

From Care by Default to Care by Design: Improving Primary Care of the Elderly in Capital Health

Report of Capital Health's
Primary Care of the Elderly Project
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Introduction

Every month, 700 Nova Scotians reach their 65th birthday. Seniors in Nova Scotia currently number about 132,000 and this is expected to nearly double by the year 2026.¹ This demographic shift has many implications for our society, including how primary care is provided to seniors. Providing high quality primary care to seniors now and in the future was the focus of Capital Health's Primary Care of the Elderly (PCOE) Project, which began in June 2004 and ended in the winter of 2006. This report provides an overview of the findings of the PCOE project and offers recommendations on possible future directions for Capital Health to strengthen primary care for elderly people.

Evolution of the PCOE Project

The PCOE project was originally conceptualized by several family physicians that provide care to the elderly both in their practices and in continuing care facilities. The group of physicians presented their project idea to Capital Health as part of Capital Health's call for expressions of interest in support of primary care renewal in 2004. Capital Health funded the PCOE project as one of the suite of projects undertaken as part of the Primary Health Care Transition Fund.

The purpose of the PCOE project was to:

- Develop potential alternative models and changes to existing systems for primary care of the elderly for Capital Health, with a specific focus on integrating services provided by family physicians, continuing care (long term care facilities and home care), tertiary care settings, geriatricians and other health care providers;
- Identify feasible and practical tools for family physicians to use within their practice settings to improve primary care of the elderly; and
- Examine broad policy issues that impact primary care of the elderly and create recommendations about how to address these issues.

The project leader for the PCOE project was Dr. Barry Clarke, Medical Director, Veterans' Memorial Hospital. During the initial stages of the project, Dr. Clarke was supported by an Advisory Group that included representatives from not-for-profit and private continuing care facilities, the provincial health department, geriatricians and family physicians. The Advisory Group assisted in determining data collection strategies and identifying guiding principles and key concepts for future models of care.

Planning Context for the PCOE Project

At the time the PCOE project was created, there was growing interest in the issue of improving primary care for the elderly in Nova Scotia. In fact, the PCOE project contributed to a growing sense of urgency to address these issues. As the project proceeded, Dr. Clarke was contacted on an increasingly frequent basis by people all over the province who were seeking input and advice about ways to improve primary care for the elderly. As part of the ongoing process to develop a long term strategic framework for continuing care, the Nova Scotia Department of Health adapted the focus group

process developed by Capital Health's PCOE project and implemented it across the province in order to more clearly identify issues and options for improving primary care for the elderly.

During the project, a number of related concurrent initiatives were underway. The project team worked to ensure that the PCOE project worked collaboratively with other initiatives and took into consideration the findings and directions of other initiatives, such as the Community University Research Alliance that created a research proposal to examine the role of nurse practitioners in long term care settings; a provincial working group examining access to medical services for continuing care facilities; various continuing care facilities exploring the option of implementing a nursing home physician model; the work of the Nova Scotia Task Force on Aging and the Centre for Health Care of the Elderly; and most recently, ongoing planning for alternative level of care beds within Capital Health.

Another important dimension of the planning context for the PCOE project is the number of different entities responsible for elements of primary care for the elderly. Responsibility for providing primary care services to the elderly currently lies with many different jurisdictions, agencies and professionals. For example, elderly people who live in the community may receive primary care from health professionals in private practice, such as physicians, as well as government services such as home care. Elderly people who live in continuing care facilities have some of their primary care needs met by the staff of their facility of residence as well as a community-based physician. There is no single institution with both clinical and financial responsibility for ensuring that elderly people receive high quality integrated primary health care services.²

In order to clearly identify roles for Capital Health in improving primary care for the elderly, the PCOE project examined the complexity of the current path of primary care service delivery for elderly people. The problems and issues encountered at various points along the path of care were identified, leading to the identification of potential opportunities for improvement, and ultimately, recommendations for the consideration of Capital Health to strengthen primary care services for the elderly.

Methods

The PCOE project used multiple sources of information to identify issues and possible solutions. Each method is briefly described below. For further information about any of the data collection methods, please contact the project leader.

- **Literature review:** In the early stages of the project, a search of the formal and grey literature was conducted to identify potential models for providing primary care to the elderly. The literature search provided information about integrated models of care based in communities and facilities, as well as the role of interdisciplinary teams. Approximately 90 articles and reports were reviewed for the PCOE project.
- **Focus Groups:** Nine focus groups were held to hear about the experience of providing primary care to the elderly from nurse practitioners, family physicians, directors of care from continuing care facilities, staff of continuing care facilities, family members of frail elderly people and geriatricians. Focus groups were held in various locations throughout the Capital District, including several in Halifax, Dartmouth, Windsor and Musquodobit Harbour.
- **Peer Discussions:** Throughout the project, the project leader sought opportunities to discuss issues and options relevant to the PCOE project with health professional colleagues who were unable to attend focus group sessions. Although these sessions were ad hoc, the ideas offered by peers helped to inform the overall project.
- **Retrospective Data Review:** Based on experiences reported in the literature, it was decided that the use of emergency health services by residents of continuing care facilities is a good indicator of the how well the present system of primary care is working for elderly people who live within the facilities. To define the relationship of transfers from continuing care facilities to emergency departments in the Capital District, retrospective data analysis using data from Emergency Health Services (EHS) databases was conducted to determine the total volume of transfers; ratio of transfers to emergency to number of nursing home beds in Capital District; reasons for transfer; and the amount of EHS time used for transfers.

A special program was written to collect as close to the entire dataset as possible. There were significant challenges in assembling a complete dataset, including the many different ways the information was recorded (for example, a transfer from Arborstone could be coded as third floor Arborstone, hallway Arborstone, entrance Arborstone etc.) Special filters were developed for the program to collect all data anomalies. The data stated in this report is believed to be very close to reality, however because of the challenges in assembling the dataset it may actually underestimate the transfers.

- **Prospective Study:** Based on the review of retrospective data that revealed higher than expected patient transfer rates from continuing care facilities to

emergency departments, the advisory committee recommended the creation of a prospective study to further examine this issue. Seven continuing care facilities within the Capital District that use the emergency department at the Halifax Infirmary participated in a study that followed the cases of 240 patients who were transferred. The facilities that participated in the study represent 65% of continuing care beds within Capital Health.

- **Economic Analysis:** With the assistance of a health economist, an analysis of the costs of transfers from continuing care to emergency departments was undertaken.
- **Administrative Survey:** Continuing care facilities within Capital Health were asked to complete a survey about current staff ratios, primary care activities occurring on site and data about transfers to emergency departments. The data available from many facilities was quite sparse due to lack of electronic tracking systems, limiting the overall usefulness of this method.

The Frailty Continuum

In order to understand issues related to primary care of the elderly, it is important to understand the concept of *frailty*. Frailty refers to a “multidimensional syndrome of loss of reserves (energy, physical ability, cognition, health) that gives rise to vulnerability.”³ It is not the age of an individual but rather their level of frailty that determines how much and what type of primary or other levels of care they require. An individual’s frailty increases as they develop more complex acute and chronic medical problems; functional disabilities; and social problems such as isolation increases.²

As frailty increases, so does the need for care. As represented in Figure 1, frailty occurs along a continuum. At one end of the frailty continuum is health and at the other end is illness. An individual becomes increasingly frail when they move along the continuum towards illness, as physical health deteriorates and disability, dependence on others, and social isolation increase. With timely assessments and appropriate interventions, frailty can be reduced.^{4,5} However, the reverse is also true -- without timely assessments and interventions, frailty can be accelerated.

