

**Community Pharmacy Foundation**

**Grant Number: 72107 - 235**

**Final Report**

**Title: Medication Education for Dementia Support (MEDS) Initiative: Integrating Community Pharmacists into Home Health**

**Authors:** Natalie Hohmann, PharmD, PhD; Amber Hutchison, PharmD; Heqin Yang, PhD Student

**Date:** 4/29/2024

## **1. Background:**

Home-bound older adults living with dementia are often unable to access health and wellness services and have high levels of medication non-adherence and medication errors. Community pharmacists can act as key educators on medication management for people living with dementia and their family caregivers; however, pharmacists have traditionally not been added to home health teams.<sup>1-4</sup> Thus, the purpose of this study is to develop a sustainable partnership and reimbursement model for integration of community pharmacists into home health dementia care teams that can be tested in future large studies and used as an example in multiple states, community practice sites, and health conditions.

Alzheimer's dementia and related dementias (ADRD) is a significant issue in the United States, affecting approximately 5.5 million Americans.<sup>5</sup> High-quality dementia-care is impeded by several multi-faceted barriers, including people with dementia (PWD) and family caregivers' lack of awareness about the availability of home care services,<sup>6-8</sup> despite the fact that 80% of homebound older adults have dementia.<sup>9</sup> Further, pharmacists are often not included in home care teams, creating a gap in medication education for homebound patients living with dementia and their family caregivers. To address barriers with awareness of home care services and demonstrate the value of home care pharmacists, studies have tested the feasibility of integrating pharmacists into home care teams through partnerships with senior services organizations and home health agencies.<sup>1-4</sup> These studies showed that pharmacist provision of Medication Therapy Management (MTM) to homebound patients resulted in higher patient satisfaction with the home care service and reduced the number of medication errors.<sup>1-4</sup> **However, these studies were not specific to dementia care and did not create reimbursement models. All of this evidence leads us to conclude that pharmacists add value to home care teams and can be feasibly incorporated into home health, but further work is needed to create practice protocols and reimbursement models specific to partnerships between community pharmacies and dementia home care teams.** Developing these resources using dementia care as an example is the first step in creating a sustainable partnership between community pharmacy and home health that can be tested in future large studies and scaled across multiple states, community practice sites, and health conditions.

## **2. Objectives:**

The purpose of this study is to develop a sustainable partnership and reimbursement model for integration of community pharmacists into home health dementia care teams that provides a platform for practice transformation and promotes community pharmacists as dementia home care team members. This was accomplished using two aims:

**Aim 1:** To investigate community pharmacist and home health provider knowledge, attitudes, and recommended strategies for pharmacist-delivered medication management services for home-bound older adults living with dementia, using semi-structured interviews.

**Aim 2:** To create a Medication Education for Dementia Support (MEDS) toolkit and reimbursement model to facilitate consultation requests between home health dementia care teams and local community pharmacists.

Study results provide interdisciplinary stakeholder perspectives on the feasibility of a pharmacist-led medication management program for homebound older adults with dementia, as well as the tangible MEDS Toolkit containing practice resources and a reimbursement model that can be piloted in future large studies and used as an example in multiple states, practice sites, and health conditions.

### **3. Methods:**

**Aim 1:** To investigate community pharmacist and home health provider knowledge, attitudes, and recommended strategies for pharmacist-delivered medication management services for home-bound older adults living with dementia, using semi-structured interviews.

**Study Design:** Semi-structured telephone interviews were conducted from January to June 2023 with community pharmacists, home health providers, and aging services representatives in the Southeastern US.

**Recruitment:** Participants were recruited via a faxed study invitation using contact information obtained from the Hayes Directory of community pharmacies, SeniorCare Directory,<sup>16</sup> and National Provider Identification (NPI) Registry. Pharmacists were eligible to participate if they were a licensed pharmacist in the Southern US employed by a community pharmacy. Home health and aging services representatives were eligible for study inclusion if they: 1) were currently employed at a home health agency or senior services organization in Alabama (including Medicare-certified home health agencies, non-medical home care agencies, State Departments of Senior Services, State Departments of Public Health, Area Agencies on Aging, or other community-based aging organizations); and 2) were nurses, physicians, physician assistants, therapists, home health aides, agency or program directors, social workers, billing technicians, office staff, or education specialists.

**Data Collection:** Interview questions were informed by the Consolidated Framework for Implementation Research (CFIR).<sup>17</sup> Interview questions focused on the following domains: 1) knowledge/awareness of current collaborative practices between community pharmacies and home health or aging services agencies; 2) attitudes/preferences regarding particular collaboration and reimbursement strategies; 3) organization- and individual-level barriers/facilitators to particular collaboration and reimbursement strategies; and 4) organizational readiness to implement key collaboration and reimbursement strategies. Collaboration and reimbursement strategies discussed varied depending upon interviewee, and included communication mechanisms, practice protocol development, and contract formation (logistics, legalities, personnel roles, and costs). Interviews were conducted until the point of saturation,<sup>12,13</sup> and were audio-recorded and transcribed verbatim by a third-party transcription service (Rev.com). Interviews lasted approximately 20 to 60 minutes, and interviewees received a \$50 electronic gift-card for their time.

Example interview questions are shown in Table 1.

<b>Table 1. Example Interview Questions</b>		
<b>CFIR Construct</b>	<b>Example Question(s)</b>	
	<b>Community Pharmacists</b>	<b>Home Health and Senior Services Organizations</b>
Inner Setting	1. What would make it difficult/easier to implement a pharmacy dementia home care consulting service?	1. What would make it difficult/easier to partner with a community pharmacy to implement a medication management service for home-bound older adults living with dementia?

Outer Setting	1. How do you think your patients will feel regarding this consulting service?	1. How do you think your patients/clients will feel regarding this consulting service?
Intervention Characteristics	1. What technological resources do you need to implement this service? 2. How do you feel about implementing a contract with a home health agency for this consulting service?	1. What technological resources do you need to implement this service? 2. How do you feel about implementing a contract with a community pharmacy for this consulting service?
Characteristics of Individuals	1. What are your thoughts regarding the effectiveness of this type of consulting service?	1. What are your thoughts regarding the effectiveness of this type of consulting service?

**Data Analysis:** Deductive thematic analysis was conducted by a trained research assistant (RA) using the rapid content analysis technique to identify themes based on CFIR categories (inner setting, outer setting, intervention characteristics, characteristics of individuals).<sup>18,19</sup> Rapid content analysis was utilized so that findings could quickly be used to inform Aim 2, and included three steps: 1) review transcripts; 2) code the transcripts using a structured Excel template based on the CFIR framework categories of inner setting, outer setting, intervention characteristics, and characteristics of individuals; and 3) summarize over-arching themes that describe barriers, facilitators, and pharmacies' and home health agencies' organizational readiness to implement a community pharmacy-based dementia home care consulting service.<sup>18,19</sup> All home health and aging services transcripts, as well as a sub-set of pharmacist transcripts, were re-coded by two to three student investigators to verify coding patterns. Coding patterns were discussed among the research team to create overarching themes that describe perceptions and preferences for initiating a pharmacist-led medication management program for homebound older adults with dementia.

