Pharmacist-led geriatric clinic: A unique service for complex elderly patients

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Background

An aging population is a major challenge facing Canadian health care. Elderly patients often have multiple comorbidities and take multiple medications.¹ It takes more time and expertise to review and manage medications for these complex patients to minimize the risk of adverse drug events. Pharmacists, with their expanding scope of practice and expertise in pharmacotherapy, are able to work with this complexity to minimize the risks.²⁻⁴ Many studies have demonstrated that pharmacist-led clinical services in a multidisciplinary setting significantly reduce inappropriate drug therapies and achieve better patient outcomes.²⁻⁴ However, there are few reports of pharmacists as independent providers working in collaboration with prescribers or with delegated authority from prescribers.

Description of initiative

In January 2015, an outpatient pharmacist-led geriatric clinic was launched at the Vancouver General Hospital in British Columbia. The clinic operates as part of the Geriatric Rapid Access Clinic and is associated with the health authority and the Division of Geriatric Medicine. The pharmacist sees patients independently of patient visits to the geriatricians. The clinic evolved from a quality improvement pilot project led by one of our institution's geriatricians and a pharmacist. The quality improvement project demonstrated the need for pharmacist-guided management of these high-risk elderly patients. In addition, the experience from the practitioners involved in the pilot led to the

pharmacist independently booking patients for consults from referrals to the clinic. The pharmacist's clinic is open 1 afternoon (3 hours) each week, with patients booked for 1-hour appointments. Administrative support for the pharmacist's activities is provided through the clinic's designated medical office assistant. The pharmacist in the clinic has advanced training, with a hospital pharmacy residency and a post-graduate Doctor of Pharmacy degree. The pharmacist works full-time for the health authority and divides his or her time between the clinic and providing care on an inpatient acute care for elders unit. Patients are referred to the clinic from the community, through the emergency department and after discharge from hospital as a means to avoid hospital admission. In the initial visit with the pharmacist, a history and focused physical exam are conducted to clarify the patient's symptoms, and all laboratory and imaging results are reviewed. A detailed medication history that includes a review of the patient's community pharmacy prescription record and interviews with the patient and caregivers, in order to provide a comprehensive assessment of the patient's medication regimen, is also performed. The pharmacist has access to the patient records via the health authority electronic medical record. In addition, the clinic also uses iClinic for internal electronic record-keeping and communication. The pharmacist then dictates a consult note that is sent to the family doctor. Based on the patient's issues and recommendations, the pharmacist determines medication changes and arranges specific

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TABLE 1 Clinic patient flow and pharmacist interventions (total [percent])

Referral source (<i>n</i> = 122)			
Emergency department	General practitioner	Specialist	Hospital discharge
51 (42%)	37 (30%)	22 (18%)	12 (10%)
Method of follow-up (<i>n</i> = 88)			
Repeat clinic visit	Phone or email	Home visit	
53 (60%)	33 (38%)	2 (2%)	
Interventions (<i>n</i> = 513)			
Drug discontinuation	Dose change	Drug initiation	Compliance intervention
238 (46%)	138 (27%)	89 (17%)	48 (9%)

follow-up with respect to labs, investigations and appointments.

Methods

As this was a new initiative and the pharmacist documented all consults and interventions in the clinic's computer database, a quality improvement evaluation of the clinic's activities to date was completed. All pharmacist documentation of every clinic visit was reviewed and data were abstracted for patient baseline characteristics and interventions. Interventions were categorized as follows: drug discontinuation, drug dose change, drug initiation and compliance interventions. Analysis was planned to include descriptive statistics and a paired *t* test evaluating the number of drugs patients were taking before and after the visit.

Results

A total of 122 patients (57% female; mean age 81 ± 9 years) have been seen. The most common comorbidities are hypertension (73%), chronic pain (52%), depression or anxiety (48%), dementia (43%), diabetes mellitus type 2 (31%), heart failure (29%) and atrial fibrillation (29%). Depending on their needs, follow-up visits were organized (Table 1). Follow-up for patients seen in the clinic has ranged from no visits to 14 visits for 1 patient.

A total of 513 interventions were made, with a mean ± SD of 4.2 ± 2.2 per patient. The most

common interventions were to stop a drug (46%), followed by dose changes (27%), starting a drug (17%) and addressing compliance issues (9%). A statistically significant reduction in the number of drugs patients were taking before and after the clinic visit has been seen (mean 8.3 before and 6.9 after; paired *t* test, *p* < 0.001) (SPSS Version 1.0.0.1126; SPSS, Inc., an IBM Company, Chicago, IL).

Discussion

The clinic demonstrates the value of an independent, pharmacist-led assessment and titration of drug therapy. This clinic is a unique practice setting due to the high degree of independence given to the pharmacist to evaluate and intervene in the patients' medications. As pharmacists' scope of practice continues to expand, we expect these types of practices to become more commonplace. The initiative also highlights the importance of pharmacists performing physical examinations in order to function independently and work efficiently in a delegated authority practice.

Limitations and future directions

This report is limited to a description of the provision of a unique pharmacist-led service. Future studies should investigate whether a pharmacist-led clinic has an impact on patient outcomes such as community health care utilization, hospitalization and mortality. ■

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References

1. Steinman MA, Handler SM, Gurwitz JH, et al. Beyond the prescription: medication monitoring and adverse drug events in older adults. *J Am Geriatr Soc* 2011;59: 1513-20.
2. Thomas R, Huntley AL, Mann M, et al. Pharmacist-led interventions to reduce unplanned admissions for older people: a systematic review and meta-analysis of randomised controlled trials. *Age Ageing* 2014;43(2):174-87.
3. Marcum ZA, Hanlon JT, Murray MD. Improving medication adherence and health outcomes in older adults: an evidence-based review of randomized controlled trials. *Drugs Aging* 2017;34(3):191-201.
4. Campins L, Serra-Prat M, Gózaló I, et al. Randomized controlled trial of an intervention to improve drug appropriateness in community-dwelling polymedicated elderly people. *Fam Pract* 2017;34(1):36-42.