

# The ProHealth House Call Program: a unique care model for elders

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## **ABSTRACT:**

### **Background:**

As the elderly population continues to expand, it may be faced with inadequate access to healthcare. In order to circumvent this forthcoming dilemma, home based care programs are expanding and are in need of careful evaluation and further development. Bloomfield Internists, a ProHealth Physicians, Inc. practice located in Bloomfield, Connecticut, has created and is utilizing a unique house call program.

### **Objectives:**

This study sought to describe the components of the ProHealth House Call Program (PHCP) and the patient population it serves.

### **Methods:**

An observational study of the ProHealth Bloomfield Internists House Call program was performed using literature reviews, chart abstractions, provider interviews, and investigator participation in actual house call visits.

### **Conclusions:**

The PHCP is a unique “pre-palliative” house call program that has not been previously described. It is comprised of an advanced practice registered nurse (APRN)/primary care physician (PCP) team. The APRN performs routine preventative and follow up house call visits to patients who have substantial difficulties getting to an office visit. The APRN and PCPs then meet weekly to discuss patients. Patients who previously did not have access to primary care are now being seen and monitored more frequently. This patient population is also incredibly time-consuming due to their multiple health and medication issues. By being seen at home, more time is available in the office schedule for PCPs to see more patients in a day. These two observations suggest a financial benefit of the PHCP. In addition, providers have commented that patients and caregivers express improved satisfaction and quality of life in this program. Formal evaluation, including a cost analysis, patient and caregiver satisfaction surveys, and patient outcomes assessment, should be performed to investigate the benefits of the PHCP.

**BACKGROUND:**

The elderly population is one of the fastest growing populations in the United States. According to the CDC, by the year 2030, one in every five Americans will be an elderly person. With the increasing number of elderly adults, there will be an increased strain on the resources available for this population. As the elderly population continues to grow over the next decade, they will face the reality of inadequate accessibility to healthcare due to a continued preference of the elderly to remain in their homes; as well as insufficient nursing homes and assisted living facilities.<sup>1</sup> In order to provide adequate care to this growing population, the practice of medicine and pharmacy must adjust. One adaptation is the expansion of home based care programs.

Home care has been defined as “the provision of equipment and services to the patient in the home for the purpose of restoring and maintaining his or her maximal level of comfort, function, and health.”<sup>2</sup> According to the most recent Health, United States, 1,355,290 people were receiving home health care in the year 2000, with 70.5% of those being aged 65 and older.<sup>3</sup>

There are many types of home care ranging from homemakers, visiting nurses, laboratory services, as well as physician house calls. Elderly patients require a variety of types of care as well as various levels of care as they age and their health status changes. Home care is often the most desirable and economic form of health care for an older patient. Providing care to patients in this setting affords health care providers the opportunity to fully assess the patient’s health including their social well being and family support by being able to witness their living conditions and interactions with caregivers. By bringing the provider into the home, functional impairments, that often go unnoticed in a typical office visit can be identified.<sup>4</sup>

House calls are one component of home based healthcare in which a patient is seen by a physician, physician assistant, or nurse practitioner wherever they live; family home, skilled nursing or assisted living facility, or hospice house.<sup>5</sup> Although home based primary care programs accounted for 40% of all physician-patient encounters in the 1950s, only 30 years later, house calls decreased to less than one percent.<sup>6,7</sup> Most patients now interact with their physicians in either an office or hospital setting. This transition can be attributed to the increased concerns of liability, expansion of third-party payers, as well as the convenience and increased efficiency provided to the physician and the increased access to technology and specialist services for the patient that office and hospital-based medicine offer.<sup>6,8</sup> During the late 1990s house calls began to make a comeback for multiple reasons, including the patient’s desires to be seen in their own homes. Additionally, in 1998, Medicare reimbursement for house calls was increased by nearly fifty percent, which assisted physicians with incorporating this mode of care back into their practices. There are a number of reasons for making house calls, some of which include the patient’s inability to physically travel to the physician’s office, the need for observation of the patient’s environment, or the request of the patient or patient family member to be seen at home.<sup>3</sup>

ProHealth Physicians Inc. (hereafter referred to as ProHealth) was founded in 1997 and is the largest primary care physician group practice in CT. ProHealth includes almost 225 practitioners, including 55 Physician Assistants/Advanced Practice Registered Nurses. Practitioners concentrate in one of the following primary or specialty care divisions: Family Practice (71), Internal Medicine (77), Otolaryngology (1), Pediatricians (65), Pediatric Gastroenterology (2) or

Physical Therapy (8). Most of the practitioners concentrate in the primary care divisions of Family Practice, Internal Medicine or Pediatrics. ProHealth provides care to over 350,000 patients, or 9% of the Connecticut population, at 75 practice sites throughout Connecticut. The ProHealth network has developed a central organization and administrative structure that provides support for most practice business functions. These centralized services include billing, accounting, financial reporting, human resources, payer contracting, credentialing, medical management, quality assurance, ancillary service department, technology assessment, continuing education, and legal services.

The Connecticut Center for Primary Care (CCPC) is a 501c3 affiliate of ProHealth, established in 2002. The CCPC vision is to preserve and strengthen the delivery of primary medical care services and the health of our communities. The strategic mission for CCPC is to become a premier center for primary care research and for primary care quality and patient safety; and a catalyst for care coordination of disparate elements in the region's primary care system. In order to carry out its vision, CCPC has a number of goals that it aims to accomplish. These goals include:

- Identify best practices and establish evidence based medicine where it does not exist;
- Translate evidence based research results into everyday primary care practice;
- Prove (concept) optimal models of preventative, acute, and chronic primary care;
- Promote sustainable models of preventative, acute, and chronic primary care;
- Document ROI and outcomes from optimal models of primary care (PC);
- Empower patients to collaborate with primary care (PC) practitioners to further their health care goals; and,
- Serve as a conduit linking diverse, disjointed care with a common primary care "medical home" framework with a common goal of improving patient care.

The CCPC uses research and education to improve the health of patients in Connecticut and focuses on strengthening and preserving the delivery of primary care medical services in the various communities within Connecticut. It ultimately hopes to become a center for primary care research, primary care quality, and patient safety.

The Urban Service Track is a unique program at the University of Connecticut that addresses the health care needs of underserved communities and the under representation of minority and disadvantaged students entering the workforce. It is a collaboration between four health professional schools at the University of Connecticut, the Schools of Medicine, Dental Medicine, Pharmacy, and Nursing. The program enrolled its first class in 2007 and continues to enroll approximately 20 students per year. Students within the program, Urban Health Scholars, are exposed to real life interdisciplinary health models that are active within the state of Connecticut and learn how such models are established, developed, and continue to provide patient care. In addition to this, scholars receive inter-professional training and mentoring from health care professionals from the various disciplines and are able to enhance their training in urban community health facilities. Most health care professional students do not receive extensive knowledge about research methods or urban service training within their respective curriculums. Through participation in this program, Urban Health Scholars learn how to address the issues and challenges in providing care to underserved populations, the importance of working in

multidisciplinary teams and accepting each others disciplines, and the general terminology, rationale, scope, and sequence for evaluating a clinical based program.

Despite the existence of many studies surrounding the efficacy of home care, the results have thus far been controversial.<sup>6,9-19</sup> The methods utilized have been criticized since various models were compared that did not share similar interventions, or measure similar outcomes. Recent attempts have been made to improve the methodology of the systematic reviews, but even those analyses include models from multiple countries with various health care systems.<sup>10</sup> Efficacy research must focus on a particular model within the same healthcare system as opposed to home care programs in general, since each model has its own unique properties and different approaches to home care. It is vital to separate home care programs into their respective models in order to compare and contrast to other types of healthcare.

Currently there are multiple models of home care. Leff and Burton identify some of the models and separate them into distinct categories including interdisciplinary home care, home geriatric assessment, and post acute hospital home-based case management strategies.<sup>6</sup> However, overlap does exist between the models. One such model, the interdisciplinary home care model consists of a team of various disciplines working together to meet the needs of a patient.<sup>11-13</sup> The team usually consists of some or all of the following: social workers, nurses, physical or occupational therapists, pharmacists, homemakers, and a physician, nurse practitioner, or physician assistant. The goals of these programs tend to center around improving the functionality of patients, reducing hospitalizations and emergency department visits, and increasing patient and caregiver satisfaction with the healthcare they receive. Another model of home care is the in home comprehensive geriatric assessment model.<sup>14</sup> The comprehensive geriatric assessment is a tool utilized to assess geriatric patients who are chronically ill in order to create a treatment or care plan for the patient.<sup>15</sup> It can be performed in a number of institutional settings as well as in the home. The main components assessed are physical and mental health, social and economic status, functional status, and environmental conditions. The overall goals of this model are to prevent disability or nursing home readmissions in geriatric patients.

