Interprofessional Collaboration in the Provision of Medication Therapy Management Services via Video Conferencing Technology for Patients with Epilepsy

Kate Johnson BSN, RN[1]; Jennifer Bingham PharmD[1]; David Rhys Axon MPharm[2]; Sandra Leal PharmD, MPH[3]
[1]University of Arizona Medication Management Center (UAMMC); [2]University of Arizona College of Pharmacy; [3]SinfoniaRx

THE UNIVERSITY OF ARIZONA COLLEGE OF PHARMACY
Center for Health Outcomes & PharmacoEconomic Research

SinfoniaRx Orchestrating Health

ARIZONA MEDICATION MANAGEMENT CENTER COLLEGE OF PHARMACY

BACKGROUND

- Patients living in rural areas typically have poorer access to clinical pharmacy services than their urban counterparts.[1]
- Medication therapy management (MTM) results in positive health outcomes for patients with complex chronic conditions.[2,3]
- Limited published literature exists regarding interprofessional collaboration via video conferencing for patients with epilepsy in rural areas.
- In 2016, the University of Arizona Medication Management Center (UAMMC) created a novel pilot program to collaborate with a rural satellite location of the Epilepsy Foundation to provide their patients with interprofessional MTM services via video conferencing.

OBJECTIVES

- To evaluate whether an interprofessional, collaborative approach to MTM utilizing centralized, video-based, clinical pharmacy services solutions can enhance patient care, ultimately improving health outcomes for rural patients with epilepsy.

METHODS

- A UAMMC clinical telepharmacist participated in video conferencing appointments involving Epilepsy Foundation patients, the nursing staff, and the epileptologist once a week.
- The telepharmacist conducted a comprehensive medication review (CMR) directly with the patient. Any resulting concerns or recommendations were immediately relayed to the epileptologist and acted upon during the video conferencing session, as appropriate.
- The epileptologist was encouraged to utilize the telepharmacist's clinical knowledge to formulate collaborative patient treatment decisions.
- Each patient received a current medication list and a medication action plan in the mail, following the consultation. He/she was also given the UAMMC's telephone number, in case he/she had any medication-related questions or concerns in the future.
- High-risk patients (see criteria below) received a follow-up telephone call from the UAMMC pharmacist three months after the initial video conferencing consultation. All other patients received telephone follow-up six months post-initial review.
- The pharmacist submitted a summary of the initial consultation, any follow-up conversations, and all clinical recommendations to the Epilepsy Foundation's electronic health record (EHR).

METHODS (CONT.)

Medication Review Components

- The initial CMR included:
  - Medication reconciliation, including over-the-counter medications and supplements
  - Evaluation of level of control (e.g., well controlled, poorly controlled) of current health conditions, including epilepsy and other co-morbidities
  - Assessment for safety concerns, including therapeutic duplications, drug-disease and drug-drug interactions, dosing concerns, and adverse drug reactions.
  - Medication adherence assessment via patient self-report (i.e., "In the past month, how often do you forget to take any of your medicines?" with potential responses of "never", "rarely", "sometimes", "often", or "very often")
  - General medication counseling and addressing patient concerns

Criteria to Identify High-Risk Patients

- To be identified as high risk, patients met one or more of the following criteria:
  - Problems identified with adherence (patients who have reported that they "sometimes", "often", or "very often" forget to take their medications or skip doses for any other reason)
  - Problems with side effects
  - Problems with access to care
  - Recent increase in seizure activity
  - Recent changes to medication regimen
  - General confusion about medication regimen
  - Unresolved/pending medication issue

OBSERVATIONS

Demographics

- A total of 63 patients have participated in the program to date.
- Roughly half of the participants were female (59%), with a median age of 23 years.

Table 1 describes patient demographic characteristics.

Table 1. Patient Demographics

	N=63
Gender	**N (%)**
Male	26 (41)
Female	37 (59)
Age Group	
0-9	4 (6)
10-19	24 (38)
20-29	9 (14)
30-39	17 (27)
40-49	6 (10)
50-59	2 (3)
60+	1 (2)

Vaccinations

- During the follow up telephone call, the telepharmacist evaluates the patient's vaccination status. The most commonly recommended vaccination was the flu vaccine (83% of qualified patients were eligible).

