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Team Based Approach to Fall Prevention in Elderly Population: A Four Year Review

Britney Schwartz BSN, RN

Anne Yaple

Jamie Gaul PharmD, BCPS

Jennifer Ferguson

Katelyn Hougham

See next page for additional authors

Authors

Britney Schwartz BSN, RN; Anne Yaple; Jamie Gaul PharmD, BCPS; Jennifer Ferguson; Katelyn Hougham; and FenLei Chang MD, PhD

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Introduction

- ❑ Falls cause major morbidity and even mortality in the elderly population >65 years.
- ❑ Falls are the number one cause of both fractures and head injuries
- ❑ From population health standpoint – An unexplained fall should be treated as a red flag for a timely Fall Prevention Clinic evaluation and intervention.

Methods

- ❑ The Fall Prevention Clinic was established 4 years ago as an outpatient service within a community hospital.
- ❑ The patient completes a series of two appointments after a physician referral is received
- 1st Visit – Composed of evaluation by a multi-disciplinary team: Neurologist (Neuro),RN Care Advisor (RN), Physical Therapist (PT), Pharmacist (RPh), Occupational Therapist (OT), and Aging & In-Home Services (AIHS)
- 2nd Visit – Provides personalized recommendations to the patient and family members from each team member
- ❑ Patients are instructed to call the clinic and report any falls and are contacted by RN at 1 month intervals to discuss patient status, care plan compliance, and further recommendations
- ❑ Follow up with patient occurs every 6 months
- ❑ Total of 590 patients age 65 years or above were included in this study.

Subset Analysis

- ❑ Neuro – Figure 2 & Figure 3
- ❑ PT – Table 4
- ❑ RPh – Table 5 & Figure 6
- ❑ AIHS – Figure 7
- ❑ OT – Table 8

Randomized data collection from 2014-2017 on variety of patient groups

Results

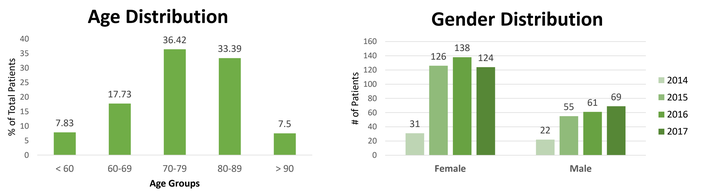

Figure 1: Demographic Information (N= 626)

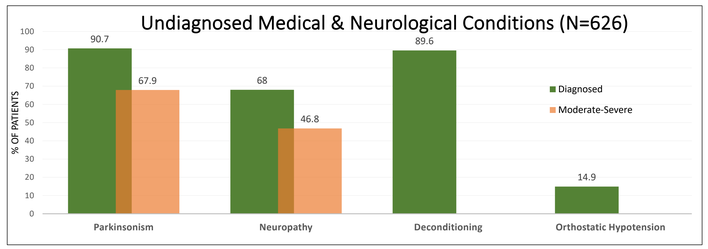

Figure 3: Previously Undiagnosed Medical and Neurological Conditions There are multiple reasons for the under-diagnosis of these conditions including their insidious onset and slowly progressive clinical course. Proper diagnosis may provide additional treatment options and facilitate compliance with recommendations.

Table 5: Classes of Medication in Which Written and Verbal Education was Provided to Patients/Caregivers

Pharmacy – Education Data (N=67)	
Antihypertensives	35
Diabetic Medications	16
Opioids/Muscle Relaxants	7
Benzodiazepines	1
Other	8

Recommendations reviewed for a subset of patients (N=43) from October-December 2016; with basic demographic data comparable to the 18-month review of general medication data. Average number of medications per patient seen was 12.09 ± 5.29 (which includes supplements/vitamins). In this group, 79.1% were being treated with antihypertensive medications and 39.5% of patients were being treated for diabetes. Patient use of commonly-associated fall-risk medications varied; opioids* (13.95%), anticholinergic (18.60%), muscle relaxants (11.63%), and benzodiazepines (13.95%).

* *Lower than the percentage seen in general medication data.*

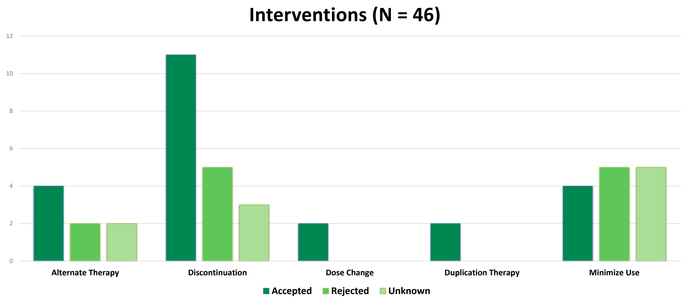

Figure 6: Pharmacy Interventions

Made via a variety of forms (To Patient, Patient to Physician, and To Physician) for recommended changes in therapy after medication evaluation from October-December 2016. Acceptance determined retrospectively based on future notes and various encounters in the electronic health record (EHR) within a 6-month period.