**Aim 2: To create a Medication Education for Dementia Support (MEDS) toolkit and reimbursement model to facilitate consultation requests between home health dementia care teams and local community pharmacists.**

**Study design:** This aim used a participatory design approach to develop the MEDS Toolkit using a 3-round Delphi process with a stakeholder panel of community pharmacists, home health providers, and aging services representatives.<sup>20</sup> Relative importance of toolkit sections and recommended strategies for disseminating the toolkit were also explored.

**Recruitment:** Community pharmacist, home health, and aging services panelists were recruited purposively from Aim 1 interview participants using a faxed study invitation. Eligibility requirements for pharmacists, home health providers, and aging services panelists were the same as in Aim 1.

**Data Collection:** A preliminary toolkit and reimbursement model were drafted by the investigators based on Aim 1 interview findings, and circulated to panelists for 3 rounds of iterative feedback based on a modified Delphi process / Evidence Based Quality Improvement (EBQI) derived from Teeter et al (2020).<sup>21</sup> Feedback was elicited using open-ended and Likert-type scale questions via self-administered online questionnaires that were emailed to panelists and hosted on the Qualtrics platform. Survey #1 gathered input on resources needed to implement the MEDS service. Surveys #2 and #3 elicited feedback on an attached pdf of the MEDS Toolkit. Responses were collected for 2 weeks per feedback round, with one email reminder per round. Earlier surveys were left open between rounds, to collect feedback from those not available during the designated feedback window. Panelists received a \$50 electronic gift-card for each round completed.

## Survey Measures:

Measures included feasibility, acceptability, appropriateness of using the toolkit to initiate a pharmacist-led medication management service for homebound older adults with dementia. Level of satisfaction with the toolkit's content, format, and design were also investigated, as well as preferred dissemination strategies and perceived importance of toolkit sections. Information on resources needed to implement different components of the MEDS service was also gathered, including supplies, people, and costs needed for service components that emerged from Aim 1 interviews: medication education; bubble packing; organizing medications in the home; home delivery of medications; medication reconciliation; medication synchronization; medication adherence evaluation and monitoring; medication administration; pharmacist telephone hot-line; and medication coordination. Measures are described in Table 2.

<b>Round 1</b>		<b>Round 2</b>		<b>Round 3</b>	
<b>Measures</b>	<b>Questions</b>	<b>Measures</b>	<b>Questions</b>	<b>Measures</b>	<b>Questions</b>
Resources needed to implement the MEDS service, including supplies, people, and costs for 10 different service components	36 open-ended items organized in a matrix table. Panelists responded to items they were familiar with.	Satisfaction with the toolkit's content  Elicitation of additional resources	1 Likert-type item and 1 open-ended item  1 open-ended item	Satisfaction with the toolkit's content  Elicitation of additional resources	1 Likert-type item and 1 open-ended item  1 open-ended item
Relative importance of MEDS service elements	1 ranking item	Satisfaction with the toolkit's design	1 Likert-type item and 1 open-ended item	Satisfaction with the toolkit's design	1 Likert-type item and 1 open-ended item
Preferred design of the MEDS service	1 open-ended item	Satisfaction with the toolkit's format	1 Likert-type item and 1 open-ended item	Satisfaction with the toolkit's format	1 Likert-type item and 1 open-ended item
Demographics	11 multiple choice/response items	Preferred dissemination strategies	1 open-ended item	Most and least preferred toolkit features	2 open-ended items
		Accuracy and completeness of costs information	1 open-ended item	Accuracy and completeness of cost information	1 open-ended item
		Relative importance of toolkit sections	1 ranking item	Relative importance of toolkit sections	1 ranking item
		Feasibility, Acceptability, Appropriateness	FIM, AIM, IAM <sup>22</sup> – 12 Likert-type items	Perceived toolkit improvement	1 Likert-type item
		Demographics	11 multiple choice/response items	Feasibility, Acceptability, Appropriateness	FIM, AIM, IAM <sup>22</sup> – 12 Likert-type items
		Demographics	11 multiple choice/response items		

**Data Analysis:** Feasibility, acceptability, and appropriateness constructs were analyzed using descriptive statistics (frequencies, percentages, means, standard deviations). Similarly, relative importance of MEDS service elements and toolkit sections was analyzed using descriptive statistics. Implementation resources needed for the MEDS service, including supplies, people, and cost were summarized in a narrative format. Panelist opinions on dissemination strategies for the MEDS Toolkit were also summarized in a narrative format.

#### **4. Results:**

##### **Summary:**

Interviews were conducted in Aim 1 with 34 stakeholders, including 18 pharmacists, 9 home health providers, and 7 aging services representatives to investigate feasibility of a community pharmacist-led medication management service for homebound older adults with dementia. Among pharmacists, 1 worked in a chain pharmacy, 5 in a grocery store pharmacy, 2 in an outpatient pharmacy, 8 in an independent pharmacy, and 2 in a mass merchandiser pharmacy in Alabama. Among home health providers, 6 worked in Alabama, 2 in Georgia, and 1 in Mississippi. Five worked in non-medical home care, 3 in medical home care, and 1 in both. Four were executive directors/officers, 2 health education specialists, 1 agency owner, 1 social worker, and 1 office manager. Among the aging services representatives, 1 was a senior housing director, 1 a community recreation center director, 1 a respite/adult day program director, and 4 were social workers at Area Agencies on Aging in the Southeast.

Interview findings were used to draft a toolkit with resources for pharmacists wanting to initiate this service in partnership with home health or aging services (MEDS Toolkit). In Aim 2, the toolkit was iteratively refined and revised using feedback from 3 rounds of surveys with n=18 panelists, including community pharmacist, home health, and aging services stakeholders. Some panelists completed all 3 surveys, while some completed only one or two surveys. In the first survey, n=13 stakeholders provided input on what they would like to see included in the toolkit, and information about cost of various service elements - this information was used to further develop the draft toolkit. In the second survey, n=12 stakeholders reviewed the draft toolkit and provided feedback on its content, format, and design, including perspectives on the reimbursement model and cost information - this information was used to revise the toolkit. Of these 12 respondents in the second survey, n=5 respondents were new participants, while n=7 had also completed the first survey. In the third survey, n=13 participants provided feedback on the revised toolkit's content, format, and design, and again provided perspective on the reimbursement model and costs - this information was used to further revise and finalize the toolkit. All respondents in the third survey had previously completed the first and/or second survey. The final MEDS Toolkit contains 10 key sections and is attached to this report.