Several other homecare models focus on post-acute hospital home-based care management, including discharge planning and hospital in the home programs.<sup>16-20</sup> Discharge planning models revolve around care of the patient that begins prior to discharge and continues after the patient returns home. Some of these models focus on specific disease states,<sup>17,18</sup> while others address various conditions.<sup>16</sup> The main objectives of these models are to prevent readmissions to the hospital. With hospital in the home models, care also begins in the hospital, but the patient is “admitted” from the Emergency Department to his/her home as opposed to the hospital and hospital-like care is administered in the patient’s home. This model focuses on preventing complications that often occur in the elderly patients when they are treated in the hospital setting, including confusion and infections.

Lastly, the palliative care home model is another form of home care often utilized in the elderly patient population.<sup>21,22</sup> Palliative care is the unique method of administering physical, psychological, social, and spiritual support to patients of all ages who have life threatening illnesses. An interdisciplinary approach is used and includes but is not limited to physicians, nurses, and social workers who are specifically trained in this field. Other individuals that can be

a part of the administration of care, based on the patient's needs, include volunteers, chaplains, pharmacists, psychologists, home attendants, and bereavement coordinators. The goals of this model are to prevent and/or relieve any suffering that the patient, and his or her family, may be experiencing as a result of their disease burden and improve their quality of life for the duration of the illness. Leff and Burton do not address this last model, since it is not typically considered to be a home care model, but rather is usually discussed as its own form of healthcare.

Five years ago, Bloomfield Internists, a ProHealth practice site in Bloomfield, CT created a home based primary care program to address the specific needs of their elderly patient population. Some patients faced multiple obstacles in accessing care at the office and presented a need for receiving care while at home. Other patients preferred to remain at their home, especially at the end of life, instead of residing at assisted living or skilled nursing facilities. In addition, by providing care at home, this allowed practitioners to be able to assess patients living conditions firsthand and its direct impact on their health. In this particular model, the patient is recommended to the home health care program for various reasons. An APRN from the practice performs house calls where the patients living conditions are assessed, medications are reviewed, patients are interviewed and examined, and receive a corresponding treatment plan. The medical records of each patient are reviewed weekly with the patient's primary care physician and follow up is performed at subsequent home visits or over the phone. The specific objectives of this project are:

- To determine and document the components of the ProHealth House Call Program (PHCP) including patient selection criteria and care parameters
- To characterize the PHCP based on other existing model
- To begin preliminary evaluation of the program to determine if it meets national standards
- To determine whether it would be effective to incorporate a pharmacist into the program as a means to reduce drug related problems and medication issues
- To design standardized house call forms for the practice to use to facilitate patient enrollment and provider documentation.

**METHODS:**

In order to begin to describe the PHCP program, the investigators abstracted and analyzed data from the medical records of 25 PHCP patients, participated in house calls, and conducted interviews of the PHCP APRN, office providers, and staff members.

***Data Collection***

The study was approved by the University of Connecticut institutional review board. All patients enrolled in the PHCP were eligible for participation in this study. Over three hundred patients have been enrolled in the PHCP since its inception, but only the most current patient records are kept in the Bloomfield Internists office. Medical records of prior patients who have either transferred out of the practice or who are deceased (longer than) have been stored in archives and were inaccessible for the purposes of this study. For the purposes of this initial investigation and due to time constraints and a limited number of investigators, only twenty-five patient charts were utilized for the data abstraction. These patient charts were randomly selected, without provider bias, from the subset of patient medical records located at the Bloomfield Internists

office. All Personal Health Information (PHI) was de-identified by assigning numbers to each chart. Patient identifiers were kept in a secure location. Patient demographics, health care utilization, medications, disease states, and drug related problems (DRP) were obtained from chart abstractions. Patient care data from chart abstractions were compared to national quality-of-care standards in home-based primary care. The components of a typical house call were observed by investigators through participation in house call visits. Guidelines were created for the interpretation of chart information and determining pertinent parameters and recorded for the reference of future phases of this project. See Table 1.

### ***Interviews***

The development of the program, goals, referral practices, barriers, and suggestions for improvement were obtained from face-to-face interviews of providers and staff members of the practice. In total, four physicians, one physician assistant, one advance practice registered nurse, the office manager, coding expert, and the LPN associated with the PHCP were interviewed. One interview had to be conducted over the phone due to scheduling conflicts. The interview questionnaire is included. See Appendix 1. Each provider was asked the questions listed and was also offered the opportunity to add any additional information that they wished to share. The answers were either typed or hand recorded and then converted to electronic form.

### ***Study sites***

Interviews and chart abstractions were conducted at the Bloomfield Internists office in Bloomfield, CT. This practice specializes in Internal Medicine and also offers a gerontologist, as well as a Family Medicine trained Doctor of Osteopathy. There are 15 employees, including four physicians, one physician assistant, and an advance practice registered nurse. The office sees on average 60 patients each day. Data analysis and literature reviews occurred at the ProHealth, Inc. main office or at the University of Connecticut Health Center both located in Farmington, CT. House call participation occurred at various patient homes as well as geriatric communities, assisted living, and skilled nursing facilities in the Greater Hartford area.

### ***Outcomes***

Outcomes were collected in order to characterize the PHCP and the patient population. The outcomes included: sex; age; race; living/deceased; marital status; caregivers; length of enrollment in PHCP; number of hospitalizations, Emergency department visits, and office visits one year prior to entry into the program; number of hospitalizations, Emergency Department visits, and office visits after entry into the program; the type of office visit; number and type of specialists seen by patients; number of phone calls made to patient by providers; number of PHCP visits; referral reasons; referring provider; whether the initial PHCP visit was a consultation or screening; disease states; allergies; drug related problems (See Table 2); and medications. These were grouped into categories including patient demographics, usage of the PHCP, healthcare utilization, drug related problems, medications, and disease states. If documented, all chart thin dates were also noted.

Table 1: Interpretation Rules

Data Obtained	Interpretation
Start Date in HCP	The First House Call Visit (HCV)
End Date in HCP	The Last House Call Visit
Earliest Date in Chart	Oldest/First Office Visit form
Hospitalizations	Any hospital discharge form or mention of hospitalization in the medical progress note
Outside Resources	Includes but not limited to Home Health Care Recertification forms, Insurance forms, Medical/Surgical Supply Forms, Outgoing Letters from providers in the office, Skilled Nursing Facilities, Home Health Aides (Any initiated by APRN is an APRN Communication)
Type of Health Care	Specialists the patient may have seen (i.e. cardiologist, physical therapist)
<b>Office Visits:</b>	
Routine Follow Up	Follow up of 3 months or more, or follow up of a chronic condition (i.e. HTN, CHF etc)
Acute	Patient makes office visit because of an acute condition (i.e. cold)
Acute Follow Up	Patient makes office visit to follow up on the acute condition (usually documented as such in the note, may or may not follow acute visit). If a patient makes a visit to the office after the phone call in which an acute problem was discussed then that visit is an "Acute Follow Up"
APRN Follow Up	APRN sends patient to see PCP after seeing them to confirm/consult on an issue
Other	Office visit for any other reason that doesn't fit in the above (i.e. INR testing, pick up prescription hardcopies)
Telephone Calls	Only count telephone calls that say "spoke to patient" or something that indicates that there was a conversation with the patient/caregiver. Phone call logs that say FYI not to be included. Telephone calls in which meds are being ordered/changed are included in phone call logs if the prescriber speaks to the patient. If it doesn't say "spoke to patient" or shows that they had a conversation it's not to be included
Referral Reasons	Usually documented in the first house call visit, or previous office visit
Screening Visit	HCV performed for a specific issue/reason ( i.e. "Provider is looking to assess the patient's living conditions")
Disease States	All medical conditions documented in the "problem list"
<b>Medication Issues:</b>	
HCV with medication problem	Any HCV in which there was a medication change, dosage change, adherence issue, adverse effect issue, counseling, etc.
Current medications	Medications in the medication list or those listed in the most recent office/house call visit
Drug regimen review	Physician or APRN explains the indication and use of medication(s) with the patient.
DRPs	Only those during HCV were recorded.
Medication Adherence	Based on patient's medication list and visit in which the issue was addressed.

