Supporting Seniors Across Systems: Effectiveness of Parish Nurse Interventions

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Executive Summary

The Metropolitan Area Agency on Aging received funds through the Community Service/Services Development grant program from the Minnesota Department of Human Services to analyze the interventions of parish nurses on older persons and discern their impact on health care costs. Using the DIARY methodology 75 parish nurses documented activities that often resulted in preventing the need for expensive acute or long-term health care while promoting independence and emotional well-being.

The sample consisted of 713 older persons in 1,061 documented cases, or notes. More than 200 of the citations included signs and symptoms of impending crisis events that may have resulted in serious acute illness or chronic disability. More than one third of all notes pertained to sustaining independence and more than 100 notes pertained to intercession for elders who were confused, isolated or otherwise vulnerable. One third of the notes documented calming, re-motivation, addiction recovery and end-of-life decisional support interventions. Caregivers were directly sustained in at least 80 reports, through calming, respite, and access to caregiver support.

Overall the study demonstrated that parish nurses effectively assist older persons to obtain needed health care often preventing costly crisis care or expensive care for a more significantly serious or disabling illness that was averted as a result of the parish nurses' interventions. They also help older persons link to community long-term care services such as chore service and meals-on-wheels, and to access information resources such as the Senior LinkAge Line® to learn about free prescription medications for low-income individuals. Parish nurses are trusted advisors and often provide emotional and spiritual support for anxious and isolated elders that result in the older person taking action or accepting help to improve his or her situation.

Background

The Metropolitan Area Agency on Aging received grants from the Minnesota Department of Human Services Community Service/Services Development program and the Medica Foundation for the Supporting Seniors Across Systems Project (SSAS). The project's overall intent was to build capacity for eldercare by leveraging informal resources and enhancing collaboration between formal and informal systems. Partner organizations in the initiative included the Arrowhead Area Agency on Aging, Central Minnesota Council on Aging, East Central Area Agency on Aging, South East Metro Seniors Agenda for Independent Living / Eldercare Development Partnership, Elderberry Institute, Hennepin County, Lyngblomsten, Medica Center for Healthy Aging, Minnesota Board on Aging, Normandale Center for Healing and Wholeness, North Central Region Health Ministries Network, Plymouth Congregational Church, and TRUST.

A component of the SSAS initiative was the "Parish Nurse Effectiveness Study." This activity replicated Region Nine Area Agency on Aging's and Immanuel St. Joseph's study of rural parish nurse interventions in South Central Minnesota (Rydholm, 1997). The intent of the current study was two fold: to collect data that validates the value of parish nursing to prevent health and long-term care costs and to describe the ways in which parish nurses improve the quality of life of older persons and their family caregivers. The study utilized a standardized DIARY charting technique through which Data, Interpretations, Actions, Responses, and Yields (perceived outcomes) were captured.

Parish Nursing

Parish (or congregational) nursing is a growing type of faith-based eldercare service. Parish nursing is recognized by the American Nurses Association (ANA) as a specialty area of practice and in 1998 published scope and standards of practice.

The expertise of parish nurses is in their knowledge of the people they serve. They maintain ongoing relationships with elders at risk in their faith communities, and are often the first to know when things aren't going well. They function as access facilitators for urgent care. They link people to assistive devices and formal and informal helpers. They offer decisional and self care guidance. They lend emotional support. It is well understood that parish nurses are nurses who maintain active RN licensure.

Oftentimes, parish nurses serve with minimal or no pay from their congregations. This is particularly true of poor congregations, where parishioners are more likely to be minority or low-income and are at greater risk for health disparities. Parish nurses usually assist parishioners of all ages within their congregations. Some assist people who are not members of the congregation but reside in the surrounding neighborhood or contiguous community, depending on the policies of their sponsoring church or temple.

The Supporting Seniors Across Systems Project identified and contacted more than 400 parish nurses in the project area. Of those nurses, 145 offered information about their services to support frail seniors for inclusion in the State of Minnesota's community resource database, www.MinnesotaHelp.info.

Health Care Expenditures

In the United States, individuals 65 years old and older comprise 13 percent of the population, and 37 percent of medical expenditures (Center for Medicare and Medicaid Services, 2000). With the loss of spouses and support networks, older adults can become more isolated resulting in less support when faced with serious illness or debilitation. Older persons turn to informal services from caregivers such as family and friends, social service agencies, and faith communities for support.

Older adults are more likely to use the emergency department (ED) than any other age group. A Maryland study found that older adults had a rate of ED visits of 41 per 100 persons and the condition that brought them to the ED was more serious than for other patients (Schur, Mohr & Zhao, 2003). They were much more likely to be admitted inpatient (48%) and the least likely to be seen for non-emergency conditions or emergency conditions that were considered to be primary care treatable than other age groups.

