking individuals. All project material including educational information and evaluation tools are currently in English. While pharmacies have invested in utilizing interpretive services, this South Dakotan landmark project is limiting in reaching some key non-English speaking populations. This has impacted enrollment into MTM programs at one site, resulting in lower numbers of enrollment than was hoped for. In response, the project team is actively exploring more inclusive alternatives for future projects.

Despite some barriers, the team was able to make progress toward achieving project objectives. The team worked with many potential collaborators throughout the year on problem-solving and refining implementation strategies, utilizing practitioner, patient, and payer feedback to develop the model and its wider implementation. Strong established partnerships continued to grow with practitioners and payers at partner pharmacies and organizations, facilitating progress towards improving and expanding MTM services, increasing awareness throughout the state, and improving the knowledge, expertise, and training of pharmacists. Through presentations at various national events, our work continues to educate and inform others across the nation.

In Year Five, the team will continue working with partners on trainings and on continued efforts to implement, evaluate, and develop these MTM models. Focused evaluation using the ECHO model (economic, clinical, and humanistic outcomes) will facilitate continuous quality improvement. Meanwhile, efforts to ensure the sustainability of the work completed during the grant period will

continue. Finally, the team will continue to work on dissemination of findings and model designs to inform others within and outside of South Dakota of the work being done through this project.

Table 3. Needs Identification and Implementation and Evaluation Strategies

| Year One: Identified Needs | Year Two: Addressing Needs | Year Three: Implementing Programs | Year Four: Continued Implementation and Evaluation |
|---|---|---|---|
| *Non-pharmacist practitioners needed more education on pharmacist expertise and services* | Focused educational efforts, such as development of a webinar, geared toward educating non-pharmacist practitioners on pharmacist background, expertise, and services for patients | Continued engagement with non-pharmacist practitioners at collaborating sites; Incorporated MTM information into an EHR for provider use and patient education | Evaluation of elicitation interviews with non-pharmacist practitioners from a collaborating partner; continued engagement with non-pharmacist practitioners at other sites |
| *Pharmacists expressed a desire to be a more integral part of the healthcare team* | In-depth conversations and strategies with partners to empower pharmacists and their administrators to integrate them into the patient healthcare journeys | Pharmacists integrated into new healthcare teams including two clinics and a Medicaid Health Homes team | Expansion of pharmacist-provided services to new locations and patient groups; continued working with newly integrated pharmacists |
| *Pharmacists needed guidance on integrating MTM services into workflow* | Development of a webinar on MTM and its practical applications; Advanced training for 27 SD pharmacists, including actions, templates, and workflow processes to help implement MTM immediately in their practice | Specialized workflow guidance for each collaborating site; shared successful practices within and across collaborating sites | Conducted advanced training for 14 more SD pharmacists; continuous evaluation of efforts at each site; patient-satisfaction survey data analyzed to determine success of implementation |
| *Patients needed more understanding of services pharmacists provide* | Development of a thorough patient awareness campaign that will help patients begin to familiarize themselves with these | Distribute campaign materials at pharmacies across the state; Launch of "Your Pharmacist Knows" ad campaign; website tracking enabled | Continued the "Your Pharmacist Knows" campaign; evaluation of campaign and survey data |
| *Payers understood team-based care but needed help in figuring out how to reimburse pharmacists for their services* | Development of a toolkit that will provide detailed instructions, examples, and forms for payers to customize for their needs in reimbursing for pharmacy-based services | Finalized toolkit; received recommendations and suggestions for further customization of the toolkit based on site/setting; additional material will be added to the toolkit as needs are identified | Collected payer reports for evaluation in Year Five; began working with one payer to analyze return on investment; working with all payers to create sustainability strategies |