##### **Interview Findings:**

###### **Community Pharmacists**

Three themes emerged from community pharmacist interviews: 1) Facilitators and barriers to initiate the MEDS service focus on characteristics of homebound older adults with dementia; 2) Implementation strategies focus on interdisciplinary collaboration; and 3) Need to individualize the service by adjusting delivery mode, frequency, content, and intensity. Regarding service design, interviewees expressed that pharmacist medication management services should be individualized and tailored for homebound older adults with memory loss, while simultaneously addressing the needs of family caregivers. This tailoring fell into four domains: service elements, intensity, delivery mode, and frequency. For service elements,

pharmacists mentioned a need to individualize the types of services provided, including medication delivery, medication refill synchronization, bubble packing, medication review, medication education, and care coordination. The intensity of services varied depending on the number of medications and changes in older adults' status, with many interviewees mentioning the need for a comprehensive medication review at the first patient visit or following a care transition, with follow-up medication review visits when a medication is added or changed, and consultations for specific medications when requested by families or home health agencies. For mode of delivery, interviewees thought the medication management service would ideally be delivered in-person at the patient's home, but thought that video or telephone calls may be feasible with family caregivers or home health providers. For the service frequency, pharmacists mentioned various options ranging from weekly to annually, with some suggesting more frequent weekly visits on service initiation, followed by monthly or quarterly follow-up visits depending on patient complexity. Regarding barriers and facilitators to service provision, pharmacists identified several barriers to providing a medication management service for homebound older adults with dementia. Perceived barriers included lack of a defined reimbursement model and uncertainty surrounding billing procedures, lack of a universal electronic health record, competing tasks and responsibilities in community pharmacies, lack of corporate buy-in, providers lacking awareness of pharmacist roles, and potential patient denial at early stages of dementia. Facilitators included trust and established relationships with communities, patients, nurses, and physicians. Regarding collaboration strategies, pharmacists were open to the idea of contracting with home health agencies. Pharmacists emphasized the need to clearly outline pharmacist responsibilities in collaborative contracts, establish rapport, and demonstrate pharmacist value.

#### Home Health Providers

Three themes emerged from interviews with home health providers: 1) Service business model; 2) Needed resources; and 3) Service elements. Regarding the business model, interviewees thought this service would be most feasible using external contracts with pharmacists versus direct employment in their home health company. Interviewees also liked the idea of pharmacists working at physician offices to conduct medication management services for homebound clients. Regarding resources, they expressed a need for a universal electronic health record between the pharmacist and home health providers. More resources for pill packing, separation of morning and nightly doses, and medication adherence technology for patients with memory loss were needed. Regarding service elements, pharmacist provision of medication reconciliation was emphasized for care coordination between multiple prescribers. Home visits were often discussed to visualize all medications in a patient's household, as well as pharmacists providing patients/caregivers with medication education. Many interviewees expressed concern with home health non-nursing staff being legally unable to assist patients with taking medications, and mentioned pharmacists as a possible solution.

#### Aging Services Representatives

Three themes emerged from interviews with aging services representatives: 1) Local attitudes; 2) Intended participants; and 3) Logistical barriers to accessing the service. Regarding the local attitudes, interviewees were positive and enthusiastic about this service, and expressed curiosity about collaborating with pharmacists. However, participants were unsure about the process to establish this service and had limited experience with pharmacist clinical services. Regarding intended participants, they expressed variation in who the intended focus of the service should be, patients or caregivers. Despite this variation, they mentioned a need to include family caregivers throughout the care process. Regarding logistical barriers to service access, concerns included transportation, missed appointments due to memory loss, and overall health literacy. They mentioned a pressing concern about family caregivers being located at a distance from the care recipient. Similarly, service location was important for visualizing patient medication and environmental needs, but should be individualized for the patient.

Representative quotes are shown in Table 3.

**Table 3. Representative Quotes from Semi-Structured Interviews**

Pharmacist	Home Health Provider	Aging Services Representative
<p>“It really is <b>so rewarding</b> to get to work so closely with my patient on this. And I don't know, I wish I could do it all for them...And I wish it was <b>accessible</b> for everybody.”</p>	<p>“...with those urinary tract infections, especially an antibiotic can clear that up pretty quickly. But medication is so important. And if you're not taking those antibiotics frequently, then the family can really go into kind of a concerned state because it's just such a dramatic change and they don't understand why. So suddenly it went from something they could manage to something that they're afraid of and don't know what to do next.”</p>	<p>“We have a very good relationship with several of what I call, the mom and pop pharmacies in our community.”</p>
<p>“So it would be hard to imagine that she would ever be able <b>to remember</b> to take her meds herself.”</p>	<p>“It's a lot easier to partner with a local independent pharmacy than it is a corporate pharmacy.”</p>	<p>“We have one pharmacist that will let my clients get medication on credit the old-fashioned way, if they can't afford or their medication copay is a little more expensive. Or he will, if they're on my program, will direct bill me for their copays, or if it's flat out, have to pay for the full prescription.”</p>
<p>“The changes in the medications and the swapping and go to <b>four or five different doctors</b> and nobody knows what's going on.”</p>	<p>“They [the patients] no longer have dexterity. Trying to get a small little, tiny pill out of a pill bottle and then place that into a Monday through Sunday pill planner correctly without dropping it is an aggravating task and difficult. So having a caregiver to try to help fill that pill box, whether it's a family member or someone, a nurse is a huge help.”</p>	<p>“We have called pharmacists to talk with caregivers to explain new medications that the doctor may have put them on, tell them how to use the medication. We have a client who recently, her husband was put on [a new drug], and those are injections. And she didn't quite understand. Very expensive injections for his diabetes, and she didn't quite understand. And the pharmacy told her, "Come to our parking lot and I'll come out to the car with gloves and alcohol swab, and I can talk you through how to do the injections weekly.”</p>
<p>“<b>Inspecting the medicines</b> to see does it look like the patient's been remembering to take them? Is there stuff that patients had</p>	<p>“It leads for a lack of errors with the bubble packs because basically it's all pre-packaged 30</p>	<p>“...we would love to host a group or a pharmacist or two or whatever at our support group. So we do a little bit of education</p>



<p>for years that they've never been taking? Is there stuff that they shouldn't?"</p>	<p>days and appropriately morning, afternoon, evening. And so, it's pretty simple."</p>	<p>in our support group for caregivers. So maybe that would be a great way to get plugged in."</p>
<p>"Starting out, you do have to take those extra steps to almost <b>prove yourself</b>, but once you have that rapport built, I mean, you're kind of an indispensable part of the team."</p>	<p>"If there was a pharmacy where all the meds could be... Maybe all the patient's meds could be kept at the pharmacy and once a week the meds are... Either we pick them up or they're delivered to the house and they're prepackaged in a blister pack...A pharmacist setting that up or a pharmacy tech setting that up in the pharmacy would probably be a lot more cost-effective than sending a nurse out to a patient's home to do one patient."</p>	<p>"For the ones that have more than one doctor...there's not always communication going on to make sure there weren't any interactions that shouldn't be happening, or a medicine affecting another one. It would be good for someone to be checking that because not all of them know or understand, I should not be taking these two pills together. So that would be a big help. And then filling their pill boxes would be a big help for sure. And we would take as often as we could get. But if someone came in weekly just to make sure they were actually taking their medicine, that would be amazing too. And just someone for them to even talk about education, what it's for, because most of them don't know why they're taking what they're taking. The education would be amazing too. Someone that actually had the time to be thorough and explain it in a way they could comprehend it."</p>

**Survey Results:**

Responses to the service component matrix in Survey #1 are shown in Table 4.

