



Health Care Use at the End of Life in British Columbia

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Executive Summary

Throughout their lives, British Columbians depend on the provincial health care system for a wide variety of high quality, safe health care services to help maintain their health and wellness when self-care alone is insufficient. At the end of life, patients, their families and friends, and health care providers alike value increased choice and coordinated, compassionate care. Knowing this, in May, 2006, the Province released its policy document, the Provincial Framework for End-of-life Care, as a guide for the Ministry of Health Services and its six health authorities in their planning and delivery of end of life care.

Around the same time, the Canadian Institute for Health Information (CIHI), in collaboration with the Home and Community Care Branch of the BC Ministry of Health Services, undertook a BC-specific, retrospective quantitative study to describe the demographic characteristics and service use trends and patterns for all persons who died in 2003/2004. Study objectives were to:

- Develop profiles of health service utilization, per selected characteristics and services, of British Columbians specifically during their last two years of life;
- Identify and quantify the locations where decedents died;
- Identify and quantify the trends and patterns of health care usage; and
- Quantify the number of physician visits used and palliative drugs prescribed through the Palliative Benefits Program for that same time period.

The study was part of the larger Western Canadian study by CIHI that produced the companion report, “Health Care Use at the End of Life in Western Canada.” The report is found at www.cihi.ca.

The researchers used anonymous, retrospective quantitative data and had no access to any data containing personal or traceable information. The study did not collect any qualitative data to analyze or describe the subjective experiences of decedents or their friends/family members, and the study was not an evaluation of the quality or appropriateness of end of life care in BC.

Data sources included multiple databases owned and managed by the Ministry of Health Services, the Vital Statistics Agency, and the British Columbia Ambulance Service. Throughout the study, all legal requirements and obligations to ensure optimal data integrity and complete privacy protection of the decedents were met at all times by all parties and the researchers.

Preliminary data analyses included linking, sorting and counting specific types and volumes of services and resources used by each decedent in their last two years of life. Services that were examined included numbers and patterns of physician visits used; pharmaceutical prescriptions written and dispensed; acute care days used; residential care facility days used; direct care community visits used (nursing, physiotherapy and occupational therapy); home support hours used, and adult day care days used.

Major Findings

1. The study found that 29,456 people died in BC during 2003/2004. This represented 0.7 percent of the 2003/2004 British Columbia (BC) population. Of these decedents, the study found that:
 - 79 percent were aged 65 and over;
 - 49 percent were female and 51 percent were male;
 - 41 percent were married, 37 percent were widowed, 11 percent were never married, and 10 percent were divorced or separated;
 - 13 percent lived in rural and remote areas;
 - 34 percent died from diseases of the circulatory system, 28 percent died from cancer, and 10 percent died from respiratory disease. The remaining died from external causes or other diseases including those of the endocrine, nervous, digestive and other systems;
 - The three most common locations of death were in hospital (53 percent), in a residential care facility (27 percent), and at home (17 percent). Two percent died in other places; one percent died on the street or highway.
2. Four patterns were found to describe the cohort's overall service utilization in terms of their dependency, or not, on specific services. Findings showed decedents were (1) primarily self-care (13%), (2) primarily self-care with simple single service use (34%), (3) having increased dependency (9%), and (4) those that were primarily dependent on most services (18%).
3. Thirteen unique service event groups were found within the patterns:
 - Group 1: 3,778 persons who used 0–49 services;
 - Group 2: 3,524 persons who used 50–99 services;
 - Group 3: 3,572 persons who used 100–149 services;
 - Group 4: 3,042 persons who used 150–199 services;
 - Group 5: 2,190 persons who used 200–249 services;
 - Group 6: 1,584 persons who used 250–299 services;
 - Group 7: 1,964 persons who used 300–399 services;
 - Group 8: 1,683 persons who used 400–549 services;
 - Group 9: 1,069 persons who used 550–699 services;
 - Group 10: 3,291 persons who used 700–849 services;
 - Group 11: 1,984 persons who used 850–999 services;
 - Group 12: 1,672 persons who used 1000–2899 services; and
 - Group 13: 93 persons who used 2900+ services.

4. For the entire cohort, a total of 2.2 million physician visits were utilized; a total of 1.99 million prescriptions were written; a total of 0.76 million acute care days, or the equivalent of 2,455 acute care beds at 85 percent occupancy were utilized; and a total of 3.97 million residential care days, or the equivalent of 11,455 residential care beds at 95 percent occupancy were utilized.
5. A total of 8,071 decedents were formally identified as palliative, and their utilization of services spanned all thirteen groups.
6. Services authorized by general practice physicians in private practice and Home and Community Care (HCC) case managers were analyzed during the study. Authorizations for services by home care nurses were included in the total hours authorized by HCC case managers, as this data could not be retrieved or analyzed as a sub-set.
7. Based on costs provided by the Ministry of Health Services, the calculated total cost of health services used by all decedents in the last two years of life was \$1.3 billion.
 - The combined cost for all services used in the last two years of life by the 5,100 people who died at home was \$98.2M (7 percent of total cost);
 - The combined cost of all services used over the last two years of life by the 7,825 decedents who died in residential care was \$633M (48 percent of total cost);
 - The combined cost of all services used over the last two years of life by the 15,580 decedents who died in hospital was \$587M (44 percent of total cost);
 - The cost of all services used over the last two years of life by the 951 decedents who died in other places (for example, on the street, highway or other) was \$8M (less than 1 percent of total cost) for the entire cohort.
8. A major finding of the study was that for many decedents, health service use peaked in the last 3–6 months of life. The findings also showed that for many decedents with chronic illnesses and co-morbid conditions, many had increased need for, and in fact did receive, complex bundles of services in the end of life period well before the last 3 to 6 months of life.
9. The findings suggest overall that policy-makers, health planners and clinicians may wish to consider embedding a “palliative approach” into provincial and regional policy and practice where appropriate so that consenting terminally-ill patients, including those with end-stage chronic disease, may be empowered to receive compassionate end of life care sooner, in a place of their own choosing.

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1. Introduction

The provision of end of life care services in BC can vary from person to person across the province, where some request or require minimal to no formal health service intervention, to those who require intense intervention at the end of life from specialists and interdisciplinary teams. For example, a cancer patient may require significant intervention in the last months of life, while a person who experiences death in a traffic accident or following a heart attack at home may not require any health service. Depicting a picture of service needs and use during the period prior to the end of life is important for clinical managers, health authorities and provincial governments to inform and support planning and decision-making.

The Province of British Columbia values the promotion of caring and effective end of life care services for individuals and their families that is cognizant of, and sensitive to, the cultural, social, and spiritual needs of individuals in their preferred environment, which is most often identified as “home.” Exploring what services are used by persons at the end of life, and the bundles and patterns of service used, can provide valuable information to inform policy, planning and care delivery for all concerned.

The Canadian Institute for Health Information (CIHI) and the Ministries and/or Departments of Health of the four Western provinces joined together to generate information on end of life care, health service volumes, and service use patterns. This report presents the results of the British Columbia Branch study.

1.1. Research Objectives

The research objectives of the study were to:

- Describe the people who died during 2003/2004 in British Columbia;
- Identify where these people died (geographic area, service location, institution type, and home);
- Quantify the type, and identify the patterns, of health care services used (e.g., acute care hospitalizations, physician visits, home care services used, prescriptions written, days spent in residential facilities etc.) by decedents during their last two years of life.
- Quantify use of the provincial Palliative Care Drug Plan.

1.2. Audience

The key audience for this report includes health care system planners, health care providers, and public policy decision-makers. This work can also support analysts, researchers, senior planners and clinicians to better understand the services needed and used by individuals at the end of life.

2. Research Questions, Data and Methods

2.1. Specific Questions That Were Addressed

The specific questions addressed in this study were:

- What are the demographic profiles of those who died during 2003/2004?
 - Characteristics (age, gender, date, cause and place of death)
- Regional breakdown
- Where did decedents die? (hospital, residential, home, other)
- What “service utilization baskets” were typical among decedents?
- What types of health services were used during the last two years of life?
 - How many hospitalizations and days’ stay were used?
 - What was the average number of days in hospital?
 - How many physician visits were provided by general practitioners and specialists?
 - How many residential care days were used?
 - How many home support hours were used?
 - How many home care visits were used?
 - How many hospice admissions and days of stay were used?
 - What was the average number of days in hospice?
 - How was British Columbia Ambulance Service (BCAS) used?
 - What was the utilization of the Palliative Care Drug Plan (Plan P)?

2.1.1. Data Sources

Data was provided by the Ministry of Health Services and Vital Statistics Agency and included: Vital Statistics data-sets; Medical Services Plan (MSP)—Physician Claims data; Hospital Separations—Discharge Abstract Database data; the Continuing Care, Home Support, Home Care and Adult Day Care—Continuing Care Information Management System dataset; the PharmaCare and Palliative Care Drug Program data; and the database of the British Columbia Ambulance Service (BCAS).

Throughout the study, there was full compliance with all legislative Acts and regulations governing the protection and use of sensitive information. Strict policies and procedures were followed by the researchers to ensure privacy and security requirements were met at all times.

2.1.2. Approach and Methods

Grouping and Classification

It is known that over time, service use patterns will vary across individuals, where some may use no services or single services while others may use complex bundles of services. It is often assumed that variations are known and considered as health care services are planned and delivered, but often, that is not the case.

Being able to clearly identify and describe actual patterns of service use by person has been a challenge for health system planners and decision-makers for years. In the past, due to limited data collection and technological/analytic capacity, analysis of health services has been primarily done on a single service basis with the focus on service production and workload, or on statistical analyses applying various methods, assumptions and proxy measures.

In this analysis—building on the many years of data collection and management efforts of the BC Ministry of Health Services—the service use patterns of the individuals who died in 2003/2004 were rebuilt for each month during the last two years of life through a process of data linking to reveal the type and distribution of services used by individual, anonymous decedents over time. Service use that was examined included physician visits provided, pharmaceutical prescriptions written/dispensed, acute care days used, residential care days used, direct care services used (home care nursing, rehabilitation and occupational therapy), home support visits provided, and adult day care days used.

Three basic assumptions guided the analyses:

- Those months where decedents had no service events reflected periods of complete self-care;
- The higher the number of service events a person had over the two years was a reflection of their higher need for service. For example, a person who used 400 service events over the two years had a higher need for service than a person who used 50 service events; and
- The higher the number of *different types* of services used concurrently by an individual was a reflection of an increased complexity and need for service.
- The two primary analyses completed involved (a) grouping all decedents by the number of service events over the two years and (b) classifying each month for each person by the type of service used.

Service Event Groups

In determining service use patterns for the decedents over the last two years of life, 13 unique groups were identified based on the total number of service events used. In the study, a “service event” was defined as: one physician visit, one pharmaceutical prescription, one day of acute care service, one residential care day, one direct care visit, one hour of home support, and one adult care day. The service event groups ranged from those people who only used 0 to 49 services in total over the last two years of life (Group 1) to those that used 2,900 or more services in total (Group 13).

Service Event Group and Range	
Group 1:	0–49 Service Events
Group 2	50–99
Group 3	100–149
Group 4	150–199
Group 5	200–249
Group 6	250–299
Group 8	400–549
Group 9	550–699
Group 10	700–849
Group 11	850–999

Classification of Months by Service Type

For each person, each of the 24 months in the last two years of life was classified based on the type of service used. The three broad categories included self-care where no publicly-funded health service was used, simple single service where only one service type was used in that month; and complex services where bundles of services were used concurrently. There were 23 possible service classification categories that were defined as presented below:

Service Types and Bundles—Classification Categories	
Self-Care	
Simple/Single Service	
Physician Visits (MSP) Pharmaceutical Prescription (PH) Adult Day Care (ADC) Home Support (HS) Home Care (HC) Acute Care (AC) Residential Care (RC) Physician Visit + Pharmaceutical Rx (MSP+PH)	Single Service Group (Included Physician Visit + Pharmaceutical Rx as a single service classification group)

Complex/Service Bundles

Physician Visit + Acute Care (MSP+AC)
 Physician Visit + Residential Care (MSP+RC)
 Physician Visit + Pharmaceutical Prescription + Adult Day Care (MSP+PH+ADC)
 Physician Visit + Pharmaceutical Prescription + Home Support (MSP+PH+HS)
 Physician Visit + Pharmaceutical Prescription + Home Support (MSP+PH+HC)
 Physician Visit + Home Care + Home Support (MSP+HC+ HS)
 Physician Visit + Pharmaceutical Prescription + Home Care + Home Support (MSP+PH+HC+ HS)
 Physician Visit + Pharmaceutical Prescription Acute Care (MSP+PH+AC)
 Physician Visit + Acute Care+ Direct Care (MSP+AC+ DC)
 Physician Visit + Acute Care+ Residential Care (MSP+AC+ RC)
 Physician Visit + Pharmaceutical Prescription + Residential Care (MSP+PH+RC)
 Physician Visit + Pharmaceutical Services + Acute Care+ Residential Care (MSP+PH+AC+RC)
 Pharmaceutical Prescription + Residential Care (PH+RC (no MSP))
 Other

The combination of the service event groups with the service types/bundles (single service and complex service groups) by month in a specific analysis provided more detailed information about the actual patterns of service use of these people.