Recommendations

## RECOMMENDATIONS

***Expand the reach of support and resources***

- Given the positive trend in medication adherence, patient satisfaction, and clinical outcomes, pharmacist-provided MTM services should continue to be expanded to new locations and patient groups.
- When launching new sites and pharmacist-provided services, utilize and leverage developed policies, procedures, processes, and workflows surrounding MTM delivery and address gaps in understanding of pharmacists and their services.
- Pharmacies should continue to offer the option of telehealth for pharmacist-provided MTM services for patient convenience and increased access to care.
- Capturing patient stories through a standard tool, such as the Patient Stories Reporting Tool (PSRT) can help capture the impact and interventions that greatly improve the patient experience through the lens of the pharmacist. These quantitative and qualitative data on the pharmacist-provided MTM services can then be shared and utilized to improve practice and support for reimbursement of services.
- Continue or begin utilizing QR codes linked to an enrollment survey to simplify enrollment and increase the number of participants completing the enrollment process.
- Given the results of the campaign and its disproportional effect on people with higher levels of education and females, efforts should be made to tailor additional material towards males and those with less education. Additionally, having patients share their experiences through testimonials will also allow many to relate with these experiences. Overall efforts to increase awareness of pharmacy services available should be continued.
- Pharmacists should advocate for and pursue a variety of services and multiple avenues for reimbursement to enable access to all patients and improve sustainability of services. They should also utilize organization-specific project data to engage appropriate practitioners to impact care. Continued engagement with local health plans and key stakeholders is needed for continued progress in adoption and reimbursement, which is necessary for sustainability of programs.
- Pharmacists should continue to document and assess outcomes data to further demonstrate the value of their services. In addition to clinical outcomes, evaluation should include economic and humanistic outcomes, patient stories, and provider feedback.
- Continue to ensure all members of a patient's healthcare team have access to the information and data they need to effectively manage their diseases as sites expand.

***Expand and mature transdisciplinary relationships***

- Create environments for transdisciplinary collaborations and communications, leveraging transdisciplinary relationships to identify new opportunities to work across departments and disciplines to impact patient health and wellness.
- Support development of infrastructure to enable efficient bidirectional communication and knowledge-sharing between practitioners working in different settings in which a patient engages.
- Upon implementation, obtain feedback and diverse perspectives from new sites with pharmacy-based services within an organization or local healthcare team to validate best practices, enhance models, and continuously improve services.
- Continue cross-professional development of webinars, trainings, or resources to educate on practical skills and knowledge and widen perspectives of practitioners.
- Develop partnerships between pharmacies and other local, state, and community or healthcare organizations to expand pharmacist-provided educational services offered to patients including targeted programs to further patient knowledge and resources for health and wellness.

- Facilitate events and utilize technology to simplify workflows that connect healthcare providers in traditional care settings with community-based and state resources that currently exist.

***Continue to grow confidence***

- Continue to identify emerging resource needs and utilize existing resources to ensure sustainability of pharmacist-provided programs.
- Continue to offer and encourage attendance of advanced training to practitioners (i.e., APhA MTM training) that provide opportunities for direct application of learned skills and knowledge.
- Empower patients to better manage their disease state through advanced pharmacy services to help them comprehend their medications and therapies through patient programs that target education and behavioral modification (i.e., MTM).
- Identify new ways to increase patient knowledge regarding pharmacy-based care such as leveraging other practitioners and healthcare organizations to promote patient participation in pharmacy-based services.
- Continually evaluate and adjust workflows to gain efficiency so pharmacists are able to do pharmacist-level tasks, such as MTM services, while technicians and other staff can focus on dispensing workflow.
- Utilize outcomes data and patient success stories collected to advocate for MTM and other pharmacist-provided services that have been shown to improve medication adherence and overall impact on patient care.
- Encourage evaluation of data from organizations across the patient's journey to identify and enhance interventions that improve patient outcomes.
- Collaborating sites should identify continuous quality improvement efforts and measure the impact of the changes made, including working with the project team on processes implemented for continued positive outcomes.
- Continue to develop and strengthen relationships between practitioners in local communities to strengthen the healthcare team and improve the quality of patient care.

