

# Effectiveness of a Geriatrics and Palliative Care Consultation on Symptom Management and Geriatric Syndromes

Angelica E Davila<sup>1</sup>, Jeanette S Ross<sup>1,2</sup>, Scotte Hartront<sup>1,2</sup>, Mary Garza<sup>1,2</sup>, Shuko Lee<sup>2</sup> and Sandra Sanchez-Reilly<sup>1,2\*</sup>

<sup>1</sup>Department of Medicine, The University of Texas Health Science Center at San Antonio, USA

<sup>2</sup>GEC and GRECC, The South Texas Veterans Health Care System, San Antonio, TX, USA

## Abstract

With the increase in geriatric patients and the wide spectrum of their illnesses, geriatricians and palliative care physicians would benefit from combining their expertise in treating chronically and terminally ill elder patients in a hospital setting. The objective of our pilot study was to determine if a Geriatric Palliative Care consult could improve pain management and prevent geriatric syndromes in elder patients. Our data was collected from a retrospective chart review of subjects older than 65 years-old who received combined Geriatrics and Palliative Care consult from a combined Geriatrics Palliative Care team. Previously validated instruments identified pain score and level of co-morbidity. A total of 60 charts were reviewed. Results showed a Geriatric Palliative Care consultation lowered pain score from pre-consult to post-consult (2.63 vs. 1.17;  $p=0.012$ ) and effectively improved pain in 20% of subjects (41.7% vs. 21.7%;  $p=0.002$ ). The Geriatric Palliative Care consult team effectively lowered the in-hospital complication of restraints (11.7% vs. 3.3%;  $p=0.025$ ) and also had a positive effect on delirium and advance directives ( $p=0.5$ ). In conclusion, Geriatric Palliative Care consults have shown to improve the quality of care for older adults by effectively managing pain symptoms and improving pain scores among 20% of the subjects.

**Keywords:** Geriatrics; Palliative care; Consultation; Pain assessment

## Introduction

With the increase in geriatric patients and the wide spectrum of their illnesses, geriatricians and palliative care clinicians would benefit from combining their expertise. Both of these specialties focus on ideals that are pertinent to the older adult population, such as, pain and symptom management, discharge planning and patient autonomy.

With the increase in older adult demographics, geriatricians and in general, clinicians who care for older adults will have an overwhelming patient population. Geriatricians must be able to maintain a patients' quality of life by ensuring older adults stay independent, and maintain an active lifestyle. Hospitalization may be necessary when chronically ill older adults experience decline in their multiple co-morbidities and clinicians caring for older adults must be skilled in managing multiple illnesses with appropriate treatments and medications [1]. Cognitive decline [2] during hospitalization can also cause harm to the patient. During episodes of delirium the use of restraints can increase complications such as bed sores, injuries related to falls, and increased morbidity and mortality [3]. Injuries often surpass physical injuries and also include an emotional component involving increased agitation [4] and social withdrawal [5]. Furthermore, acutely hospitalized elders often face functional decline [6] which results in prolonged hospitalization, placement in long term care facilities and multiple clinical complications [2,6].

Palliative care clinicians may also have a pivotal role in caring for the older adult population. Training in effective pain and symptom management makes this specialty an important counterpart to treating chronically ill older adults. Studies have shown that an older adults sensitivity to pain increased per decade of life [7] and pain is experienced in as much as 80% of older adults suffering from common co-morbid conditions [7-9]. In addition to pain and symptom management, palliative care clinicians are also focused on establishing goals of care, psychological and spiritual support and discharge planning [10,11]. These areas are important when dealing with older adults and their families and can provide improved goals of care for chronically and terminally ill patients.

Due to the impending increase in baby boomers, research has been

conducted to determine the benefits of geriatric and palliative care independent consults. Geriatric evaluations have focused on physical [12-15] and mental function [12,15], medications [16], survival [12,13], length of stay [13,17], rehabilitation [18], disposition [13,15,18] and readmission rates [13,17,18]. Results are variable among the authors and are difficult to compare due to differences in population illnesses and settings. Palliative care research focuses on symptom management [19,20] and how the perspective of dying [21] and level of satisfaction [19,20] could be improved when caring for terminally ill patients and their families. Due to the limited number of combined Geriatric Palliative Care (GPC) consult teams, little research has been done to determine if a combined geriatric palliative care consult would be effective. Our research focuses on determining if a combined geriatric palliative care consult has an effect in managing symptoms, decreasing in-hospital complications, eliminating inappropriate medications and preserving autonomy in chronically and terminally ill older adult patients in a hospital setting.