It is important to understand the linkage between frailty and the elderly person’s place of residence. In the community, elderly people live in one of three types of living arrangements: at home with or without caregiver support, in assisted living arrangements or in continuing care facilities. There is often a link between frailty, place of residence and access to primary health care. In many cases, as people become more frail, they leave their home in the community to enter assisted living arrangements or continuing care facilities in the case of the most frail.⁶

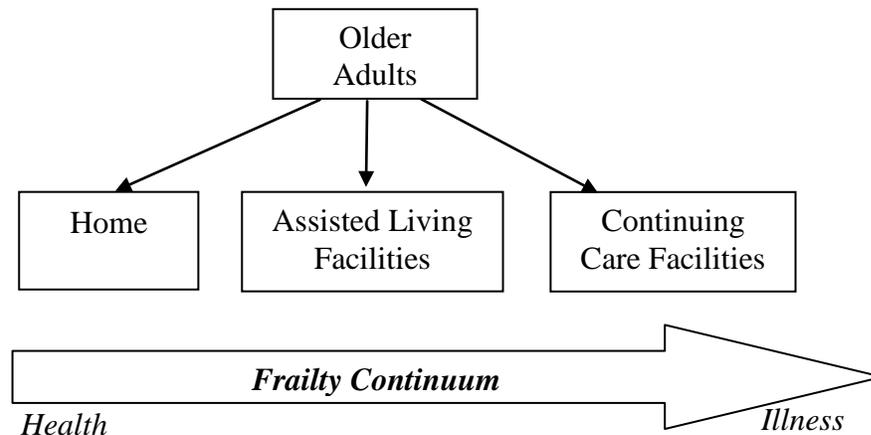


Figure 1: Continuum of Frailty

The Current Situation: Care By Default

One of the main issues highlighted through focus groups, peer discussions and the literature review is the lack of access to primary care experienced by many elderly people. A large part of the access problem is related to a shortage of physicians willing to provide home-based or facility-based primary care. When elderly people cannot access timely appropriate care in the community or in their continuing care facility of residence, the current system results in a series of defaults that often does not result in optimal care from both a quality and an efficiency perspective.

If elderly people do not receive timely assessments and interventions, frailty is accelerated. The frailty status of an individual has an impact on where they are able to live, and their level of frailty influences how much timely assessment and treatment they will receive. Unfortunately primary care assessments and interventions tend to happen less often as individuals progress along the frailty continuum. This results in care by default, with the only consistent default for care being emergency departments. Figure 2 provides an illustration of the current system of care experienced by many elderly people within Capital District. There are several defaults labelled in the figure, each of which is explained in more detail below.

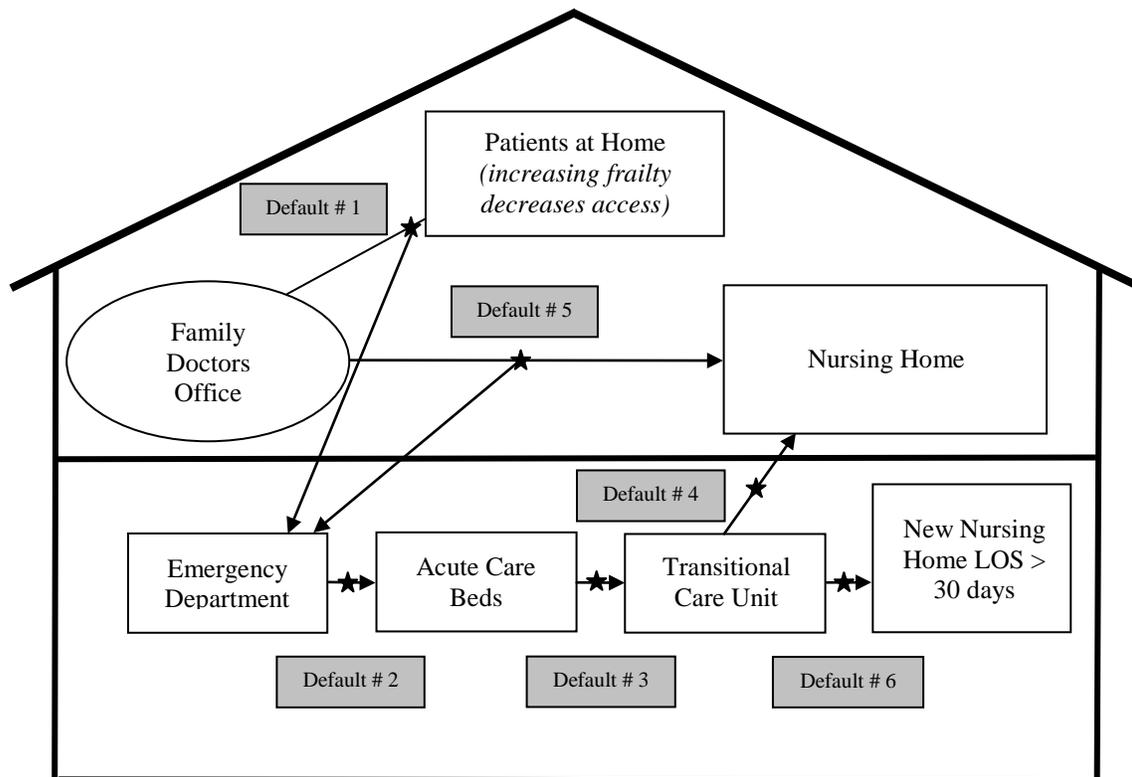


Figure 2: Care by Default

Lack of Access to Primary Care in the Community

Elderly people living in the community usually access primary care through their family physician. In most cases, this requires individuals to visit a professional office. As elderly people become increasingly frail they often experience mobility challenges that make it very difficult for them to physically transport to a physician's office. Ideally, they would be able to have their primary care concerns addressed in their home. However, provincial physician billing data indicates that the number of physicians who visit their patients at home is declining. Between 1997 and 2005, the number of family physicians providing in-home services has declined by 6%, and the number of actual services provided in the home has decreased by 30%. The end result is that many elderly people who are unable to visit their physician's office do not receive a regular assessment of health and frailty issues and existing health problems go unattended and worsen until an emergency results (e.g. falls, delirium). The lack of ability to access a physician results in default 1 – a trip from home to the emergency department.

Complex Problems of the Frail Elderly are Not Best Treated in Emergency Departments

Emergency departments are not resourced to respond to the complex health and social issues experienced by the frail elderly. Often the emergency department is able to treat the acute problem that precipitated the visit to emergency and the individual is sent home, where the problem of lack of access to primary care services persists.

A recent study in Montreal found that elderly patients discharged from emergency departments without access to a physician were twice as likely to have a return trip to the emergency department within 15 days of the first visit.⁷ A cycle of trips to the emergency department and return trips home can begin, where acute issues are addressed but the underlying causes of increasing frailty (e.g. decreased mobility, increased social isolation) are not addressed and worsen. In other cases, the emergency department treats the acute issue but is unable to discharge the patient home because they are too ill with little or no support to manage the condition diagnosed in the emergency department. This cycle results in defaults 2, 3 and 4 as described below.

Moving from Acute to Transitional to Long Term Care

The frail elderly often need a “complex and flexible combination of medical and social interventions.”⁸ The frail elderly who are admitted to acute care often do not receive the integrated care that they need, resulting in long lengths of hospital stays. In many cases, long lengths of stays are related to a lack of options available within the community to enable the individual to return home with appropriate supports, or waiting for bed availability within a continuing care facility. For the frail elderly, an admission to acute care often results in a lengthy hospital stay, followed by transfer to a transitional care unit, followed by discharge to a continuing care facility. Long stays in acute care facilities do not result in optimal care for frail elderly patients.

