Incorporation of an Efficient Pharmacist Workflow During the Transition From In-Person to Telemedicine Geriatric Clinics in Response to the COVID-19 Pandemic

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Abstract

The COVID-19 pandemic created care continuity challenges for older adults in the ambulatory care setting. Similarly, maintaining the multidisciplinary team concept of geriatric care among healthcare practitioners working from home presented several logistical difficulties. It became apparent there was a need to address these problems to avoid care gaps in this vulnerable population. Realizing that in-person clinics could put vulnerable older adults at increased risk of contracting COVID-19, a workflow was proactively developed to convert a traditional in-person multidisciplinary geriatric clinic to a telemedicine-based model. A video patient encounter option within our electronic health record along with a secure on-line meeting platform was used to maintain a team-based approach to care. This resulted not only in a high level of efficiency in care delivery, but also ensured the safety of older adult patients served by the clinic. This model provides a template for the continued use of telemedicine as a strategy for the care of vulnerable older adults who experience challenges with attending in-person clinics.

Keywords

telehealth, telemedicine, geriatric clinic, pharmacist, COVID-19

Background

The onset of the coronavirus disease 2019 (COVID-19) pandemic in early 2020 brought new challenges and opportunities in the care of older adults in the ambulatory setting. Older adults living both independently and in facilities were subject to either self-imposed or facility-imposed travel restrictions to minimize infection risk which limited their ability to attend in-person clinic-based healthcare appointments. The dual challenges of maintaining healthcare relationships with older adult patients without unnecessarily exposing them to the risk of infection, became the driver in the creation of a new practice model embracing telemedicine.

A popular model used in ambulatory clinics specializing in the care of older adults consists of a patient traveling to a clinic for an in-person appointment with an interprofessional team. The interprofessional team often consists of a primary care provider (physician, nurse practitioner [NP], or physician assistant [PA], pharmacist, social worker, and nurse. Clinic visits include physical and social history assessment, medication reconciliation and monitoring, counseling, patient education, and care planning. Pharmacists have served as important healthcare team members in ambulatory care settings, including geriatric clinics, for decades providing medication management; however, most have been in traditional in-person clinic settings.[1-4]

Telemedicine, as defined by the American Telemedicine Association (ATA), is "the use of medical information exchanged from one site to another via electronic

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communications to improve a patient's clinical health status."[5,6] While telemedicine is not a new concept, it has yet to achieve widespread adoption primarily due to limited re-imbursement for such services.[7] In early 2020, The Centers for Medicare and Medicaid Services (CMS) temporarily expanded telemedicine benefits for Medicare beneficiaries. This expansion allowed for patients to receive telemedicine services in any healthcare facility including their home.[8,9] This was a major change from previous telemedicine requirements which required patients to travel to a local medical facility to obtain telemedicine services rather than from their home and allowed for the expanded use of telemedicine services during the COVID-19 pandemic.

The American College of Clinical Pharmacy (ACCP) released a white paper in 2018 providing guidance for clinical pharmacists providing telemedicine. This paper described the results of 34 studies which looked at clinical outcomes against a comparator. Overall, they found that clinical pharmacy telemedicine interventions in the outpatient or ambulatory setting, primarily via phone, have an overall positive impact on outcomes related to clinical disease management, patient self-management, and adherence in the management of chronic diseases.[10] Several other studies have evaluated interventions by pharmacists providing chronic care management via telemedicine. Taylor et al[11] looked at a model which involved a telepharmacist providing chronic disease management in a family medicine clinic. In this small pilot study, the telepharmacist completed 200 interventions with the majority concerning patient safety, vaccine recommendations, gaps in care per national consensus guidelines, adherence, and cost savings. A negative finding of this study was that only one-third of the telepharmacist's recommendations were accepted by the provider. A study by Shafiee et al looked at the collaboration of pharmacists and geriatricians via telehealth.[12] This study used an on-line platform for pharmacists to share recommendations for changes in medication therapy of long-term care facility residents. Pharmacists were asked to conduct medication reviews of the charts of 20 long-term care facility residents. They were asked to make a recommendation to a geriatrician for each medication: 1- no change; 2- stop; 3-increase dose; 4- decrease dose; or 5- decrease dose with view to stop. They also recorded any new medications they were recommending. A total of 297 medications were reviewed generating 1485 recommendations. The geriatricians found the pharmacists' recommendation useful in 72% of the cases.