<p><b>Table 4. Resources Needed to Implement the MEDS Service, by Service Component; n=13</b></p>			
<p><b>Service Component</b></p>	<p><b>Supplies</b></p>	<p><b>People</b></p>	<p><b>Cost</b></p>
<p>Medication education <b>n=11</b></p>	<p>Response 1: Tablet , easy to understand simplified brochures, flow chart, booklet  Response 2: N/A</p>	<p>Response 1: Pharmacist  Response 2: Nurse/pharmacist  Response 3: 1 pharmacist</p>	<p>Response 1: Time and supplies  Response 2: Hourly rate  Response 3: N/A  Response 4: N/A</p>

	<p>Response 3: Printed education materials, software, tablet or laptop</p> <p>Response 4: Drug information software, patient medication info guides, demonstration devices, iPad or laptop</p> <p>Response 5: education print outs, brochures, medication instructions, software, ipad</p> <p>Response 6: computer with software, paper, printer,</p> <p>Response 7: Printer</p> <p>Response 8: Education materials (printed) Computer</p> <p>Response 9: Easy to understand step by step instructions for medicines printed and electronically</p> <p>Response 10: Leaflet per each dispensed medication listing side effects as well as dosage form description and pertinent med administration guidelines</p> <p>Response 11: brochure/education sheet</p>	<p>Response 4: 1 Pharmacist</p> <p>Response 5: 1 pharmacist</p> <p>Response 6: pharmacist</p> <p>Response 7: Pharmacy tech</p> <p>Response 8: 1 pharmacist 1 technician</p> <p>Response 9: 1 Pharmacist</p> <p>Response 10: 1 rph</p> <p>Response 11: 1 pharmacist</p>	<p>Response 5: printing costs of prints, brochures and med instructions: 500.00 Software: ipad: 800.00 Pharmacist time</p> <p>Response 6: computer \$300; software \$100; paper\$20; printer#150; pharmacist \$60/h</p> <p>Response 7: Printer/paper/ink- 0.50/patient Pharmacy Tech: \$15/hr- approx 5-10 min to print all education</p> <p>Response 8: Pharmacist \$60/hr Technician \$17/hr Computer/printed materials cost \$2/patient</p> <p>Response 9: Brochure cost Ipad Cost</p> <p>Response 10: \$50/hr</p> <p>Response 11: \$300 printing material/salary for a pharmacist</p>
<p>Bubble packing <b>n=11</b></p>	<p>Response 1: Week or two week packages</p> <p>Response 2: Actual pack</p> <p>Response 3: bubble packing supplies to package meds, printed materials to state meds in package</p> <p>Response 4: Plastic blisters Cold or heat seal cards</p>	<p>Response 1: Pharmacist will fill. Patient will use or caregiver of patient</p> <p>Response 2: Pharmacist/tech</p> <p>Response 3: 1 pharmacist and 1 tech for</p>	<p>Response 1: Plastic week , two week , or month long bubble packs</p> <p>Response 2: Hourly rate</p> <p>Response 3: N/A</p> <p>Response 4: N/A</p> <p>Response 5: Cost of bubble wrap, cost of</p>

	<p>Heat seal device Printer for labeling cards</p> <p>Response 5: bubble wrap packing supplies, envelopes</p> <p>Response 6: package material (bubble board and plastic);</p> <p>Response 7: 1 piece cold seal medication cards.</p> <p>Response 8: Packaging supplies (cards + blisters), marketing materials</p> <p>Response 9: Packing supplies</p> <p>Response 10: one pack per med dispensed</p> <p>Response 11: Packing materials</p>	<p>every 15 patients</p> <p>Response 4: 1 pharmacist, 1-2 techs</p> <p>Response 5: 1 pharmacist</p> <p>Response 6: technician</p> <p>Response 7: 1 Pharmacist</p> <p>Response 8: Additional technician and pharmacist training 1 pharmacist, 1 technician</p> <p>Response 9: 1 Pharmacy Technician</p> <p>Response 10: 1 rph 1 tech</p> <p>Response 11: Pharmacist/tech</p>	<p>envelopes, postal service charges, pharmacist time</p> <p>Response 6: Tech \$15/h; materials \$10</p> <p>Response 7: cold seal pk 0.50/pk Pharmacist time: \$50/hr Total time for each patient- 20 min</p> <p>Response 8: Additional packaging costs for blisters/cards (Approx \$0.37/script)</p> <p>Response 9: Cost of packing supplies Cost of meds (varies) Time for Pharmacy Technician</p> <p>Response 10: \$50/hr</p> <p>Response 11: \$\$ medication/pharmacist salary/\$100 packing material</p>
<p>Organizing medications in the home <b>n=11</b></p>	<p>Response 1: Medication planner , electric medicine plan, Amazon Alexa with daily reminders for patient set</p> <p>Response 2: Pill pack</p> <p>Response 3: supplies for visually impaired patients/cg, pill planners of different types, supplies for patients/cg with reading issues</p> <p>Response 4: Pill box organizers Labels Portable label maker</p>	<p>Response 1: Nurse , patient , caregiver</p> <p>Response 2: Pharmacist</p> <p>Response 3: 1 pharmacist with techs to assist</p> <p>Response 4: 1 pharmacist</p> <p>Response 5: 1 pharmacist, 1 technician</p> <p>Response 6: technician</p>	<p>Response 1: Time , products and services if desired for technology</p> <p>Response 2: Pill pack \$5 Pharmacist hourly rate</p> <p>Response 3: N/A</p> <p>Response 4: N/A</p> <p>Response 5: Cost of pill box: \$1 per client Cost of large print medication labels: Color coding labels lock box Pharmacist time Pharmacy tech time portable printer: 200</p>

	<p>Response 5: pill box, large print medication labels, color coding, lock box</p> <p>Response 6: bubble packs (above); med boxes;</p> <p>Response 7: 1 zipper bag for all medications with label of company and phone number for PCP</p> <p>Response 8: Laptop with pharmacy reference access, mobile label printer Vehicle</p> <p>Response 9: Pill boxes, App for alarming of pill reminders</p> <p>Response 10: Bubble pack organizer of sorts (home base if you will)</p> <p>Response 11: Pill organizer/transportation to client home</p>	<p>Response 7: To be performed in home on initial visit</p> <p>Response 8: 1 pharmacist</p> <p>Response 9: 1 Pharmacy Technician</p> <p>Response 10: 1rph</p> <p>Response 11: Pharmacist/tech</p>	<p>Response 6: Tech \$15/h; materials \$10</p> <p>Response 7: Cost of bag 0.75/Patient</p> <p>Response 8: \$65/hr pharmacist (higher cost for service like this) Vehicle/travel costs \$0.57/mile</p> <p>Response 9: Cost of pillbox supplies, Time for Pharmacy Technician</p> <p>Response 10: \$50/hr</p> <p>Response 11: \$10 pill organizer pharmacist salary/\$25 transportation</p>
<p>Home delivery of medications <b>n=11</b></p>	<p>Response 1: Medicine in easy to understand packaging, car</p> <p>Response 2: Delivery driver</p> <p>Response 3: vehicle, mail order or personal carrier</p> <p>Response 4: Outer packaging (bags) iPad for delivery manifest/signatures</p> <p>Response 5: vehicle/gas,</p> <p>Response 6: car to transport with owner supplying insurance; gas or mileage</p> <p>Response 7: Company car</p>	<p>Response 1: Driver , pharmacist</p> <p>Response 2: N/A</p> <p>Response 3: pharmacy tech/driver</p> <p>Response 4: 1 courier</p> <p>Response 5: 1 pharmacist</p> <p>Response 6: technician</p> <p>Response 7: Driver</p> <p>Response 8: 1 driver 1 tech 1 pharmacist</p>	<p>Response 1: Time , gas , driver pay</p> <p>Response 2: Above minimum wage</p> <p>Response 3: N/A</p> <p>Response 4: N/A</p> <p>Response 5: reimbursement for price per mile at current average gas rates in area</p> <p>Response 6: tech \$15/h; milage \$0.60/mile</p> <p>Response 7: Car-30,000 Fuel/repairs- Monthly: 1,000</p>