As the number of elderly people within Capital Health continues to grow, the problem of using acute care resources because of the lack of better alternatives for the frail elderly will also continue to grow. According to data from the Department of Health's

Continuing Care Branch, during the two year period from April 2003 to March 2005, the number of clients in Capital District waiting for admission to a continuing care facility increased by 70. Most of this increase is accounted for by people in the community waiting for entry to a facility. The wait for longer term care alternatives may increase the likelihood that people currently housed in the community will experience a further decline in health resulting in a need for acute care resources.

Another indicator of an ailing community care of the elderly system is the rapid increase in alternate level of care (ALC) patients in hospitals. The problem of large numbers of acute care beds being used for the frail elderly is fundamentally a community resource problem. When the frailty of older adults living at home reaches a critical point, the lack of primary care assessments and interventions available in the home results in a trip to the emergency department. The visit to emergency is often followed by admission to the hospital with designation as an ALC patient. The solution for the problem of high utilization of acute care beds in the hospital by frail elderly patients lies in enhancing access to primary care in the community.

Primary Care in Continuing Care Facilities

There are significant gaps in primary care services available in most continuing care facilities located in the Capital District. This was the strongest message received throughout the PCOE project, from all of the focus groups, peer discussions and various data collection strategies. Physician billing data shows that the overall supply of primary care services in facilities has declined (32% from 1999 to 2004), as has the number of physicians actually providing primary care in continuing care facilities. Most continuing care facilities are finding it increasingly difficult to find physicians who are willing to provide care to residents, and finding physicians willing to provide after-hours care is even more challenging. It was also noted that the physicians who are willing to provide care in facilities are generally all within five to ten years of retiring.

The majority of patients admitted to continuing care facilities from acute care are admitted under the medical advisor/director at each facility. This finding illustrates two very important points. First, there is a transfer of care in the majority of admissions from the patient's family doctor to the medical advisor/director of the facility, which is an interruption in the continuity of care for the patient, exacerbated by the usually poor communication to the facility about the patient's health status prior to their arrival. Second, the increasing number of nursing home patients is falling to only a few physicians by default. During focus group discussions with medical advisors/directors from throughout the District, these physicians clearly stated that they cannot safely maintain their current patient load. Furthermore, there was also agreement among medical advisors/directors that if the current system was not improved, they would not likely continue to work in continuing care in the future.

The key issues identified by the medical advisors/directors include:

- Medical directors/advisors cannot physically see all of the patients that have been admitted under their care in a timely way;

- Given the high case loads, time is not available to provide the type of comprehensive complex care needed by frail elderly people;
- Human resources are not always available in the facilities to deliver the type of complex care required by residents who as a general trend are coming to facilities with much greater needs for care than in the past;
- There is poor communication in the system that results in a lack of complete information about residents' health status when they come to facilities, which in turn results in wasted time and potentially inappropriate interventions; and
- There is a critical shortage of physicians willing to provide after hours on-call coverage.

Moving from Continuing Care Facilities to Acute Care to Transitional Care – And Back Again

The prospective study conducted as part of the PCOE project found that for the 240 residents transferred to the emergency department from continuing care facilities, the first physician assessment of the problem that precipitated the transfer was completed by the emergency room physician. In only 15% of cases did a physician actually assess the resident at the continuing care facility before the resident was transferred. The lack of access to primary care through a family physician in continuing care facilities results in default 5 – facilities must transfer patients to emergency departments for care, which can result in a progression from acute to transitional care.

Default 6 happens when transition back to the facility is delayed due to the lack of resources in the facility to provide adequate follow-up care. Due to current continuing care policy in Nova Scotia, if an individual who was previously in a facility is in an acute care setting for more than 30 days, they lose their bed in their previous facility of residence and are placed on a list to receive the first available bed when they are well enough to be transferred. This new bed may not be in their original facility of residence. This cycle is extremely disruptive for individuals and their families and may actually cause harm (accelerate frailty) for people with dementia who are more likely to thrive in stable environments.

A Closer Look at the Root Causes of Care by Default

In order to fix the current situation where frail elderly people are moved through the system by a series of defaults rather than according to their needs, changes need to be made to affect the root causes of the various defaults. This section provides an closer look at why the defaults outlined in the previous section occur.

Access to Primary Care Providers

The focus groups identified a myriad of reasons why the elderly experience difficulty in accessing primary care services in their place of residence, whether that be in the home or in a facility. A significant barrier to accessing primary care physicians is the inadequate remuneration available for the type of complex care required by the frail elderly.

Assessing and managing frailty on a routine basis takes far longer than the time allotted for a general office visit, especially when travel time to a home or facility is included. Yet in the current fee-for-service model, physicians are not compensated for all of this time. Likewise, the time required to participate in team case conferences, family meetings or several other activities in support of providing high quality, integrated care is also not compensated. This contributes to reluctance on the part of many physicians to provide care to the frail elderly in settings other than their practice office.

Many physicians also believe that they do not have the necessary expertise required to care for the complexity of issues that are experienced by the frail elderly. Lack of training and experience also results in reluctance to provide care for the frail elderly. Physicians participating in focus groups also noted their frustration about a lack of referral options for their frail elderly patients. For example, physicians were unaware of timely rehabilitation services that could be provided in the home for frail elderly people who could remain in the home with such supports.

Two other issues were noted by physicians as barriers to providing primary care in continuing care facilities. Continuing care is not viewed as a valuable service within the context of the broader health system. This lack of value placed on the care provided in continuing care discourages people from choosing to provide care in these settings. In addition, physicians noted that continuing care facilities are not provided with staffing levels that allow them to provide optimal primary care. Several focus group participants indicated their belief that facilities do not have the number of staff or enough staff of right type to provide high quality of primary care services. Focus group participants emphasized that staff in continuing care facilities are caring dedicated professionals who are struggling to provide high quality services without enough resources to do so.

Transfers to Emergency from Facilities

During the PCOE project, two methods of data collection were used to examine data about the circumstances that surround transfers to emergency departments from continuing care facilities. This particular aspect of the care by default system was chosen for examination because it was believed that the circumstances surrounding transfers would serve as indicators of issues within the broader system. Also it was considered to

be relatively easier to collect detailed data around transfers from facilities to emergency (compared to collecting data from transfers from individual homes).

Retrospective data from the EHS databases was examined for the years 2002 to 2005 which resulted in the following conclusions:

- The rate of transfer from continuing care facilities in Capital Health to emergency departments is 75% (total transfers/total beds studied) x100%. In the Netherlands, where a comprehensive approach to caring for the elderly has been implemented over the last 10 years, the transfer rate is only 5%.
- The most common reason for transfers to emergency from facilities is that the patient “cannot breathe” or “had a fall”.
- The median time for patients to be in an ambulance was 1 hour, but the range included up to 6 hours.

The second source of data used to study the implications of transfers to emergency was a prospective study conducted between November 2004 and April 2005. Data was collected for 240 transfers from continuing care facilities to an emergency department. To better understand the circumstances around each transfer, data was collected at the continuing care facility, from EHS, from the emergency department and from hospital admissions.

Description of the People Who Were Transferred

The following describes the population of 240 people who were transferred from facilities to emergency departments.