While several studies have looked at the utility of a pharmacist in telemedicine, the workflow of such a service is not standardized nor sufficiently described. The development of a workflow based upon the *Pharmacists' Patient Care Process* for the provision of pharmacist services in a geriatric telemedicine clinic is needed. The *Pharmacists' Patient Care Process (PPCP)* describes a "patient-centered approach in collaboration with other providers on the healthcare team to optimize patient health and medication outcomes."[13] The purpose of this paper is to describe a workflow based upon this process that transitioned patients seen in a geriatric clinic from traditional in-person care to care received via telemedicine.

Practice Description PRE-COVID-19

The practice setting is a geriatric clinic, housed in a large Midwest academic medical center, serving patients 65 years-of-age and older for both consultation and comprehensive primary care. The geriatric clinic is staffed five days per week with a core staff of five physicians, one physician assistant, seven pharmacists, one social worker, and one medical assistant. This interprofessional team, along with students, residents, and fellows from all healthcare disciplines, provides a comprehensive approach to the management of healthcare of older adults.

A typical clinic visit for a new patient includes each team member meeting individually with the patient and caregivers to discuss and assess daily functioning, diet, health history, medication history, cognitive status, mood, social support, as well as any other specific patient or caregiver concerns. After all team members have completed their assessment, they meet as a team in person to discuss their findings and formulate a proposed care plan incorporating all team members' findings. This plan is then shared with the patient and caregiver(s) using a shared decision-making approach based on clinical evidence that balances risks and expected outcomes with patient preferences and values to develop a plan that is agreeable and feasible.

For consultation only visits, patient follow-up is referred to the patient's primary care provider. For patients who desire the geriatric team to provide their comprehensive primary care, follow-up visits are scheduled with the team based upon the initial assessment and plan including management of chronic care concerns and changes in health status. In addition, all clinic patients receive an annual Medicare Wellness visit. During each follow-up visit, team members meet with the patient and caregiver(s) as needed; however, each visit always includes a consultation with a pharmacist to conduct medication reconciliation and evaluation and monitoring of the medication regimen.

Practice Innovation in Response to COVID-19

In March of 2020, concerns regarding the COVID-19 pandemic and the need to prevent exposure and spread of the disease to the vulnerable older adult population led to the decision to convert all geriatric clinic visits from face-to-face to a telemedicine format. The interprofessional team met to discuss the transition to a geriatric telemedicine clinic. Additionally, the pharmacist members of the team met separately to discuss this change and to develop a workflow to assure continued pharmacist involvement in the patient care process.

The initial proposed geriatric telemedicine clinic workflow consisted of the interprofessional team meeting over a secure online meeting platform to discuss each patient before each team member made individual calls to the patient. This was followed by another team meeting to discuss findings and develop a treatment plan. This proved to be unsustainable and

Table 1: Pharmacist Geriatric Telemedicine Clinic Telephone Call Workflow.

1. Pharmacist calls patient
2. Complete medication reconciliation
    a. Create telephone encounter and note in the patient's electronic medical record (EPIC) documenting medication reconciliation completion
3. Assess adherence with medication regimen via patient report with verification by pharmacy fill history if necessary
    a. Ask about any difficulties in obtaining medications due to social isolation
4. Follow-up on any medication changes made during last visit
5. Follow-up on any telephone or patient communication since last visit
6. Assess medication therapy for efficacy
    a. Ask about any home monitoring that is being done (blood pressure, pulse, blood glucose etc.)
    b. Ask about symptom improvement or resolution
7. Assess medication therapy for safety
    a. Assess adverse drug reactions
    b. Assess for necessary monitoring for safety
8. Answer any medication related questions
9. Ask patient to take any vitals possible before the team call later in the day, including weight, blood pressure, pulse etc.

inefficient for the pharmacists due to the variability in time required to conduct medication reconciliation and medication monitoring.