Table 2: Drug Related Problems (DRPs)

1.	Untreated indication(s) – patient is not receiving a drug for a condition that requires pharmacotherapy
2.	Drug use without indication – patient is taking a drug without an indication
3.	a. Subtherapeutic drug selection – patient’s condition is being treated with an insufficient dose of the appropriate drug b. Overdosage – patient’s condition is being treated with suprathereapeutic doses of the drug and may be experiencing toxicity
4.	Failure to receive drug – patient’s condition is the result of not receiving a drug
5.	Adverse drug reaction – patient’s condition is the result of an adverse reaction to a drug
6.	Drug interaction(s) – patient is experiencing a drug-drug,
7.	Improper drug selection – patient has a condition that requires pharmacotherapy but is receiving an inappropriate drug <ul style="list-style-type: none"> <li>• See Beers’ criteria (e.g. propoxyphene for pain, antihistamine to treat insomnia)</li> <li>• Inappropriate drug use includes the use of a medication that interacts with (or would be contraindicated in) a specific disease state.</li> </ul>
8.	Cost/adherence – patient’s medication regimen can be changed to equivalent agent(s) that enhance adherence and/or cost effectiveness <ul style="list-style-type: none"> <li>• Can meds be changed to combinations (e.g. Lipitor and Norvasc → Caduet, lisinopril and HCTZ to lisinopril HCT) to reduce pill burden?</li> <li>• Can meds be changed to once daily formulations (e.g. enalapril bid changed to once daily lisinopril, Lopressor to Toprol XL)?</li> <li>• Can meds be changed to more affordable options:                 <ul style="list-style-type: none"> <li>- various \$4/\$10 lists from pharmacies (e.g. Walmart, Target, Price Choppers, Stop and Shop). Note: Wal-Mart’s plan includes OTCs &amp; COCs.</li> <li>- Walgreens’ discount plan (requires \$20 fee/year)</li> <li>- prescription discount plans (e.g. AARP, AAA, rxoutreach.com)</li> <li>- manufacturers’ patient assistant programs (see pparx.org)</li> <li>- for chronic meds at stable doses, can change to mail order or 3-month supply to decrease from 3 copays to 1 copay</li> </ul> </li> </ul>

**RESULTS:**

***Patient Demographics***

The majority of participants in the PHCP are white female widows, with an average age of 85 years. Ages ranged from 62-98 years old in this study subset. According to the PHCP APRN the ages of the current patients in the program range from 43-100 years old. Twenty percent of the patients were either African American or Hispanic. Over half (56%) of the patients had professional assistance in their home, including VNA, skilled nurses, home health aides, 24 hour caregivers or lived in an assisted living facility. There were no deceased patients in the study subset. Three patients transferred out of the PHCP for various reasons that included requiring residence in a facility specializing in Alzheimer’s, need for skilled nursing facility, and desire to move closer to family. Almost a third (8/25 or 32%) of the patients saw at least three specialists in addition to his/her PCP. Over 75% (19/25 or 76%) of the patients live at home with the remainder living either in a skilled nursing or assisted living facility.

***House Call Program Utilization:***

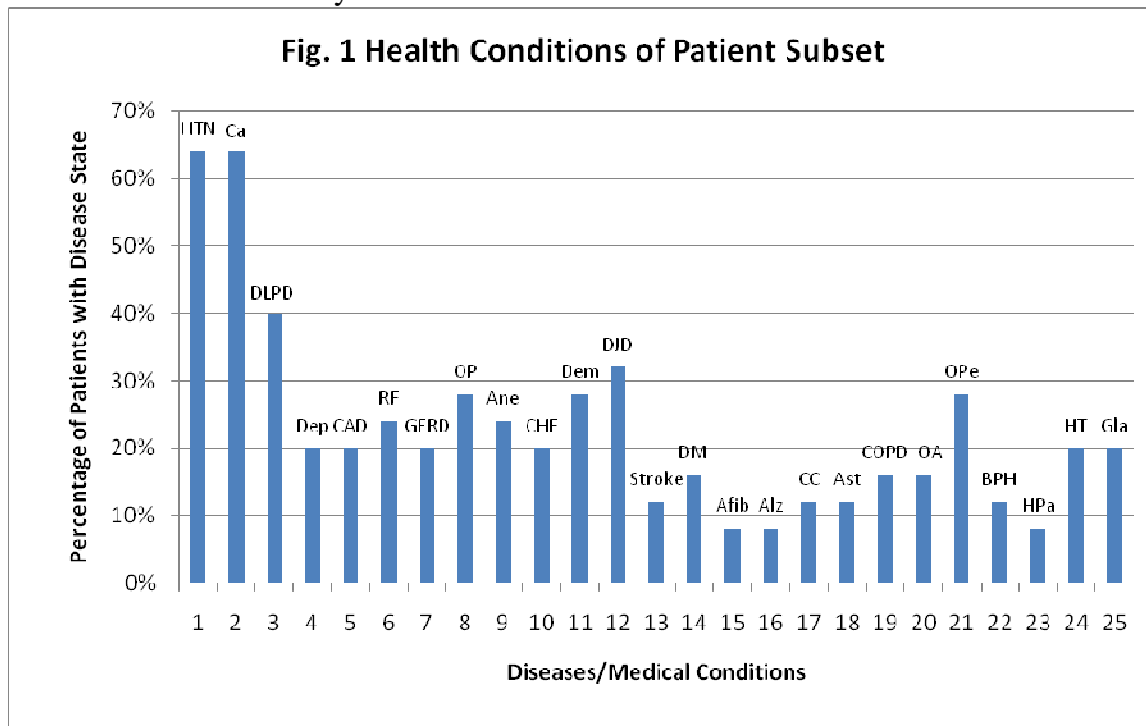
The patients in the subset included both new patients to the PHCP as well as patients who had been enrolled for years. The length of time in the PHCP ranged from less than a month to three years. The total number of PHCP visits that patients received during their enrollment ranged from 1-27. Almost half (12/25 or 48%) of the patients were referred to the program due to difficulty getting to the office. Eight out of twenty-five (32%) were entered into the program following a screening visit. The remaining patients were enrolled for various other reasons including patient request, follow-up after an office visit, and caregiver burnout.

**Healthcare Utilization:**

Patients in the PHCP vary in their degree of healthcare system utilization. The number of office visits one year prior to patient enrollment ranges from 1-16 visits and averages 5.96 visits. The reasons for office visits also vary among the patients. Five patients had more acute office visits than routine follow-ups. However, greater than half (14/25 or 56%) were seen at the office more for routine follow-ups visits than for acute reasons. Hospitalizations one year prior to PHCP program entry range from none to three at the most. Emergency Department visits range from 0-1. The number of telephone contacts patients had with their providers from one year prior to their entry into the PHCP to the present also varied among patients. The range of telephone calls was from 0-20, with the average being 4.8 calls per patient.