- 70% of patients were female; 30% were male.
- 80% of the patients were transferred with breathing problems or because of a fall, consistent with the data from the retrospective data analysis.
- 35% of the patients transferred to hospital had an advanced care directive that stipulated comfort care only (i.e. a directive to not send them to the hospital).
- 50% of the patients had at least one transfer to emergency in the past year.
- 35% of the patients were in the facility for 6 months or less prior to the current transfer.
- 50% of the patients had 10 or more drugs that were **not** *pro re nata* (prn).
- In terms of health history, 50% of patients had dementia; 75% had fallen; 45% experienced incontinent bowel; and 48% experienced incontinent bladder.
- Prior to living in their current facility, 40% of patients had lived at home; 40% had lived in the hospital; 19% had transferred from another facility and 1% had lived in assisted living.

Before the Transfer

As part of the prospective study, events that took place in the facility before the transfer occurred were examined. In 50% of cases, the facility was not able to reach the patient’s family physician for a consultation before the patient was transferred to emergency. In only 15% of cases was there an on-site assessment by a family physician prior to transfer. In fact, in 60% of cases, there had been no family physician investigation with the patient

in the last week prior to admission. In the four weeks prior to the transfer, 33% of patients had no visits from a family physician, while 66% had one visit from a physician.

During the Transfer

During the transfer to the emergency department, patients spent on average one hour in the ambulance. In 42% of cases, an intervention was required by EHS staff, such as oxygen or morphine. In 87% of cases, there was no change in clinical condition during the transfer to emergency.

In the Emergency Department

Ninety five percent of the patients who were transferred to the emergency room received some sort of test, specifically:

- 45% of patients transferred had a plain x-ray;
- 45% of patients transferred had an EKG;
- 26% of patients transferred had a bladder catheter;
- 10% of patients transferred had a CT scan; and
- 7% were sutured.

Overall, 20% received consults to internal medicine, 6.2% received surgical consults, and 2% and 1% received consults to family medicine and geriatrics respectively.

In terms of admissions to hospital from the emergency department, 60% of patients transferred to emergency were returned to the nursing home. Thirty nine percent were admitted to the hospital and 1% died. Admissions to the hospital were distributed as follows:

- Internal medicine: 58%
- Orthopedics: 10%
- General surgery: 10%
- Family medicine: 9%
- Geriatrics: 2%
- Cardiology: 2%
- Other: 10%

Finally, 60% of those transferred for a breathing problem were admitted to hospital, while only 15% of those transferred to emergency because of a fall were admitted.

During the Hospital Stay and Return to Continuing Care Facility

Of the 39% of patients who were admitted to the hospital, 20% died while in hospital and 80% returned to a continuing care facility. Half of these patients had at least nine drugs, half had at least 18 lab tests and half had at least one x-ray. Thirty four percent had a catheter, 16% were ventilated, 10% received enemas and 10% received a cast or splint.

Of the patients who returned to the continuing care facility after an admission to the hospital, 25% returned to the emergency department within one week, and 50% returned to the emergency department within one month. When they returned to the facility, 57% returned with a diagnosis different from the diagnosis given in the facility prior to transfer. In 62% of cases, the overall condition of the patient had either not changed or

was worse when they returned to the facility, and 13% had worse mobility when they returned. Fifty-one percent of returning patients had a change in their medications.

Implications of the Transfer Cycle

The data clearly show the implications of a lack of access to primary care services in continuing care facilities, both in terms of patient care and system inefficiencies. Over half of the patients who were transferred from continuing care facilities to emergency departments returned to the facility without admission to hospital. Given the number of people transferred for breathing problems and falls, it is probable that many of these people could have been kept in the continuing care facility if there was adequate access to physician and nursing services and equipment such as oxygen and the ability to perform an x-ray on site. The fact that 35% of the patients who were transferred specifically directed that they were not to be transferred to hospital (through their advance care directives) suggests that continuing care facilities are not adequately resourced with staff, training or physical infrastructure (such as oxygen) to provide comfort care in the facilities. The ongoing cycle of trips between the facility and the emergency department for at least half of the patients in the study is a strong indicator of the need for a better solution that enables frail elderly people to receive the care they need in the facility where they reside.

Another issue of considerable concern emanating from the data is the fact that half of the study population were receiving 10 or more non-prn drugs. A review of each clinical case by a physician specifically trained in care of the elderly revealed many cases of inappropriate drug combinations and dosages. This situation poses a risk to the health of patients and is also costly for the health system.

The Economic Imperative

To better understand the economic impact of the current system of providing primary care to the elderly in Capital District, the data from the prospective study were used to develop a costing analysis to identify and quantify from a financial perspective the resources consumed by transfers. While this analysis is limited to only one element of care for the elderly (i.e. the analysis focuses on transfers from continuing care facilities and does not capture any costs related to providing primary care to the elderly in the community), it does provide an important indication of the economic impact of the current system of care by default.

Each component in the care process has a number of associated resources all of which have related costs. By accessing data from a number of different databases, attempts were made to estimate these costs. Although the costs of certain components in the care process were not readily identifiable, it is believed that the cost estimates are reasonable. Figure 3 shows the various components of the care process used in the analysis and the associated annual costs. Based on the available data and the assumptions used in the analysis (see Appendix 1 for additional details about the costing analysis), the total cost incurred in the health system resulting from continuing care transfers to the emergency department is \$8.246 million annually.

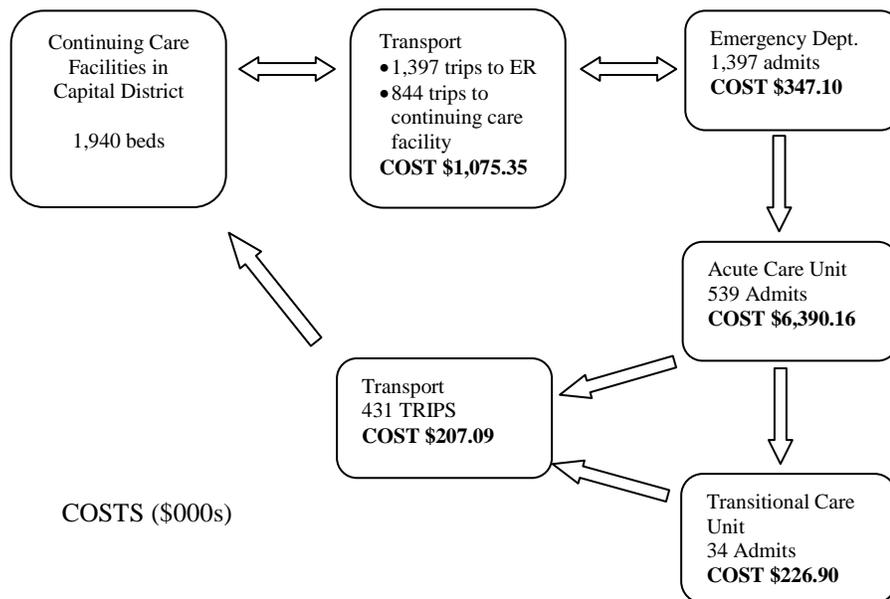


Figure 3: Costs Associated with Care Components

It is important to note that all of the costs above would not be ‘saved’ if transfers to the emergency department stopped. In the context of a publicly funded health care system, even if the transfers stopped, health care providers would still be seeing patients, hospital beds would still be used and ambulances would still be on the road. However, diverting some of the patient transfers to the emergency room to another care approach could free health care resources currently used for supporting transfers for other uses. Finding

means of caring for at least some if not most of the patients who currently get transferred to the emergency department would allow for a reallocation of these existing resources as well as provide higher quality care on-site for patients.