The path from hospital inpatient stay to nursing home is common. During the past decade, the odds of being discharged from the hospital to a nursing home have increased while hospital stay has declined, as patients are sent to nursing homes for recuperation from illness or injury (Aharonoff, Barksky, Heibert & Zuckerman, 2004). Most residents of nursing homes come from an acute care hospital (73%), most commonly for strokes or fractures (Lee, Kovner, Mezey & Ko, 2001). Risk factors for nursing home entry include female, no spouse, advanced age, Caucasian, and poor. Family support helps reduce nursing home placement while living alone is highly correlated to nursing home placement.

In Minnesota, $2 billion is spent annually on nursing home care with Medical Assistance paying for the majority of the residents (Minnesota Department of Human Services, 2005). Approximately 5.5 percent of all Minnesotans age 65 and over reside in nursing facilities and most come to nursing homes after a hospital stay for an acute injury or illness (Lee, et al., 2001). The average monthly Medical Assistance payment for a nursing facility resident is $4,160 (Minnesota Department of Human Services, 2005). Maintaining an older adult's independence in the community has been shown to save public assistance expenditures while maintaining well-being and quality of life. Independence is best maintained by a network of formal and informal supports. Supports may include faith-based services like health/care team ministries and parish nurses. This study examined interventions offered by parish nurses that supported the independence of older adults.

Methodology

This study replicated the Region 9 Area Agency on Aging's Project Study 309-95. The purpose of the project was to encourage registered nurses, as congregational case managers, to be intentional about assisting older parishioners cope with chronic, urgent and emergent health concerns. The purpose of this study was to utilize the Project Study methods to describe the nature of parish nurse interventions and to explore the impact of those interventions.

All known parish nurses practicing in a 24 county area of metropolitan, central and northeastern Minnesota were invited to participate in the study through a letter of invitation. No-obligation preparation was offered in the form of two free continuing education credits. Participants were informed that the project's goal was to obtain a total of 1000 notes and were informed they would receive a $20 stipend per note submitted. Potential contributors were asked to attend a two-hour preparatory workshop. The workshop was repeated 13 times in an effort to engage all potential contributors. A total of 100 nurses attended the sessions. All project participants signed letters of understanding (informed consent) before remuneration began. Strict confidentiality of both the older person and their caregiver(s) was protected in the data collection phase.

The DIARY format was used for the reporting process. DIARY is an acronym for charting that assures adherence to the standards of nursing practice through documentation. It requires relaying:

D Data (What were the signs and symptoms indicating there was a concern?)
I Interpretation (What was the concern, concisely stated?)
A Action (What did the nurse do to help?)
R Response (by the parishioner – What happened to the signs and symptoms?)
Y Yield (What was the perceived benefit of the nurse intervention?)

Taxonomies developed from the notes submitted in the initial parish nurse effectiveness study (Region Nine) were folded into a set of charting by exception forms known as the DIARY tool. The DIARY tool allows for ease in documentation and quantification of interventions. The tool is being modified for efficacy; reliability and validity have not been formally tested.

The most significant form in the tool for discerning the impact of parish nursing on health care costs (a focal point of this review) pertained to symptom disregard. Contributing **p**arish nurses were informed they were not to formally diagnose medical conditions in projecting impending crisis events that might have happened if they had not intervened. As part of the process parish nurses confirmed that recognition of impending crisis events and avoidance interventions were within their scope of practice as a delegated medical role.

The potential conditions specifically spoken to in the Symptom Disregard forms include:

Stroke	Fluid / electrolyte loss	Back injury
Heart attack	Sepsis	Trauma: fall / accident
Heart failure	Cellulitis	Abuse: self / other
Renal failure	3rd degree wound	Untended fractures
Pneumonia / ARDS	Amputation	Medicine toxicity
Hypoxia / Acidosis	Cancer therapy	Other

Other forms in the tool allowed parish nurses to document interventions pertaining to:

- Psycho-social-spiritual concerns and related risks
- Isolation related risk for depression/illness progression
- Safety concerns related to functional decline

- Illness self-care deficits and related risks
- Detrimental lifestyle habits and related risks.

Initially, many of the nurses chose to submit their stories in narrative form. As they became accustomed to the technique they gradually shifted to using the charting by exception forms. Information related in narrative form was converted to the appropriate charting by exception form by tool author. Forms were then entered into a Microsoft Access database. The database was collated using SPSS (Statistical Package for the Social Sciences) by Hennepin County.

Demographics

There were 713 patients represented in 1,061 encounters. The majority were female. Patients with repeat visits from their parish nurse were more likely to be female, older, frail, with a physical disability and living alone.