Palliative Flags

There were five palliative identifiers (flags) used to identify those decedents who used palliative services. These included:

- Patient Service 58—Those people who received palliative care patient service during their hospital stay.
- Diagnosis Code—ICD Code Z515—Those people who had a diagnostic code that indicated palliative care was received during their hospital stay.
- Hospice Organization—Those people who died in a hospice.
- Pharmacare Plan P—Those people registered with the provincial Palliative Care Drug Plan.
- Physician Billing Codes 127 or 138127—Those people who received services identified by these codes indicate that the services may be provided to people with a terminal illness. (No people were identified as having used this service, however; as this code was introduced only recently).

Broad Diagnostic Groups

Each decedent was grouped into four broad diagnostic groups including circulatory, cancer, respiratory, external causes and other. These diagnostic groups were based on the ICD-10-CA code stated as the diagnosis underlying the cause of death found on the Medical Certificate of Death. The criteria for the diagnostic groups were defined by the Ministry of Health Services and were applied as follows.

ICD-10-CA		Code Range	BC MOH Diagnostic Group	Number of Possible Codes
Chapter Number	Chapter Title			
I	Certain Infectious and Parasitic Diseases	A00–B99	Other	753
II	Neoplasms	C00–D48	Cancer C00–C97 Other D00–D48	803
III	Diseases of the Blood and Blood-forming Organs and Certain Disorders Involving the Immune Mechanism	D50–D89	Other	168
IV	Endocrine, Nutritional and Metabolic Diseases	E00–E90	Other	1,059
V	Mental and Behavioural Disorders	F00–F99	Other	407
VI	Diseases of the Nervous System	G00–G99	Other	386
VII	Diseases of the Eye and Adnexa	H00–H59	Other	290
VIII	Diseases of the Ear and Mastoid Process	H60–H95	Other	113
IX	Diseases of the Circulatory System	I00–I99	Circulatory	395
X	Diseases of the Respiratory System	J00–J99	Respiratory	245
XI	Diseases of the Digestive System	K00–K93	Other	453
XII	Diseases of the Skin and Subcutaneous Tissue	L00–L99	Other	362
XIII	Diseases of the Musculoskeletal System and Connective Tissue	M00–M99	Other	2,590
XIV	Diseases of the Genitourinary System	N00–N99	Other	468
XV	Pregnancy, Childbirth and the Puerperium	O00–O99	Other	1,552
XVI	Certain Conditions Originating In the Perinatal Period	P00–P96	Other	338
XVII	Congenital Malformations, Deformations, and Chromosomal Abnormalities	Q00–Q99	Other	633
XVIII	Symptoms, Signs and Abnormal Clinical and Laboratory Findings Not Elsewhere Classified	R00–R99	Other	351
XIX	Injury, Poisoning and Certain Other Consequences of External Causes	S00–T98	Other	2,425
XX	External Causes of Morbidity and Mortality	V01–Y98	External Causes	1,421
XXI	Factors Influencing Health Status and Contact With Health Services	Z01–Z99	Other	682
XXII	Morphology of Neoplasms	8000/0–9989/1	Other	814
XXIII	Provisional Codes For Research and Temporary Assignment	8000/1–9989/1	Other	21
Total ICD-10-CA Codes				16,729

It is important to note that although many ICD-10-CA codes exist, only a small number were used by physicians to identify the underlying cause of death.

MOH Diagnosis Group	Total Codes Available	Codes Used as Cause of Death	Percent of Total Codes Used	Codes Not Used	Percent of Total Codes Not Used
Cancer	486	171	35%	315	65%
Circulatory	395	114	29%	281	71%
External Causes	1,421	129	9%	1,292	91%
Other	14,185	494	3%	13,691	97%
Respiratory	242	54	22%	188	78%
Total Codes Available	16,729	962	6%	15,767	94%

Notes:

1. Codes Available to Use: All ICD-10-CA codes available to be used as diagnosis for cause of death.
2. Codes Used: All ICD-10-CA codes used as diagnosis for cause of death.
3. Codes not Used: All ICD-10-CA codes available but NOT used as diagnosis for cause of death.

Place of Death

The place of death was as identified from the Medical Certificate of Death and included hospital, residential facility, home and other.

Statistical Methods

It was an intentional decision of the study to limit the statistical analyses to simple descriptive statistics only. By identifying service event groups and thematic client profiles, it was believed this approach would best support a beginning discourse about end of life care services and the persons who need them, between researchers, policy-makers, planners and clinicians.

Validation

Validation of the findings was conducted with the BC Ministry of Health Services Working Group, other BC Ministry of Health Services staff, the Canadian Institute for Health Information (CIHI) End of Life Western Canada Research Team, and the BC End of Life Care Working Group.

2.2. Summary and Next Section

This section provided an overview of the research questions that were addressed, and the data sources and methods used. The next section presents a broad overview of the findings.

3. People, Characteristics, Services and Resources—Overview

This section provides a description of the characteristics of the people who died in 2003/2004 and how they used publicly-funded health services and resources in their last two years of life.

3.1. What Were the Ages of the People Who Died in 2003/2004?

3.1.1. British Columbia

In 2003/2004, the total population of British Columbia was 4.15 million and of these, 29,456 people (0.7 percent) died.

When looking at the distribution of all residents in BC during this time period, 40,000 (1 percent) were less than 1 year old, 2.5 million (60 percent) were between 1 to 44 years of age, 1.1 million (26 percent) were between 45 and 64 years, 300,000 (7 percent) were 65 to 74 years, 200,000 (5 percent) were 75 to 84 years, and 66,000 (2 percent) were 85 years of age or older.

Of all people, 0.4 percent of people less than 1 year old died, 0.1 percent of people age 1 to 44 died, 0.4 percent of people 45 to 64 died, 1.7 percent of people 65 to 74 died, 4.6 percent of people 75 to 84 years died and 13.8 percent of people 85 years and older died.

Of the 29,456 people who died, 172 (1 percent) were less than 1 year old, 1,600 (6 percent) were between 1 to 44 years old, 4,500 (15 percent) were 45 to 64 years, 4,900 (17 percent) were 65 to 74 years, 9,100 (31 percent) were 74 to 84 years and 9,100 (31 percent) were 85 years or older.

BC 2003/2004 Total Population and People Deceased					
Age Group	Population of BC	Percent by Age Group	People Who Died	Percent by Age Group	People Who Died Percent of Total BC Pop.
0	40,170	1%	172	1%	0.4%
1-44	2,473,810	60%	1,621	6%	0.1%
45-64	1,076,254	26%	4,528	15%	0.4%
65-74	296,337	7%	4,939	17%	1.7%
75-84	199,732	5%	9,104	31%	4.6%
85+	65,986	2%	9,092	31%	13.8%
Total	4,152,289	100%	29,456	100%	0.7%

3.1.2. By Region

From a regional perspective, of all the people who died, most died in Fraser Health Authority (9,002 people, 31 percent of the total provincial deaths). Vancouver Island, Vancouver Coastal and the Interior Health Authority each accounted for 21 to 22 percent of the total deaths with 6,000 to 6,500 people who died, while Northern had 1,522 people who died (5 percent).

In all regions except Northern, the proportion of all people who died in the region by age group was similar (within three percent) of the provincial proportion. In Northern, a larger proportion of all people who died were younger than other regions and across the province with decedents 19–44 years old being 8 percent of all the people who died (BC—5 percent), 45 to 64 years being 23 percent (BC—15 percent), 65 to 74 years being 22 percent (BC—17 percent), 75 to 84 year olds being 25 percent (BC—31 percent) and people 85 years and older being 20 percent of all people who died (BC—31 percent).

3.2. What Was the Gender of the People Who Died in 2003/2004?

3.2.1. British Columbia

Provincially, 49 percent of decedents were female and 51 percent were male.

3.2.2. By Region

The distribution of deaths by gender in Vancouver Island, Vancouver Coastal and Fraser was similar to the province. For Interior and Northern there were more males (54 to 56 percent of the total) than females who died (44 to 46 percent).

3.3. What Was the Marital Status of These People at the End of Life?

3.3.1. British Columbia

Of all people at the end of life in BC in 2003/2004, 41 percent were married, 37 percent were widowed, 11 percent were never married, and 10 percent were divorced or separated.

3.3.2. By Region

Across the regions, fewer people in Vancouver Coastal were married (36 percent) and more had never been married (16 percent). In Northern, fewer people were widowed (29 percent). Vancouver Island, Fraser and Interior were similar to the provincial patterns.

3.4. How Many People Lived in Rural or Urban Areas at the End of Life?

3.4.1. British Columbia

Across BC, 3,719 people (13 percent of the cohort) lived in rural areas at the end of life.

3.4.2. By Region

The proportion of people at the end of life living in rural areas varied significantly across the regions. Few of the decedents in Fraser (2 percent) lived in a rural area; Vancouver Island and Vancouver Coastal had more (7 to 10 percent), while for the Interior and Northern regions almost one-third of all decedents lived in rural areas at the end of life

Interior had the largest number of decedents (2,030) who lived in a rural area, which accounted for 55 percent of the total number of people living rural at the end of life across BC. The 464 people in the Northern region accounted for 12 percent of the total number of people across BC living rural at the end of life.

3.5. What Were the Main Causes of Death?

3.5.1. British Columbia

The three most common underlying causes of death were diseases of the circulatory system (9,931 people, 34 percent of total), cancer (8,171 people, 28 percent), and respiratory disease (3,082 people, 10 percent). This was followed by external causes (6 percent) and disease of the endocrine, nervous and digestive systems each with 4 percent. Others include mental and behavioural diagnoses (3 percent), genitourinary, infectious and diseases each accounted for two percent of the underlying causes of death.

3.5.2. By Region

Across the regions, the patterns of underlying causes of death were very similar to the provincial patterns, being within two percent of the provincial proportions in almost all categories.

There were two notable exceptions. In the Northern region, 28 percent of people had the underlying cause of death as circulatory system disease; this was 6 percent lower than the province (34 percent). As well, in the Northern region “external causes” was the underlying cause of death for 11 percent of people. This was five percent higher than the province, which was six percent.

When examining the underlying cause of death categories by region, 25 percent of all people who died of miscellaneous diagnoses across the province were from Vancouver Island while only 14 percent of people who died from infectious and parasitic diseases were from that region. Vancouver Island accounted for 21 percent of all people who died in the province.

People who died in Vancouver Coastal region accounted for 28 percent of all deaths across the province related to mental and behavioural disorders and 39 percent of all deaths related to infectious and parasitic diseases. These proportions were higher than the Vancouver Coastal proportion of all deaths across the province, which was 22 percent.

In Fraser region, people with an underlying cause of death of mental and behavioural disorders only accounted for 24 percent of deaths in this diagnostic group across the province. This is lower than Fraser’s proportion of all deaths across the province, which was 31 percent.

3.6. How Many Health Services and Resources Were Used?

3.6.1. By All People Who Died

Over their last two years of life, health services used by decedents included 2.2 million physician visits, 1.99 million pharmaceutical prescriptions, 0.76 million acute care days, 3.97 million residential care days, 0.33 million direct care visits, 2.0 million home support hours and 0.045 adult day care visits.