Another element of costs relates to drugs provided through the provincial Pharmacare program. In 2004-05, Pharmacare spent \$6 million on drugs in continuing care facilities in the Capital District. Given that the results of the prospective study showed a high number of patients unnecessarily receiving too many drugs, implementing a primary care approach that includes regular monitoring of medications for patients could potentially result in savings to Pharmacare. In addition, elderly patients who wait in acute care for beds in continuing care facilities are consuming a substantial number of drugs. Decreasing the number of patients transferred to acute care could therefore potentially result in a further drug cost saving in the acute care sector.

The Preferred Future: Care by Design

Ideally, primary care for the elderly and the frail elderly would be provided through an integrated system. Critical elements of an integrated system identified through the literature include the following characteristics:

- a community-based system built on the foundation of primary care, offering a full range of health and social services;
- a system developed around providing care to a defined population;
- a system that is funded through a means other than fee for service; and
- a system that offers a case management function to ensure clinical responsibility for the entire range of health and social services required by individuals and families.²

Models that have shown promise in the literature include rapid response multidisciplinary care teams that provide a full range of primary care services in a variety of settings (home and continuing care facilities); shared care models where a secondary care specialist works with a primary care team for assessment and/or follow-up; implementing new roles within continuing care facilities such as nursing home physicians and/or nurse practitioners, and implementing comprehensive geriatric assessment processes to identify and develop effective care plans.⁹⁻²⁸

Guiding Principles for a New Approach to Care

The PCOE Project Advisory Committee identified guiding principles for a new approach to primary care of the elderly. The guiding principles were developed based on the findings from the literature review and the focus groups. Changes in the system of care for the elderly in Capital Health should be guided by the principles below.

FOCUS

1. The elderly person is the centre of any model, living in the most appropriate setting.
2. Elderly patients receive the most appropriate amount of the most cost effective medications.
3. Elderly people have increased access to comprehensive primary care services.
4. Elderly people living in the community have access to restorative/rehabilitative care.
5. The type of care is most appropriate for the elderly person and is determined through a comprehensive assessment.
6. Families are educated about the reality of their loved one's health status.

TEAM

7. Comprehensive primary care to the elderly is provided by an interdisciplinary team, with clear roles for all team members.
8. Communication is improved among physicians, facilities, acute care settings and others involved in providing primary care to the elderly.
9. Team members providing primary care to the elderly have the necessary skills, expertise attitudes and comfort with end of life issues.

SUSTAINABILITY

10. Strategies for recruitment and retention of physicians and other primary care providers are a key feature of new models.
11. New models cannot increase the burden of work load on primary care professionals in the system.
12. The public is informed about end of life issues and expectations around aging.
13. Models do not encourage the creation of unnecessary nursing home beds.
14. Models are flexible and recognize that different situations exist in Capital Health.
15. Models are sustainable and have clear lines of clinical and fiscal accountability.
16. Models support the design of appropriate facilities to provide continuing care to the elderly.

Implementing Changes in Capital District

Many of the issues related to primary care of the elderly are provincial in scope (e.g. physician remuneration) and will hopefully be addressed through the ongoing Strategic Framework Project at the Department of Health. However, there are opportunities for Capital Health to strengthen primary care for the elderly that will be congruent with the directions of the provincial Strategic Framework Project and ultimately improve care for the elderly in the district. Three main initiatives would improve the system of caring for the elderly in Capital Health. Each initiative is described below.

Support Family Physicians in Providing Better Care to the Elderly in the Community

Family physicians are critical components of an effective primary care system for the elderly in Capital District, as shown in the care by default diagram (default numbers 1 and 5 in Figure 2). Supporting physicians to provide better care for their elderly patients is a key step to enable more elderly people to remain in their homes by identifying frailty early and intervening as appropriate. The PCOE project learned that many physicians do not feel that they have the expertise to assess and manage the complex issues of frailty experienced by many elderly people. A key initiative in support of better primary care

for the elderly then, is the creation of a tool to assist physicians in assessing and managing frailty.

By adapting the Canadian Study of Health and Aging (CSHA) Clinical Frailty Scale developed by Dr. Kenneth Rockwood and colleagues,³ a tool could be developed that assists family physicians in regularly assessing the frailty of their elderly patients. Such a tool could also provide supporting recommendations for intervention depending on the result of the frailty assessment. The CSHA Clinical Frailty Scale³ categorizes individuals into seven levels of frailty ranging from very fit to severely frail. For the purposes of a support tool for family physicians, the PCOE project suggests the development of four levels of frailty based on combining elements of the CSHA as follows:

- Level 1: Generally Healthy. This level refers to elderly people who have no major problem indicators, and would encompass the CSHA categories 1 (very fit), 2 (well), and 3 (well with treated co-morbid disease).
- Level 2: Some Frailty. This level refers to elderly people showing some indications of increasing frailty, however, they are generally able to manage the tasks of daily living independently. This level would encompass the CSHA categories 4 (apparently vulnerable) and 5 (mildly frail).
- Level 3: Increasing Frailty. This level corresponds to the CSHA category 6, moderately frail, and refers to elderly people who require assistance with the activities of daily living.
- Level 4: Severe Frailty. This level corresponds to the CSHA category 7, severely frail, and refers to elderly people who require care at all times.

An effective tool for family physicians would enable physicians to conduct relatively quick assessments to determine which of the four levels best describes their patients. The tool would also direct physicians to appropriate interventions based on the assessed frailty level. Figure 4 shows a preliminary conceptual model for the organization of the tool. The figure refers to an entity called a “Nursing Home Medicine Outreach Team” which is the next initiative described after the figure. The term “Nursing Home Medicine Outreach Team” describes where the team is based (i.e. in a continuing care facility) and the fact that nursing home patients can be treated whether in the facility or in their homes in the community. The Team is intended to provide care for people who are the most frail, no matter where they live.

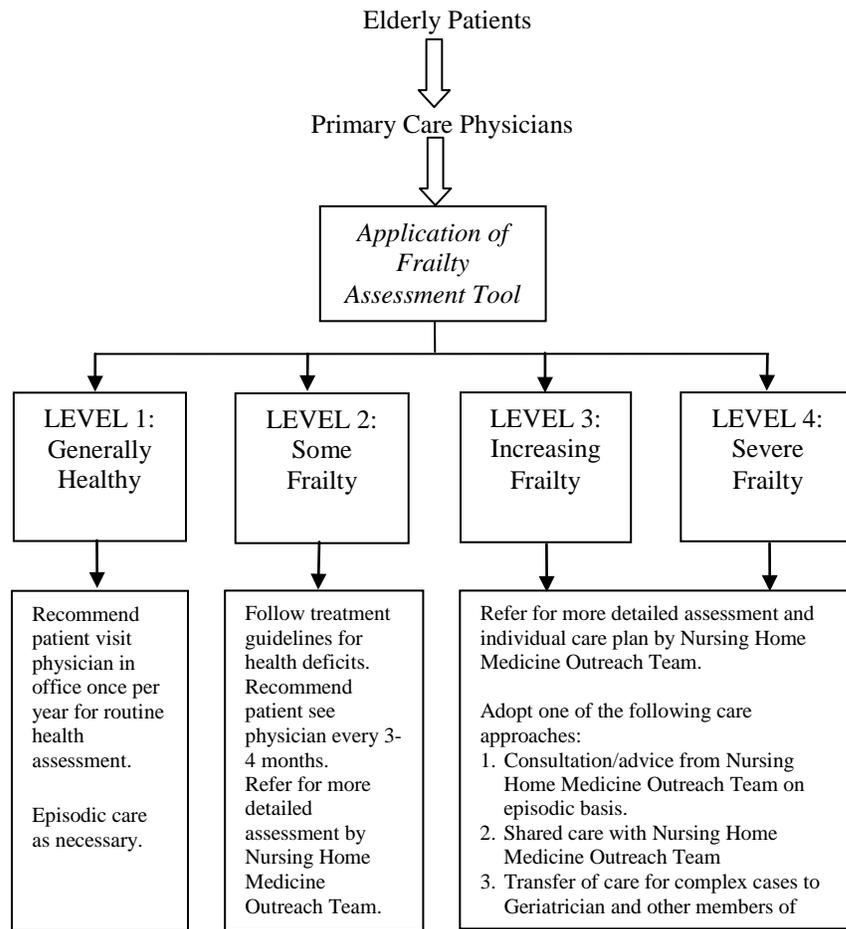


Figure 4:
Conceptual Framework for a Frailty Assessment Tool for Family Physicians