Table 1: Gender of Participants

Gender	n Served	n Revisited	n Revisits
Female	457 (64%)	89 (70%)	196 (56%)
Male	200 (28%)	35 (28%)	89 (26%)
Unknown	56 (8%)	2 (2%)	63 (18%)
Total	713	126	348

Table 2: Age of Participants

Age	n Served	n Revisited	n Revisits
< 60	15 (2%)	5 (4%)	10 (3%)
60-69	138 (19%)	27 (21%)	45 (13%)
70-79	213 (30%)	28 (22%)	59 (17%)
80-89	232 (33%)	49 (39%)	145 (42%)
≥ 90	49 (7%)	15 (12%)	22 (6%)
Unknown	66 (9%)	2 (2%)	67 (19%)
Total	713	126	348

Table 3: Self Identified Demographic Traits

Trait	n Served	n Revisited
Frail	582 (82%)	87 (69%)
Lives Alone	419 (59%)	62 (49%)
Poor	307 (43%)	46 (37%)
Caregiver	210 (29%)	27 (21%)
Diabetic	174 (24%)	28 (22%)
Disability	430 (60%	70 (56%)

Descriptive Findings

There were 1,061 DIARY notes submitted by parish nurses between October 2004 and June 2005. Each DIARY note pertained to a lead intervention category. However, notes often conveyed the presence of co-existing morbidities and therefore more than one potential yield as a result of intervention.

The greatest focus of parish nurse intervention was in the area of "risks perpetuating psycho-social-spiritual concern." This represented 40 percent of all interventions (418 events). This area of intervention is related to quality of life. The major risks identified by nurses were worry/anxiety, loss of meaning, vulnerability, and loneliness.

The second largest area of intervention was in "signs and symptoms warranting concern." Here, nurses identified specific illnesses and appropriate interventions were provided in an effort to reduce or avoid a specific serious injury or illness (n = 265; 25%). Among illnesses, the most common illnesses with interventions were falls and strokes.

Other areas represented smaller percentages of a nurse's intervention effort, but all were important functions to enhancing the elder's quality of life. Many efforts were related aging, such as illness progression, self-care deficits, and functional decline.

Table 4: Nature of Parish Nurse Interventions

Intervention	Percent
Psycho-social-spiritual concerns	40%
Signs and symptoms	25%
Functional decline	14%
Illness self-care deficits	9%
Depression/illness progression	8%
Detrimental lifestyle habits	4%

Psycho-Social-Spiritual Concerns and Related Risks

Top Interpretations, Actions, and Responses to Psycho-Social-Spiritual Concerns (more than 25% response)

Interpretation	
worry/anxiety/loss of serenity/anxiety crisis	68%
decisional conflict	39%
loss of meaning/hope/despair/grief loss/relocation stress	37%
altered role performance/caregiver role strain	32%
feelings of inadequacy, vulnerability	28%
loneliness	25%

Action	
anticipatory guidance	40%
values clarification	38%
purpose finding/hope instillation/grief work/guilt work	36%
social networking/befriending/support group	29%
information/prayer/healing service	27%
prayer support/reframing	26%
empowerment/praise	25%

Response	
verbalizes choices and preferences	39%
decisions are made and settled	35%
accepts help/appears rested	25%

Figure 1: Psycho-Social-Spiritual Concerns

Interventions for psycho-social-spiritual concerns often addressed quality of life issues. This is at the heart of parish nurse interventions, where connections with one's faith community and its members lend support to isolated elderly parishioners who are facing physical decline. Psycho-social-spiritual interventions focused on helping elders connect with support systems within their faith communities. In part this involved promoting trust and the will to reach out to others. Calming, persuasion, re-motivation and redirection were needed prior to creating these connections. Two-thirds of the psycho-social-spiritual concerns addressed by parish nurses pertained to worry or anxiety. Despair and loneliness were common too. These are addressed later under the section entitled "Isolation Related Risk For Depression Or Illness".

Nurses provided anticipatory guidance, values clarification, purpose finding, social networking, information, intercession, mediation, and prayer to help anxious elders. Supported elders were more inclined to verbalize their choices and remedy their situations. Some of the reports indicated a breadth of intervention where many emotional needs were being simultaneously addressed.

Scenarios related to psycho-social-spiritual concerns

Abuse or neglect cessation

117 Stopped family from taking relaxant medications from man with deteriorating neurological disease unable to move or communicate

1625 Helped initiated restraining order to protect woman from abusive, bipolar son

Intubation prevention

669 Empowered ex wife to speak up for man who had no other family advocates

647 Helped elder complete advanced health care directive before heart failure set in after massive heart attack

216 Helped caregiver let go in situation where infections were not responding to antibiotics

1810 Affirmed right to stop chemotherapy and shift focus to palliative care

Recovery support

313 Rescued caregiver from alcoholic son's abuse through intervention and recovery support

1900 Persuaded confused widow abusing alcohol to see her to see MD and start antidepressants

1432 Helped chronically intoxicated elder through intervention, recovery support and reintegration into congregational life

Caregivers in distress

1789 90 year old (CHF) fearful of abandoning son (cerebral palsy now in 70s)

857 Obtained night alarms and medication adjustments for spouse who wanders at night

1674 Composed phone list of sitters from church for Alzheimer's caregiver at wits end

211 Found respite for trapped caregiver whose family prevents access to services (Spouse with stage 4 Alzheimer's)

Anxiety

412 Brought assistive devices, support to woman despairing after knee replacement.

701 Placed pictures of family on enlarged phone buttons created a speed dial system for elder recovering from stroke home alone

1588 Comforted frightened elder who had been through 2 defibrillations
Elder wore lifeline in ICU for rapid access to parish nurse if needed

725 Prevented biopsy cancellation by getting MD on speaker phone for consultation

1394 Reduced Cancer related shortness of breath through coaching and music therapy

1202 Read pre bypass instructions to distraught blind elder

Signs and Symptoms Warranting Concern: Symptom Disregard

Common Conditions Where Parish Nurses Intervened

condition	number	pct
fall	60	23%
stroke	56	21%
heart failure	24	9%
heart attack	17	6%
sepsis	17	6%
pneumonia	13	5%
cancer therapy	10	4%
cellulitis	10	4%
dehydration	10	4%
all others	91	34%
total*	265	100%

* Individual conditions total to more than 265 because a patient could have more than one condition.