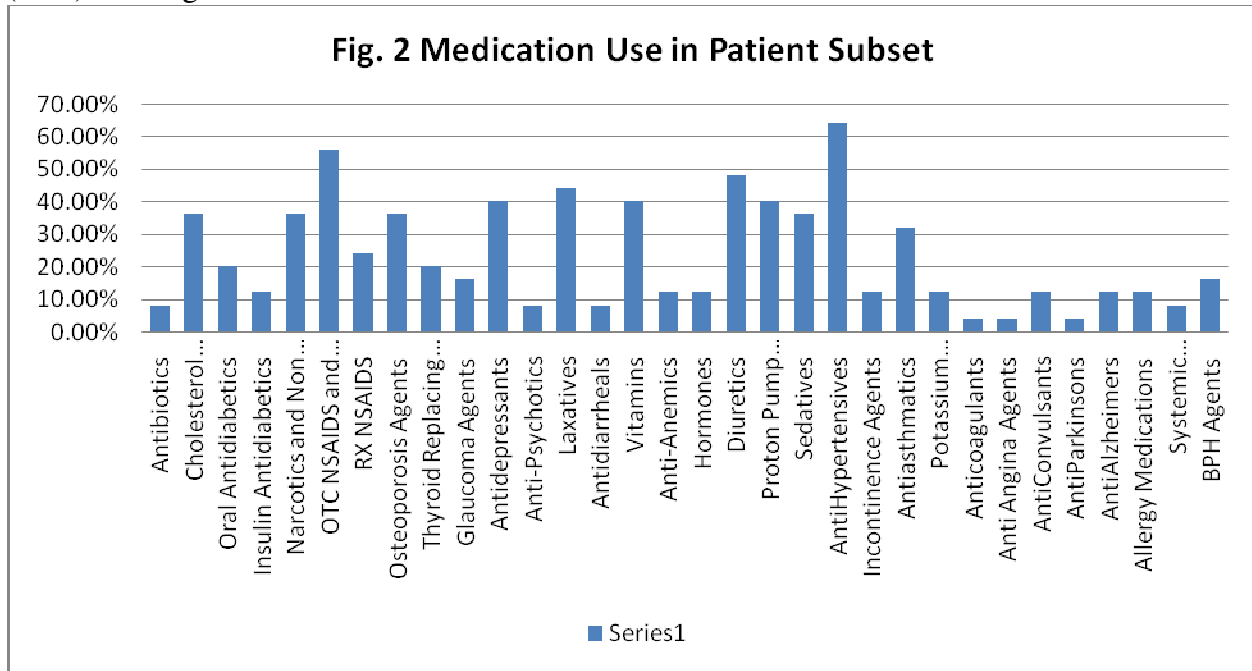
**Disease States:**

Sixty-four percent 16/25 of patients have hypertension documented as a medical condition. 16/25 64% Sixty-four percent have a history of cancer documented in their medical record of various types including ovarian, breast, skin, colorectal, and prostate. 40% 10/25 have dyslipidemia. Each of the following disease states: depression, coronary artery disease, renal failure, gastroesophageal reflux disease, osteoporosis, anemia, congestive heart failure, dementia, and DJD, was documented in at least five patients or twenty percent of the subset. See Figure 1. Other diseases recorded but that occurred in less than 20% of patients are a history of: stroke, diabetes, atrial fibrillation, Alzheimer’s, chronic constipation, asthma, COPD, osteoarthritis, osteopenia, benign prostatic hyperplasia, and hyperparathyroidism. Although other disease states are listed in patient medical records, unless at least one other patient shared the condition it has not been recorded for analysis.



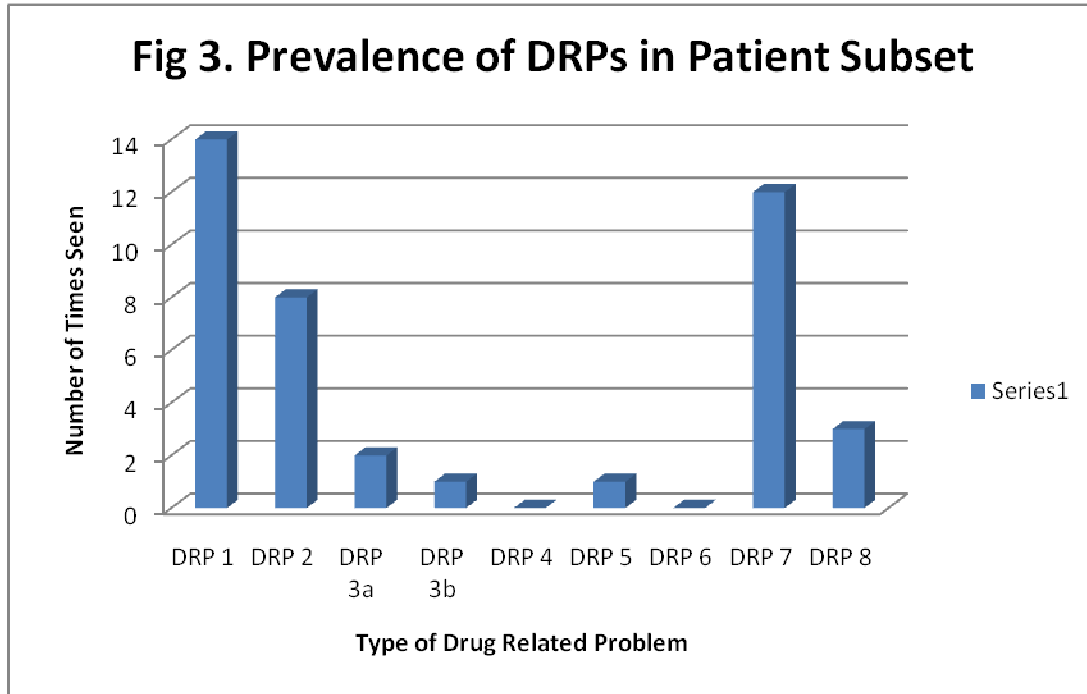
**Medications:**

Sixty-four percent (16/25) are two or more medications for the same medical condition. Of note, two patients of this group were on twenty medications. Sixty-four percent 16/25 were on at least ten medications. More than fifty percent 64% of patients are on a medication for hypertension. The majority (56%) of patients are taking an over-the-counter non-steroidal anti-inflammatory. At least forty, forty to forty-eight percent of patients are taking an antidepressant (40%), over-the-counter vitamins/minerals (40%), proton-pump inhibitors (40%), laxatives (44%) or diuretics (48%). See Figure 2.

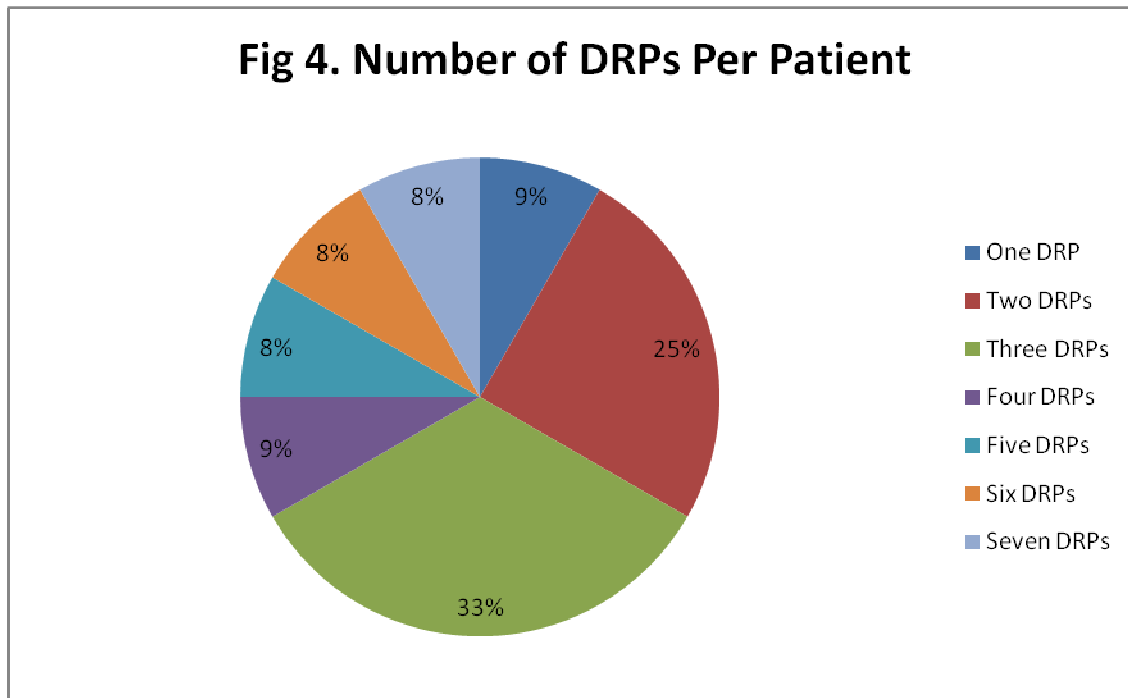


**Drug Related Problems:**

Thirteen of the twenty-five charts reviewed for this study were also reviewed for the presence of drug related problems (DRPs) while enrolled in the house call program (See Table 2 for the description of each DRP). The most problematic DRP among the patient subset was untreated indications, occurring fourteen times. Improper drug selection was the second most problematic DRP occurring twelve times in the patient subset. The DRP that occurred eight times was the use of a medication with no indication. Of all the DRPs the ones that were the least problematic were drug-drug interactions and failure to receive a medication. These two did not occur at all. See Figure 3.



The average number of drug related problems per patient was 3. Four of the thirteen patients had 3 drug related problems (31%). Twenty three percent of the patients (3/13) had at least two drug related problems. Five patients had either one, four, five, six, or seven drug related problems. Only one patient had no drug related problem, and this patient was only seen once as a house call patient. See Figure 4.



**DISCUSSION:****Program Development**

The ProHealth House Call Program (PHCP) grew out of the Bloomfield Internists practice. The PHCP began in the Fall of 2002 as a discussion between the gerontologist and APRN based on observations they had made of their patient population. Out of the providers in the practice the APRN was most interested in undertaking the role of the house call provider. Unfortunately, due to health issues, the program was postponed and began one year later in the Fall of 2003. Initially, the APRN began seeing many of the patients that she had previously seen in the office in their home along with some of the gerontologist's referrals. In addition to performing house calls, the APRN continued to see patients in the office. As the program became more well known to the other providers in the practice, some of which had previous experience in making house calls themselves, the patient population grew from increased referrals and the APRN was designated to making house calls only.