## Methods

### Description of the south texas veterans health care system-audie murphy division

An in-patient Combined Consultation Service in geriatrics and palliative care (GPC) was developed at the Geriatrics and Extended Care Service (GEC) of the South Texas Veterans Health Care System

**\*Corresponding author:** Sandra Sanchez-Reilly, Associate Professor, Palliative Medicine Section Chief Hospice and Palliative Medicine Fellowship Program Director, Division of Geriatrics, Gerontology and Palliative Medicine, The University of Texas Health Science Center at San Antonio and the South Texas Veterans Health Care System, 7703 Floyd Curl Drive MC 7875, San Antonio, Texas 78229, USA, E-mail: [sanchezreilly@uthscsa.edu](mailto:sanchezreilly@uthscsa.edu)

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(STVHCS)-Audie Murphy Division in San Antonio, TX. The Audie L. Murphy Veterans Administration (VA) Hospital is a 268 bed facility providing primary, secondary and tertiary health care in medicine, surgery, psychiatry, and rehabilitation medicine. It supports a 90-bed Extended Care Therapy Center, a 30-bed Spinal Cord Injury Center, an eight-bed Bone Marrow Transplant Unit, and a Geriatric Research, Education and Clinical Center. Approximately 65% of all patients admitted to the acute medical services are over 60 years old. Minority groups comprise more than 60% of the population served - of these approximately 75% are Hispanic and 25% African American. Geriatric and Extended Care (GEC) programs include in-patient, ambulatory, home, nursing home, hospice, respite and dental care. The STVHCS is affiliated with the University of Texas Health Science Center at San Antonio. The GEC programs are a primary site for geriatric training among medical and other inter-professional learners.

The GPC team includes attending physicians (dual board certification in geriatrics and palliative care), nurses, social workers, pharmacists, chaplains and psychologists.

### Data collection

This is a retrospective pilot study conducted by electronic medical record review of subjects admitted to a tertiary VA hospital. Because of its pilot nature, a convenience sample of 60 subjects was chosen. Subjects were enrolled between 2006 and 2009. Inclusions of records were determined by three criteria: age over 65, referral from the acute care team for a GPC consult and having been seen by the consult team before discharge from the hospital. The local Institutional Review Board (IRB) approved the study. Study personnel attended standard training in human subjects' protection in research as mandated by the IRB. Additionally, study personnel received training by the principal investigator of this study.

Previously validated instruments were chosen to measure the proposed aims of our study. In order to understand the degree of illness severity for each patient, we used the RAND Co-Morbidity Validated Scale. The scale identifies 21 variables of 16 prior medical conditions including cancer, diabetes and cerebrovascular accident and 5 current problems including smoking, alcoholism and morbid obesity, with a maximum score of 45 [23]. A score of 16 predicts a 180 day post-admission mortality [23]. Each record was reviewed for information concerning demographics, illnesses, geriatric syndromes, symptom management, in-hospital complications, medications and presence and type of advance directives. Demographics were determined as stated in the chart at the time of hospitalization. Problem lists were examined from all hospitalizations prior to the current admission. A list of 43 potential problems was identified as pertinent information in determining patient status.

Geriatric syndromes included delirium, falls and loss of function which were identified by the GPC and primary care team. The management of symptoms such as pain was measured with numeric pain scores [22]. Due to multiple pain scores recorded by the nursing staff each day, the recorded values 0-48 hours prior and 24-48 hours post consult were averaged to obtain an average pain score.

Other proposed measures included in-hospital complications which focused on the use of restraints, uncontrolled pain, nausea and shortness of breath. Patients were questioned concerning their level of comfort concerning these issues. Data was gathered from medical records as reported by patients and primary care teams. The use of inappropriate medications as classified by the Beers criteria [1] was recorded. Beers criteria is a list of 75+ medications that are updated

with time, these medications that have shown to cause serious adverse effects in elderly adults and are not recommended for that population. One important class included in Beers criteria are benzodiazepines [1]. All factors were identified both before and after consult to determine effectiveness. Patients' autonomy was measured by the presence of advance directives such as a medical power of attorney and do not resuscitate orders. Presence of these documents shows that the patient has made their wishes known concerning medical decisions at the end of life.