	<p>Fuel/repairs</p> <p>Response 8: Vehicle</p> <p>Response 9: Mail Delivery</p> <p>Response 10: Colored bin for differentiation/transporting</p> <p>Response 11: Transportation to client home</p>	<p>Response 9: USPS- Fed Ex-UPS</p> <p>Response 10: 1rph</p> <p>Response 11: Pharmacist/tech/ delivery driver</p>	<p>Driver- \$12.50/Hr</p> <p>Response 8: Pharmacist \$60/hr Technician \$17/hr Driver \$15/hr</p> <p>Response 9: Shipping cost</p> <p>Response 10: \$50/hr</p> <p>Response 11: \$25 delivery driver</p>
<p>Medication reconciliation <b>n=10</b></p>	<p>Response 1: Medication reconciliation worksheet or form explaining proper meds to take , to stop , to speak with PCP about</p> <p>Response 2: tablet or laptop, software to identify pills that are not in bottles, MD orders and med lists, facility dc med lists</p> <p>Response 3: Pharmacy software Secure document transmission software</p> <p>Response 4: Medication instructions and print outs, ipad to look up medication list for client</p> <p>Response 5: computer and software</p> <p>Response 6: Printer, Software to list all medications with freq, indications, and purpose for each medication.</p> <p>Response 7: Computer Dedicated phone number/equipment</p>	<p>Response 1: Pharmacist, PCP, patient</p> <p>Response 2: pharmacist and techs</p> <p>Response 3: 1 pharmacist</p> <p>Response 4: 1 pharmacist</p> <p>Response 5: pharmacist</p> <p>Response 6: 1 pharmacy technician to record and print</p> <p>Response 7: 1 pharmacist</p> <p>Response 8: Caregiver; Doctor</p> <p>Response 9: 1rph</p> <p>Response 10: Pharmacist/tech</p>	<p>Response 1: Time, form.</p> <p>Response 2: N/A</p> <p>Response 3: N/A</p> <p>Response 4: iPad: 800 print outs and instructions: 500 Pharmacist time</p> <p>Response 5: computer \$300; software \$100; pharmacist \$60</p> <p>Response 6: software: ? Printing materials per patient: &lt;\$3 Pharmacy Tech: \$15/Hr, \$7.50 to complete this per patient</p> <p>Response 7: Pharmacist \$60/hr Computer + phone \$2/patient</p> <p>Response 8: Doctor cost</p> <p>Response 9: \$50/hr</p> <p>Response 10: Pharmacist/tech salary</p>

	<p>Response 8: Work with doctor and family to keep med list up to date</p> <p>Response 9: multiple colored bowls for containing meds dumped from bubble pack</p> <p>Response 10: Software/technology/iPad</p>		
<p>Medication synchronization <b>n=10</b></p>	<p>Response 1: Medication time take table, Amazon Alexa with reminders set</p> <p>Response 2: laptop or tablet, med list confirmed by MD, Software, insurance auth</p> <p>Response 3: Pharmacy software File organizer Labels Vials/lids</p> <p>Response 4: software with computer; notebook to organize (calender)</p> <p>Response 5: Software will be needed to add all Medication in that will provide education, interaction alerts, and will create documents to fax to PCP with interactions (level 1, 2 or 3)</p> <p>Response 6: Medication instructions, ipad to look up medication list, instruction list on when to pick up next set of medications</p> <p>Response 7: Computer Dedicated phone number/equipment Additional sync software</p>	<p>Response 1: Nurse, pharmacist, pharmacy, tech, caregiver</p> <p>Response 2: pharmacist and techs</p> <p>Response 3: 1 pharmacist 1-2 techs</p> <p>Response 4: pharmacist or technician</p> <p>Response 5: na</p> <p>Response 6: 1 pharmacist or 1 technician</p> <p>Response 7: 1 technician</p> <p>Response 8: Pharmacist</p> <p>Response 9: 1rph 1 tech</p> <p>Response 10: Pharmacist/tech</p>	<p>Response 1: Wages , devices , medication time take table</p> <p>Response 2: N/A</p> <p>Response 3: N/A</p> <p>Response 4: pharmaicst \$60/h; tech \$15/h; computer and software \$450; paper or organizer \$10</p> <p>Response 5: Software- ?</p> <p>Response 6: Pharmacist or Pharmacy Tech time Printout of instructions iPad: 800 portable printer: 200.00</p> <p>Response 7: Technician \$17/hr Computer + sync software \$2/patient</p> <p>Response 8: Medicine cost of refills; Pharmacist cost</p> <p>Response 9: \$50/hr</p> <p>Response 10: \$\$ software</p>

	<p>Response 8: Aligning refills on a monthly basis on the same day monthly</p> <p>Response 9: rx computer system w/medsync capabilities + med list printout from system</p> <p>Response 10: Software/technology</p>		
<p>Medication adherence evaluation and monitoring <b>n=10</b></p>	<p>Response 1: Medication check list for daily taking of medication</p> <p>Response 2: home visits to speak to patient/cg, laptop or tablet, someone in home to count meds and review pill planner for compliance, communicate with MD regarding meds that have labs to monitor</p> <p>Response 3: Pharmacy software iPad or laptop for documenting interventions and adherence check-ins</p> <p>Response 4: ipad to log into software, evaluation tool containing questions that may help in monitoring/evaluating medication adherence, education on importance of medication adherence</p> <p>Response 5: software and computer; phone to make calls; notebook/calendar for appointments or follow up</p> <p>Response 6: Weekly visits by Pharmacy tech/ Pharmacist monthly Expense of company car, fuel, repairs</p>	<p>Response 1: Patient , caregiver</p> <p>Response 2: pharmacist and techs</p> <p>Response 3: 1 pharmacist</p> <p>Response 4: 1 pharmacist</p> <p>Response 5: pharmacist</p> <p>Response 6: Pharm Tech, Pharmacist</p> <p>Response 7: 1 pharmacist</p> <p>Response 8: Doctor, Nurse, Pharmacist</p> <p>Response 9: 1rph</p> <p>Response 10: Pharmacist/tech</p>	<p>Response 1: Form for record keeping</p> <p>Response 2: N/A</p> <p>Response 3: N/A</p> <p>Response 4: iPad: 800 Software evaluation tool in software Pharmacist time education materials</p> <p>Response 5: pharmacist \$60/h; calender \$10; phone service; computer and software \$450</p> <p>Response 6: see above expenses</p> <p>Response 7: Pharmacist \$60/hr Computer + phone \$2/patient</p> <p>Response 8: Cost of Doctor, Nurse or Pharmacist</p> <p>Response 9: \$50/hr</p> <p>Response 10: Software/pharmacist salary</p>