One of the major observations made by the gerontologist and APRN were that many of their patients had difficulties getting into the office; they were frail and had undergone significant decline over the decades. In addition to their physical limitations, fewer family members were able to accompany them to visits. Once in the office, these patients also required substantial amount of staff and provider time to accomplish the goals of the visit. When seen at the office, removed from their comfort zone, elderly patients sometimes became disoriented and frightened, making the office visit an unnecessary stress in their life. Aside from this, patients "buffed and puffed" prior to their office visits in an attempt to paint a picture for the provider that did not accurately reflect their true health status and normal hygiene practices. Medication adherence was also, at times, inaccurately reported in an office visit. Patients had trouble remembering what medications they took and how to take them. They sometimes assured the provider that they were adherent and had no medication issues in an attempt to please the provider, regardless of the true situation. Another observation made, was that many of their patients had reached a point in their lives where they no longer valued diagnosis and treatment as much as the preservation of their quality of life. Although these patients were not "terminal" and would not be eligible for palliative care, these "pre-palliative" patients did not necessarily benefit from repeated testing, multiple office visits, or initiating medications for new indications and had a desire to stay at home for the remainder of their lives.

**Goals of the Program**

The goals of the program were to meet an obvious need that they identified in their elderly patient community. They sought to offer quality care to the frail elderly with the patients' best interests in mind at all times. Secondly, they aimed to assist in keeping patients at home and out of the hospital if that was their desire. The APRN and gerontologist agreed that they would be offering more preventative care rather than crisis care. The treatment goals in this population became the maintenance of their health status, prevention of decline, and improvement in their quality of life. From the financial perspective, the practice aimed for at least a cost neutral program.

**Current Program Description****Discussion of the PHCP with Patients**

The physicians in the practice only discuss the PHCP with patients who they have identified as a good candidate for the program.

***Patient Eligibility***

Patients who may be considered for the PHCP are all patients of the Bloomfield Internists practice who have been seen at the office on at least one occasion and have a significant need for referral to the program.

***Reasons for Referral***

Patients are referred to the PHCP for a variety of reasons. The most common reason, by far, is a patient who has difficulty getting to an office visit. This may be due to physical limitations or social reasons. Many elderly patients have severely impaired mobility and transporting them to a physician’s office often requires considerable effort on their part as well as one or more other persons to assist. Various disease states may also leave a patient homebound. In addition, many elderly no longer drive due to medical conditions that impair their sight, judgment, or response times. If family or friends are not available, or public transportation is not accessible or affordable, many patients are not able to get to the office. Patients who have entered into palliative care programs become participants of the PHCP, if they have not already been. Other reasons exist for PHCP referral, however, including a provider’s desire to obtain information regarding a patient’s home environment. A provider may be suspicious if a patient has multiple no shows or cancellations. The safety of a patient’s home may come into question including conditions that may increase fall risk, abusive situations, caregiver burnout, or hygiene practices. Patients also hear of the program by word of mouth and occasionally request participation in the PHCP themselves. As the community is increasingly aware of the PHCP, many Home Health Agencies are also generating referrals. Patients must however, be a member of the Bloomfield Internists practice and be seen there before they are eligible for the program.

One physician explained his considerations when evaluating patients for the PHCP by an equation relating components of a patient’s physical, social, and quality of life concerns with their candidacy for the PHCP.

$$\text{PHCP candidacy} = \frac{\text{Hassle factor} + \text{Mental status change} + \text{Provider suspicion}}{\text{Diagnostic benefit}^4 \times \text{Therapeutic benefit}}$$

Where hassle factor includes the risk of injury, expense, and cost of caregiver’s time involved in the transportation to the office. Mental status change refers to the negative impact of changing venues or disorientation associated with removing an elderly person, especially one with dementia, from their home environment. Provider suspicion is that he/she is not seeing the entire picture of the patient including home conditions such as medication adherence, poverty, or abuse.

Diagnostic benefit is:  $\frac{\text{benefit of an office visit}}{\text{benefit of a home visit}}$

Therapeutic benefit refers to the relative therapeutic value of a treatment a patient may receive.

For example, Mrs. X, a 30 year old female with a lump in her breast, would benefit highly from an office visit during which she would be referred to diagnostic imaging for further evaluation.

Upon the diagnosis of breast cancer, the therapeutic benefit of treatment would be high for her, given her age and the early discovery. This patient does not have transportation issues, but does take care of two young children at home. She is not at risk for mental status change and the provider has no suspicion regarding her home life. The equation would therefore have a high diagnostic and therapeutic benefit that far outweighs any hassle factor that may be present, thus making the overall candidacy for enrollment in the PHCP very unlikely.

Mrs. Y, however, is an 85 year old female also with a lump in her breast. She is wheelchair bound, has a history of dementia, and her physician is unsure if she is able to care for herself. Given her age, the hassle factor, disorientation potential, and provider suspicion may be far greater than the diagnostic and therapeutic benefit compared to that of Mrs. X, thus making her a better candidate for the PHCP.

This equation should not be applied in the literal sense but merely illustrates one provider's rationale in evaluating PHCP candidacy.

### ***Referral Procedure***

Once a candidate has been identified for the program, many referral procedures exist. For example, the providers may communicate the referral to the APRN in person, by email, or via phone. Other providers record their recommendation in the patient chart or on the patient bill. The chart may also be sent either to the office manager or directly to the APRN in order to enroll the patient and schedule appointments. The staff members also suggest referrals if they identify a potential patient. Once notified, the APRN will then review the chart with the PCP and they will evaluate the need for PHCP. The APRN also routinely visits each provider to ascertain whether any new patients have been identified. Recently, a new spreadsheet was added to the Bloomfield Internists computer system that records cancellations and no shows by patient; if more than one occurs, the patient chart is flagged. His/her medical records are reviewed and the patient may be referred to the PHCP or potentially discharged depending on the reasons identified. Several of the providers and staff members expressed interest and enthusiasm for a standardized referral form to be completed by a provider or patient that could facilitate the referral process.

### ***Anticipation of Length of Enrollment:***

Currently, the referring provider determines a patient's length of enrollment in the PHCP. There are varying opinions among the referring providers as to what the enrollment should be. The majority of providers refer patients to the PHCP with the anticipation that their enrollment will last for the remainder of his/her life. This was the original intention of the program at its inception. Another type of enrollment that has been observed is a one time visit by the APRN at the request of the physician, as a consult, for the purpose of gathering information that is unattainable at an office visit. Termed an "expedition visit" by one provider, this type of visit allows the physician to discover issues that may be present at home through the eyes and ears of the APRN. Although the PHCP was not originally intended for this purpose, the gerontologist found this type of visit to be incredibly beneficial to the care of patients. One provider suggested that patients recently discharged from the hospital would also benefit from this program. Close follow-up upon discharge may decrease the re-hospitalization rates of these patients. This type of PHCP candidate would require the services of the PHCP temporarily until his/her condition improves or resolves. This can be seen in the current PHCP to a certain degree. On occasion, a

patient is entered into the program following an injury or hospitalization that renders them unable to get to the office. Upon recovery they may become well enough to return to the office but since this temporary enrollment does not formally exist, there is no method in place to discharge these patients from the PHCP and they continue to be seen at home. In general, three enrollment categories potentially exist, including permanent enrollment, a one time enrollment for a “consult” visit, and a temporary enrollment for the duration of a patient’s rehabilitation following an illness.

Although the program was designed for maintenance and follow up as an alternative to office visits, some patients in the PHCP are still seen at the office for a variety of reasons. Acute conditions still require that the patient comes into the office; the APRN’s availability is limited and does not always allow for last minute additions. Some patients are seen in the office by their PCP and then by the APRN in the PHCP on an alternating basis. This “tag-team” approach can be beneficial to some patients but may not always be necessary and raises the concern that some patients are being provided with a service that they may not need. By reserving time for these patients, the PHCP resources are potentially more strained and less available to see the patients that truly cannot get into the office. Another reason a patient may return to the office following PHCP entry is if a patient has had a significant change in their condition and the APRN suggests they be seen at the office if at all possible to allow the PCP to assess the change first hand. Although rare, some patients will chose to return to seeing their physician at the office. This is often due to the patient-physician relationship they have established, or the social aspect of leaving the house to visit the doctor.

Due to the variability in length of enrollment, utilization of office visits after enrollment, and the limited resources of the PHCP, the practice would like to solidify enrollment and discharge guidelines based upon the needs of their entire patient population.

### ***Patient Notification***

Patients are notified of enrollment in the PHCP in a number of ways. Some practitioners discuss the prospect of the program with patients and families during an office visit. Other practitioners choose to call their patients to inform them. One physician provides an announcement flyer to his patients that are potential candidates either presently or in the near future. See Appendix 2. This proactive approach enhances patient understanding and acceptance of the prospect of being seen at home.