### Data analysis

*Cardiff Teleform* Software [24] was used to scan and organize all data. Univariate comparisons between variables pre and post-intervention were performed by T-test and Chi-square tests for continuous and categorical variables, respectively. Comparisons were examined by mixed linear models to adjust for correlations between measurements in repeated measures data. Data analysis with p-values less than 0.05 were considered of statistically significant level. Analyses were conducted using *SAS statistical software, SAS Institute Inc., Cary, NC*.

Both, the UT Health Science Center Institutional Review Board and the STVCHS Office of Research and Development approved the study.

### Results

A total of 60 (n=30 referred for palliative care consult and n=30 referred for geriatric consult) subjects were reviewed. Reasons for consultation included: (a) Guidance and assistance with discharge planning; (b) Comprehensive Geriatric Assessment for older adults; (c) Geriatric syndromes: Delirium or altered mental status, cognitive impairment, falls, loss of function and potentially inappropriate prescribing; (d) Evaluation of pain and other symptoms; (e) Facilitation of difficult family meetings for disposition planning, advance directives, or end-of-life discussions; and (f) Referral to hospice for very ill patients with poor prognosis.

Veteran subject demographics comprised a mean age of 76.9 years with 96.7% male. Ethnicity comprised of 58.8% Caucasian, 35.6% Hispanic, 5% African American and 3% other (unidentifiable). Most predominant diagnoses identified among subjects included hypertension (75%), weakness (60%), cardiac arrhythmias (60%), cancer (58%), diabetes (50%), pulmonary disease (47%), coronary artery disease (42%) and congestive heart failure (25%), among others. The subjects had an average RAND Co-Morbidity Score [23] of  $16.87 \pm 4.93$  (range of 5-26). Sixty five percent of the subjects had previously acquired advance directives, 43.9% had a medical directive for health care, 75.61% had a designated medical power of attorney and 46.34% had an order for do not resuscitate.

The GPC consult identified factors that may be overlooked by primary treating physicians in treating older adults. The GPC intervention lowered pain score from pre-consult to post-consult (2.63 vs. 1.17;  $p=0.012$ ) and effectively improved pain in 20% of subjects (41.7% vs. 21.7%;  $p=0.002$ ) by decreasing pain score to zero. In addition, the GPC consult team effectively lowered the use of restraints (11.7% vs. 3.3%;  $p=0.025$ ). Although not significant, the effect on geriatric syndromes were positive on delirium (18.3% vs. 11.7%;  $p=0.10$ ), and negative or negligible for falls (1.7% vs. 5%;  $p=0.32$ ), and loss of function (88.3% vs. 86.7%;  $p=0.32$ ). The GPC consult intervention did not have a statistically significant decrease in average number of inappropriate medications taken by subjects ( $1.15 \pm 1.01$  vs.  $1.20 \pm 1.20$ ) or number of subjects prescribed inappropriate medications (70% vs. 65%;  $p=0.93$ ).

Of the subjects that did not have an advance directive, the GPC was successful in attaining 22% completion (p=0.5) (Table 1).

Since the primary treating team makes the ultimate decision for each patient’s management, the research team identified the percentage of recommendations followed. The recommendations followed the most were suggestions for placement (94.9%), management of delirium (87.5%), non-pain symptom management (71.4% it refers to shortness of breath, nausea and weakness) and pain management (65%). Recommendations that were not regularly followed by the acute care team included discontinuing medications (13%) and discontinuing inappropriate medications as identified by Beer’s criteria (19%) in (Table 2).

## Discussion

Combined geriatric palliative care teams are on the up rise to help better care for older adults [25-27]. Therefore, studies that show the effectiveness of GPC teams are important in order to continue expanding among institutions. Our pilot study showed improvement in two variables, pain management and use of restraints. Though a minimal number of variables were statistically significant, it is important to note that the level of cooperation with the primary care team can influence the level of change.

Although retrospective, this small pilot study showed that GPC consult teams have a positive effect on patient care, especially pain management. Since studies have shown that older adults are more sensitive to pain [7] and up to 80% of pain complaints are due to common co-morbid conditions [8], being able to control pain in the older adult population is valuable.