It became apparent that having the pharmacist make a call (either video or telephone) to the patient prior to the scheduled telemedicine clinic interprofessional team meeting call would allow for more time for the pharmacist to efficiently complete their tasks and communicate findings promptly to the rest of the team. The "Pharmacist Geriatric Telemedicine Clinic Telephone Call Workflow" (Table 1) was developed to guide the pharmacist's call to the patient. To facilitate communication of the pharmacist's findings to the interprofessional team, a data collection form was developed which became known as the "PharmD Geriatric Telemedicine Clinic Workup Template" (Appendix A).

The overall geriatric clinic telemedicine workflow and Workup Template underwent several iterations over several weeks in response to feedback from patients, caregivers, and team members. Changes which resulted in improved team efficiency and less patient waiting time included:

- Moving the pharmacist-patient interaction to before the telemedicine visit.
- Initiation of a unified team call to the patient rather than each team member making their own individual call
- Team pre-staffing for all scheduled patients prior to first scheduled call
- Using a clinic medical assistant to contact the patient in advance to assist patients and caregivers with technical issues

An efficient workflow that allowed for all team members to contribute to the care of the patients while being considerate of everyone's time and the need to keep patient's appointments on schedule was eventually developed (Table 2). Billing for geriatric telemedicine visits was done as a physician telemedicine visit using the expanded guidelines put in place due to the COVID-19 pandemic. Pharmacists did not bill for services directly. This is similar to previous billing procedures as pharmacists did not bill for services for in-person geriatric clinic visits prior to the transition to telemedicine visits.

Discussion

Innovation is driven by necessity, and this often occurs in times of emergency and uncertainty. While the benefits of older adults receiving care via telemedicine in their homes rather than by traveling to a clinic setting has been suggested, the change to this model has faced slow adoption. While a formal study of patient and caregiver perceptions of this innovation in the delivery of care was not conducted, anecdotal benefits were noted by providers during informal discussions including improved patient-provider engagement, patient and caregiver satisfaction, and provider efficiency.

Patients seemed to be more communicative and open to sharing details regarding their current health status in the telemedicine visits as compared to traditional in-person clinic visits, often sharing details of their life under COVID-19 restrictions and the resulting loneliness and stress. Several factors may have contributed to this enhanced patient engagement during the telemedicine visits including that many patients were in lock-down in their homes with little contact with the outside world. Physical comforts of being at home along with familiarity of surroundings during the telemedicine visit could have also played a role reducing stress and anxiety associated with traveling to a busy academic medical center location. This same difference has been anecdotally noted by the geriatric clinic team when making home visits

While not formally surveyed, patients and caregivers expressed positive feedback when allowed to convert their in-person to telemedicine visits. Caregivers expressed relief that patients would not have to be exposed to unnecessary risk from exposure to others in transit to the clinic as well as within the healthcare facility.

Pharmacists noted anecdotally that patients were more engaged in the medication reconciliation process since they had easy access to their medications while in their home setting. While not formally studied, this enhanced engagement by patients may result in improved efficiency and better accuracy of the medication reconciliation process. Pharmacists also reported less pressure to quickly conduct their medication review and assessment using this model. In addition, completing the *Collect* and *Assess* steps in the PPCP and preparing a written report prior to the team meeting made the *Plan* step of the process more efficient and allowed for better documentation of the pharmacist's findings in the electronic medical record clinic visit note.

Table 2. The Geriatric Telemedicine Clinic Workflow Developed Via an Iterative Process by an Interdisciplinary Care Team, Caregivers, and Patients.