British Columbia							
	MSP Visits	Pharm Scripts	DAD Tdays	Facility Days	Direct Visits	Home Hours	Adult Days
Service Counts	151,164	89,065	426,620	564,053	28,064	64,923	3,575

The 2003/2004 average cost for each service as calculated by the BC Ministry of Health Services was:

Dollars per Service Count						
MSP Visits	Pharm Scripts	DAD Tdays	Facility Days	Direct Visits	Home Hours	Adult Days
\$67.90	\$44.84	\$560.00	\$142.00	\$85.00	\$32.00	\$78.00

Based on these average costs, over their last two years of life, the calculated total cost of the health services used by decedents was \$1.3 billion. This included \$151 million for physician visits, \$89 million for pharmaceutical prescriptions, \$426 million for acute care days, \$564 million for residential care days, \$28 million for direct care visits, \$65 million for home support hours and \$3.6 million for adult day care visits.

British Columbia									
\$ (Thousands)									
Type of Service	Total Clients	MSP Visits	Pharm Scripts	DAD Tdays	Facility Days	Direct Visits	Home Hours	Adult Days	Total \$
Total	29,456	151,164	89,065	426,620	564,053	28,064	64,923	3,575	1,327,463

3.7. What Were the Broad Patterns of Service Use by Service Event Groups?

In determining service use patterns, 13 unique groups of people were identified based on the total number of services, or service events, used over the last two years of life. The service event groups ranged from those people who used 0 to 49 services in total over the last two years of life (group 1) to those people that used 2,900 or more services in total (group 13).

Following detailed review of the service use patterns of the people in each group, it was determined that the groups could be broadly described as:

- Primarily self-care
- Primarily self-care with simple single service use
- Increased dependency
- Primarily dependent
 - Residential services
 - Complex bundles and high service volumes.

These broad groupings and the relationship to the 13 specific service event groups are described below.

Primarily Self-Care

Primarily Self-Care with Very Low/Occasional Service Use—3,778 People

- Group 1: 0–49 services over the last two years of life—3,778 people.

Across the entire cohort, there were 3,788 people (13 percent of the total 29,456) that were primarily self-care with very low/ occasional service use (using only 0 to 49 services) over the last 24 months of life.

Primarily Self-Care With Simple Single Service Use

Primarily Self-Care + Simple/Single Health Services (Physician, Pharmaceutical or Occasional Other Service)—10,138 People

- Group 2: 50–99 services over the last two years of life—3,524 people;
- Group 3: 100–149 services over the last two years of life—3,572 people;
- Group 4: 150–199 services over the last two years of life—3,042 people.

There were 10,138 people (34 percent of the total 29,456) that were primarily self-care, using 50–199 services that were most frequently physician and pharmaceutical services along with the occasional use of other types of services.

Self-Care + Increased #of Simple/Single Health Services (Physician, Pharmaceutical and Other Services Used as Single Service in a Time Period)—5,738 People

- Group 5: 200–249 services over the last two years of life—2,190 people;
- Group 6: 250–299 services over the last two years of life—1,584 people;
- Group 7: 300–399 services over the last two years of life—1,964 people.

There were 5,738 people (19 percent of the total 29,456) that were self-care but used an increasing number of simple/single health services (physician, pharmaceutical and all other types of services) in a month or across short periods of months.

Increased Dependency

Increased Dependency on Publicly-Funded Health Services: More Complex Service Bundles (More Than one Type of Service Used Concurrently Within or Across Months)—2,752 People

- Group 8: 400–549 services over the last two years of life—1,683 people;
- Group 9: 550–699 services over the last two years of life—1,069 people.

There were 2,752 people (9 percent of the total 29,456) who had increased dependency on publicly-funded health services using both simple/single services and more complex service bundles (more than 1 service used concurrently) within a month or across months.

Primarily Dependent (a) Residential Services (b) Complex Bundles and High Service Volumes

Primarily Dependent on Publicly-Funded Health Services: Complex Service Bundles or Continuous Residential Care Over the 24 Months—5,275 People

- Group 10: 700–849 services over the last two years of life (residential care common)—3,291 people;
- Group 11: 850–999 services over the last two years of life (residential care common)—1,984 people.

There were 5,275 people (18 percent of the total 29,456) that were primarily dependent on publicly-funded health services using complex service bundles (over a period of a few months) or continuous residential care services over the last 24 months of life.

Primarily Dependent on Publicly-Funded Health Services: Complex Service Bundles and High Volume of Services (Multiple Types of Services Used Concurrently Over Numbers Of Months (Most Often Does not Include Residential Care)—1,765 People

- Group 12: 1000–2899 services over the last two years of life—1,672 people;
- Group 13: 2900+ services over the last two years of life—93 people.

There were 1,765 people (6 percent of the total 29,456) that were primarily dependent on publicly-funded health services using high service volumes (greater than 1,000 services) and complex service bundles (other than residential care) over the last 24 months of life.

3.7.1. What Were the Broad Patterns of Service Use?

The 3,788 people (13 percent of the cohort) who were primarily self-care each used 0 to 49 services over the last two years of life. In total, these people used only 2 percent of the total physician visits and 1 percent of pharmaceutical prescriptions and acute care days.

The 15,876 people (54 percent of the cohort) who were primarily self-care, using only simple single services, each used 50 to 399 services over the last two years of life. In total, these people used 58 percent of the total physician visits, 51 percent of the acute care days, 48 percent of all direct care visits, 37 percent of all pharmaceutical prescriptions and 29 percent of adult day care sessions. However, they used only 2 percent of all residential days and 7 percent of all home support hours.

The 2,752 people (9 percent of the cohort) who had increased dependence on publicly-funded health services each used 400 to 699 services over the last two years of life. In total, these people used 29 percent of adult day care sessions, 21 percent of direct care visits, 20 percent of acute care days, 16 percent of physician and pharmaceutical services, 14 percent of home support hours and 6 percent of residential care days.

The 5,275 people (18 percent of the cohort) who were primarily dependent on residential services each used 700 to 999 services over the last two years of life. In total, these people used 79 percent of all residential care days, and between 14 to 23 percent of the total services in all other service types.

The 1,765 people (6 percent of the cohort) who were primarily dependent and used complex bundles and high volumes of services each used 1,000 to 2,900 or more services over the last two years of life. In total, these people used 65 percent of all home support hours, 23 percent of all pharmaceutical prescriptions, 19 percent of direct care visits and between 9 to 13 percent of physician visits, acute care days and residential care days.

British Columbia								
Service Counts								
Service Event Group	Total Clients	MSP Visits	Pharm Scripts	DAD Tdays	Facility Days	Direct Visits	Home Hours	Adult Days
Gr 1: Primarily Self Care	3,788	52,591	11,919	7,024	65	1,384	213	54
Gr 2-7: Simple Single Service Use	15,876	1,295,549	741,320	386,019	84,281	158,504	145,581	13,445
Gr 8-9 Increased Dependency	2,752	354,817	325,880	156,094	245,587	69,915	276,662	13,119
Gr 10-11 Primarily Dependent Residential Services	5,275	320,327	453,477	132,191	3,118,267	36,052	279,410	8,528
Gr 12-13 Primarily Dependent Complex Bundles High Volume	1,765	202,988	453,683	80,494	524,002	64,308	1,326,980	10,687
Total	29,456	2,226,272	1,986,279	761,822	3,972,202	330,163	2,028,846	45,833

British Columbia								
Percent of Services								
Service Event Group	Total Clients	MSP Visits	Pharm Scripts	DAD Tdays	Facility Days	Direct Visits	Home Hours	Adult Days
Gr 1: Primarily Self Care	13%	2%	1%	1%	0%	0%	0%	0%
Gr 2-7: Simple Single Service Use	54%	58%	37%	51%	2%	48%	7%	29%
Gr 8-9 Increased Dependency	9%	16%	16%	20%	6%	21%	14%	29%
Gr 10-11 Primarily Dependent Residential Services	18%	14%	23%	17%	79%	11%	14%	19%
Gr 12-13 Primarily Dependent Complex Bundles High Volume	6%	9%	23%	11%	13%	19%	65%	23%
Total	100%	100%	100%	100%	100%	100%	100%	100%

3.8. What Were the Broad Patterns of Resource Use by Service Event Groups?

When examining service use patterns and resource use across groups, for Group 1 [0 to 49]: For the 3,788 people (13 percent of the cohort) who used 0 to 49 services in total over the last two years of life, the cost of services used by these people was \$8.2 million (M). This was one percent of the total cost of all services used by the 29,456 who died, and the average cost per person was \$2,159.

For Group 2 [50–99]: 3,524 people (12 percent of the cohort) used 50 to 99 services in total over the last two years of life. The cost of services used by these people was \$32M which was two percent of the total cost of all services used by the 29,456 people who died, and the average cost per person was \$9,081.

On the other end of the spectrum, for Group 12 [1000–2,899]: 1,672 people (6 percent of the cohort) used 1,000 to 2,899 services in total over the last two years of life. The cost of services used by these people was \$183M which was 14 percent of the total cost of all services used by the 29,456 people who died and the average cost per person was \$109,351.

In Group 13 [2,900+]: 93 people (less than one percent of the cohort) used 2,900 services or more over the last two years of life. The cost of services used by these people was \$19.5M which was one percent of the total cost of all services used by the 29,456 people who died and the average cost per person was \$210,101.

The average cost per client increased steadily across Service Event Group 1 (\$2,159 per person) to Group 13 (\$210,101).

Service Event Groups: Clients and Service Costs British Columbia					
Service Counts					
Service Event Group	Total Clients	Percent of Total Clients	Total Service Cost \$ (Thousands)	Percent of Total Service Cost	Average Cost per Client (\$)
Gr 1: 0–49	3,788	13%	8,177	1%	2,159
Gr 2: 50–99	3,524	12%	32,001	2%	9,081
Gr 3: 100–149	3,572	12%	56,453	4%	15,804
Gr 4: 150–199	3,042	10%	69,230	5%	22,758
Gr 5: 200–249	2,190	7%	63,944	5%	29,198
Gr 6: 250–299	1,584	5%	57,901	4%	36,554
Gr 7: 300–399	1,964	7%	88,998	7%	45,314
Gr 8: 400–549	1,683	6%	98,766	7%	58,684
Gr 9: 550–699	1,069	4%	78,044	6%	73,006
Gr 10: 700–849	3,291	11%	349,074	26%	106,069
Gr 11: 850–999	1,984	7%	222,502	17%	112,148
Gr 12: 1,000–2,899	1,672	6%	182,835	14%	109,351
Gr 13: 2,900+	93	0%	19,539	1%	210,101
Total	29,456	100%	1,327,463	100%	45,066

There were 19,664 people included in service event groups 1 through group 7 that received from 0 to 399 services in total over the last two years of life. These people accounted for 67 percent of the cohort and 28 percent of the total cost of all service provided. The remaining 9,792 people in groups 8 to 13 received from 400 to 2,900 services or more in total over the last two years of life. They accounted for 33 percent of the cohort and 72 percent of the total cost of all service provided.

The people in groups 10 through group 12 received from 700 to 2,899 services over the last two years of life, they accounted for 24 percent of the cohort and 57 percent of the total cost of services. As will be shown later in this report, these people were very dependent on publicly-funded health services and a significant proportion of the people in these service event groups received residential care services as a primary service.

Service Event Groups: Clients and Service Costs (Cumulative) British Columbia				
Service Counts				
Service Event Group	Total Clients	Percent of Total Clients	Total Service Cost \$ (Thousands)	Percent of Total Service Cost
	Cumulative		Cumulative	
Gr 1: 0–49	3,788	13%	8,177	1%
Gr 2: 50–99	7,312	25%	40,178	3%
Gr 3: 100–149	10,884	37%	96,631	7%
Gr 4: 150–199	13,926	47%	165,861	12%
Gr 5: 200–249	16,116	55%	229,805	17%
Gr 6: 250–299	17,700	60%	287,706	22%
Gr 7: 300–399	19,664	67%	376,704	28%
Gr 8: 400–549	21,347	72%	475,470	36%
Gr 9: 550–699	22,416	76%	553,513	42%
Gr 10: 700–849	25,707	87%	902,588	68%
Gr 11: 850–999	27,691	94%	1,125,089	85%
Gr 12: 1,000–2,899	29,363	100%	1,307,924	99%
Gr 13: 2,900+	29,456	100%	1,327,463	100%
Total	29,456	100%	1,327,463	100%

3.9. Of These People, How Many Were Palliative?

In total, there were 8,071 of the 29,456 people identified as being palliative. Of these, 4,063 used a single service, acute care palliative service, hospice service, or received Palliative Care Drug Plan benefits (also called PharmaCare Plan P) in the last two years of life.