	<p>Response 7: Computer Dedicated phone number/equipment</p> <p>Response 8: Personal Relationship with Doctor, Nurse or Pharmacist to ensure meds are being taken correctly</p> <p>Response 9: Printout with spaces for documenting med admin as well as any important notes during admin</p> <p>Response 10: Software/ipad</p>		
<p>Medication administration <b>n=10</b></p>	<p>Response 1: Medicine pill box</p> <p>Response 2: MD orders, tablet or laptop, supplies top administer such as syringes etc</p> <p>Response 3: Syringes, needles, alcohol swabs, sharps container, cotton rounds, bandages</p> <p>Response 4: pill box or lock box, color coding products, large print medication labels, education materials</p> <p>Response 5: phone to contact patient</p> <p>Response 6: Needle/syringe, alcohol, Bandaid (oral medication admin is not feasible)</p> <p>Response 7: Computer Vehicle Phone Admin supplies (Syringe, pill pack, etc)</p>	<p>Response 1: Rn , or pharmacy</p> <p>Response 2: pharmacist and techs to assist</p> <p>Response 3: 1 pharmacist or 1 nurse</p> <p>Response 4: 1 pharmacist</p> <p>Response 5: technician or caregiver</p> <p>Response 6: Pharmacist</p> <p>Response 7: 1 Nurse</p> <p>Response 8: N/A</p> <p>Response 9: same</p> <p>Response 10: Pharmacist/tech</p>	<p>Response 1: Wages</p> <p>Response 2: N/A</p> <p>Response 3: N/A</p> <p>Response 4: pill boxes lock boxes color coding products education materials pharmacist time: hourly rate of local pharmacists</p> <p>Response 5: staff \$15; phone to contact</p> <p>Response 6: Needle/syringe- 0.10/admin bandaid/alcohol- 0.3/admin</p> <p>Response 7: Nurse \$35/hr Vehicle \$0.57/mile Computer + supplies \$2/patient</p> <p>Response 8: N/A</p> <p>Response 9: same</p> <p>Response 10: N/A</p>



	<p>Response 8: Help from Caregiver</p> <p>Response 9: same as above</p> <p>Response 10: Software/iPad</p>		
<p>Pharmacist telephone hot-line <b>n=10</b></p>	<p>Response 1: Graphic designed marketing social media, physical copy for handouts</p> <p>Response 2: brochures, educational materials, magnets etc, answering service to filter calls</p> <p>Response 3: Phone contract Phone Portable device with drug information software/pharmacy software access</p> <p>Response 4: phone system or app, computer system to notify pharmacist</p> <p>Response 5: phone to manage calls</p> <p>Response 6: Monthly subscription</p> <p>Response 7: Computer Dedicated phone number/equipment</p> <p>Response 8: Phone number, texting, email</p> <p>Response 9: use personal landline/cellphone without giving personal numbers. 800 number that routes to rph on duty at the time</p> <p>Response 10: Office space</p>	<p>Response 1: Graphic designer, marketing person</p> <p>Response 2: pharmacists to monitor calls</p> <p>Response 3: 1 pharmacist</p> <p>Response 4: operators</p> <p>Response 5: pharmacist</p> <p>Response 6: Pharmacy Tech</p> <p>Response 7: 1 pharmacist 1 technician</p> <p>Response 8: Pharmacist or Pharmacist Technician</p> <p>Response 9: same</p> <p>Response 10: Pharmacist/tech</p>	<p>Response 1: Wages</p> <p>Response 2: N/A</p> <p>Response 3: N/A</p> <p>Response 4: phone system or app: operator compensation: hourly rate</p> <p>Response 5: pharmacist \$60/h or less if paid per phone call.</p> <p>Response 6: Subscription \$75/month</p> <p>Response 7: Pharmacist \$60/hr Technician \$17/hr</p> <p>Response 8: Cost of Pharmacist/Pharmacist Technician</p> <p>Response 9: same</p> <p>Response 10: Rent</p>
<p>Medication coordination <b>n=10</b></p>	<p>Response 1: Form for coordination amongst different providers, or companies</p>	<p>Response 1: Marketing person</p>	<p>Response 1: Wages</p> <p>Response 2: N/A</p>

	<p>Response 2: laptop or tablet, MD orders, communication from MD office and facilities</p> <p>Response 3: education materials, computer system for documentation and receiving orders from physicians</p> <p>Response 4: computer with software to manage meds</p> <p>Response 5: Software (see above) will have ability to fax md with the option for md to sign and or/make changes to medications within software.</p> <p>Response 6: Computer Phone</p> <p>Response 7: App for reminders; Calls from drug store to remind</p> <p>Response 8: caretaker with either some knowledge of medications or at least a desire to give correct care</p> <p>Response 9: Software/technology</p> <p>Response 10: (This was left blank)</p>	<p>Response 2: pharmacist and techs</p> <p>Response 3: 1 pharmacist</p> <p>Response 4: tech or pharmacist</p> <p>Response 5: N/A</p> <p>Response 6: 1 technician</p> <p>Response 7: Pharmacy Technician</p> <p>Response 8: same</p> <p>Response 9: Pharmacist/tech</p> <p>Response 10: N/A</p>	<p>Response 3: education materials: computer software</p> <p>Response 4: hourly rate for staff</p> <p>Response 5: N/A</p> <p>Response 6: Technician \$17/hr</p> <p>Response 7: Cost of Pharmacist Technician</p> <p>Response 8: sam</p> <p>Response 9: N/A</p> <p>Response 10: N/A</p>
Other n=4	<p>Response 1: NA</p> <p>Response 2: Billboards, Brochures, Pamphlet's, Marketing, etc</p> <p>Response 3: na</p> <p>Response 4: na</p>	<p>Response 1: NA</p> <p>Response 2: Marketing team</p> <p>Response 3: na</p> <p>Response 4: na</p> <p><b>Summary:</b> Response 2 thought a marketing</p>	<p>Response 1: NA</p> <p>Response 2: Marketer-\$35/HR with Commission Annual Advertising Expenses-115,000</p> <p>Response 3: na</p>

	<b>Summary:</b> Response 2 thought readable advertisement was important. Others non-applicable.	team would help. Others non-applicable.	Response 4: na <b>Summary:</b> Response 2 stated costs for annual advertising to be \$115,000 and hiring marketers off commission would be \$35 per hour. Others non-applicable.
Other n=3	Response 1: NA  Response 2: na  Response 3: na  <b>Summary:</b> All non-applicable.	Response 1: NA  Response 2: na  Response 3: na  <b>Summary:</b> All non-applicable.	Response 1: NA  Response 2: na  Response 3: na  <b>Summary:</b> All non-applicable.

Responses to the open-ended survey question *“If you would like to describe in more detail what a pharmacist medication management service for homebound older adults with dementia would look like from your perspective, please do so here”* resulted in four main themes. These focused on:

- 1) Medication management, adherence, or reconciliation. Most responses expressed the importance of medication reconciliation and management.
  - This category includes anything to do with what medications the patients take and if they are taking them correctly.
- 2) Caregiver and client support and education.
  - This category encompasses all responses having to do with supporting caregivers and clients at their homes. It also covers education on medications, care of a dementia patient, and disease state information.
- 3) Medication organization with pill boxes or other methods like color coding.
  - This is all methods for organizing medications. This deserved its own category due to infrequency of response and how it is more about organizing medications at home as opposed to what medications the patient is taking and if they are taking them.
- 4) Medication support with home delivery.
  - A few responses mentioned home delivery for homebound patients or patients unable to reach a pharmacy.