## SUSTAINABILITY

As we look toward the final year of this five-year project, our sustainability efforts continue to be paramount. We have found that the increased demand for pharmacy resources is expected to remain for at least the near to mid-term future. A shortage of pharmacy staff, including pharmacy technicians, is an existing issue and one that the COVID-19 pandemic magnified. Throughout COVID-19, however, pharmacies have proven their willingness and ability to serve communities in a greater role and bring health benefits and value to patients, when they receive reimbursement for their service. The same model for MTM services can and should be utilized to sustain the ability of pharmacies to offer MTM services. This can be pursued through individual contracts or through changes in health plan policies. Additional services and roles should be explored that can decrease health disparities and should include exploration of existing models offered by other health professionals that can be adapted to pharmacies in communities where those services are not currently offered.

Health plans continue needing evidence supporting the impact of value-based-service such as those offered by pharmacists through pharmacies across the country. The evidence gathered through this project on the impact that pharmacists can have on the patient and other practitioners on the health care team, simultaneously, increases the likelihood of health plan reimbursement and thereby sustainability for pharmacist-provided services increases. Utilizing evidence-based robust models across several diverse environments and settings and utilizing data to show the value of the pharmacist-provided services aids the subjective influence from patient success stories and support from physicians. Additionally, our current collaborators have agreed to work with us on potential sustainability plans. For example, one collaborating insurer is working with us to analyze data to show ROI and/or cost savings that increase the ability for them to establish contracts with other third-party payers or to self-sustain the program through cost savings for their ACO. Demonstrating positive patient outcomes and ROI enables payers to support coverage of pharmacist-provided services, increasing the sustainability of services.

Data is also being collected and analyzed to further support the economic, clinical, and humanistic outcomes (ECHO) of pharmacist provided MTMs and other services. Preliminary data analytics are demonstrating a positive trend toward improving these outcomes. Assuming outcomes follow trends of favorability, the data will further support contracting with third party payers for reimbursement of services and internal programs to reduce cost, enabling sustainment of programs and continued benefit to patients, communities, populations, and organizations/systems. Furthermore, in September, the team conducted an interview with clinical directors from one collaborating organization to obtain feedback on integration of a pharmacist into clinical services. Feedback was positive and providers saw the value and encouraged the health system to improve payment and sustainability after the grant program ends. A similar interview is scheduled with providers from another collaborator for the beginning of Year Five.

Overall, collaborating organizations and their physicians find pharmacy services offering great value to the patients in the models implemented and have advocated for sustainability, expansion, and reimbursement of services provided. Additionally, COVID-19 has facilitated patient awareness of expanded pharmacy services. Engagement with local health plans and key stakeholders needs to continue for progress in adoption and reimbursement of pharmacist-provided services. While most projects focus on impacting one aspect of outcomes, using the ECHO model for outcome evaluation, offers greater opportunities to demonstrate the impact and thereby sustainability of these models. In early conversations surrounding reimbursement and sustainability, collaborators saw the need to ensure their pharmacists time was reimbursed through multiple mechanisms, including both an internal budget reinvestment and through external sources such as health plan or employer contracts. The opportunities for continued retention and expansion of these services beyond the 1815 contract year, are numerous. What began as a grass roots effort to move the needle on pharmacy services is rapidly evolving towards the need for expansion of these services to areas that are not yet being captured by this project and the inclusion of

targeted interventions such as social determinants of health to minimize health disparities across patients receiving care at pharmacies across the state.

Future Directions

## FUTURE DIRECTIONS

- The infrastructure needed to offer pharmacist-provided services such as Medication Therapy Management and other related services should continue to be expanded, including training opportunities for pharmacists and technicians, especially in rural areas, to positively impact patient health, behavior, and awareness of services.
- To improve access to social services, pharmacies should be leveraged as a point of contact for screening and referral to services as they are a trusted source of information that is generally very accessible to the public. Models showing success in pilot programs should be explored in our state such as training pharmacy staff to engage with community health workers and implement screening and referral processes within the pharmacy workflow.
- Pharmacies should implement or continue to utilize data tracking to monitor results for internal evaluation of programs and leverage tools like SD HealthLink to support the services provided. The collaboration of interdisciplinary teams is needed to improve public health, and data tracking through such tools facilitates collaboration.
- Continuous monitoring and adaptations based on findings should be made as necessary, including tracking continuous quality improvements strategies implemented and how those changes interact with the outcomes evaluated.
- Future project design should work to include patients that do not speak English as their primary language, specifically through use of educational material and other evaluation tools applicable to these patients.
- With the public health workforce shortages, across the country and specifically in rural areas, it is imperative to engage cross-trained practitioners in rural communities on identifying the needs of their communities and resources available. Future work on this project should aspire to bring in other practitioners, such as nurses, community health workers, dieticians, nutrition therapists, behavioral health workers, etc., working collaboratively with pharmacists to minimize disparities, and improve access to care and outcomes.