There were 2,132 people that used two types of palliative services over the last two years of life, the most common being the two acute care palliative services and the second most common being acute care palliative and Pharmacare Plan P services.

1,763 people used three services and the majority (1,725) of these people used acute care palliative services and Pharmacare Plan P services. Thirty of these people used acute care and hospice services.

113 people used four of these services over the last two years of life, and these included acute care services, hospice and Pharmacare Plan P services.

Number of Palliative Flags	Palliative Flag				Palliative Clients
	Patient Service 58	ICD Code Z515	Hospice	Pharmacare Plan P	
Single Flag	52	1,716	36	2,259	52 1,716 36 2,259 4,063
Two Flags	1,560 1 23	1,560 17 472	1 17 59	23 472 59	1,560 1 23 17 472 59 2,132
Three Flags	1,725 30 1	1,725 30 7	30 1 7	1,725 1 7	1,725 30 1 7 1,763
Four Flags	113	113	113	113	113 113
Total	3,505	5,640	264	4,659	8,071

Of the 8,071 people identified as palliative, 261 people (3 percent) were self-care, 6,325 people (78 percent) were self-care with simple single service use, 825 people (10 percent) had increased dependence on publicly-funded health services and used services frequently in complex bundles and the remaining 660 people (8 percent) were primarily dependent on publicly-funded health services. Of the people that were dependent 345 people primarily used residential services in the last 24 months of life and 315 people used complex service bundles and a high volume of services.

3.10. Where Did These People Die?

3.10.1. British Columbia

The three most common places of death were hospital (15,580 or 53 percent of the cohort), residential care (7,825 or 27 percent of the cohort) and home (5,100 people, 17 percent of the cohort). In addition, 2 percent of people died in other specified places and 1 percent died on the street/highway.

3.10.2. By Region

Across the regions, the patterns of place of death are similar to the province with two exceptions. In the Interior region, 47 percent of people died in a hospital. This was six percent less than the provincial rate of 53 percent and was the lowest of all regions. As well, 31 percent of people died in residential care facilities. This was four percent higher than the provincial rate and the highest of all regions.

In the Northern region, other specified places and street/highway each accounted for three percent of all deaths. This was higher than the provincial rate and that of the other regions, found to be one percent.

3.11. What Were the Patterns of Services and Resources Used by Place of Death?

Of the 5,100 people who died at home (17 percent of all people that died), 1,645 were palliative. These people used less than one percent of the total residential care days, 9 percent of the acute care days, 13 to 16 percent of the physician visits, pharmaceutical prescriptions and adult care days and 22 to 26 percent of all direct care visits and home support hours.

Of the 7,825 people who died in residential care (27 percent of all people that died), 1,436 were palliative. These people used 20 to 25 percent of the total direct care visits, physician visits, home support hours and acute care days, 31 to 33 percent of pharmaceutical prescriptions and adult day care days and 77 percent of residential care days.

Of the 15,580 people who died in hospital (53 percent of all people that died), 4,934 were palliative. These people used 22 percent of the total residential care days, 50 to 53 percent of pharmaceutical prescriptions, direct care visits, home support hours and adult day care days and 60 to 65 percent of physician visits and acute care hospital days.

British Columbia									
Place of Death	Total Clients	Percent of Services							Palliative Client Count
		MSP Visits	Pharm Scripts	DAD Tdays	Facility Days	Direct Visits	Home Hours	Adult Days	
Died at Home	5,100	324,072	311,430	66,902	20,090	84,169	446,549	6,292	1,645
Died in Residential	7,825	529,805	634,964	195,565	3,075,310	66,424	495,300	15,379	1,436
Died in Hospital	15,580	1,336,648	1,006,886	493,596	873,977	175,242	1,072,689	24,037	4,934
Died Other	951	35,747	32,999	5,759	2,825	4,328	14,308	125	56
Total	29,456	2,226,272	1,986,279	761,822	3,972,202	330,163	2,028,846	45,833	8,071
Died at Home	17.31%	14.56%	15.68%	8.78%	0.51%	25.49%	22.01%	13.73%	20.38%
Died in Residential	26.57%	23.80%	31.97%	25.67%	77.42%	20.12%	24.41%	33.55%	17.79%
Died in Hospital	52.89%	60.04%	50.69%	64.79%	22.00%	53.08%	52.87%	52.45%	61.13%
Died Other	3.23%	1.61%	1.66%	0.76%	0.07%	1.31%	0.71%	0.27%	0.69%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

The cost of all services used over the two years by the 5,100 who died at home was \$98.2M which was 7 percent of the total cost of services for all decedents. When examined by service, these people accounted for 15 percent (\$22M) of the total cost of physician services, 16 percent (\$14M) of pharmaceutical services, 9 percent (\$37M) of acute care services, less than one percent (\$3M) of facility services, 25 percent (\$7M) of direct care visits, 22 percent (\$14M) of home support hours and 14 percent (\$0.5M) of adult day care days.

The cost of all services used over the two years by the 7,825 who died in residential care was \$633M which is 48 percent of the total cost of services for all decedents. When examined by service, these people accounted for 24 percent (\$36M) of the total cost of physician services, 32 percent (\$28M) of pharmaceutical services, 26 percent (\$110M) of acute care services, 77 percent (\$436M) of facility services, 20 percent (\$6M) of direct care visits, 24 percent (\$16M) of home support hours and 34 percent (\$1M) of adult day care days.

British Columbia									
Place of Death	Total Clients	\$ (Thousands)							Total \$
		MSP Visits	Pharm Scripts	DAD Tdays	Facility Days	Direct Visits	Home Hours	Adult Days	
Died at Home	5,100	22,004	13,965	37,465	2,853	7,154	14,290	491	98,222
Died in Residential	7,825	35,974	28,472	109,516	436,694	5,646	15,850	1,200	633,351
Died in Hospital	15,580	90,758	45,149	276,414	124,105	14,896	34,326	1,875	587,522
Died Other	951	2,427	1,480	3,225	401	368	458	10	8,368
Total	29,456	151,164	89,065	426,620	564,053	28,064	64,923	3,575	1,327,463
Place of Death	Total Clients	Percent of \$ by Service and Total							Percent Total \$
Died at Home	17.31%	14.56%	15.68%	8.78%	0.51%	25.49%	22.01%	13.73%	7.40%
Died in Residential	26.57%	23.80%	31.97%	25.67%	77.42%	20.12%	24.41%	33.55%	47.71%
Died in Hospital	52.89%	60.04%	50.69%	64.79%	22.00%	53.08%	52.87%	52.45%	44.26%
Died Other	3.23%	1.61%	1.66%	0.76%	0.07%	1.31%	0.71%	0.27%	0.63%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

The cost of all services used over the two years by the 15,580 who died in hospital was \$587M which is 44 percent of the total cost of services for all decedents. When examined by service, these people accounted for 60 percent (\$91M) of the total cost of physician services, 51 percent (\$45M) of pharmaceutical services, 65 percent (\$276M) of acute care services, 22 percent (\$124M) of facility services, 53 percent (\$15M) of direct care visits, 53 percent (\$34M) of home support hours and 52 percent (\$2M) of adult day care days.

The cost of all services used over the two years by the 951 who died in other places was \$8M which was less than 1 percent of the total cost of services for all decedents. When examined by service, these people accounted for two percent (\$2.5M) of the total cost of physician services, two percent (\$1.5M) of pharmaceutical services, one percent (\$3M) of acute care services, one percent (\$0.4M) of direct care visits, one percent and (\$0.5M) of home support hours.

3.12. Who Provided Physician Services?

Of the total 2.22 million physician visits, general practice physicians provided 1.0 million visits (49 percent), diagnostic service physicians provided 485,000 (22 percent), internal medicine physicians provided 292,000 (13 percent), and specialist services including anaesthesia, ophthalmology, psychiatry, general surgery, podiatry, urology and orthopaedic surgery when combined provided 211,000 visits (10 percent). All other specialists provided 141,000 visits (6 percent).

When examined across service event groups, general practice physicians were the primary physicians who provided the majority of physician services used by the people in all service event groups, followed by diagnostic service physicians, internal medicine specialists, the specialists group as listed above and then all other specialists.

3.13. Who Authorized and Coordinated Services?

In British Columbia, primarily general practice physicians and Home and Community Care (HCC) case managers, including home care nurses, were responsible for the authorization, access and coordination of services for all people at the end of life.

For the 29,456 people who died in 2003/2004 across British Columbia, physicians completed the assessment, authorized access and directly coordinated 2.2 million physician visits, 2 million pharmaceutical prescriptions and 761 thousand acute care days of service. In total, the services they authorized resulted in 4.97 million service events. The estimated cost of these services was \$667 million.

HCC case managers and home care nurses completed the assessment, authorized and directly coordinated 3.97 million residential care days, 330 thousand direct care visits, 2 million home support hours and 45 thousand adult day care days. In total the services they authorized resulted in 6.4 million service events. The estimated cost of these services was \$660 million.

3.14. Summary and Next Section

This section provided a broad overview of some of the characteristics of the people who died in 2003/2004 and how they used publicly-funded health services and related resources in the last two years of life. The following section provides an in-depth look at the specific service use patterns and resources used for each of the thirteen groups of decedents identified.

4. The Client Profile—Specific Service Use Patterns

This section presents, for each of the thirteen groups of decedents identified, descriptive vignettes, specific examples of service event patterns and a synopsis of the findings on service use and related resources in the last two years of life.

4.1. How Did These People Use Services During the Last Two Years of Life?

- For each group, the questions addressed include:
- What are three or four vignettes that visually display the patterns of service used by the people in this group?
- How many people were in this group?
- What were the causes of death of these people?
- What were the patterns of service use (single service and bundles of services) over the 24 months?
- What was the average number of services used of each service type by a person in this group?
- Where did these people die (hospital, home, residential, other place)?
- For the people that died in hospital (or home, or residential or other place) what were the average number of services used?
- What was the ambulance service use by these people?
- How many people in the group were identified as palliative?
- For the people identified as palliative, what was the average number of services used, for each service type, over the 24 months?
- What was the total and average cost of all services used (excluding ambulance) by the people in the service event group?
- What was the total and average cost of all services used when examined by diagnostic group and when examined by place of death?

For ease of data analysis and presentation, all numbers in the following sections have been rounded to the nearest whole number.

Group 1: People Who Had 0–49 Service Events Over the Two Years

Vignette 1.1

This lady of 82 years lived in an urban setting and died in a hospital in the Fraser region of “other-psoriasis.” Over the last two years of her life there were 18 months across the 24 where she was completely self-care with no direct contact with formal health service providers. She had a total of 37 service events in three types of services over the other four months. These included 18 physician visits distributed across the last 6 months with 13 of these in the last month of life, 8 pharmaceutical prescriptions, 4 of which were in the last month of life and 11 days of acute care in the last month of life.

82819505		Age: 82	Gender: F	Palliative:	R/U: Urban	HA: Fraser (02)	Group 1																			
		Where: UCOD:	L408	Other Psoriasis	02—Hospital, School, Other Institution																					
		Months Before Death																								
		23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																										
MSP Visits		0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	1	1	0	0	0	0	0	13	18
Pharm Scripts		0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	4	8
DAD Tdays		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
Facility Days		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Home Hours		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total		0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	2	2	1	0	0	0	0	0	28	37
Srv Typ Cnt		0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	2	1	0	0	0	0	0	3	3

Vignette 1.2

This gentleman of 80 years lived in an urban setting and died in a hospital in the Interior region of a stroke (not specific haemorrhage or infarct). Over the last two years of his life there were 17 months across the 24 where he was completely self-care with no direct contact with formal health service providers. He had a total of 15 service events in two types of services over the other 7 months. These included 14 physician visits distributed across the two years and one day in hospital in the last month of life.