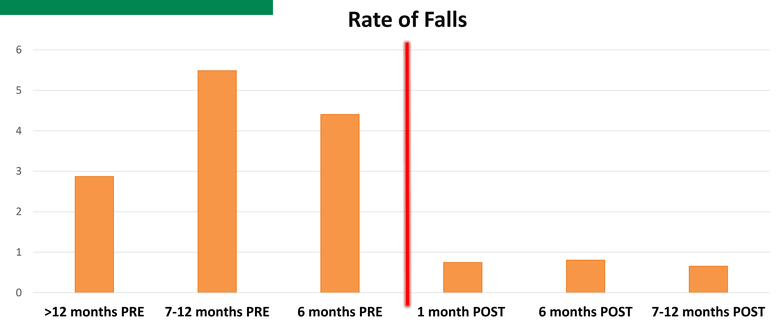

Figure 2: Fall Rate pre and post Fall Prevention Clinic intervention from 2014-2017 (N=590) Fall Prevention Clinic Visit and Intervention was noted with a **solid red line**. Prior to the Clinic visit, pre-assessment is completed to obtain fall occurrence. After the Fall Prevention Clinic diagnostic evaluation and initiation of care plan, the fall rate is reduced significantly. Continued Close Follow Up Program has kept the fall occurrence rate low for over one year period.

Physical Therapy Education/Intervention (N=192)	
Exercise Instructions	73%
Use of Gait Devices	48%
Referral to Outpatient PT	24%
Assisted Ambulation	3%

Table 4: Frequency of PT Patient Education/Instructions Given in Year 2017 Assessment of individual patient during Clinic visit. Use of gait devices based on Berg Balance Scale. Exercise instructions based on leg strength testing.

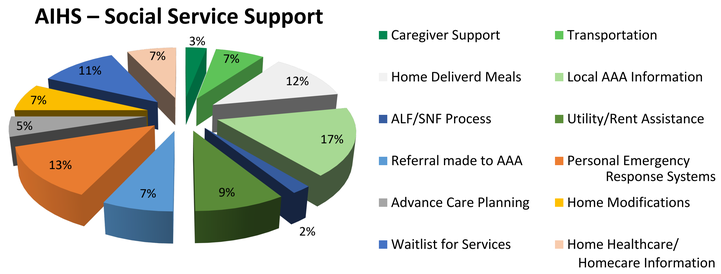

Figure 7: AIHS Social Service Support and Educational Information Provided to Fall Prevention Clinic Patients from 2015-2017 (N= 590)

AIHS, a federal and state designated Area Agency on Aging (AAA) and Aging &Disability Resource Center, is a non-profit community-based organization with a mission to promote dignity, independence, and advocacy for older adults, persons with disabilities and their caregivers.

Compliance for Home Assessment		
Year	Type of Contact	Agreeable "Yes"
2015	Telephone Contact	21%
2017	Face-to-Face Contact	66%

Table 8: Occupational Therapy Compliance for Home Assessment from 2015-2017 (N= 185) Clinic OT assess the patients' engagement in activities of daily living within their home environment in order to provide personalized recommendations: Adaptive equipment, home modifications, and activity adaptations. September 2016, patient contact method changed from telephone call to OT who was able to achieve face-to-face contact with each patient. This contact method has significantly increased the compliance of patient's willingness to complete a home assessment.

Discussion

Past

- ❑ Process Improvement – increase patient compliance and improve overall results
- ❑ Referral based off of multiple falls
- ❑ Incorporating collaboration with outside health care providers
- ❑ Establish routine care from all providers

Present

- ❑ Early referrals – patients at risk for falls instead of multiple falls
- ❑ Introduction of RN Care Advisor – oversee patients and increase compliance
- ❑ Patient Satisfaction Surveys – awareness of weaknesses and improve those areas Example: take-home diagnosis education
- ❑ Added Follow-Up Day to increase amount of initial patients seen each week

Future

- ❑ Interprofessional Education and Research
- ❑ Provide extended care for high risk patients – multiple falls, abnormal balance/gait, etc.
- ❑ Support groups for Fall Prevention Clinic patients and caregivers

Conclusion

- ❑ The contributors for our significant fall reduction includes: Multi-disciplinary teamwork, identification and management of previously undiagnosed neurological/medical conditions, personalized fall prevention rules, and assessment/management of psychosocial issues to improve compliance.
- ❑ Neurological diagnosis helps to define additional treatment options. Example:
  1. Vitamin B12 supplement for deficiency indicative of neuropathy
  2. Treatment for orthostatic hypotension
- ❑ Neurological/medical evaluation helps to stratify patients into those amenable to functional enhancement through PT/OT vs. someone with significant cognitive impairment, neuropathy, or stroke who may benefit from protection/adaptation

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