Table 3 summarizes the vaccine recommendations.

Table 3. Vaccination Recommendations

	# of clinically qualified patients	# of recommendations made
Vaccinations	**N**	**N (%)**
Flu	18	15 (83)
Tetanus	19	11 (58)
Pneumonia	0	0 (0)
Shingles	6	4 (67)

Medication Adherence

- Approximately one-fifth (19%) of patients reported "sometimes", "often", or "very often" forgetting to take their medications.

Table 4 summarizes patient responses to medication adherence assessment questions.

Table 4. Medication Adherence

Assessment question	N	Never N (%)	Rarely N (%)	Sometimes N (%)	Often N (%)	Very Often N (%)
"In the past month, how often did you forget to take any of your medicines?"	58	37 (64)	10 (17)	9 (16)	0 (0)	2 (3)
"In the past month, how often did you skip taking any of your medicines?"	57	38 (67)	8 (14)	8 (14)	1 (2)	2 (4)

Medication-related Problems (MRPs)

- A total of **162** medication-related problems (MRPs) were identified by the UAMMC telepharmacist, resulting in an average of **2.57** interventions per patient.

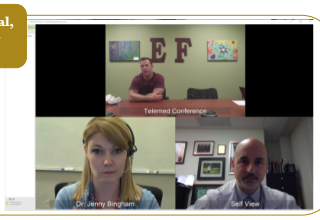
Table 2 summarizes MRPs identified.

Table 2. Medication-related Problems

	# of MRPs identified
	N (%)
Drug-drug interactions	65 (40)
Adverse drug reactions	37 (23)
Dose-related concerns	34 (21)
Therapeutic duplications	13 (8)
Drug-disease interactions	13 (8)

Collaborative, interprofessional, video-based clinical pharmacy services patient consultation

- During the initial patient consultation, all parties were simultaneously displayed on the respective computer monitors:
  - The telepharmacist
  - The patient
  - The epileptologist



DISCUSSION

- During the interprofessional video conferencing consultations, the telepharmacist identified an average of 2.77 MRPs per patient, highlighting potentially harmful situations that may have otherwise gone unnoticed.
- EHR access allowed the pharmacist to:
  - review the patient's background information (e.g., health conditions and recent laboratory work) in advance
  - submit notes in to the patient's record for the Epilepsy Foundation staff to act upon

Limitations

- Medication-related concerns identified rarely resulted in telepharmacist-recommended medication changes, making it difficult to evaluate respective provider acceptance rates.
- Patients were initially seen at the clinic; reaching them via telephone for follow up presented challenges, helping to explain the high attrition rate (e.g., lost to follow up).
- The small sample size and lack of a control group limit the generalizability of these results.

CONCLUSIONS

- Preliminary analysis showed positive program outcomes, suggesting that: integration of video conferencing technology and clinical pharmacy services may provide a novel and feasible approach to facilitate standard epilepsy care and help increase rural patients' access to MTM.
- Future studies are needed to:
  - explore the cost effectiveness of this type of collaborative program;
  - compare this approach to traditional face-to-face models; and
  - evaluate outcomes in diverse patient populations and clinical settings.

REFERENCES

1. Rural Health Information Hub. Rural Pharmacy and Prescription Drugs. https://www.ruralhealthinfo.org/topics/pharmacy-and-prescription-drugs. Accessed April 5, 2017.
2. Ai AL, Carretta H,Beitsch LM, Watson L, Munn J, Mehriary S. Medication therapy management programs: promises and pitfalls. J Manag Care Spec Pharm. 2014;20(12):1162-82.
3. Isetts BJ, Schondelmeyer SW, Artz MB, Lenarz LA, Heaton AH, Wadd WB, Brown LM, Cipolle RJ. Clinical and economic outcomes of medication therapy management services: the Minnesota experience. J Am Pharm Assoc. 2008;48(2):203-11.

Disclosures: The authors have no disclosures to report.
For further information, please contact: Kate Johnson• kjohnson@pharmacy.arizona.edu