82505867		Age: 80	Gender: M	Palliative: Y	R/U: Urban	HA: Interior (01)	Group 1																			
		Where: UCOD:	I64	Stroke Not Spec Haemorrhage or Infarct	02—Hospital, School, Other Institution																					
		Months Before Death																								
		23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																										
MSP Visits		0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	6	1	0	0	0	0	0	0	3	14
Pharm Scripts		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DAD Tdays		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Facility Days		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Home Hours		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total		0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	6	1	0	0	0	0	0	0	4	15
Srv Typ Cnt		0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	2	2

Vignette 1.3

This gentleman of 39 years lived in an urban setting and died in a hospice in the Vancouver Coastal region of an infectious disease. Over the last two years of life there were 15 months across the 24 months where he was completely self-care with no direct contact with formal health service providers. He had a total of 41 service events in three types of services over the other 9 months. These included 24 physician visits distributed across the two years, 12 days in hospital in the last month of life, and 5 days in residential care (hospice) in the last month of life.

82679398	Age: 39	Gender: M	Palliative:	R/U: Urban	HA: Vancouver Coastal (03)	Group 1																				
	Where:			01—Residential Institution																						
	UCOD:	B208																								
	Months Before Death																									
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total	
Service																										
MSP Visits	1	0	0	0	0	0	1	0	0	0	0	3	1	1	1	0	0	0	2	0	0	0	5	9	24	
Pharm Scripts	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12	
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Srv Total	1	0	0	0	0	0	1	0	0	0	0	3	1	1	1	0	0	0	2	0	0	0	5	26	41	
Srv Typ Cnt	1	0	0	0	0	0	1	0	0	0	0	1	1	1	1	0	0	0	1	0	0	0	1	3	3	

Group 1 (0–49 Services): Characteristics, Health Service Use and Patterns

The People

3,788 people (13 percent) of the 29,456 people who died across British Columbia had between 0 to 49 service events over the last two years of life. Of these people, circulatory disease was the cause of death for 39 percent, cancer for 11 percent, respiratory disease and external causes for 31 percent and other for 19 percent. This group had the highest proportion of deaths from external causes.

Service Use: Patterns and Bundles

When examining service use patterns and bundles by month over the last two years of life, these people were fully self-care with no direct contact with formal health service providers 74 percent of all months, they accessed a single service or physician/pharmaceutical services 24 percent of all months and two percent of the time they had more complex service bundles.

When examining single service use in more detail, 18 percent of the months they had physician visits alone, four percent of the time they had physician visits in combination with pharmaceutical prescriptions and three percent of the time the only service used was pharmaceutical prescriptions. They had physician and acute care visits one percent of all months over the two years.

Average Service Use

On average these people each had 14 physician visits, 3 pharmaceutical prescriptions and two days of acute services. Although this group was 13 percent of the population, it used only one to two percent of all physician visits, pharmaceutical prescriptions and acute care days used by the cohort during the two years.

Place of Death and Average Service Use

The most common place of death was hospital, with 47 percent (1,769) of all people in this group having died in hospital, 33 percent (1,247) having died at home, five percent (188) having died in residential care and the remaining 15 percent (584) having died in other places.

- On average the people who died in hospital had 16 physician visits, three pharmaceutical prescriptions and three days of acute services over the two years (all other services were less than one).
- The people who died at home had 12 physician visits, four pharmaceutical prescriptions and one day of acute care.
- Those who died in residential care had 11 physician visits, four pharmaceutical prescriptions and one day of acute services.
- While those who died elsewhere had 11 physician visits and two pharmaceutical prescriptions.

Ambulance Service Use

Of all people in this group 2,242 (59 percent) used 1.5 ambulance trips over the last two years of life. For these people, there was a total of 3,446 ambulance trips of which 1,110 (32 percent) were no siren, 1,982 (58 percent) were with siren, 90 (3 percent) were air ambulance, and for 264 (8 percent) the status was unknown.

People Identified as Palliative

261 of the people in this group (7 percent) were identified as palliative, as they received a service classified as palliative. They accounted for 3 percent of all 8,071 palliative people identified in the cohort. Of these, 35 people (13 percent) died of circulatory disease, 67 percent of cancer and five percent of respiratory disease.

On average the people identified as palliative each had 21 visits covered by the Medical Services Plan (MSP), five pharmaceutical prescriptions, 6 days of acute services and two direct care visits.

The people identified as palliative most frequently died in hospital (80 percent), 13 percent died at home and 7 percent died in residential care.

Cost of Services Used (Excluding Ambulance)

Service Event Group 1 [0–49]

The total cost of all services used by decedents who had between 0 to 49 service events over the last two years of life, was \$8M with the average for each person in this service event group being \$2,159.

When examined by type of services the total cost by service was \$3.5M for physician visits, \$0.5M for pharmaceutical prescriptions, \$4M for acute care, 0.1M for direct care visits and only a few thousand for residential services, home support hours and adult day care days.

The average cost of services used by each person was \$943 for physician services, \$141 for pharmaceutical prescriptions, \$1,038 for acute care days, \$31 for direct care visits and only one to two dollars each for residential care days, direct care visits, home support hours.

By Diagnostic Group

When this group of people was examined by diagnostic group, the total cost of services used over the last two years of life for those people who died of circulatory disease was \$3M, cancer \$2M, respiratory disease \$0.5M, external causes \$1.5M and other \$1.5M.

The average cost of services used per person was \$1,992 for circulatory disease, \$3,978 for cancer, \$3,273 for respiratory disease, \$1,369 for external causes, and \$2,231 for other diagnoses.

By Place of Death

When this group of people was examined by place of death, the total cost of services used over the last two years of life for those who died in hospital was \$5.5M, in residential care was \$0.3M, at home was \$1.7M and in other places was \$0.5M.

The average cost of services used by person, by place of death, was \$3,114 for those people who died in hospital, \$1,755 for residential care, \$1,398 for home, and \$1,017 for other places.

Group 2: People Who Had 50–99 Service Events Over the Two Years

Vignette 2.1

This gentleman of 79 years lived in an urban setting and died at home in the Interior region of an acute myocardial infarction (unspecified). In the last two years of his life there were five months of the 24 months where he was completely self-care with no direct contact with any formal health service providers. He had a total of 86 service events in 2 types of services over the other 19 months. These included 44 physician visits distributed across the two years with 29 of these visits being in the last five months of life and 42 pharmaceutical prescriptions distributed across the 23 to 7 months prior to the end of life.

82665131	Age: 79	Gender: M	Palliative:	R/U: Urban	HA: Interior (01)	Group 2																			
	Where: UCOD: I219		Acute Myocardial Infarction Unspecified	00—Home																					
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	0	7	0	0	1	0	0	1	0	1	1	0	0	0	0	2	1	0	0	5	8	3	6	8	44
Pharm Scripts	0	4	4	2	3	3	0	2	4	1	4	0	2	4	1	2	6	0	0	0	0	0	0	0	42
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	0	11	4	2	4	3	0	3	4	2	5	0	2	4	1	4	7	0	0	5	8	3	6	8	86
Srv Typ Cnt	0	2	1	1	2	1	0	2	1	2	2	0	1	1	1	2	2	0	0	1	1	1	1	1	2

Vignette 2.2

This lady of 85 years lived in an urban setting and died at home in the Vancouver Island region of a stroke (not specific haemorrhage or infarct). Over the last two years of her life there was one month of the 24 months where she was completely self-care with no direct contact with formal health service providers. She had a total of 71 service events in four types of services over the other 23 months; these included 22 physician visits and 47 pharmaceutical prescriptions distributed across the two years. In the last month of life she received one day of acute care service and one direct care visit.

82621935	Age: 85	Gender: F	Palliative: Y	R/U: Urban	HA: Vancouver Island (04)	Group 2																			
	Where: UCOD: I64		Stroke Not Spec Haemorrhage or Infarct	00—Home																					
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	2	0	2	0	1	0	0	2	1	0	2	1	0	0	1	0	0	1	3	0	1	0	1	4	22
Pharm Scripts	2	2	1	4	2	2	3	0	0	3	1	2	3	3	2	2	1	1	0	2	3	0	4	4	47
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	4	2	3	4	3	2	3	2	1	3	3	3	3	3	3	2	1	2	3	2	4	0	5	10	71
Srv Typ Cnt	2	1	2	1	2	1	1	1	1	1	2	2	1	1	2	1	1	2	1	1	2	0	2	4	4

Vignette 2.3

This gentleman of 74 years lived in an urban setting and died in an “Other Specified Place” in the Fraser region of mitral valve disease (other mitral valve diseases). In the last two years of his life there were four months of the 24 months where he was completely self-care with no direct contact with formal health service providers. He had a total of 74 service events in three types of services over the other 20 months. These included 41 physician visits and 31 pharmaceutical prescriptions distributed across the two years. He received two days of acute care service (one day, twelve months before he died, and one day, 9 months before he died). In the last month of life he had no service events.

82640479	Age: 74	Gender: M	Palliative:	R/U: Urban	HA: Fraser (02)	Group 2																				
	Where:			08—Other Specified Places																						
	UCOD:	I058	Other Mitral Valve Diseases																							
	Months Before Death																									
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total	
Service																										
MSP Visits	0	0	0	2	0	0	5	1	6	5	1	5	0	7	2	0	0	2	0	0	2	2	1	0	41	
Pharm Scripts	1	2	1	0	5	1	1	3	2	2	2	0	1	3	4	0	0	0	3	0	0	0	0	0	31	
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2	
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Srv Total	1	2	1	2	5	1	6	4	8	7	3	6	1	10	7	0	0	2	3	0	2	2	1	0	74	
Srv Typ Cnt	1	1	1	1	1	1	2	2	2	2	2	2	1	2	3	0	0	1	1	0	1	1	1	0	3	

Group 2 (50–99 Services): Characteristics, Health Service Use and Patterns

The People

3,524 people (12 percent) of the 29,456 people who died across British Columbia had between 50–99 service events over the last two years of life. Of these people, circulatory disease was the cause of death for 35 percent, cancer for 34 percent, respiratory disease 7 percent and external causes/other for 23 percent. The number of people with the cause of death being cancer (34 percent) was much higher in this group than in group 1(11 percent).

Service Use: Patterns and Bundles

When examining service use patterns and bundles by month over the last two years, these people were fully self-care with no direct contact with formal health service providers 36 percent of all months. They accessed a single service or physician/ pharmaceutical services 57 percent of all months, and 7 percent of the time they had more complex service bundles.

When examining single service use in more detail, 28 percent of the months they had physician visits alone, 21 percent of the time they had physician visits in combination with pharmaceutical prescriptions and 8 percent of the time the only service used was pharmaceutical prescriptions.

When examining more complex service bundle use, they had physician and acute care visits two percent of all months over the two years.

Average Service Use

On average these people each had 44 physician visits, 18 pharmaceutical prescriptions, 9 days of acute services, three direct care visits and one hour of home support. Service use was higher for all service types than the previous group.

Although this group was 12 percent of the entire cohort, it used 7 percent of all the physician visits, three to four percent of pharmaceutical prescriptions and acute care days, and three percent of all direct care visits used by the cohort during the two years.

Place of Death and Average Service Use

The most common place of death was hospital with 64 percent (2,269) of all people in this group having died in hospital, 25 percent (886) having died at home, 7 percent having died in residential care (240) and the remaining 4 percent (129) having died in other places.

- On average, the people who died in hospital had 46 physician visits, 16 pharmaceutical prescriptions, 11 days of acute services and two direct care visits over the two years (all other services were less than one).
- The people who died at home had 41 physician visits, 23 pharmaceutical prescriptions, four days of acute care and four direct care visits.
- Those who died in residential care had 41 physician visits, 18 pharmaceutical prescriptions, 9 days of acute services, three residential care days, four direct care visits and one hour of home support.
- Those who died elsewhere had 44 physician visits, 18 pharmaceutical prescriptions and four days of acute service.