Figure 2: Common Conditions for Parish Nurse Intervention

Data were gathered on 17 conditions where nurses felt that their interventions helped prevent an injury or illness. For analysis purposes, nine conditions are reported here. All other conditions had fewer than ten interventions. Falls and strokes were the most common conditions identified by nurses where they felt their intervention made a difference.

For all conditions, the most common reasons given for patients not addressing the medical issue early included reluctance to bother medical doctors (sometimes for fear of being reprimanded), naiveté related to signs and symptoms, and stoic independence. Lack of sufficient insurance was only cited in two cases (1%).

The response by the nurse was more apt to be oriented toward advocacy (more than three-quarters) than information (slightly less than half of all patients).

In most cases, the patient sought additional medical care or had new treatments prescribed, as a result of nurse advocacy. In half of all cases, the nurse reported that the patient's condition improved.

Scenarios relating to access persuasion

1621 Facilitated emergent laser surgery for detached retina (floaters only symptom)
1125 Persuaded repeat visit for angioedema (facial swelling for severe allergic reaction)
413 Made assisted living staff aware of 1" foot ulcer
302 Waited with patient for five hours in the ER to prompt further investigation of GU bleed

CT showed renal tumor (removed the next day).
736 Advocacy to move biopsy up. 12+ nodes. CA resolved with mastectomy
609 Excision of melanoma
1647 Advocacy for medication changes resolved confusion and paranoia

Falls

Falls are a common risk for older adults. They often lead to serious consequences. In 1998, the cost of a fall resulting in medical intervention was $19,440 for the emergency department, nursing home, and home health care (Rizzo, Friedkin, Nabors, Acampora & Tinetti, 1998). At Hennepin County Medical Center (HCMC), the Medicare reimbursement for a hip fracture, a common result of falls, is $11,822. A stay for hip surgery is usually followed by a three week rehabilitation visit to a nursing home when the elder is frail or alone (estimated cost: $3120). One study demonstrated that about one third of adults 65 years old and older fall each year and about 10 percent of those who fell sustained a hip fracture, leading to death for 34 percent and institutionalization for 29 percent. Another study found that the average hospitalization for a hip fracture was 22 days and that 36 percent were discharged to skilled nursing facilities (Aharonoff, et al., 2004). Even without serious injury, falls can lead to pneumonia, joint contractures, pressure sores, depression, and functional dependence (Huang & Actor, 2004). While falls is a major driver of emergency department and nursing home use, the majority of falls may be preventable (Huang & Actor, 2004). Common risk factors for falls include physiological morbidities, emotional concerns (eg. intoxication or depression), environmental hazards, and social isolation (Huang & Actor, 2004; Turcu, Toubin, Mourey, D'Athis, Manckoundia, & Pfitzenmeyer, 2004).

Signs and Symptoms Reported by Nurses in Patients at Risk for Falls
(10 percent or greater)

Data - Signs and Symptoms	pct
confusion	32%
unsteady - at risk of fall	32%
altered awareness (LOC)	23%
syncope	18%
acute pain	17%
shortness of breath/uremic breath	15%
irregular heart rate	12%
immobility	10%
toxicity signs and symptoms	10%
weight loss	10%

Reasons Patients were not Addessing Medical Conditions
(10 percent or greater)

Interpretation	pct
stoic independence	33%
naivete related to signs	32%
reluctance to bother MD	30%
difficulty expressing concerns	20%
apathy/fatigue/depression	18%
fear of diagnosis/implications	17%

Figure 3: Signs and Symptoms in Patients at Risk for Falls

Parish nurses addressed all four of these realms but often the protective outcomes weren't claimed. In 60 cases interventions were reported where the nurses felt their intervention prevented or reduced the risk of falls. Often parish nurses failed to code patients who were unsteady and confused as being at risk for falls. Different from other conditions, the main reasons identified by the nurses for inattention to syncope or unsteadiness were stoic independence and naiveté, not reluctance to bother the doctor.

Responses by nurses were primarily advocacy based, (half related to medication initiation or adjustment). Nurses also helped set up chore services, including identifying live-in helpers, help with house cleaning, meals on wheels, bathing assistance, or equipment.