*Quotes from this question are presented below:*

**Response 1:** “Go into the home and assist caregivers and clients with filling pill boxes, provide education on medication interactions if applicable, collaborate with physicians regarding any possible interactions, teach caregivers importance of using pill boxes, lock boxes, or color coding, education to caregivers and clients on the importance on being able to know if the client is taking medications as prescribed.”

**Response 2:** “This service could help support caregivers as they handle such sensitive and important matters as medication management for the person living with dementia. As dementia progresses it becomes more challenging for the person with dementia to accurately manage their own medications so

they must rely on their caregiver(s). Having a trusted third party alleviate the burden of care in this way could look like:

- medication reconciliation (making sure various medications are not causing unnecessary complications/side effects)
- home delivery
- assistance organizing medication and distribution schedule”

**Response 3:** “A place where caregivers could contact someone with medications questions. Organizing medications and looking for duplications that can be missed by patient. Providing organization of medications through bubble wrap or similar service to let patients know when medications have been taken so they do not repeat. Delivery of medications to home for homebound adults. Coordination of care with caregiver to improve quality of life for both patient and family.”

**Response 4:** “Medication education with dementia patients would not be a top priority as they often do not have the ability to recall the education provided. it would be more of a priority to coordinate all medications with primary care provider and make adjustments with any medications that have interactions/ contraindicated for any co morbid conditions and follow up for adherence with the plan of care.”

**Response 5:** “I think ensuring that the client is able to correctly organize a pill box, open bottles, understand the dosage. Coordinate with physicians if there are duplicate meds.”

**Response 6:** “An adherence program for these patient would have multiple tiers of options of service that could be offered depending on the family’s involvement in care. Starting with adherence packaging on the low tier and working up to in home medication administration on the highest tier.”

**Response 7:** “Friendly and available for client and caregivers with questions, concerns with medication management.”

**Response 8:** “The most important aspects for the patient to receive quality service is time and reimbursement for the pharmacy providing service. At the moment, there is very little, if any, time to give to a service other than the normal filling of daily medications in the retail pharmacy. Furthermore, even if time wasn't an issue, reimbursements are not available to provide for additional staff to provide this service either.”

In Survey #2, *ideas for dissemination of the MEDS Toolkit* included:

**Response 1:** “Mailing a hard copy, but also a digital format to all the major retail companies.”

**Response 2:** “Through social workers who are the best recourse brokers...presentations at health fairs...community wide education event.”

**Response 3:** “Digitally.”

**Response 4:** “Since this book is for pharmacies and home health agencies I would suggest having a brief in-service with the companies who are willing to participate in order to make sure that everyone is fully committed and educated on the idea of the whole concept. This can be done via web conferences or in person. I would also suggest follow up meetings to gather feedback.”

**Response 5:** “Make it available as a CE. Partner with companies to make it a part of a mandatory training module.”

**Response 6:** “Contact center for aging, local pharmacies, home instead (healthcare/sitter services), health clinics, geriatric physician offices.”

**Response 7:** “Outreach to home health agencies and pharmacies and explain the process of this program.”

**Response 8:** “- Neurology offices, - Churches/synagogues/mosques/etc, - Area Agency on Aging.”

**Response 9:** “Give it to pharmacies, doctor's offices, and Area Agencies on Aging, home health agencies, hospitals, elderly living facilities to give to the patients/clients.”

**Response 10:** “Coordinate with local home based care providers to gauge willingness to adopt new practices, then notify local pharmacists of who will be agreeable to assisting pharmacists in managing these cases.”

In Survey #3, several *quotes from open-ended questions about the MEDS Toolkit stood out:*

**Response 1:** “Types [of costs in the reimbursement model section of the MEDS Toolkit] seem accurate. Costs would be difficult to ascertain as there's a huge range depending on how robust of a software program you use. OutcomesMTM is free to use, and the CMR payments are generally \$50-75. However, pharmacists can only complete opportunities the platform presents them and cannot manually add CMR documentations for billing purposes. In addition, pharmacists can only complete CMRs for patients of the pharmacies they are granted access to, and the terms of use state that the pharmacist must be employed by that pharmacy.”

**Response 2:** “For me personally, it is not feasible [to use the toolkit to help start a medication management service for homebound older adults with dementia] at all because I work for a major retail pharmacy. There are too many hoops and barriers for me to do something like this as a staff pharmacist. The resources in the booklet are still helpful for a community pharmacist.”

**Response 3:** “Setting up and billing for MTM CPT codes and outcomes MTM opportunities are very limited and not sustainable to support a pharmacy fully (that we have found doing so in practice now). More information on doing so and details would be more useful, the links provided are good resources. But many patients are not eligible for MTM unless previously presented in Outcomes.”

**Response 4:** “I believe the booklet is a great start for consultants to gather information to determine if they want to move forward, I'm sure adjustments will have to be made throughout the process.”

**Response 5:** “After reading it, I felt like I could start a service in the next few months! The billing portion has always felt tricky to me, so having those resources made the whole thing feel more doable.”

### **MEDS Toolkit:**

Responses and feedback from Surveys 1-3 were used to iteratively revise the MEDS Toolkit. The final MEDS Toolkit contains 10 key sections, including:

- 1) Provider Resources
- 2) Home and Community Services
- 3) Patient and Caregiver Education
- 4) Practice Tips

- 5) MEDS Service Flier
- 6) Decision Support Tool
- 7) Medication Risk Assessment
- 8) Forms and Templates
- 9) MEDS Action Plan
- 10) Reimbursement Model

The Toolkit also contains a Purpose section to introduce the purpose and intended use of the toolkit, as well as its creation process; a MEDS Quick Guide for easy access to key services, resources, and education; and a References and Resources section that includes key references, Quick Links with easy access to all of the links in the toolkit, and a blank Notes page.

***Download the MEDS Toolkit:***

<https://bit.ly/MEDSToolkit>



**5. Conclusions:**

Community pharmacists perceived that homebound older adults with dementia need an individualized medication management service. The service may be individualized in terms of service elements, intensity, delivery mode, and frequency. However, barriers exist in terms of reimbursement, technology, competing responsibilities, and attitudes. Future studies may test collaborative practice models between community pharmacists and home health agencies to help overcome identified barriers.

There is a need for pharmacist integration in home health agencies to assist in medication management for the aging population of patients. Pharmacists can help provide medication reviews, answer questions regarding new medications, and assist in management of medication lists. Pharmacists should familiarize themselves with technology to assist with medication adherence in homebound older adults with dementia. Development and testing of business models is needed to enhance collaboration between home health agencies and pharmacists. Future research should also investigate shared electronic health records between pharmacists and home health agencies to provide the most streamlined care.

Similarly, there is a need for pharmacist integration in aging services to assist in medication management. Collaborations between pharmacists and aging services should consider local attitudes, intended participants, and logistical barriers to service delivery. Incorporation of pharmacists in these services is viewed positively by aging services, but solutions to patient barriers surrounding transportation, service location, and health literacy are needed. Development and testing of community partnerships is needed to enhance collaboration between aging services agencies and pharmacists. Future research should also investigate ways to individualize this service for varying stages of dementia.