Nursing Home Medicine Outreach Teams

One of the issues identified by the PCOE project through focus groups and peer discussions with physicians is level of expertise required to manage the complex care needs of the frail elderly. Many physicians spoke to the project leader about their own lack of expertise in providing the in-depth care needed by their elderly patients. In addition to concerns about their own expertise, physicians expressed frustration with the lack of resources in the community to which they can refer their elderly patients. Based on the experience of models reported in the literature, and experience in Capital Health with issues such as mental health and palliative care, the implementation of a Nursing Home Medicine Outreach Teams would be an important step in supporting family physicians and their elderly patients. As noted in Figure 4, family physicians would be able to access a Nursing Home Medicine Outreach Team for more detailed assessments of patients who are showing some or increasing frailty. As patients become increasingly or severely frail, family physicians would have several options in the ways they could use a nursing home medicine outreach team depending on the needs of their patient and their

own expertise and ability to manage the issues: consultation on an episodic basis, shared care approach with the team, or complete transfer of care to the team.

Nursing Home Medicine Outreach Teams would have the capacity to provide services by professionals who have been specifically trained in providing care to the elderly. Primary medical and nursing care, rehabilitation services and case management would all be functions provided by the team. It is envisioned that a Nursing Home Medicine Outreach Team would provide services for a defined geographic area within the district, and would provide services in physicians' offices, the homes of elderly people in the community and continuing care facilities within the area. It is proposed that the Nursing Home Medicine Outreach Teams be based out of continuing care facilities, working in collaboration with physicians designated to provide care in the facilities, as described next.

Improving Primary Care in Continuing Care Facilities

Given the current crisis in accessing primary care in continuing care facilities, it is apparent the current model of providing primary care in this setting is not working. The PCOE project proposes an alternative model, which would ensure better access to care in the facilities and also provide the foundation on which to build the Nursing Home Medicine Outreach Teams described above.

The first step in creating improvements in primary care for the elderly is ensuring that there is physician leadership to drive change. For this reason, the alternative model proposed by the PCOE project requires the appointment of a district medical director for continuing care, who can work in partnership with medical directors at each of the continuing care facilities within the district to implement improvements in primary care at the facility and community levels. Medical directors currently exist for facilities, however the role varies by facility and they often only receive a small stipend that is insufficient to cover the responsibilities that they are expected to fulfill. Formalizing a consistent role for medical directors at each facility, and providing adequate resources for the role is an essential step in the change process.

The PCOE project recognizes that the current fee for service model by which physicians are paid to provide care in continuing care facilities is not working. Therefore, an alternative approach would be to pay physicians a fixed amount for caring for a specific number of patients in continuing care facilities. With the current number of continuing care beds in the district, 11 physicians could be contracted to cover 145 beds each and could also work collaboratively to develop a district-wide approach to providing on-call services in facilities. Having regular on-site care at facilities would enable more timely assessments and interventions for patients, likely reducing the number of transfers to emergency, reducing the amount of poly-pharmacy, ensure that on-call services are available in facilities after hours, and overall, improve primary care for the frail elderly in continuing care. This approach is consistent with directions explored in the provincial strategic framework for continuing care. Developing a group of physicians with expertise in providing care to the frail elderly would be the foundation on which to build Nursing Home Medicine Outreach Teams that could ultimately support family physicians in the community.

Implementation Budget

To ultimately build a primary care system that assesses frailty early and intervenes in a timely manner, all three of the initiatives described in the previous section are important. In terms of sequence, the first step would be the development of greater primary care physician capacity in continuing care facilities. Concurrent with this capacity-building process would be the development of an assessment tool for family physicians. Once the foundation of primary care services for the elderly has been strengthened within continuing care facilities, this foundation can be built upon with the creation of nursing home medicine outreach teams that closely collaborate with continuing care facilities. Resources required to begin the process of change have been estimated and are outlined below.

Increasing Access to Primary Care Physicians in Continuing Care

The following annual expenses are anticipated for implementing a new model of providing primary care physician services in continuing care facilities in Capital District. It should be noted that approximately \$1.1 million is currently spent on the current system of providing fee for service care in facilities.

Table 1: Estimated Budget for Increasing Primary Care Physician Capacity in Continuing Care Facilities

Item	Amount
<i>Medical Directors</i>	
District Medical Director for Continuing Care (0.5 FTE).	75,000
• Duncan MacMillan (0.1 FTE)	15,000
• Dykeland Lodge (0.1 FTE)	15,000
• Glades (0.1 FTE)	15,000
• Haliburton Place (0.1 FTE)	15,000
• Melville (0.1 FTE)	15,000
• Northwood (0.3 FTE)	45,000
• Oakwood (0.1 FTE)	15,000
• Oceanview (0.2 FTE)	30,000
• Scotia (0.1 FTE)	15,000
• Shannex (0.3 FTE)	45,000
• St. Vincents (0.2 FTE)	30,000
• The Birches (0.1 FTE)	15,000
• Windsor Elms (0.1 FTE)	15,000
<i>Subtotal: Medical Directors</i>	360,000
<i>Primary Care Physicians</i>	
11 physicians (145 beds per physician @ \$150,000/physician)	1,650,000
On-call coverage (3 call groups @ \$1,000/week)	156,000
Fee for service for on-call coverage	130,000
Total Annual Expense	\$2,296,000

Frailty Assessment Tool Development for Family Physicians

Developing a frailty assessment tool for physicians would require one-time development and dissemination costs, as well as periodic costs associated with updating the tool (as yet undetermined). It is anticipated that the project manager and physician leader identified in the budget for this initiative could also lead the development of the pilot project for the Nursing Home Medicine Outreach Team. The budget for the initial development and dissemination of the tool are as follows:

Table 2: Estimated Budget for Developing Frailty Assessment Tool for Family Physicians

Item	Amount
Project manager*	50,000
Physician leader* (0.3FTE)	45,000
Other administrative supports	20,000
IT supplies/support (assuming an electronic assessment tool)	25,000
Total	\$140,000

**This position supports both this initiative and the development of the Nursing Home Medicine Outreach Team pilot.*

Pilot for Nursing Home Medicine Outreach Team

The first stages of developing a pilot project for a Nursing Home Medicine Outreach Team includes getting agreements to participate in the project from various partners in the implementation process (different departments within Capital Health, continuing care facility(ies), family physicians, etc), identifying the mandate and operating parameters of the team, developing annual operating budgets and identifying staff for the team. For the first developmental year, it is anticipated that the project manager and physician working on the development of the assessment tool would coordinate the development of the pilot project. Once the project is implemented, there will obviously be salary support costs associated with team members, but these cannot be defined until the team roles and functions are articulated and agreed upon by all partners.