Scenarios related to fall prevention

904 Rx adjustment needed: Anti-hypertensives causing low BP (recurring scenario)
1901 Access for woman whose husband remarks. "She double doses on her insulin"
310 Hypoglycemic blackouts resolved with antihyperglycemic dosage adjustments
802 Advocated stopping Xanax, Ativan and narcotics in grieving woman pre-ECT Stupor quickly resolved, re-engaged in community
1904 Pacer Rx for rapid irregular heartbeat and low BP (atrial fibrillation)
1010 Blind caregiver has Menieres: Low vision resources, transport & bathing assist
1220 Incontinence resolved with medication
1676 150/105 & syncope resolved with Rx adjustments
346 Anemia causing weakness

Strokes

Strokes were the second most common medical condition identified by parish nurses for intervention. The parish nurses identified 56 older persons with whom they felt a stroke was interrupted or prevented. The signs of stroke that were noted by the nurse were quite clear, yet patients were reluctant to bother the medical doctor in two-thirds of the cases. Half of the elders in distress were naïve as to the signs of stroke, perhaps favoring denial.

Signs and Symptoms Reported by Nurses in Patients at Risk for Strokes
(greater than 5 percent)

Data - Signs and Symptoms	pct
symptomatic hypertension	86%
syncope	16%
shortness of breath/uremic breath	14%
sentinel headache	9%
irregular heart rate	9%
sudden sensory/motor loss	7%
edematous weight gain/diminished urine	7%
hypotension (med related?)	7%
unsteady - at risk of fall	7%

Reasons Patients were not Addessing Medical Conditions
(greater than 5 percent)

Interpretation	pct
reluctance to bother MD	68%
naivete related to signs and symptoms	50%
fear of diagnosis/implications	23%
stoic independence	21%
difficulty expressing concerns	11%
apathy/fatigue/depression	11%
caregiving/chore demands	7%

Figure 4: Signs and Symptoms in Patients at Risk for Strokes

Similar to falls, advocacy was more common than education, and in most cases, symptoms improved with nurse intervention. In 45 cases with descriptions of specific nurse intervention, 33 (73%) involved the nurse getting the patient to the Emergency Department or to a medical doctor and 31 cases (60%) resulted in an adjustment in medications.

HCMC's reimbursement for a hospitalization for hypertension is $5,681. Their Diagnostic Related Grouping (DRG) reimbursement for stroke recovery is $11,863. The

approximate cost of the standard three weeks of nursing home rehabilitation is $3160. Extended nursing home stay costs exceed $50,000 per year when debilitated elders have no caregivers. It is important to note that almost all of these scenarios were prevented medically on an outpatient basis.

Scenarios relating to stroke prevention

1535 An unsteady hypertensive elder with motor deficits was escorted to ER for resolution of symptoms of trans ischemic attack.
1034 PN found a friend who could persuade elder having TIAs to go to the ER . Symptoms resolved
1217 Elder with BP of 182/94 tremors and sentinel headache improved with prescription
1203 Elder who only spokes Khmer presented with BP 168/96 Did not realize he needed to be rechecked by MD before pharmacist could refill his BP med
1613 Medication assistance found for elder cutting pills in half to stretch them. 190/100.
128 BP 200/110 dizziness treated with Rx and 30# weight loss (160/80 after weight loss)

Heart Failure

In 24 cases, nurses indicated that they interrupted or prevented heart failure in patients who either had valve or myocardial dysfunctions perhaps stemming from prior heart attacks. Advocacy for heart failure (88%) was more common than education (75%).

Signs and Symptoms Reported by Nurses in Patients at Risk for Heart Failure
(10 percent or greater)

Data - Signs and Symptoms	pct
shortness of breath/uremic breath	58%
irregular heart rate	54%
edematous weight gain/diminished urine	33%
syncope	29%
symptomatic hypertension	21%
sudden sensory/motor loss	17%
localized edema	17%
communication difficulties	13%
hypotension (med related?)	13%
unsteady - at risk of fall	13%
confusion	13%
toxicity signs and symptoms	13%
weight loss	13%

Reasons Patients were not Addessing Medical Conditions
(10 percent or greater)

Interpretation	pct
naivete related to signs and symptoms	63%
reluctance to bother MD	50%
fear of diagnosis/implications	46%
difficulty expressing concerns	42%
stoic independence	29%
apathy/fatigue/depression	25%
frugality	13%

Figure 5: Signs and Symptoms in Patients at Risk for Heart Failture

The standard DRG reimbursement for pulmonary edema with intubation is $12,630. The standard Medicare reimbursement for dialysis is $15,000 per year ($100 per episode), admission to dialysis $7,548.

In 21 cases, written descriptions accompanied the coded sheet. In the vast majority of those cases, the nurse got the patient to the Emergency Department or a medical doctor (76%)

and medications were started or adjusted (90%). Sometimes rapid intraveneous Lasix was given on an outpatient basis. Other times patients were admitted for treatment of underlying causes. Pacemakers were placed. Atrial fibrillation was resolved. Hypertension was treated. Medications were adjusted before renal injury resulted from low cardiac output. The estimated cost to treat a cardiac arrhythmia without complications is $4,882 and a pacemaker placement is $21,975.