Ambulance Service Use

Of all people in this group, 2,674 (76 percent) used two ambulance trips over the last two years of life. For these people, there was a total of 5,627 ambulance trips of which 2,752 (49 percent) were no siren, 2,366 (42 percent) were with siren, 142 (3 percent) were air ambulance, and for 367 (7 percent) the status was unknown.

People Identified as Palliative

1,005 of the people in this group (29 percent) were identified as palliative, as they received a service classified as palliative. They accounted for 12 percent of all 8,071 palliative people identified in the cohort. Of these, 9 percent died of circulatory disease, 80 percent of cancer, two percent of respiratory disease and 9 percent of external causes or other.

On average, the people identified as palliative each had 44 physician visits, 15 pharmaceutical prescriptions, 11 days of acute services, 6 direct care visits and 1 hour of home support. These people most frequently died in hospital (67 percent), 22 percent died at home and 11 percent died in residential care.

Cost of Services Used (Excluding Ambulance)

Service Event Group 2 [50–99]

The total cost of all services used by decedents who had between 50 to 99 service events over the last two years of life was \$32M, with the average for each person in this service event group being \$9,081.

When examined by type of services, the total cost by service was \$10.5M for physician visits, \$3M for pharmaceutical prescriptions, \$18M for acute care, \$0.1M for residential services, \$0.75M for direct care visits, \$0.1M for home support hours and a few thousand for adult day care days.

The average cost of services used by each person was \$2,985 for physician services, \$808 for pharmaceutical prescriptions, \$5,002 for acute care days, \$36 for residential care days, \$225 for direct care visits and only \$20 for home support hours and five dollars for adult day care.

By Diagnostic Group

When this group of people was examined by diagnostic group, the total cost of services used over the last two years of life for those people who died of circulatory disease was \$9M, cancer \$12.5M, respiratory disease \$2.5M, external causes \$2M and other \$6M.

The average cost of services used by person was \$7,545 for circulatory disease, \$10,349 for cancer, \$9,369 for respiratory disease, \$7,079 for external causes, and \$10,442 for other diagnoses.

By Place of Death

When this group of people was examined by place of death, the total cost of services used over the last two years of life for those who died in hospital was \$23M, in residential care was \$2M, at home was \$6M, and in other places was \$0.8M.

The average cost of services used by person, by place of death, was \$10,216 for people who died in hospital, \$9,248 for residential care, \$6,537 for home, and \$6,282 for other places.

Group 3: People Who Had 100–149 Service Events Over the Two Years

Vignette 3.1

This gentleman of 84 years lived in an urban setting and died in a hospital in the Vancouver Island region of an “other fall on same level”. In the last two years of his life there was one month of the 24 months where he was completely self-care with no direct contact with formal health service providers. He had a total of 113 service events in three types of services over the other 23 months, 58 of these service events were in the last month of life. The 113 service events included 83 physician visits (38 in the last month of life), 20 days of acute care service (all in the last month of life) and 10 pharmaceutical prescriptions distributed across the two years.

82508908	Age: 84	Gender: M	Palliative:	R/U: Urban	HA: Vancouver Island (04)	Group 3																			
	Where:			02—Hospital, School, Other Institution																					
	UCOD: W18		Other Fall on Same Level																						
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	3	1	0	1	1	2	1	2	2	1	2	3	1	1	1	1	3	4	2	3	1	2	7	38	83
Pharm Scripts	2	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3	0	0	10
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	20
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	5	1	0	2	3	2	1	2	2	1	2	3	1	1	1	1	3	4	4	3	1	5	7	58	113
Srv Typ Cnt	2	1	0	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	1	2	3

Vignette 3.2

This gentleman of 70 years lived in a rural setting and died in a hospital in Fraser region of a malignant neoplasm of right bronchus or lung (unspecified). In the last two years of his life there were four months of the 24 months where he was completely self-care with no direct contact with formal health service providers. He had a total of 108 service events in four types of services over the other 20 months, 39 of these service events were in the last two months of life. The 108 service events included 66 physician visits (25 of these were over the last two months of life), 40 pharmaceutical prescriptions distributed across the 24 months, one day of acute care service and one direct care visit in the last month of life.

82637431	Age: 70	Gender: M	Palliative: Y	R/U: Rural	HA: Fraser (02)	Group 3																			
	Where:			02—Hospital, School, Other Institution																					
	UCOD: C349																								
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	3	0	0	1	8	2	1	0	1	1	0	1	0	4	2	2	2	4	4	1	2	2	15	10	66
Pharm Scripts	1	0	4	0	2	2	1	0	0	2	0	1	0	3	1	0	4	0	2	2	2	1	6	6	40
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	4	0	4	1	10	4	2	0	1	3	0	2	0	7	3	2	6	4	6	3	4	3	21	18	108
Srv Typ Cnt	2	0	1	1	2	2	2	0	1	2	0	2	0	2	2	1	2	1	2	2	2	2	2	4	4

Vignette 3.3

This lady of 89 years lived in an urban setting and died in a hospital in the Vancouver Coastal region of septicaemia (unspecified). In the last two years of her life there was one month of the 24 months where she was completely self-care with no direct contact with formal health service providers. She had a total of 118 service events in three types of services over the other 23 months, 37 of these service events were in the last two months of life. The 118 service events included 65 physician visits (24 of these were over the last two months of life), 45 pharmaceutical prescriptions distributed across the 24 months and 8 days of acute care service in the last month of life.

82653415		Age: 89	Gender: F	Palliative:	R/U: Urban	HA: Vancouver Coastal (03)	Group 3																							
		Where:	02—Hospital, School, Other Institution																											
		UCOD: A419	Septicaemia Unspecified																											
		Months Before Death																												
		23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total				
Service		23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total				
MSP Visits		4	1	3	2	2	1	2	0	1	0	1	2	3	5	1	0	2	0	3	0	5	3	5	19	65				
Pharm Scripts		2	1	1	2	3	0	3	0	1	2	0	2	1	3	2	2	3	1	2	3	2	4	5	0	45				
DAD Tdays		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8				
Facility Days		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Direct Visits		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Home Hours		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Adult Days		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Srv Total		6	2	4	4	5	1	5	0	2	2	1	4	4	8	3	2	5	1	5	3	7	7	10	27	118				
Srv Typ Cnt		2	2	2	2	2	1	2	0	2	1	1	2	2	2	2	1	2	1	2	1	2	2	2	2	3				

Group 3 (100–149 Services): Characteristics, Health Service Use and Patterns

The People

3,572 people (12 percent) of the 29,456 people who died across British Columbia had between 100–149 service events over the last two years of life. Of these people, circulatory disease was the cause of death for 30 percent, cancer for 43 percent, respiratory disease 8 percent and external causes/other for 19 percent. The number of people with the cause of death being cancer (43 percent) was higher in this group than in group 1(11 percent) and group 2 (34 percent).

Service Use: Patterns and Bundles

When examining service use bundles and patterns by month over the last two years of life, these people were fully self-care with no direct contact with formal health service providers 22 percent of all months, they accessed a single service or physician/ pharmaceutical services 67 percent of all months, and 11 percent of the time they had more complex service bundles.

When examining single service use in more detail, 25 percent of the months they had physician visits alone, 32 percent of the time they had physician visits in combination with pharmaceutical prescriptions and 9 percent of the time the only service used was pharmaceutical prescriptions. These people used a more varied range of service bundles than the previous two groups.

When examining more complex service bundle use, these people had physician and acute care visits (three percent of all months), physician, pharmaceutical and acute care (two percent), physician, prescription and home care (two percent), prescription, acute care and day care (two percent) of all months over the two years.

Average Service Use

On average, these people each had 65 physician visits, 33 pharmaceutical prescriptions, 16 days of acute services, one facility day, 6 direct care visits and three hours of home support. Service use was higher for all service types than the previous group.

Although this group accounted for 12 percent of the cohort, it used 10 percent of the physician visits, 6 to 8 percent of pharmaceutical prescriptions and days of acute care and direct care visits, and two percent of all adult day care used by the cohort over the two years.

Place of Death and Average Service Use

The most common place of death was hospital with 67 percent (2,401) of all people in this group having died in hospital, 20 percent (702) having died at home, 11 percent (398) having died in residential care, and the remaining two percent (71) having died in other places.

- On average, the people who died in hospital had 68 physician visits, 30 pharmaceutical prescriptions, 19 days of acute services, 4 direct care visits and two home support hours over the two years (all other services were less than one).
- The people who died at home had 60 physician visits, 39 pharmaceutical prescriptions, 8 days of acute care, 11 direct care visits and four hours of home support.
- Those who died in residential care had 59 physician visits, 36 pharmaceutical prescriptions, 16 days of acute services, five residential care days, 7 direct care visits and two hours of home support.
- Those who died elsewhere had 65 physician visits, 45 pharmaceutical prescriptions, 10 days of acute service, four direct visits and three hours of home support.

Ambulance Service Use

Of all people in this group, 2,828 (79 percent) used three ambulance trips over the last two years of life. For these people, there was a total of 7,342 ambulance trips of which 3,970 (54 percent) were no siren, 2,682 (37 percent) were with siren, 169 (two percent) were air ambulance, and for 521 (7 percent), the status was unknown.

People Identified as Palliative

1,415 of the people in this group (40 percent) were identified as palliative, as they received a service classified as palliative. They accounted for 18 percent of all 8,071 palliative people identified in the cohort. Of these, 8 percent died of circulatory disease, 81 percent of cancer, four percent of respiratory disease, and 8 percent of external causes or other.

On average the people identified as palliative each had 66 physician visits, 28 pharmaceutical prescriptions, 18 days of acute services, one day of residential care, 10 direct care visits and two hours of home support. These people most frequently died in hospital (64 percent), 21 percent died at home and 15 percent died in residential care.

Cost of Services Used (Excluding Ambulance)

Service Event Group 3 [100–149]

The total cost of all services used by decedents who had between 100 to 149 service events over the last two years of life was \$56M, with the average for each person in this service event group being \$15,804.

When examined by type of services, the total cost by service was \$16M for physician visits, \$5M for pharmaceutical prescriptions, \$33M for acute care, \$0.5M for residential services, \$1.75M for direct care visits, \$0.3M for home support hours and \$0.1M for adult day care days.

The average cost of services used by each person was \$4,427 for physician services, \$1,481 for pharmaceutical prescriptions, \$9,180 for acute care days, \$122 for residential care days, \$494 for direct care visits, \$80 for home support hours, and \$21 for adult day care.

By Diagnostic Group

When this group of people was examined by diagnostic group, the total cost of services used over the last two years of life for those people who died of circulatory disease was \$15.5M, cancer \$25M, respiratory disease \$4.5M, external causes \$2M, and other \$9.5M.

The average cost of services used by person was \$14,395 for circulatory disease, was \$16,440 for cancer, \$15,777 for respiratory disease, \$13,751 for external causes, and \$17,319 for other diagnoses.

By Place of Death

When this group of people was examined by place of death, the total cost of services used over the last two years of life for those who died in hospital was \$41M, in residential care was \$6.5M, at home was \$8M and in other places was \$1M.

The average cost of services used by person by place of death was \$17,156 for those people who died in hospital, \$15,853 for residential care, \$11,503 for home and \$12,342 for other places.

Group 4: People Who Had 150–199 Service Events Over the Two Years

Vignette 4.1

This lady of 80 years lived in an urban setting and died in hospital in the Vancouver Coastal region of a malignant neoplasm right bronchus/lung (unspecified). In the last two years of her life there were two months of the 24 months where she was completely self-care with no direct contact with any formal health service providers. She had a total of 198 service events in 4 types of services (one of these services was classified as palliative) over the other 22 months. These included 137 physician visits distributed across years with 74 these visits being in the last 6 months of life, 22 pharmaceutical prescriptions distributed across 12 of the 24 months, 29 days of acute care service (23 of these were all over the last four months of life with 11 of these being in the last month of life) and 9 direct care visits over the last three months of life.