Table 3: Estimated Costs to Define the Pilot Project for a Nursing Home Medicine Outreach Team

Item	Amount
Development of team for Nursing Home Medicine Outreach Team pilot project	\$100,000
Administrative supports/supplies	\$50,000
Development of evaluation framework and reporting system for Nursing Home Medicine Outreach Team pilot project	\$15,000
Total	\$150,000

Evaluation and Monitoring

The many changes being proposed by the PCOE project need to be evaluated to determine their impact. In particular, replication of the prospective study conducted for the PCOE project in three years would enable comparison on several key indicators, such as number of transfers to emergency or number of drugs. In addition, other key indicators should be defined, measured at baseline and then again a few years after the change process begins. Given the size and scope of the changes being proposed, it would not be unreasonable to budget **\$250,000** for evaluation and monitoring over three years.

Concluding Remarks

In addition to raising awareness about the importance of addressing issues related to primary care of the elderly, the PCOE project has confirmed that there are viable options for the future that will improve the system and ultimately the quality and accessibility of primary care. Many of the issues related to primary care services for the elderly are provincial in scope (e.g. physician remuneration for caring for the elderly), and most issues will require a partnership approach to resolution that involves multiple departments in Capital Health, the Continuing Care Branch at the Nova Scotia Department of Health, physicians, continuing care facilities and of course, elderly people who live in the district.

It is clear that the current system of providing primary care services to elderly people is not working. It is equally clear that most of the few remaining physicians who provide primary care to the frailest elderly now, will not continue to do so in the near future if there are not significant changes made in the system. Despite the current reality of a very challenged system, there is tremendous will and support throughout the District for implementing the solutions identified by the PCOE project to meaningfully change the system and ultimately result in healthier elderly people in Capital District.

Appendix 1: Detailed Cost Analysis

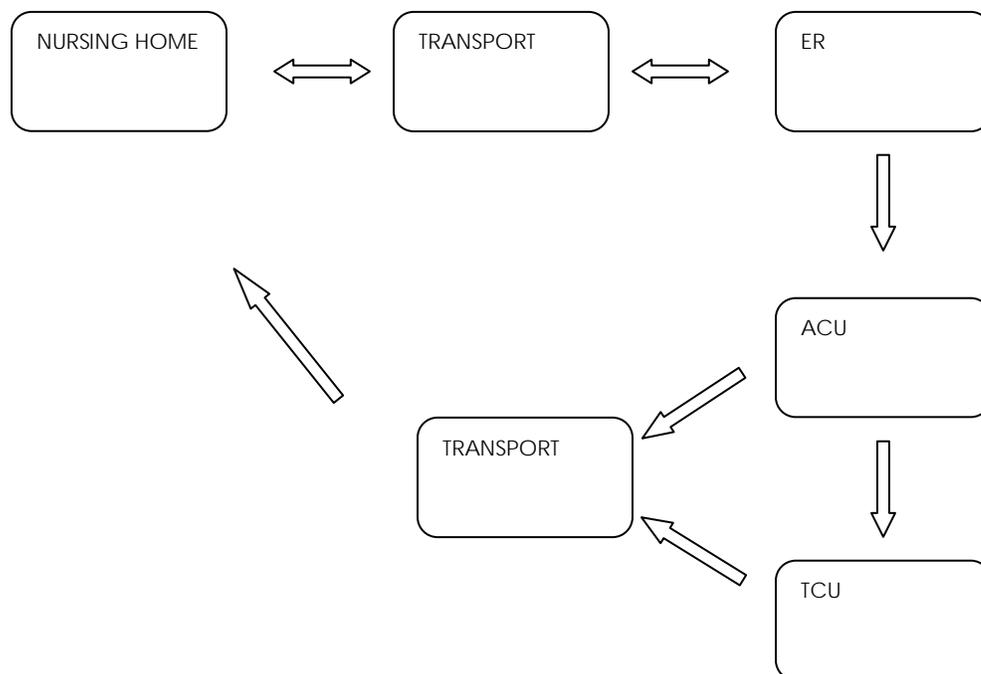
The following cost analysis was prepared by Mike Joyce, Health Economics Branch, Nova Scotia Department of Health.

Transporting a Nursing Home Patient to the Emergency Room – Identifying Resource Use

Overview

The problem considered here is the costs associated with the ambulance transport of nursing home patients to the emergency room, and, if necessary, admission of the patient to the acute care unit. A simple costing analysis was applied to the situation within CDHA to identify and quantify from a financial perspective the resources consumed in these situations. The costs are from the perspective of the public funder. The data is based on the events occurring over the 2003 – 2005 time period. The analysis looks at a number of different paths of care provided within the hospital after the patient enters the ER. This is illustrated in Figure 1.

Figure 1



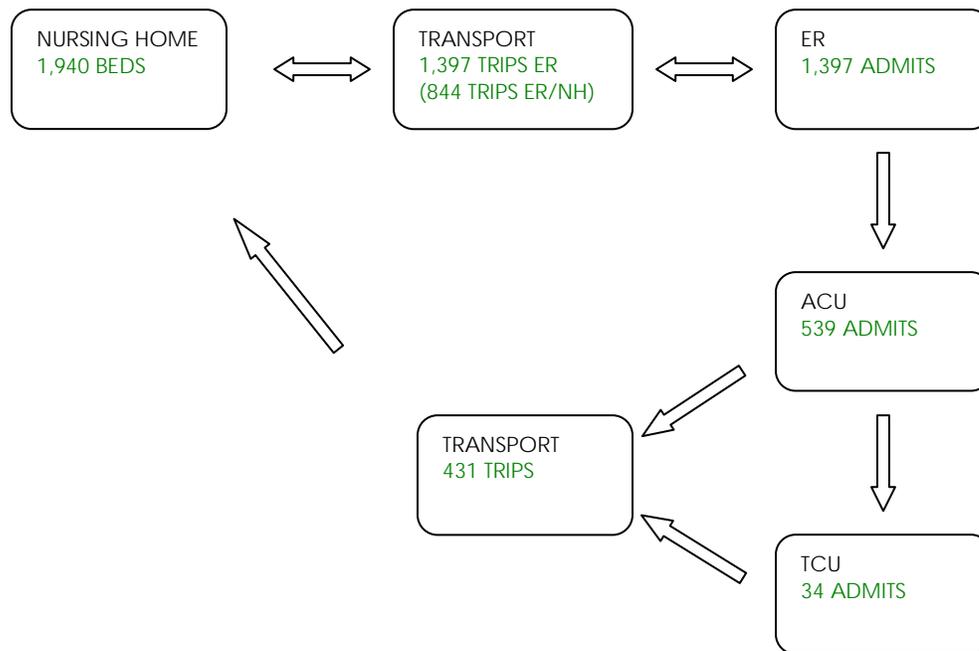
A number of factors must be considered when reviewing the analysis:

- Not all transport cases are considered to have potential to be diverted to an alternate program of care; however, the rate is currently unknown
- The analysis looks at costs on an average cost basis, and only for those within CDHA where costs may differ from other provincial facilities
- Not all costs were readily identifiable
- The costs identified do not necessarily represent a potential for cost savings (this issue will be discussed later in the analysis).

Basis of the utilization and transfer rates

The transfer rates are based on data obtained from the EHS database. The transfer rates are shown in Figure 2.