All three stakeholder groups had a positive attitude towards the MEDS service. Findings inform the design of community pharmacist-led medication management services for homebound older adults with dementia and the collaborative practice model between community pharmacies, home health or home care agencies, and aging services agencies. Future studies may test this collaborative practice model to help

overcome identified barriers to service implementation. Results lay the foundation for future studies to pilot the MEDS initiative and gather return on investment data. The MEDS Toolkit is a tangible resource that community pharmacists can use as a starting point to help initiate a medication management service for homebound older adults with dementia, in partnership with home health and aging services agencies.

## **6. Abstracts and presentations:**

4 completed, 1 under review, 1 planned = 6 total

- 1) ASHP Midyear 2023: 1 abstract with poster presentation (home health provider interviews, encore presentation at APhA below)
- 2) APhA Annual Meeting 2024: 2 published abstracts with 2 poster presentations
  - a. Poster 1: Community pharmacist interview findings,  
[https://drive.google.com/file/d/10BpeoeFSmQQr9rWLlphAM\\_ACWFJzdHaw/view?usp=sharing](https://drive.google.com/file/d/10BpeoeFSmQQr9rWLlphAM_ACWFJzdHaw/view?usp=sharing)
  - b. Poster 2: Home health provider interview findings,  
[https://drive.google.com/file/d/1mT4N1tcjJC1kc7TcTM\\_nLI9A1GfLB-x7/view?usp=sharing](https://drive.google.com/file/d/1mT4N1tcjJC1kc7TcTM_nLI9A1GfLB-x7/view?usp=sharing)
- 3) Auburn University Student Research Symposium 2024: 1 abstract with oral podium presentation (summary of interview findings from all 3 stakeholder groups)
- 4) APA Annual Convention 2024: 1 abstract under review (aging services interview findings)
- 5) APhA Annual Meeting 2025: 1 abstract planned (Survey findings and MEDS Toolkit development process)

## **7. Publications:**

2 manuscripts in preparation/planning

- 1) Aim 1 interview results: A manuscript describing the interview results is in preparation.
- 2) Aim 2 survey results and MEDS Toolkit: A manuscript describing the Aim 2 survey results and development process of the MEDS Toolkit is in the planning stages. If the MEDS Toolkit is posted on the CPF website, we hope to include a link to the toolkit in this manuscript, to increase dissemination of the toolkit.

## **8. Other deliverables:**

MEDS Toolkit

<https://bit.ly/MEDSToolkit>



## References:

1. Moultry AM, Poon IO. Perceived value of a home-based medication therapy management program for the elderly. *The Consultant pharmacist: the journal of the American Society of Consultant Pharmacists*. 2008;23(11):877-885.
2. Steele KM, Ruisinger JF, Bates J, Prohaska ES, Melton BL, Hipp S. Home-Based Comprehensive Medication Reviews: Pharmacist's Impact on Drug Therapy Problems in Geriatric Patients. *The Consultant pharmacist: the journal of the American Society of Consultant Pharmacists*. 2016;31(10):598-605.
3. Walus AN, Woloschuk DMM. Impact of Pharmacists in a Community-Based Home Care Service: A Pilot Program. *The Canadian journal of hospital pharmacy*. 2017;70(6):435-442.
4. Willis J, Hoy R, Jenkins W. In-Home Medication Reviews: A Novel Approach to Improving Patient Care Through Coordination of Care. *Journal of community health*. 2011;36(6):1027-1031.
5. Fazio S, Pace D, Maslow K, Zimmerman S, Kallmyer B. Alzheimer's Association Dementia Care Practice Recommendations. *The Gerontologist*. 2018;58(suppl\_1):S1-S9.
6. Prorok JC, Hussain M, Horgan S, Seitz DP. 'I shouldn't have had to push and fight': health care experiences of persons with dementia and their caregivers in primary care. *Aging & mental health*. 2017;21(8):797-804.
7. Jennings LA, Reuben DB, Evertson LC, et al. Unmet needs of caregivers of individuals referred to a dementia care program. *Journal of the American Geriatrics Society*. 2015;63(2):282-289.
8. Granbo R, Boulton E, Saltvedt I, Helbostad JL, Taraldsen K. My husband is not ill; he has memory loss - caregivers perspectives on health care services for persons with dementia. *BMC geriatrics*. 2019;19(1):75.
9. Ornstein KA, Leff B, Covinsky KE, et al. Epidemiology of the Homebound Population in the United States. *JAMA internal medicine*. 2015;175(7):1180-1186.
10. Rural Research Alliance of Community Pharmacies. What is Rural-CP? <https://ruralcp.web.unc.edu/>. Published 2021. Accessed April 19, 2022.
11. Westrick SC, Hastings TJ, McFarland SJ, Hohmann LA, Hohmann NS. How Do Pharmacists Assist Medicare Beneficiaries with Limited Income? A Cross-Sectional Study of Community Pharmacies in Alabama. *Journal of managed care & specialty pharmacy*. 2016;22(9):1039-1045.
12. Hohmann NS, Garza KB, Surry D, et al. Communicating benefits and risks of generic drugs to consumers: Patient and caregiver opinions of two FDA-developed educational materials. *Research in Social and Administrative Pharmacy*. 2019.
13. Hohmann NS, Qian J, Westrick S, Hunt C, Hincapie A, Garza KB. Interviews to Assess Older Adults' Preferences for Features of Community-based Fall Prevention Programs (abstract). *American Journal of Pharmaceutical Education (20th Annual Meeting of the American Association of Colleges of Pharmacy, Chicago, Illinois, July 2019)*. 2019.
14. Hayes Directories Inc. Hayes Directory. <http://hayesdir.com/index.html>. Published 2017. Accessed August 29, 2017.
15. Palinkas LA, Horwitz SM, Green CA, Wisdom JP, Duan N, Hoagwood K. Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Adm Policy Ment Health*. 2015;42(5):533-544.
16. SeniorCare. Home Health Care Agency Directory. <https://www.seniorcare.com/home-care/>. Published 2022. Accessed April 19, 2022.
17. Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implementation science*. 2009;4(1):50.
18. Keith RE, Crosson JC, O'Malley AS, Crompton D, Taylor EF. Using the Consolidated Framework for Implementation Research (CFIR) to produce actionable findings: a rapid-cycle evaluation approach to improving implementation. *Implementation Science*. 2017;12(1):15.



19. Gale RC, Wu J, Erhardt T, et al. Comparison of rapid vs in-depth qualitative analytic methods from a process evaluation of academic detailing in the Veterans Health Administration. *Implementation Science*. 2019;14(1):11.
20. Taylor E. We Agree, Don't We? The Delphi Method for Health Environments Research. *HERD: Health Environments Research & Design Journal*. 2019;13(1):11-23.
21. Teeter BS, Mosley C, Thomas JL, et al. Improving HPV vaccination using implementation strategies in community pharmacies: Pilot study protocol. *Research in Social and Administrative Pharmacy*. 2019.
22. Weiner BJ, Lewis CC, Stanick C, et al. Psychometric assessment of three newly developed implementation outcome measures. *Implementation Science*. 2017;12(1):1-12.