82623792		Age: 80	Gender: F	Palliative: Y	R/U: Urban	HA: Vancouver Coastal (03)	Group 4																		
		Where: UCOD: C349	Malignant Neoplasm Right Bronchus/Lung (Unspecified)		02—Hospital, School, Other Institution																				
	Months Before Death																								
Service	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
MSP Visits	12	7	3	5	6	3	1	4	3	0	2	0	1	7	2	2	1	4	2	10	15	13	11	23	137
Pharm Scripts	1	2	1	1	0	0	1	2	0	0	1	0	0	0	0	0	0	0	1	4	1	0	6	22	
DAD Tdays	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	8	0	11	29	
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	10	
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Srv Total	13	15	4	6	6	3	2	6	3	0	3	0	2	7	2	2	1	4	2	11	23	25	14	43	198
Srv Typ Cnt	2	3	2	2	1	1	2	2	1	0	2	0	2	1	1	1	1	1	1	2	3	4	2	4	4

Vignette 4.2

This lady of 77 years lived in an urban setting and died at home in the Vancouver Island region of liver cell carcinoma. In the last two years of her life there were four months of the 24 months where she was completely self-care with no direct contact with any formal health service providers. She had a total of 149 service events in five types of services (one of these services was classified as palliative) over the other 20 months. These included 79 physician visits distributed across the two years, with the majority of these being in the last 12 months of life, 32 pharmaceutical prescriptions distributed across the two years, three days of acute care service 8 months prior to end of life, 34 direct care visits and one home support hour in the last four months of life.

82789837	Age: 77	Gender: F	Palliative: Y	R/U: Urban	HA: Vancouver Island (04)	Group 4																				
	Where:			00—Home																						
	UCOD:	C220	Liver Cell Carcinoma																							
	Months Before Death																									
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total	
Service																										
MSP Visits	0	0	3	1	2	0	0	1	1	0	0	0	3	4	1	5	16	9	8	6	7	3	4	5	79	
Pharm Scripts	0	1	3	0	2	3	0	0	0	5	0	0	3	0	0	0	0	0	0	0	2	2	0	11	32	
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3	
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9	9	9	34	
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Srv Total	0	1	6	1	4	3	0	1	1	5	0	0	6	4	1	5	19	9	8	6	18	14	13	26	149	
Srv Typ Cnt	0	1	2	1	2	1	0	1	1	1	0	0	2	1	1	1	2	1	1	1	3	3	2	4	5	

Vignette 4.3

This gentleman of 58 years lived in a rural setting and died in hospital in the Interior region of an acute myocardial infarction (unspecified). In the last two years of his life there were two months of the 24 months where he was completely self-care with no direct contact with any formal health service providers. He had a total of 162 service events in three types of services over the other 22 months. These included 59 physician visits distributed across the two years with 17 of these visits being in the last month of life, 97 pharmaceutical prescriptions distributed across the two years and three days of acute care service in the last month of life.

82754438	Age: 58	Gender: M	Palliative:	R/U: Rural	HA: Interior (01)	Group 4																			
	Where:			02—Hospital, School, Other Institution																					
	UCOD:	I219	Acute Myocardial Infarction Unspecified																						
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	0	6	0	7	3	10	6	0	4	0	0	0	2	1	0	1	1	0	0	1	0	0	1	16	59
Pharm Scripts	3	1	0	6	5	4	10	4	4	6	8	1	0	0	0	4	6	5	4	6	5	6	6	3	97
DAD Tdays	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	6
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	3	7	0	16	8	14	16	4	8	6	8	1	2	1	0	5	7	5	4	7	5	6	7	22	162
Srv Typ Cnt	1	2	0	3	2	2	2	1	2	1	1	1	1	1	0	2	2	1	1	2	1	1	2	3	3

Vignette 4.4

This gentleman of 77 years lived in a rural setting and died in a hospital in the Vancouver Island region of a malignant prostate neoplasm (malignant neoplasm of prostate). In the last two years of his life there was one month of the 24 months where he was completely self-care with no direct contact with any formal health service providers. He had a total of 177 service events in three types of services (one of these services was classified as palliative) over the other 23 months. These included 100 physician visits (23 visits were in the last month of life the rest were distributed across the two years), 60 pharmaceutical prescriptions distributed across the two years and 17 days of acute care service in the last month of life.

82606716		Age: 77	Gender: M	Palliative: Y	R/U: Rural	HA: Vancouver Island (04)	Group 4																		
		Where:	02—Hospital, School, Other Institution																						
		UCOD:	C61 Malignant Neoplasm of Prostate																						
Service	Months Before Death																								Srv Total
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
MSP Visits	2	1	2	3	2	0	2	3	2	5	1	1	4	5	5	5	1	4	9	3	7	6	4	23	100
Pharm Scripts	1	1	2	1	1	0	2	1	5	2	1	0	1	2	1	1	5	1	4	4	6	7	8	3	60
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	17
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	3	2	4	4	3	0	4	4	7	7	2	1	5	7	6	6	6	5	13	7	13	13	12	43	177
Srv Typ Cnt	2	2	2	2	2	0	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	3	3

Group 4 (150–199 Services): Characteristics, Health Service Use and Patterns

The People

3,042 people (10 percent) of the 29,456 people who died across British Columbia had between 150–199 service events over the last two years of life. Of these people, circulatory disease was the cause of death for 26 percent, cancer for 47 percent, respiratory disease 8 percent and external causes/other for 19 percent. The number of people with the cause of death being cancer (46 percent) was higher in this group than in group 1(11 percent) and group 2 (34 percent) and group 3 (43 percent).

Service Use: Patterns and Bundles

When examining service use patterns and bundles by month over the last two years, these people were fully self-care with no direct contact with formal health service providers 15 percent of all months; they accessed a single service or physician/ pharmaceutical services 68 percent of all months and 17 percent of the time they had more complex service bundles.

When examining single service use in more detail, 22 percent of the months they had physician visits alone, 37 percent of the time they had physician visits in combination with pharmaceutical prescriptions and 8 percent of the time the only service used was pharmaceutical prescriptions. There were individual services used in other months including adult day care (0.2 percent), home support (0.6 percent), and home care (0.5 percent) of all months.

When examining more complex service bundle use, these people had physician and acute care (three percent of all months), physician, pharmaceutical and acute care (three percent), physician, pharmaceutical and home care (four percent), physician, acute care and home support (0.5 percent), physician, acute care and day care (three percent) and “other” (four percent) of all months over the two years.

Average Service Use

On average, these people each had 86 physician visits, 46 pharmaceutical prescriptions, 24 days of acute services, 2 facility days, 9 direct care visits and five hours of home support and one day of adult day care. Service use was higher for all service types than the previous groups.

Although this group was 10 percent of the entire cohort, it used 12 percent of all the physician visits, 7 percent of pharmaceutical prescriptions, 10 percent of the acute care days, 9 percent of the direct care visits, one percent of the home support hours and five percent of all adult day care used by the cohort during the two years.

Place of Death and Average Service Use

The most common place of death was hospital with 64 percent (1,956) of all people in this group having died in hospital, 20 percent (619) having died at home, 14 percent (413) having died in residential care, and the remaining 2 percent (54) having died in other places.

- On average, the people who died in hospital had 89 physician visits, 43 pharmaceutical prescriptions, 28 days of acute services, 7 direct care visits and four home support hours over the two years (all other services were less than one).
- The people who died at home had 80 physician visits, 54 pharmaceutical prescriptions, 13 days of acute care, 17 direct care visits, and 7 hours of home support and one day of adult day care.
- Those who died in residential care had 77 physician visits, 46 pharmaceutical prescriptions, 22 days of acute services, 12 residential care days, 10 direct care visits and 7 hours of home support.
- Those who died elsewhere had 84 physician visits, 59 pharmaceutical prescriptions, 18 days of acute service, 8 direct care visits and four hours of home support.

Ambulance Service Use

Of all people in this group, 2,495 (82 percent) used three ambulance trips over the last two years of life. For these people, there was a total of 8,085 ambulance trips of which 4,651 (58 percent) were no siren, 2,694 (33 percent) were with siren, 185 (two percent) were air ambulance, and for 555 (7 percent), the status was unknown.

People Identified as Palliative

1,376 of the people in this group (45 percent) were identified as palliative, as they received a service classified as palliative. They accounted for 17 percent of all 8,071 palliative people identified in the cohort. Of these, 7 percent died of circulatory disease, 82 percent of cancer, three percent of respiratory disease, and 8 percent of external causes or other.

On average, the people identified as palliative each had 87 physician visits, 40 pharmaceutical prescriptions, 26 days of acute services, two days of residential care, 16 direct care visits and four hours of home support. These people most frequently died in hospital (60 percent), 22 percent died at home, and 17 percent died in residential care.

Cost of Services Used (Excludes Ambulance)

Service Event Group 4 [150–199]

The total cost of all services used by decedents who had between 150 to 199 service events over the last two years of life was \$69M, with the average for each person in this service event group being \$22,758.

When examined by type of services, the total cost by service was \$18M for physician visits, \$6M for pharmaceutical prescriptions, \$41M for acute care, \$1M for residential services, \$2.5M for direct care visits, \$0.5M for home support hours, and \$0.2M for adult day care days.

The average cost of services used by each person was \$5,822 for physician services, \$2,051 for pharmaceutical prescriptions, \$13,555 for acute care days, \$317 for residential care days, \$795 for direct care visits, \$164 for home support hours, and \$54 for adult day care.

By Diagnostic Group

When this group of people was examined by diagnostic group, the total cost of services used over the last two years of life for those people who died of circulatory disease was \$17M, cancer \$33.5M, respiratory disease \$5.5M, external causes \$2M, and other \$11M.

The average cost of services used by each person was \$21,291 for circulatory disease, \$23,640 for cancer, \$22,801 for respiratory disease, \$18,903 for external causes, and \$23,368 for other diagnoses.

By Place of Death

When this group of people was examined by place of death, the total cost of services used over the last two years of life for those who died in hospital was \$48.5M, in residential care was \$9M, at home was \$10.5M, and in other places was \$1M.

The average cost of services used by person by place of death was \$24,758 for those people who died in hospital, \$22,221 for residential care, \$17,119 for home, and \$19,072 for other places.

Group 5: People Who Had 200–249 Service Events Over the Two Years

Vignette 5.1

This lady of 92 years lived in an urban setting and died in a hospital in the Vancouver Island region of acute pancreatitis. In the last two years of life she had direct contact with formal health service providers in all 24 months. She had a total of 229 service events in 3 types of services. These included 100 physician visits and 123 pharmaceutical prescriptions distributed over the two years, and 6 days of acute service in the last month of life.

82604286	Age: 92	Gender: F	Palliative:	R/U: Urban	HA: Vancouver Island (04)	Group 5																				
	Where:			02—Hospital, School, Other Institution																						
	UCOD: K85		Acute Pancreatitis																							
	Months Before Death																									
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total	
Service																										
MSP Visits	3	5	5	1	1	2	0	3	6	4	0	2	6	5	4	2	2	1	1	6	8	7	5	21	100	
Pharm Scripts	11	5	2	10	2	4	4	5	4	7	4	5	10	5	1	7	4	5	2	7	5	3	7	4	123	
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Srv Total	14	10	7	11	3	6	4	8	10	11	4	7	16	10	5	9	6	6	3	13	13	10	12	31	229	
Srv Typ Cnt	2	2	2	2	2	2	1	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	3	3	

Vignette 5.2

This gentleman of 83 years lived in an urban setting and died in an extended care facility in the Interior region of a malignant neoplasm (malignant neoplasm without site specification). In the last two years of his life there were 10 months of the 24 months where he was completely self-care with no direct contact with any formal health service providers.

He had a total of 238 service events in five types of services (one of these services was classified as palliative) over the other 14 months. These included 64 physician visits (50 of these visits were over the last five months of life), 106 pharmaceutical prescriptions (80 of these were over the last three months of life), 20 days of acute service (months four and three prior to the end of life) and 30 residential care days and 18 direct care visits over the last three months of life.