### ***Delivery of Care***

The APRN perform routine preventative and follow up house calls on three days of the week, Monday, Tuesday, and Thursday. Five patients are scheduled into approximate time slots per day. Patients are scheduled based upon their geographic location to minimize travel time. The areas of Connecticut served extend as far north as Enfield, south as Wethersfield, east as Vernon, and as west as Unionville. Patients are notified by mail of the date of their appointment and are contacted via telephone the day before the visit with an approximate window of time in which their visit will take place. The house call visit includes: history taking, physical exam, a thorough medication review, safety and home assessments, gait analysis, patient quality of life and comfort discussions, coordination of care, and patient and caregiver counseling. Typically fifty percent or more of the visit is dedicated to counseling. In addition, the APRN provides a vital

communication outlet for the patient to share and discuss any updates in their personal lives, which allows the APRN to gain an in depth understanding of each patient. The APRN has made herself available to patients at all hours of the day by cell phone. In addition to the scheduled patient visits, the APRN often sees patients, coordinates care, reviews test results, or updates patient records on her days off. Communication between the patients, their families, pharmacists, or other healthcare providers and the APRN is coordinated by an LPN in the office.

***Patient descriptors***

The providers and staff members described a typical patient in the PHCP as a frail elderly patient in their 80s to 90s who has substantial difficulty getting to the office and may or may not be homebound. Typically the patient has multiple debilitating and chronic health conditions that add to his/her impaired ability to get into the office. Some common conditions shared by these patients are cardiac disease, diabetes, arthritis, COPD, CHF, and renal failure. These patients often have several comorbidities and polypharmacy that complicate their care. Additional patient descriptors were identified based on chart review data abstraction and analysis. See Results section.

***Benefits of Program***

There are a number of benefits that the PHCP provides. For many patients, a home visit removes unnecessary stress associated with an office visit, including the effort and time it takes to prepare and travel to the office as well as the unease created by leaving one's comfort zone. It should be noted however, that this is not a program of convenience; it truly serves to bring services to patients who might otherwise "fall into the cracks" and not be seen or monitored. Another significant benefit is that the PHCP generates the opportunity for a provider to gain an accurate picture of the patient in his/her own environment. By coming into a person's home, the patient and his/her living conditions can be assessed which helps in evaluating his/her overall health status and influencing factors such as medication adherence, safety, poverty, and poor hygiene or nutrition. This setting allows the APRN to not only make suggestions for changes but also to follow up on their implementation to prevent future injury or disease exacerbation and improve quality of life. This program often establishes end of life communication between the provider, patient, and family while the patient is still able to express his/her desires to ensure that when a patient's health declines all care decisions will be made in the interest of the patient. Lastly, patient and caregiver satisfaction seem to be much improved with those participating in the PHCP, although further investigation is needed to quantify this observation.

***Communication between providers***

Continuity of care is ensured by continual communication between the APRN in the PHCP and the PCPs. Two of the providers who refer the majority of PHCP patients have scheduled weekly meetings with the APRN to discuss the patients seen the week prior. The providers who have fewer patients in the PHCP meet on an as needed basis either in person or via phone or email within a week of their patients being seen. The APRN values the feedback she receives at these meetings as they are a vital component to the interdisciplinary care she delivers to the patients. The APRN and LPN are in constant communication. The two coordinate the delivery of care for patients and their families, which often involves home health agencies, pharmacies, laboratories, and specialists.

***Financial Considerations***

Although, no true financial analysis was performed, many considerations can be mentioned. Many previous studies concentrate on the outright costs of a house call program, but do not address the potential financial benefits. Prior to the start of the PHCP, many elderly patients were no longer being seen in the office. When these patients were enrolled into the program, revenue was generated from the house call visits. In addition, seeing these patients at home, frees up office visit slots which allowed the practice to begin to expand to see new patients as well as more patients in general in a day. Currently, this practice is unable to bill for the numerous phone calls received and returned by providers to patients both in the office and enrolled in the PHCP. It would be beneficial to consider pursuing reimbursement for this additional time required for patient care outside of the office. Conversations with coding expert revealed that billing for the PHCP was similar to that of an office visit and is reimbursed substantially. Each house call visit is reimbursed at a higher rate compared to that of an office visit, however, house call visits require more time and therefore less house calls can be completed each day. The PHCP APRN is reimbursed for her mileage and the cell phone is provided. The practice currently believes that the PHCP is cost neutral. Further evaluation is required to determine if this is valid.

***Compared to other models***

The PHCP is a unique house call program that shares certain similarities with current models in existence. The investigators have defined this program as a “pre-palliative” program, not previously described, that utilizes a multidisciplinary geriatric-focused approach.

One interdisciplinary model of home care that has been previously analyzed was comprised of a physician, APRN, and social worker. The group advertised their program to health professionals and the community in order to recruit patients into the program. The physician completed the initial assessment and then preformed any follow up visits as needed. The APRN also completed follow up assessments as well as emergency visits. Their study revealed that the patients in this program experienced fewer hospitalizations, nursing home and outpatient care, had higher caregiver and patient satisfaction, and were more likely to remain at home until their death compared to those patients who were not entered into the program. Although not significant, the overall cost to the patient per day was decreased as a result, despite the fact that these patients also utilized more in home services.<sup>13</sup> The multidisciplinary approach of the PHCP also allows for a team based method in the delivery of patient care. The APRN, PCPs, caregivers (including but not limited to families, case managers, skilled nurses, home aides, and residential facility staff) and patients work together to develop a healthcare plan customized for that patient consistent with his/her goals. The PHCP patient population originated from within the practice as opposed to that of the above model which was recruited from the community. One benefit of the PHCP model is that the house calls were designed as an additional service to patients who have already established a trusting relationship with a provider in the practice. Therefore, the practitioners involved in the patient care team and the patient are familiar with one another, facilitating the delivery of care. The PHCP does not currently offer acute services, as it focuses more on prevention and maintenance.

Stuck et al presented a trial of an in-home comprehensive geriatric assessment model.<sup>14</sup> In this model, gerontologic nurse practitioners preformed comprehensive geriatric assessments in a patient’s home and then consulted with a study geriatrician to create a care plan. A three month

follow up was completed. Their patient population was obtained by phone solicitation of individuals aged seventy-five and older living in a particular city. They assessed functional and mental status, oral health, gait and balance, medications, body weight, safety, vision, hearing, as well as social aspects of life. The study found that this program delayed the development of disability, increased functional status, and reduced the number of permanent nursing home stays for patients in the program.<sup>14</sup> One of the providers involved in the development of the PHCP is a gerontologist whose training is extensive in addressing the needs of this patient population. His expertise in geriatrics led to the incorporation of various aspects of the geriatric assessment into the house call visit. As a result, the PHCP is primarily geriatric-focused. Unlike the in-home geriatric assessment model, the PHCP has a gerontologist within the practice as opposed to having an external consultant. In addition, the above model admitted that the house care providers rarely communicated with the patients' PCPs, which is a key component of the PHCP.

Another model that must be considered in comparison to the PHCP is the in-home palliative care model (IHPC).<sup>22</sup> This model focuses on pain management, comfort care, and other aspects of hospice care from which it evolved. However, patients are allowed to continue curative treatments. The care team includes a patient, family members, physician, social worker, and nurse. Patients were assigned a palliative care physician who preformed home visits and was responsible for the coordination of his/her care; however, the patient's PCP was still involved with patient care. These visits consisted of medical, physical, psychological, social, and spiritual assessments. The IHPC study included patients with COPD, CHF, or cancer who had a life expectancy of less than twelve months. Patients were referred to the program by discharge planners and physicians. The results of this study were reduced medical costs at the end of life, increased likelihood to die at home, increased patient satisfaction, and reduced emergency department visits and hospitalizations.<sup>21</sup> Similarities exist between the IHPC model and the PHCP. Both programs deliver their patient care in the home and utilize a team approach in assessing multiple aspects of a patient's health. Just as in the IHPC, the PCP in the PHCP remains involved in the continual care of the patient, but another provider, the APRN of the PHCP or the palliative care physician of the IHPC, functions as the primary coordinator of care. Unlike the IHPC, the PHCP offers services to patients who may have many or a few years to live and may or may not be facing a terminal illness. The APRN of the PHCP has even described her role as "keeping people better until palliative care." This comment summarizes what has been observed about the program.