Scenarios relating to heart failure

644 Shortness of breath, rapid heart rate treated with diuretics
1740 Syncope, irregular heart rate, unsteadiness, short of breath treated with IV Lasix. Parish nurse called 911
1117 Pulse 180, then suddenly 50 resulted in 911 call and pacemaker placement
913 Nebulizers, diuretics and oxygen resolved a combination of congestive heart failure (CHF) and reactive airway disease

Heart Attack Prevention

In 17 cases, nurses reported that they prevented heart attacks. Similar to their response to other serious medical conditions, the majority of patients were brought to the Emergency Department or otherwise got medical attention from a physician and the majority of patients received new medications or had their medications adjusted.

*C*ardiac conditions reimbursed by Medicare to HCMC include acute MI without complications: $9,445, acute MI with cardiac arrest: $14,383, acute MI with pacemaker placement: $33,510, coronary Bypass surgery: $36,795. An annual nursing home stay due to MI related activity intolerance (no caregiver) averages $50,000.

Signs and Symptoms Reported by Nurses in Patients at Risk for Heart Attack
(10 percent or greater)

Data - Signs and Symptoms	pct
symptomatic hypertension	59%
shortness of breath/uremic breath	41%
irregular heart rate	35%
acute pain	35%
syncope	18%
hypotension (med related?)	18%
unsteady - at risk of fall	18%
sudden sensory/motor loss	12%
altered awareness (LOC)	12%
immobility	12%
weight loss	12%

Reasons Patients were not Addessing Medical Conditions
(10 percent or greater)

Interpretation	pct
reluctance to bother MD	59%
naivete related to signs and symptoms	53%
stoic independence	18%
fear of diagnosis/implications	18%
difficulty expressing concerns	18%
apathy/fatigue/depression	18%
caregiving/chore demands	12%

Figure 6: Signs and Symptoms in Patients at Risk for Heart Attack

Scenarios relating to heart attack prevention

806 Quintuple bypass led to prevention of death or invalid status
364 911 call for syncope, chest pain shortness of breath rapid atrial fib: Pacemaker placed

1201 ER escort led to angioplasty for shortness of breath and rapid pulse
1580 260/100 Transferred to heart hospital
1215 Chest pain, shortness of breath treated with anti-anginals in ER
331 200/100, chest pain (caregiver to spouse with Alzheimers) led to bypass

Sepsis and Life Threatening Infections

Signs and Symptoms Reported by Nurses in Patients at Risk for Sepsis
(10 percent or greater)

Data - Signs and Symptoms	pct
inflammation	59%
acute pain	47%
unsteady - at risk of fall	29%
localized edema	29%
weight loss	18%
communication difficulties	12%
shortness of breath/uremic breath	12%
confusion	12%
toxicity signs and symptoms	12%
immobility	12%
loss of appetite	12%

Reasons Patients were not Addessing Medical Conditions
(10 percent or greater)

Interpretation	pct
naivete related to signs and symptoms	71%
reluctance to bother MD	53%
apathy/fatigue/depression	29%
stoic independence	24%
fear of diagnosis/implications	24%
difficulty expressing concerns	18%
system mistrust/bad memories	12%

Figure 7: Signs and Symptoms in Patients at Risk for Sepsis

In 17 cases, nurses prevented sepsis in patients. Most cases resulted in immediate medical attention and antibiotics. A DRG reimbursement for septicemia at HCMC is $14,907.

Scenarios relating to life threatening infections

612 Persuaded elder with inflamed knee (post surgical scar) to go to ER
Care initiated for early sepsis due to infected hardware
816 "Avoided an amputation" said MD. Purulent weeping leg wounds, confusion
632 Antibiotics for post-op infection after GI surgery averted peritonitis
Elder thought this degree of abdominal pain and redness was to be expected
1126 Well established UTI with bleeding
1654 Massive cellulitis in chemo arm
1205 Persuaded 2nd opinion for diabetic foot ulcer that led to wound healing

Pneumonia

In 13 cases, nurses prevented assaults on kidneys or limbs through urging intervention to resolve pneumonias or upper respiratory inflammations causing hypoxemia. Scenarios 301, 1645, 1118, 212 showed hypoxia prevention through access to needed oxygen, antibiotics and nebulizer treatments when elders were reluctant to seek care. Scenario 1415 regarded a woman who was withdrawn, sitting in the church foyer apart from a shower she had come to attend. The nurse, assuming there was an emotional concern, sat next to her with the intention of listening. Upon listening she found that she was having difficulty completing sentences without pausing

for breath. Access to urgent care was persuaded. She was treated with Zithromax for a neglected pneumonia. The estimated cost to treat pneumonia is $5,756.