## PRESENTATIONS AND PUBLICATIONS

Table 2. List of Year Four Publications

| *Title* | *Type* | *Link* |
|---|---|---|
| *The Role of Pharmacists in Cardiovascular Disease Prevention and Management at the 2022 Cardiovascular Collaborative Mid-Year Meeting* | Webinar | Available upon Request |
| *Comparing Practitioner Perspectives in Rural versus Urban Settings, Encore Presentation* | Poster | Available upon Request |
| *Pharmacists: The most Accessible, yet Underutilized Healthcare Practitioners in South Dakota* | Poster | Available upon Request |
| *Improving the Health of South Dakotans through the Prevention and Management of Diabetes and Cardiovascular Disease: Practitioners' Perceptions of Barriers to Care of American Indians* | Poster | Available upon Request |
| *Development and Evaluation of a Qualitative Documentation Tool to Share High Impact Patient Interventions Through the Lens of Community Pharmacists in South Dakota* | Poster | Available upon Request |
| *Accessing the Impact of an Educational Campaign on Patient Awareness and Perceptions of Expanded Pharmacy Services in South Dakota, Encore Presentation* | Poster | Available upon Request |
| *The Patient's Journey: Barriers and Facilitators to Care in South Dakotans with Diabetes and Cardiovascular Disease (CVD)* | Paper[1] | N/A |
| *Practitioners' Perceptions of Barriers to Care of American Indians with Chronic Conditions* | Paper[1] | N/A |
| *Improving the Health of South Dakotans through the Prevention and Management of Diabetes and Cardiovascular Disease: A Landscape Analysis – The Payer Perspective* | Paper[2] | N/A |
| *Using the Theory of Planned Behavior to investigate patient awareness and perceptions of expanded pharmacy services in South Dakota, United States of America* | Paper[2] | N/A |
| *Improving Health Care for South Dakotans with Diabetes and Cardiovascular Disease: Provider's Outlook* | Paper[2] | N/A |
| *Comparing Pharmacist Perspectives of Pharmacy Services in Rural versus Urban Settings* | Paper[2] | N/A |
| *South Dakota State University Investigators Look to Expand the Role of Community Pharmacists* | Newsletter Article | Link |
| *Identifying Needs to Improve the Care of South Dakotans with Diabetes, Heart Disease, and Stroke through CDC-1815: Year One* | News Article | Link |
| *Identifying Needs to Improve the Care of South Dakotans with Diabetes, Heart Disease, and Stroke through CDC-1815: Year Two* | News Article | Link |
| *Identifying Needs to Improve the Care of South Dakotans with Diabetes, Heart Disease, and Stroke through CDC-1815: Year Three* | News Article | Link |

[1]Submitted to Journal, Under Review, [2]Work In Progress

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Acknowledgements


## ACKNOWLEDGEMENTS

- South Dakota Department of Health, Office of Chronic Disease Prevention and Health Promotion, especially Rachel Sehr, BSN, RN, Heart Disease and Stroke Prevention Coordinator, Kayla Magee, RN, Diabetes Program Coordinator, and Laura Streich, MPA, Deputy Administrator, Chronic Disease Director
- Ryan Loo, PhD | Spectrum Health Policy Research (SHPR)
- SDSU College of Pharmacy and Allied Health Professions (COPAHP)
- South Dakota Pharmacists Association
- South Dakota Society of Health Systems Pharmacists