The PHCP, a "pre-palliative" program, attempts to balance a patient's wishes and quality of life with diagnostic testing and treatment options. Patients are explained the reasons for various tests and screenings procedures, as well as the risks and benefits associated with them and the treatments or consequences associated with any potential diagnosis. For example, if a test is required to determine a diagnosis for a patient, but the potential diagnosis may require surgery and/or other treatments, a patient who has expressed that he/she no longer desires any surgeries or debilitating treatments would be offered a thorough discussion with the APRN regarding the options available to the patient. The patient would be able to make an informed decision that may include a refusal of the test. Since the APRN is a first-hand witness to the complete picture of a patient's particular situation she is better able to address and assist a patient with understanding his/her specific risks and concerns. Recommendations are made according to

standards of care, but the patient is empowered, as a member of the multidisciplinary team, to make decisions and care is provided with the patient's interests first.

The focus of the PHCP on quality of life and patient wishes resembles the model of palliative care. Palliative care programs are offered to patients upon the diagnosis of a life-threatening illness or debilitating condition. These are not, however, factors used to determine candidacy for the PHCP and therefore, in this respect, the program would not be consistent with palliative care models. The PHCP offers patients the options of a palliative program based on their request and not based upon their disease status. As palliative care evolved from hospice care to encompass patients whose life expectancies extended beyond that window, our model can be viewed as an expansion of palliative care that encompasses patients who may or may not traditionally be eligible for palliative care due to their health status. Patients within the PHCP, who do not have life-threatening or debilitating conditions, also receive health care based upon the improvement of their quality of life with respect to their personal wishes, supporting the idea that this is a "pre-palliative" program. These patients may be "headed down the road" towards traditional palliative care, but they are "not there yet."

A future area of focus for the PHCP that was suggested was to address management of patients discharged from the hospital. Models currently exist with this focus. Discharge planning programs begin while the patient is still in the hospital and either enroll patients being discharged in general,<sup>16</sup> or patients with a particular disease state.<sup>17,18</sup> One program was led by a gerontological APN who saw patients within 48 hours of admission in the hospital and prepared a discharge and home follow up plan for each patient.<sup>16</sup> Patients were then seen every 48 hours until discharge, within 48 hours post discharge, 7-10 days later, and then as needed. Weekly telephone contact was made with patients but the APN was not accessible at all times. Collaboration with the patient's physician did occur. This model also focused on multiple aspects of patient's over health including social support, counseling, and education. This study resulted in less readmissions overall, and if a patient was readmitted he/she was not as likely to have multiple readmissions, leading to savings in Medicare reimbursements for total health services. No difference however was noted in acute care, functional status, or patient satisfaction.<sup>16</sup>

Aspects of this model may find a place in the PHCP, but given the promising result of the above studies, future evaluation of the PHCP in regards to similar outcomes should be completed first before this is attempted.

### ***Barriers***

Certain barriers have been identified by the staff and providers surrounding the PHCP. Some of these included conflicts with patients and/or their family members. These are by far the rarest, but occur due to unavoidable personality conflicts, a patient's inability to recognize his/her true health status, and just as in the office, the patient may continue to be a poor historian. Family members can be incredibly helpful in the care of a patient, but can sometimes hinder a patient's care if they disregard the recommendations of the APRN and choose not to participate in the team approach to care.

Scheduling conflicts also commonly arise. The majority of the elderly patients in the PHCP do not want to be seen in the early morning or around meal times, especially if they live at a care

facility with scheduled meals. The APRN also attempts to schedule visits when family members can be present and when she will not interfere with other home care provider visits. Although, every attempt is made to schedule patients according to their geographic locations, this is not always possible, however, and sometimes the APRN must drive long distances between visits. Similar to office visit “no shows,” the APRN sometimes arrives at a household to find that a patient is not present for various reasons or refuses to be seen.

Another obstacle to the PHCP is the lack of education surrounding the PHCP available to patients, other providers, and the community. Some providers are still being introduced to the program and its benefits and therefore have not been able to provide their patients with information about the program or recommend many referrals. Some patients do not completely understand the PHCP and its purpose and therefore are not as open to enrollment. Patients are sometimes confused that it is not an acute or emergency program and do not comprehend that the APRN is an extension of the practice rather than a substitute. Improved education among providers in the practice would facilitate the education of the patients as well as the community regarding the PHCP.

As was described previously, multiple referrals reasons and procedures are currently being utilized by the various providers. This may result in patients becoming enrolled in the PHCP who may not require these services and patients that would benefit from this program being overlooked.

As there are multiple individuals involved in the care of one patient, miscommunications often arise during the delivery of that care. Messages may be delivered in an untimely manner and may be misconstrued due to the fact that multiple parties are involved in the propagation of that message before it reaches the pertinent party.

One of the most important barriers that must be addressed is the potential for practitioner burnout. Currently, only one APRN is responsible for the care and management for the entire patient population in the PHCP. Although, working closely with other providers and members of the health care team this is still an incredible volume of patients to be responsible for. Despite her scheduled hours, more time is always needed and given to care for the patients. There is no additional compensation for this extra time. This presents an obstacle when considering replication of the PHCP at another office or the continuity of the PHCP at its current site.

***Improvements/Recommendations:***

The investigators of this project identified several recommendations based on concerns expressed by staff and providers as well as through direct observations of the PHCP. It would be beneficial for the PHCP to consider implementing these recommendations in order to improve the PHCP.

To improve patient and provider education it is recommended that more discussion should take place amongst the staff and patients about the PHCP. Time during monthly meetings should be allotted to discuss the current program and address any issues or questions that may not be obvious. An informational brochure should be created for the office so that patients can read about the program and potentially inquire about it to their provider. It would be beneficial to

have a formal presentation of the PHCP available for use with new employees, providers outside of the practice, and potentially for the community if more PHCPs are created.

Standardized procedures for the PHCP should be created in order to facilitate the operations of the current program and allow for it to be adopted by other practices. A referral procedure should be created in order to facilitate enrollment of the proper patients for the PHCP. This includes both solidifying referral reasons among providers as well as incorporating a formal notification system to inform the office staff and PHCP APRN of new enrollees. One approach may be to separate patients into three enrollment categories based on their need for PHCP services, realizing that patients may move throughout these categories depending on changes in their health status. Patients who are identified for life-time enrollment would represent a distinct category from those identified as one-time or short-term patients. Along these same lines, discharge procedures for the PHCP should be standardized so that patients no longer requiring PHCP services do not tie up resources from others. Patients should be educated and informed of their particular status, at all times, to further facilitate discharge.

Other practices interested in starting their own PHCP should do so based on the particular needs of their patients. It would be most beneficial if an APRN or PA already working in the particular office took on the role of coordinating the PHCP; this would allow for better communication and coordination of care with providers in the office because of an already existing working relationship. The office should keep in mind the prospect of hiring additional practitioners if the patient volume mandates this. Just as most practices assign an MA to each physician, a partnership must be created between the PHCP provider and an assistant at the office. The provider most qualified for this position would be one with substantial experience with geriatric patients and social work.

The PHCP and others would benefit from a detailed cost analysis. Although many studies address the costs of a program as well as savings a patient receives when care is administered at home, few analyses include an investigation into the potential revenue generation of such a program.

Collaborations exist between medical schools, residency programs, and house call programs that help to defray some of the costs associated with such programs.<sup>23,24</sup> This program would benefit from initiating collaboration with the local medical, pharmacy, and nursing schools. This may prove beneficial to both the PHCP financially, as well as the schools in being able to offer training programs in the administration of home care or in interdisciplinary team training.<sup>25</sup> In addition, affiliation with community health systems may also afford future success.<sup>26</sup>

The investigators support ProHealth's initiative to transition all offices to an electronic medical record system to facilitate the coordination of patient care as well as further data collection and analyses of the PHCP.

In the current PHCP, a potential for practitioner burnout exists. It is recommended that due to the growing PHCP patient population, additional providers be hired to assist with the increasing workload.

***Medical Forms***

A screening form was created to be given to patients/caregivers or administered by a medical assistant. See Appendix 3. The parameters in question covered activities of daily living (ADLs),<sup>27</sup> instrumental activities of daily living (IADLs),<sup>28</sup> falls, an important geriatric condition,<sup>29</sup> and other concerns regarding mobility that were expressed by staff, provider, and primary care expert interviews. Patient notification and provider notification forms were developed in order to facilitate patient and provider understanding of status in the program and to expedite entry into the program and appointment scheduling. See Appendix 4, 5. Lastly, a patient discharge form was created in order to notify patients and increase provider awareness of discharge reasons, to promote the discharge of patients who are no longer eligible or benefiting from the program in order to reserve resources for those patients truly requiring these services. See Appendix 6.