Pharmacist calls each patient prior to scheduled clinic team calls	• Conducts the pharmacist's workflow (Table 1) • Completes the "PharmD geriatric telemedicine clinic workup template" (Appendix A) • Sends copy of workup to provider via EHR messaging system for inclusion in telemedicine clinic documentation
Team members meet via secure online meeting platform prior to first scheduled patient	• Discuss each patient to be called • Provider lists priorities for each patient visit • Patient calls assigned to individual team members if necessary • Pharmacist shares information from pre-clinic patient call
Medical assistant calls patient	• Initiates patient encounter • Informs patient of procedure for telemedicine visit
Provider and team member(s) call patient	• Provider or other team member(s) place call • Additional team members joining call as necessary • Patient informed of call back to discuss findings and plan
Team members meet via secure online meeting platform to discuss patient findings	• Team members share information from patient call(s) • Discuss and develop proposed plan of care
Provider and team member(s) call patient with plan and follow-up	• Discuss plan with patient • Achieve agreement or modification of plan using shared decision making • Arrange for follow-up
Provider completes patient encounter note in electronic medical record	• Unified encounter note includes information from all team members

There are obvious drawbacks to a telemedicine visit compared to a traditional geriatric clinic visit that must be considered. First, the ability to conduct physical assessments is limited so monitoring that requires face-to-face interaction is difficult. This limitation can be minimized using available home monitoring tools such as automated blood pressure cuffs, fingerstick home testing devices for blood glucose, and home oximetry testing for patients able to use such devices. Laboratory monitoring is also more difficult in the home compared to the clinic setting, although home blood draws can be arranged if necessary. Additionally, the ability to observe patient presentation is limited in a telemedicine visit and subtle changes in grooming and physical function, which may represent decline in cognitive or physical function, may not be as evident as during an in-person clinic visit.

A challenge in the move from an in-person clinic to a telemedicine clinic was the lack of a "staffing room" for team members to gather to discuss their findings and develop an integrated treatment plan for the patient. This challenge was addressed with the use of a secure on-line video platform which created a virtual space for team members to share information and develop the interprofessional care plan.

While there are clear drawbacks to telemedicine visits for older adults compared to in-person visits, there are also potential risks of in-person visits which should be considered. Challenges in transportation to clinics are prevalent in the older adult population which include inability to drive, lack of reliable caregiver or public transportation options, and difficulty in transferring non-ambulatory patients into and out of vehicles. In addition, exposing vulnerable older adults with compromised immune systems to others in healthcare settings will always pose some risk despite best infection control practices.

Going forward, a telemedicine option for geriatric clinic visits would be helpful to address concerns associated with in-person visits. Challenges to continuation of this telemedicine geriatric clinic model in the future include provider payment structure and finding solutions to logistical issues such as physical assessment and laboratory testing.

Conclusion

Conversion from an in-person to a telemedicine geriatric clinic visit during the COVID-19 pandemic necessitated the development of a new pharmacist workflow model to maximize patient safety and continuity of care. This model has the potential to improve access to specialized geriatric care with enhanced health benefits for older adults by minimizing barriers to in-person care such as transportation challenges and physical limitations. Further research on best practices for the provision of telemedicine for older adults including assessment of patient, caregiver, and provider satisfaction with this model is needed. In addition, additional research on the impact of telemedicine on specific measurable patient outcomes is essential to optimize quality and cost effectiveness of care.

Declaration of Conflicting Interests

Funding

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Appendix A

PharmD Geriatric Telemedicine Clinic Workup Template

Date/Time of telemedicine visit
Patient name/age/gender
Telephone number
Person contacted (Select all that apply)
   Patient
   Caregiver
   Other (facility staff etc.)
Last visit information
   Date
   Medication changes or concerns
   Change
   Follow-up
   Labs
Since last visit
   Telephone/MyChart messages
   Other provider visits
   Labs
Immunization review
   Medication reconciliation

Medication/dose/frequency	Indication	Assessment/Comments

PharmD recommendations