Decreasing in-hospital complications takes the coordination between both the acute care and geriatric palliative care consult teams. Once a recommendation is made, the hope is that the acute care team will follow through. Our results show that the acute care team did respect the concerns of the consult team by following through with numerous recommendations, including decreasing the use of

restraints. This result is important due to the documented deleterious effects of using restraints. Restraints have been linked to causing direct injuries such as fractures due to increased falls [13] and indirect injuries such as emotional distress [14], loss of function [13] and nosocomial infections [13]. The ability to effectively decrease the use of restraints in an acute care setting significantly increases the quality of care provided and perceived by patients and family members.

Polypharmacy is another common problem when caring for older adults and can negatively affect patient health and medication compliance. Our results concerning discontinuing medications relied heavily on recommendations being followed by the acute care team, which was shown not to be effective. The consult team did not have an effect on the number of inappropriate medications taken or the number of subjects prescribed inappropriate medications due to pooled data of both chronically and terminally ill subjects. As expected, some inappropriate medications were prescribed to terminally ill subjects in order to provide comfort despite the deleterious effects.

The limitations to our small pilot study include that this was a retrospective study completed by electronic medical record review. Information is difficult to decipher and can only be incorporated into the study if medical personnel included the necessary information in an appropriate manner. Our study yielded a total number of only 60 subjects and would ideally like to increase this number. Similarly, our study was limited to a tertiary VA hospital and one location. The VA hospital provides a broad array of team-based services for older and terminally ill veterans, resources that might not be available in community-based settings. A multi-site trial which would include both community and Veteran administration hospital inpatient settings would be ideal to further validate our findings.

This pilot study is important in showing the benefit of providing both geriatrics and palliative care consults to older populations who are chronically and terminally ill. Many older individuals deal with pain and providing effective pain management is essential. We recognize that the shortage of geriatricians and palliative care specialists deem it impossible to have two specialists at every location, therefore there is a need to share information and increase education in order to better serve the older adult population.

## Conclusions

Combining the expertise of geriatricians and palliative care physicians may improve the quality of care for older adults by effectively managing pain symptoms and improving pain scores, as demonstrated in this pilot study. This study also showed effects on decreasing the use of restraints and increasing the completion of advance directives. Geriatrics and Palliative Care share much in common, with the overlapping goal of improving function and quality-of-life [28]. The small number of Geriatric and Palliative Care specialists deems it impossible to require both disciplines on each team therefore increased education should be encouraged in order to better serve the older adult population. Further prospective studies will need to analyze if dual GPC expertise might be beneficial when considering the improvement of quality of care among hospitalized older adults and their caregivers.

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| Variables                 | Pre-Consult | Post-Consult | P Value |
|---------------------------|-------------|--------------|---------|
| Pain Score                | 2.63        | 1.17         | 0.012   |
| Restraints                | 11.7%       | 3.3%         | 0.025   |
| Delirium                  | 18.3%       | 11.7%        | 0.10    |
| Falls                     | 1.7%        | 5%           | 0.32    |
| Loss of Function          | 88.3%       | 86.7%        | 0.32    |
| Inappropriate Medications | 70%         | 65%          | 0.93    |

Pain score values are based on 0-10 range. Geriatric syndrome values are based on the presence of the factor before and after the GPC consult

**Table 1:** Pre and Post Consult Main Results.

| Geriatric Palliative Care Recommendations | Percentage Followed |
|---|---------------------|
| Appropriate Placement                     | 94.9                |
| Delirium Management                       | 87.5                |
| Pain Symptom Management                   | 65                  |
| Non Pain Symptom Management               | 71.4                |
| Discontinue Medication                    | 13                  |
| Discontinue Inappropriate Medication      | 19                  |

Values based on the presence of a recommendation from the GPC team and the proof shown in the chart that identified whether the primary care team followed the recommendation. Appropriate placement is identified as referring the patient to skilled nursing facility, nursing home placement, or discharge home based on patients needs. Discontinue medication versus discontinue inappropriate medication refers to the presence of the medication on the Beers Criteria List

**Table 2:** Geriatric Palliative Care Recommendations followed by Primary Care Team.

1 K01 HP00137-02 respectively. The information or content and conclusions are those of the authors and should not be construed as the official position or policy of, nor should any endorsement be inferred by the DSCPH, BHP, HRSA, DHHS or the U.S. Government.

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