Figure 2



Many of the transfers could represent potential cases to be diverted to an alternate program of care. Based on the current experience within CDHA the following rates were observed:

- *Transport from nursing home facility to emergency room* – there were approximately 1,397 transports made. This represents one transport for every 1.4 beds.
- *Admission to the emergency room* – it is assumed all patients who are transported to the ER will be admitted (1,397 admissions). Of the patients transported, the death rate either during transport or in the ER was estimated at 1%; however, these patients are still factored in the analysis as they would still require the allocation of hospital resources upon arrival at the ER.
- *Transport from the emergency room back to the nursing home* – some patients can be treated in the ER and then returned to the nursing home (844 transports). In the analysis it is assumed if they were transported to the ER by ambulance they will return by ambulance
- *Admission to the acute care unit (ACU)* – some patients will be transferred to the ACU (539 admissions). This is estimated at about 39% of the ER admissions (after factoring in the death rate in the ER). It is estimated that of these patients

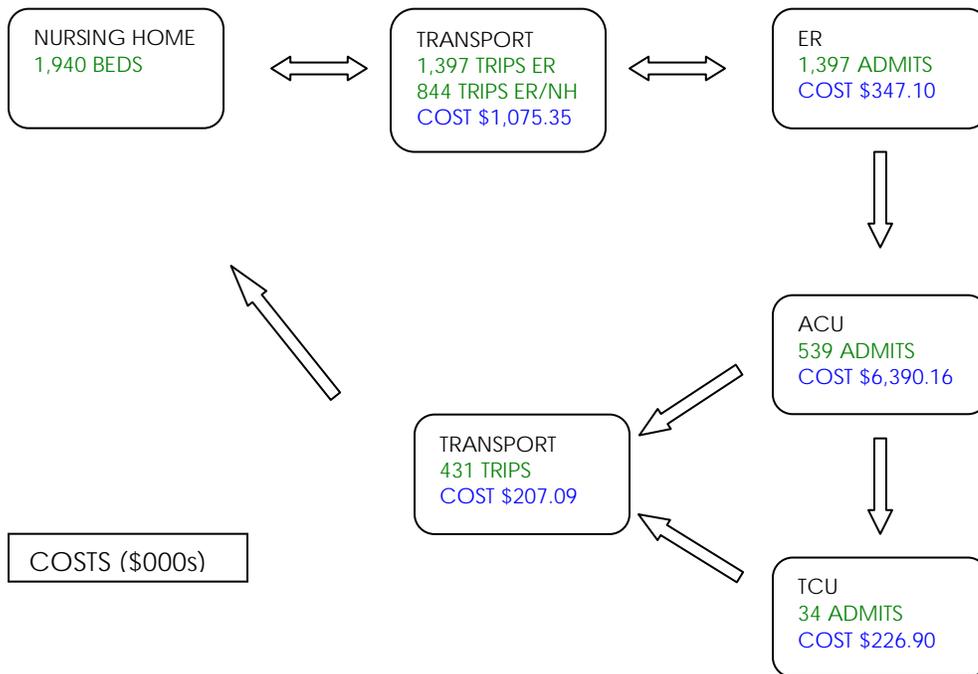
transferred to the ACU, a death rate of approximately 20% will be experienced in the unit.

- *Transfer from acute care unit to the transitional care unit (TCU)* – once a patient stay in the ACU goes beyond 30 days they are transferred to the TCU (34 admissions). In this analysis the transfer rate is estimated at 6.3% of patients in the ACU (considers the death rate in the ACU). For the patients admitted to the TCU, a death rate of 20% is estimated to occur within the units.
- *Transport from the ACU/TCU to the nursing home* – similar to the transport from the ER to the nursing home, an assumption is made that if a patient travels from the nursing home to the ER by ambulance they will return by ambulance from the TCU/ACU setting (431 transports).

Estimates of costs

Each component in the care process has a number of resources that carry with them costs. The analysis attempts to estimate the costs by accessing data from a number of different databases. It must be remembered that these are estimates, and that certain costs components were not readily identifiable. However, it is expected that the costs presented are reasonable. Cost estimates are shown in Figure 3. *The costs represent an annual cost.*

Figure 3



Transport costs – the cost is based on the average cost per transport less the user fee. The cost would consider all costs associated with operation of the vehicle, including overhead, and the wages for the paramedic.

Transport	Trips	Cost (\$000s)
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Nursing Home to Emergency Room	1,397	\$670.46
Emergency Room to Nursing Home	844	\$404.89
ACU/TCU to Nursing Home	447	\$207.09
TOTAL - TRANSPORTS		\$1,282.44

Source: EHS

Emergency room – this includes the costs for management in the ER, nursing care, ER physician fees, DI/lab facility and physician fees, and physician consultants. It excludes ER overhead. It considers time in the ER based on the average case (44.9 minutes) which is an underestimate of the actual time spent in the ER by the nursing home patient. Regarding this average case time identified – at this stage information on allocation of care in the ER over the time period spent in the ER is not entirely clear; it is thought that the most intensive portion of care would typically occur in the early part of the stay in the ER. If this is correct then even though average time per patient is underestimated, most of the cost should be captured with the exception of overhead.

Cost Component - ER	Cost (\$000s)
ER physician fees	\$77.74
Facility fee	\$158.61
DI/lab (facility)	\$33.29
DI/lab (physician fees)	\$34.69
Physician consultants	\$42.77
Overhead	n/a
TOTAL – EMERGENCY ROOM	\$347.10

Source: MSI, CMDDB

Acute care unit and transitional care units – this considers the stays of nursing home patients who were transferred by ambulance and admitted through the ER. In the ACU/TCU the costs are allocated to such stays on an average basis. It includes staffing costs, tests, accommodation, food, laundry and any other overhead. It also includes physician costs for visits services, consults, and tests. At this stage it excludes physician costs for certain procedures.

Cost Component – ACU/TCU	Cost (\$000s)
ACU – physician fees	\$237.67
ACU – facility cost	\$6,103.18
ACU - physician fees (tests/consults)	49.30
TCU – physician fees	\$10.16
TCU – facility cost	\$216.74
TCU – physician fees (tests /consults – included in ACU costs)	n/a
TOTAL – ACU/TCU	\$6,617.05

Source: MSI, DAD

Based on the data available and the assumptions being made in the analysis, the total cost incurred in the system resulting from the nursing home transfer is estimated

Note on Costs

Costs identified do not necessarily represent a potential savings even if the patient transfers were to stop. This is due to the nature of the health care sector and a publicly funded system. The analysis is based around the issue that transport of some nursing home patients represents potential cases that could be diverted to an alternate program of care. This could free up health care resources currently devoted to these

cases (physician, facilities, and ambulances) for other uses. However, in reality even in the event that the nursing home patient is diverted from using the transport and the hospital based resources, the physician in the hospital will still see patients, the hospital bed will still likely be filled, equipment and staff in the hospital will still be used, and the ambulance will still be on the road.

However, value can exist in an alternate program of care if certain criteria are met including:

- if the nursing home patient can be diverted to an alternate program of care, the physician, hospital and transport resources currently being used could be used in other areas of care that have potential for more appropriate use within the system.
- If the alternate program of care within the nursing home is found to be more appropriate for those patients.

Over the long-term savings could be realized; however, they are not likely to be incurred in the short-term. In fact in the short-term, additional costs associated with any new program will likely be incurred. However, if it is structured properly this can be viewed as an investment in health care and subsequent benefits may be incurred in the future to offset any new costs.

Limitations

Limitations of this analysis must be considered. The results are only estimates based on average costs and average utilization levels. There are also costs that are incurred but were not easily identifiable. These factors must be considered when looking at the results. The utilization data and costs presented in the scenario can vary; however, there was no opportunity to explore this further by use of a sensitivity analysis.

Endnotes

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