Signs and Symptoms Reported by Nurses in Patients at Risk for Pneumonia
(10 percent or greater)

Data - Signs and Symptoms	pct
shortness of breath/uremic breath	77%
symptomatic hypertension	31%
sudden sensory/motor loss	23%
irregular heart rate	23%
confusion	23%
localized edema	23%
immobility	23%
communication difficulties	15%
unsteady - at risk of fall	15%

Reasons Patients were not Addessing Medical Conditions
(10 percent or greater)

Interpretation	pct
difficulty expressing concerns	54%
naivete related to signs and symptoms	46%
reluctance to bother MD	46%
fear of diagnosis/implications	38%
stoic independence	31%
apathy/fatigue/depression	31%
frugality	15%
system mistrust/bad memories	15%
lack of transporation	15%

Figure 8: Signs and Symptoms in Patients at Risk for Pneumonia

Scenario 1606 pertained to advocacy for oxygen in an elder who needed oxygen but was denied it based on misplaced records that showed she qualified for it. Persistent efforts to revalidate the need finally resulted in access to needed oxygen. The estimated cost for dialysis is $15,000 per year.

Depression or Illness Related to Withdrawal

Increased Risk for Depression/Illness Progression Related to Isolation

Interpretation	number	percent
functional impairment	44	51%
feelings of vulnerability	40	46%
feelings of inadequacy	32	37%
fatigue(spiritual/physical)	30	34%
fear of falling/risk of falling	29	33%
lack of transport	26	30%
apathy/lack of purpose	26	30%
sensory impairment	24	28%
nursing home isolation	6	7%

action	number	percent
bring social contact into home	45	52%
provisions for safety	39	45%
affirmation/gifts/reminiscence	29	33%
create catch-net of support	28	32%
find meaningful duties	27	31%
transportation facilitation	25	29%
reframing	21	24%
procure assistive devices/visual/auditory aide	18	21%

response	number	percent
expressions of belonging	58	67%
expressions of gratitude	43	49%
receptive to diversion	40	46%
increased socialization - out and about	39	45%
improved hearing or vision	9	10%

Figure 9: Signs and Symptoms in Patients at Risk for Depression

Loneliness has been linked to higher medical services utilization. One study showed that people who are lonely use the Emergency Department 60 percent more often than those who are not lonely. Those who were lonely were twice as likely as others to be admitted to a nursing home. Depression has also been linked to an increase in falls (Geller, 2000).

In 87 cases, nurses intervened with patients when they felt the elder was isolated and at increased risk as a result. In many cases, functional impairment or fears were limiting the older person's ability to care for him or herself. Most commonly, the nurse helped re-engage the patient with a support network and talked with the elder about alleviating their isolation. As a result, elders felt a stronger sense of belonging that was remotivational. Through these efforts negative self talk and boredom were interrupted.

In numerous instances, nurses were successful in persuading elders to take antidepressants. They were also diligent about helping elders access medication assistance for unaffordable prescriptions. Examples of psychosocial interventions targeting isolation and withdrawal are cited in the opening of the findings discussion of this report. Interventions for loneliness ranged from alcohol intervention and recovery aftercare to transport to participation in church choir. Typically other congregational members became part of the plan of care such as

exercise groups, prayer partner clubs, cribbage circles, visiting hair dressers, shopping assistants, and mail readers.

Scenarios related to depression / despair / loneliness

411 Took elder in despair Christmas shopping to help her self esteem
1026 Engaged elder through cribbage matches
1538 Mitigated crematorium mix-up over ashes

Safety Concerns Related to Functional Decline

Safety Concerns Related to Functional Decline

Interpretation	number	percent
risk other than risk for fall or impairment	79	53%
high risk for injury/fall	78	52%
functional impairments	76	51%

action	number	percent
info/referral related to other high risk situations	103	69%
info/referral related to functional impairment	82	55%
coaching/environmental adjustments/lifeline, etc	74	50%

response	number	percent
reduced other risks	96	64%
reduced risk of fall	75	50%
improved access to help	62	42%

Figure 10: Safety Concerns Related to Functional Decline

In a similar vein, nurses helped elderly people who were experiencing functional decline, which led to safety concerns. They intervened in 149 cases, primarily providing advocacy and education related to the condition with the end result being a reduction in the risk.

Scenarios relating to safety

629 Contracted with 93 year old who was driving (unsafely) to accept transportation
1560 Circle of friends for early Alzheimer's elder whose wife was in coma post bypass
417 Major house and yard cleaning (mildew resolution) for asthmatic elder
1769 Solicited neighbor to call at daily at 9am and cue Coumadin, glaucoma drop admin
1047 Worked with family to protect: stove disconnected, med set-ups, meals on wheels
508 Parishioners help with lower level laundry
347 Coach daughter to assist with med setups
1509 Son installed grab bars
1386 Husband ill equipped as caregiver. Family brought into the loop
303 Cued to receive services (laundry assistance, etc.) after kidney removed

Increased Risk Related to Illness Self-Care Deficits/Lifestyle Habits

Increased Risk Related to Illness Self Care Deficits/Lifestyle Habits

Interpretation	number	percent
at risk for illness exacerbation due to lifestyle	27	63%
high risk - med noncompliance or toxicity	60	61%
naivete related to self care/symptoms	49	49%
distress related to symptoms/limits	48	48%
high risk - illness/injury progression	42	42%

action	number	percent
support to change lifestyle habits	42	98%
information on self care strategies	81	82%
follow up/surveillance	42	42%
advocacy	35	35%
financial problem solving	16	16%

response	number	percent
decreased risk	95	221%
change in lifestyle habits	36	36%

Note: 43 cases with changes in lifestyle habits.
99 cases with illness self-care deficits

Figure 11: Signs and Symptoms in Patient for Illness Self Care / Lifestyle Habits

There were 43 cases where nurses intervened with poor lifestyle habits that were contributing to poor health. These were most often smoking, excessive weight, little exercise, or chemical dependency. They provided support to elders to change these habits, with the resulting change in lifestyle. Also included were coaching sessions for chronic illness self care management. Foley care and glucose checks were included.