***Pharmacy***

The incorporation of a pharmacist into the PHCP could serve to benefit both the patients and providers in many ways. They would be a benefit to the providers in that they could potentially reduce the number of drug related problems that arise among patients of the house call program. Currently medication issues that arise are left to be resolved by the APRN and the patient's PCP. However, as pharmacists are drug experts, they can provide information, on a consulting level, to aid in resolving any existing or potential drug related problems. As well as being a benefit to the providers, patients may also benefit from the utilization of a pharmacist in the PHCP. Some patients had more difficulty than others in following their drug regimen. If these patients are identified, a pharmacist can step in to further investigate the source of the problem and work closely with the patient to resolve it.

***Application of National Quality of Care Standards:***

The Home-based primary care quality initiative (HPCQI) adapted quality indicators from the Assessing Care of Vulnerable Elders (ACOVE) project.<sup>1,30,31</sup> Originally the investigators intended to compare these national standards of care to the patient care provided by the PHCP. Six patients from the 25 patients selected for the PHCP project were analyzed. It was found that these standards cannot be applied to the PHCP program for many reasons. In particular, this patient population contains many advanced dementia or poor prognosis patients and therefore only a subset of quality indicators may even apply.<sup>32</sup> The PHCP also has very different patient and provider goals from those of the ACOVE and HPCQI. Also, it was difficult for investigators to obtain the data required to apply the quality indicators from chart abstraction alone due to the PHCP's current documentation practices. Lastly, it was discovered on further investigation of the origins of these quality indicators that their usage was originally designed to assess healthcare systems on a large scale and that they were not intended to be applied to one particular practice or practitioner.<sup>30</sup>

***Limitations of the study***

Several limitations were identified during the course of this study. The majority of limitations surrounded the chart abstractions. It was discovered that the Bloomfield Internists office archives charts of patients who have subsequently transferred out of the practice or who have passed away. Therefore, although over three hundred patients have been treated in the PHCP, only a subset of charts remained in the office and was available for this project. In addition, some of the

remaining charts had been “thinned” and the removed records were also archived. This made it difficult to analyze data for a specific time period since some of data were missing. The PHCP charts were also kept in multiple locations within the office and were sometimes difficult to track. Numerous charts lacked updated medication and problem lists, which made it difficult to ascertain true disease states and treatments.

Throughout the duration of the project, the investigators participated in house call visits; although, this allowed for the thorough characterization of the program, it impaired the investigators ability to remain objective after witnessing the benefits and interacting with some of the patients enrolled in the PHCP.

The subset of data used to describe the PHCP patients were obtained from a small random sample and may not accurately describe the entire patient population. Also, much variability existed between patients in regard to their participation in the program. Some patients were very “active” and seen every other month, while other patients may have only been seen once. This created skewed averages during data analysis.

### **CONCLUSIONS**

The PHCP is a unique “pre-palliative” house call program that does not fit one specific house call model that currently exists. Instead, it both shares similarities as well as contrasts various components of different house call models. The PHCP is comprised of an advanced practice registered nurse who performs routine preventative and follow up house calls to patients who would require considerable and taxing effort and at least the assistance of one other individual to have an office visit. The APRN meets weekly to discuss patients with the PCPs. Along with history taking and physical exam, the visits include counseling and coordination of care. As many DRPs exist among this patient population, incorporating a pharmacist into the PHCP would aide in addressing these medication issues. A standardized PHCP referral form, discharge letter, and initial evaluation form was created for the practice.

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Date: \_\_\_\_\_ Interviewer(s): \_\_\_\_\_

Provider Name: \_\_\_\_\_

**Provider Interview Questions:**

1. How often do you discuss the HCP with patients?
2. How do you refer patients to HCP?
3. How would you describe your typical HCP patient?
4. What are the most common reasons for referral? (Palliative care? Disease state? Adherence? No shows?)
  - How much ease or difficulty does the patient have in coming to the practice?
  - Is the patient living in a clearly unsafe home environment (abuse symptoms, multiple falls, and unkempt appearance when visiting office)?
  - Was the patient recently released from an acute or respite care hospital setting?
5. Once you decide to refer a patient to HCP how do you inform patient?
6. Do you anticipate/plan on length of enrollment in program?
7. What barriers have you observed/improvements you can offer?
8. How often do you discuss patients with Joyce once they are enrolled in HCP?/What types of communication do you utilize?
9. Do you believe the program is effective?

The next two questions for specifically for Joyce Harmon, APRN and Dr. Keating:

10. What guidelines did you use for creating the HCP?

11. What were your goals?/Have they been met?

FYI

Announcement:

I am pleased to announce that Joyce Harmon, APRN will be doing house calls, focusing on people who may have some difficulty coming in to the office for visits.

She is an excellent, well-trained adult nurse practitioner with considerable experience working with me in the care of older adults.

We can sometimes alternate office visits with house calls.

These can be scheduled through our office or at the time of our office visits.

Herbert J. Keating, III, MD, FACP  
Clinical Professor of Medicine  
University of Connecticut School of Medicine  
Bloomfield Internists/ProHealth Physicians 242 6297

Dear Patient,

Please answer the following questions so that we may better serve you:

How did you get here today?

- I drove
- Family member/Friend drove
- Bus
- Taxi
- Other (please specify):\_\_\_\_\_

How often do you leave the house?

- Every day
- 3 - 4 times a week
- 1 - 2 times a week
- 2 times a month
- Less than 2 times a month

How do you walk around your home?

- Without assistance
- Hold onto railings/walls
- Use a cane
- Use a walker
- Use a wheelchair

How do you walk around outside of your home?

- Without assistance
- Hold onto railings/walls
- Use a cane
- Use a walker
- Use a wheelchair

Who does your grocery shopping?

- I do
- Family member/Friend
- Online delivery
- Other (please specify):\_\_\_\_\_

Who does your cooking?

- I do
- Family member/Friend
- Online delivery
- Other (please specify):\_\_\_\_\_

Who takes care of your bills?

- I do
- Family member/Friend
- Online delivery
- Other (please specify): \_\_\_\_\_

Who takes care of your housekeeping/laundry?

- I do
- Family member/Friend
- Online delivery
- Other (please specify): \_\_\_\_\_

Are you currently receiving (Please check all that apply):

- Cancer Treatments
- Dialysis
- Palliative care
- Hospice care

Do you have any of the following services provided to you in your home? (Please check all that apply):

- VNA
  - Homemaker
  - Aide
  - Private nurse
  - Other (Please list): \_\_\_\_\_
- 

In the past year have you:

- Fallen more than once
- Been afraid that you would fall
- Fallen and hurt yourself or needed to see a doctor because of the fall

In the past year have you had any problems with:

- Bathing
- Dressing
- Feeding
- Toileting

Provider:

Please note that your patient has indicated some or all of the above.

Please discuss these answers with your patient and if indicated, consider him/her for referral to the ProHealth House Call Program.

Dear Patient,

It is our pleasure to inform you that you have been enrolled into the ProHealth House Call Program.

Joyce Harmon, APRN will be coming to your house to see you for your next visit. She is an excellent, well-trained adult nurse practitioner with considerable experience working in the care of older adults.

You have been enrolled in the ProHealth House Call Program:

- Short term, for a few visits
- Until your particular condition resolves
- Long term, for a few years

This program is designed for preventative and maintenance care. You may still need to come into the office if you have an acute problem. Please do not hesitate to call the office with any concerns.

Sincerely,

ProHealth Bloomfield Internists

(Adapted from Dr. Keating's announcement form.)

Dear Joyce Harmon, APRN,

I have enrolled: \_\_\_\_\_(Patient Name)\_\_\_\_\_

For the reason: \_\_\_\_\_

I anticipate that he/she will need your services:

- For a consult visit
- Until his/her current condition resolves/improves.
- Permanently

Thank you for taking the time to see him/her.

Sincerely,

(Provider name)

Dear Patient,

We are delighted to have been able to offer you the services of our ProHealth House Call Program. This is a very special program which serves to meet the needs of many of our patients. Due to limited time and resources, we are only able to offer this service to those who *truly* need it.

Unfortunately, we will be unable to continue to see you at home due to the following:

- Your health has improved so much, that you have been able to get into the office much easier on a number of occasions.
- Your health has improved so much, that we anticipate that you will be able to get into office.
- You have moved to a facility that provides primary care services to its residents.
- You have moved out of our area of service.
- Your living situation has changed and you now have a caregiver who is able to bring you in.
- You have not been home on \_\_\_\_ occasions when Joyce has come to see you.
- You are no longer adhering to our recommendations and therefore, we cannot deliver you proper medical care.

We look forward to seeing you at your next appointment in our Bloomfield office. Please do not hesitate to contact us with any further questions.

Sincerely,

ProHealth Bloomfield Internists