Scenarios relating to self care interventions

1401 Cued not to take corrosive aspirin with alcohol at night (history of GI bleeding)
1012 Lost 50+ though PN support and supplement finding
416 Helped vision impaired woman learn to do Accuchecks (small print instructions)
1517 Senior Linkage referral to access no-cost Rx (both on expensive meds)
1644 Interrupted effort to wean self from oxygen before hypoxemia was resolved

Discussion

The study provides strong confirmation that the interventions of parish nurses have significant impact on the health and well-being of older persons, and that this likely results in health and long-term care cost savings for individuals, health plans/insurers and publicly-funded health and long-term care programs (Medicare and Medicaid). It is beyond the scope of this study, or perhaps any similar study, to determine a valid cost savings calculation due to the nature of predicting that an emergency, illness or disability was prevented or to the inability to control for other variables that could influence the outcomes. Nevertheless, data obtained from the Hennepin County Medical Center was outlined within the Findings section to provide an estimate for potential cost savings for specific procedures related to medical conditions.

Some of the most compelling data indicate that the interventions of parish nurses likely prevented avoidable illness or disability in situations where elders with precarious medical conditions were reluctant to contact their physician or did not realize they had signs and symptoms meriting assessment and treatment. Parish nurses demonstrated their ability to persuade the elder to take action and they interceded as needed to ensure timely, appropriate care that prevented stroke, heart attack/failure, sepsis, and other types of debilitating illness. Conversely, there were cases of late access resulting in hospitalization and surgery. It is important to note that in these cases permanent disability which might have resulted in nursing home placements (such as amputations, dialysis or activity intolerance) were avoided.

Elders' reluctance to contact their primary care physician may be attributed to the characteristic behavior of their generational peers. Most of the elders in this study were between the ages of 70 and 89. This issue merits further analysis. Similarly, the elders' naiveté' regarding signs and symptoms of serious illness could be related to age, literacy, income, or other characteristics. Further statistical analyses can be run to isolate common attributes among the sample who were reluctant to contact a primary care physician. These issues have broad implications for persons of all ages.

Parish nurses demonstrated effectiveness in encouraging and sustaining change in lifestyle habits and reducing risk that resulted in weight loss among over-weight elders, increased physical activity, smoking cessation, and self-management of medications. Their success in health promotion and wellness interventions should be recognized and expanded as it will be increasingly critical to prevent and manage chronic disease.

The actions of the parish nurses in the study indicate that they are aware of community-based long-term services and serve an important role in identifying needed services and arranging for their delivery. Parish nurses were also adept at connecting elders to support in their own congregations, including respite for caregivers and social activities such as exercise groups, prayer circles and organized cribbage games.

Nurses who participated in the study willingly learned a new charting system and documented their interventions knowing that their data would be shared with the project's

funders and others interested in the topic. As state and federal policy-makers and health plans increasingly seek to control health and long-term care costs, consideration should be given to sustaining and expanding the role of parish nurses.

Finally, the case data demonstrate the remarkable success of parish nurses in bridging care between the informal, faith-based system and the formal, acute health care system. This role will become increasingly valuable as the older population grows dramatically and chronic diseases become more prevalent.

The impact of parish nursing will increase as the population ages and more community dwelling older adults rely on both formal and informal services to maintain independence. This study provided a glimpse into the nature of parish nurse interventions and the impact on the quality of life of older adults.

Impact

While difficult to concretely monetize the financial savings to publicly funded health care programs, extrapolations can be presented based on average costs associated with acute and chronic disease in relation to current hospital expenditures for episodic care.

When utilizing data on expenditures related to conditions, the following cost savings may be attributable to the interventions of parish nurses who participated in the DIARY study:

Table 5: Extrapolated Fiscal Impact

Condition	n	Estimated Cost Per Episode if No Intervention	Estimated Total Savings As a Result of Intervention
Fall	60	$15,000	$900,000
Stroke	56	15,000	840,000
Chronic Heart Failure	24	12,000	288,000
Heart Attack	17	9,000	161,000
Sepsis / Amputation	17	15,000	255,000
Pneumonia	13	6,000	78,000
Cancer	10	11,000	110,000
Cellulitis	10	15,000	150,000
Dehydration	10	7,000	70,000
Other	91	3,000	273,000
Total			**$3,055,000**

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