82682340	Age: 83	Gender: M	Palliative: Y	R/U: Urban	HA: Interior (01)	Group 5																			
	Where:	01—Residential Institution																							
	UCOD: C80	Malignant Neoplasm WO Site Specification																							
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	3	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	2	3	1	20	14	12	1	4	64
Pharm Scripts	4	0	0	0	0	2	0	0	2	0	0	0	2	0	0	0	3	0	0	4	2	31	33	23	106
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	5	0	0	20
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	13	30	
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	2	2	18	
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	7	1	0	3	0	2	0	0	2	0	0	0	2	0	0	0	5	3	1	24	31	80	36	42	238
Srv Typ Cnt	2	1	0	1	0	1	0	0	1	0	0	0	1	0	0	0	2	1	1	2	3	5	3	4	5

Vignette 5.3

This lady of 74 years lived in an urban setting and died in a hospital in the Vancouver Island region of chronic obstructive pulmonary disease (COPD unspecified). In the last two years of life she had direct contact with formal health service providers in all 24 months. She had a total of 234 service events in 4 types of services over the 24 months. These included 48 physician visits and 135 pharmaceutical prescriptions distributed over the two years, 25 days of acute service (11 of these were in the last two months of life) and 26 direct care visits (24 of these were in the last two months of life).

82696839	Age: 74	Gender: F	Palliative: Y	R/U: Urban	HA: Vancouver Island (04)	Group 5																			
	Where:	02—Hospital, School, Other Institution																							
	UCOD: J449	COPD Unspecified																							
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	0	0	0	1	0	0	0	1	0	1	13	3	0	0	1	7	2	3	1	0	0	1	6	8	48
Pharm Scripts	3	3	7	5	2	2	6	7	3	4	0	8	4	3	6	4	9	7	9	7	9	6	11	10	135
DAD Tdays	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	5	0	0	0	0	0	0	9	2	25
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	12	12	26	
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	3	3	7	6	2	2	6	8	3	5	24	11	4	3	7	16	11	10	10	7	9	7	38	32	234
Srv Typ Cnt	1	1	1	2	1	1	1	2	1	2	3	2	1	1	2	3	2	2	2	1	1	2	4	4	4

Group 5 (200–249 Services): Characteristics, Health Service Use and Patterns

The People

2,190 people (7 percent) of the 29,456 people who died across British Columbia had between 200–249 service events over the last two years of life. Of these people, circulatory disease was the cause of death for 26 percent, cancer for 45 percent, respiratory disease 9 percent and external causes/other for 20 percent. The number of people with the cause of death being cancer (45 percent) was similar to groups 3, 4 and 6 (43 percent, 47 percent and 43 percent).

Service Use: Patterns and Bundles

When examining service use patterns and bundles by month over the last two years of life, these people were fully self-care with no direct contact with formal health service providers 11 percent of all months. They accessed a single service or physician/pharmaceutical services 66 percent of all months, and 24 percent of the time they had more complex service bundles.

When examining single service use in more detail, 18 percent of the months they had physician visits alone, 41 percent of the time they had physician visits in combination with pharmaceutical prescriptions, 6 percent of the time the only service used was pharmaceutical prescriptions, and home support was used one percent of the time.

When examining more complex service bundle use, these people had physician and acute care (three percent of all months), physician, pharmaceutical and acute care (four percent), physician, pharmaceutical and home care (6 percent), physician, pharmaceutical and home support (one percent), physician, acute care and day care (four percent), and “other” (four percent) of all months over the two years.

Average Service Use

On average, these people each had 101 physician visits, 61 pharmaceutical prescriptions, 31 days of acute services, 5 facility days, 13 direct care visits, 10 hours of home support and one day of adult day care. Service use was higher for all service types than the previous groups.

Although this group was 7 percent of the cohort, it used 10 percent of all physician visits, 7 percent of pharmaceutical prescriptions, 9 percent of acute care days and direct care visits, one percent of home support hours and four percent of adult day care used by the cohort during the two years.

Place of Death and Average Service Use

The most common place of death was hospital with 64 percent (1,404) of all people in this group having died in hospital, 18 percent (395) having died at home, 17 percent (366) having died in residential care, and the remaining one percent (25) having died in other places.

- On average, the people who died in hospital had 106 physician visits, 58 pharmaceutical prescriptions, 35 days of acute services, two days of residential care, 11 direct care visits, 10 home support hours, and one day of adult day care over the two years.
- The people who died at home had 96 physician visits, 71 pharmaceutical prescriptions, 17 days of acute care, 25 direct care visits, and 14 hours of home support.
- Those who died in residential care had 88 physician visits, 58 pharmaceutical prescriptions, 30 days of acute services, 24 residential care days, 13 direct care visits, 9 hours of home support, and one day of adult day care.
- Those who died elsewhere had 100 physician visits, 73 pharmaceutical prescriptions, 28 days of acute service, 5 direct visits and 17 hours of home support.

Ambulance Service Use

Of all people in this group, 1,837 (84 percent) used four ambulance trips over the last two years of life. For these people, there was a total of 6,552 ambulance trips of which 3,830 (58 percent) were no siren, 2,128 (32 percent) were with siren, 142 (2 percent) were air ambulance, and for 452 (7 percent) the status was unknown.

People Identified as Palliative

990 of the people in this group (45 percent) were identified as palliative, as they received a service classified as palliative. They accounted for 12 percent of all 8,071 palliative people identified in the cohort. Of these, 7 percent died of circulatory disease, 81 percent of cancer, four percent of respiratory disease, and 8 percent of external causes or other.

On average, the people identified as palliative each had 103 physician visits, 56 pharmaceutical prescriptions, 32 days of acute services, 3 days of residential care, 22 direct care visits, and 7 hours of home support. These people most frequently died in hospital (59 percent), 22 percent died at home, and 18 percent died in residential care.

Cost of Services Used (Excluding Ambulance)

Service Event Group 5 [200–249]

The total cost of all services used by decedents who had between 200 to 249 service events over the last two years of life was \$64M, with the average for each person in this service event group being \$29,198.

When examined by type of services, the total cost by service was \$15M for physician visits, \$6M for pharmaceutical prescriptions, \$38M for acute care, \$1.75M for residential services, \$2.5M for direct care visits, \$0.75M for home support hours, and \$0.15M for adult day care days.

The average cost of services used by each person was \$6,862 for physician services, \$2,721 for pharmaceutical prescriptions, \$17,310 for acute care days, \$765 for residential care days, \$1,142 for direct care visits, \$333 for home support hours, and \$65 for adult day care.

By Diagnostic Group

When this group of people was examined by diagnostic group, the total cost of services used over the last two years of life for those people who died of circulatory disease was \$15.5M, cancer \$30M, respiratory disease \$6.5M, external causes \$1.5M, and other \$11.5M.

The average cost of services used by each person was \$26,811 for circulatory disease, \$29,671 for cancer, \$31,111 for respiratory disease, \$24,399 for external causes, and \$31,433 for other diagnoses.

By Place of Death

When this group of people was examined by place of death, the total cost of services used over the last two years of life for those who died in hospital was \$43.5M, in residential care was \$11M, at home was \$8.5M, and in other places was \$0.75M.

The average cost of services used by person, by place of death, was \$31,037 for those people who died in hospital, \$30,429 for residential care, \$21,685 for home, and \$26,600 for other places.

Group 6: People Who Had 250–299 Service Events Over the Two Years

Vignette 6.1

This lady of 88 years lived in an urban setting and died in hospital in the Vancouver Island region of atherosclerotic heart disease. In the last two years of life she had direct contact with formal health service providers in all 24 months. She had a total of 282 service events in four types of services (one of these services was classified as palliative) over the 24 months. These included 170 physician visits distributed across the two years, with 44 of these visits being in the last month of life, 52 pharmaceutical prescriptions distributed across the two years, 32 direct care visits in months 17 and 18 and three to five months prior to end of life, and 28 days of acute care service in the last month of life.

82783665	Age: 88	Gender: F	PalliativeY	R/U:Urban	HA: Vancouver Island (04)	Group 6																			
	Where:				02—Hospital, School, Other Institution																				
	UCOD:	I251	Atherosclerotic Heart Disease																						
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	4	5	4	4	3	6	6	5	7	4	3	8	6	6	9	7	6	6	7	7	5	3	5	44	170
Pharm Scripts	0	0	0	2	0	5	1	0	4	3	0	8	2	3	2	2	3	0	4	4	3	1	5	0	52
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	28
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits	0	0	0	0	0	0	7	7	0	0	0	1	0	0	0	0	0	0	6	6	6	0	0	0	32
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	4	5	4	6	3	11	14	12	11	7	3	17	8	9	11	9	9	6	17	17	14	4	10	72	282
Srv Typ Cnt	1	1	1	2	1	2	3	2	2	2	1	3	2	2	2	2	2	1	3	3	3	2	2	2	4

Vignette 6.2

This lady of 77 years lived in an urban setting and died in a hospital in the Vancouver Island region of congestive heart failure. In last two years of life there was one month where she was completely self-care with no direct contact with any formal health service providers. She had 273 service events in four types of services over the other 23 months. These included 177 physician visits and 72 pharmaceutical prescriptions distributed over the two years, 17 days of acute service (7 acute days 16 months before the end of life, 9 acute days 10 months before the end of life, and one day in the last month of life) and 7 direct care visits 16 months before the end of life.

82310605	Age: 77	Gender: F	Palliative:	R/U: Urban	HA: Vancouver Island (04)	Group 6																			
	Where:				02—Hospital, School, Other Institution																				
	UCOD:	I500	Congestive Heart Failure																						
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	2	1	0	3	3	4	16	13	3	8	12	14	8	25	11	6	8	7	3	8	5	3	6	8	177
Pharm Scripts	4	0	0	4	0	0	5	3	5	3	2	5	4	8	4	1	4	7	2	1	5	2	1	2	72
DAD Tdays	0	0	0	0	0	0	0	7	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	1	17
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	6	1	0	7	3	4	21	27	12	11	14	19	12	42	15	7	12	14	5	9	10	5	7	11	273
Srv Typ Cnt	2	1	0	2	1	1	2	4	3	2	2	2	2	3	2	2	2	2	2	2	2	2	2	3	4

Vignette 6.3

This gentleman of 74 years lived in an urban setting and died in a hospital in the Vancouver Coastal region of a malignant neoplasm of the sigmoid colon. In the last two years of life he had direct contact with formal health service providers in all 24 months. He had a total of 268 service events in four types of services (one of these services was classified as palliative) over the 24 months. These included 144 physician visits and 46 pharmaceutical prescriptions distributed over the two years, 42 direct care visits (32 were over 7 months starting 23 months before the end of life, the remaining 9 visits were over the three months prior to the end of life) and 36 days of acute service (28 of these days were 23 months before the end of life, and 7 days were in the last month of life).

82589509	Age: 74	Gender: M	Palliative: Y	R/U: Urban	HA: Vancouver Coastal (03)	Group 6																			
	Where:			02—Hospital, School, Other Institution																					
	UCOD: C187		Malignant Neoplasm of Sigmoid Colon																						
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	18	18	11	7	5	4	7	3	4	6	5	4	7	4	4	3	5	3	3	2	3	5	4	9	144
Pharm Scripts	5	4	0	1	1	0	3	3	2	0	2	2	1	5	4	1	1	3	1	1	1	0	1	4	46
DAD Tdays	28	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	7	36
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits	5	5	5	5	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	42
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	55	27	16	13	10	8	14	6	6	6	7	6	9	9	8	4	6	6	4	3	4	8	8	23	267
Srv Typ Cnt	4	3	2	3	3	2	3	2	2	1	3	3	4	2	2	2	2	2	2	2	2	2	3	4	4

Vignette 6.4

This gentleman of 87 years lived in an urban setting and died in a hospital in the Fraser region of septicaemia (unspecified). In the last two years of life he had direct contact with formal health service providers in all 24 months. He had a total of 231 service events in four types of services over the 24 months. These included 92 physician visits and 68 pharmaceutical prescriptions distributed over the two years, 34 direct care visits over 14 months starting 23 months before the end of life, and 37 acute days of service (31 of these were 7 to 8 months before the end of life, two days were in the last month of life).

82738934	Age: 87	Gender: M	Palliative:	R/U: Urban	HA: Fraser (02)	Group 6																			
	Where:			02—Hospital, School, Other Institution																					
	UCOD: A419		Septicaemia Unspecified																						
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	4	0	1	1	4	1	0	0	1	0	8	3	7	1	1	21	21	2	2	0	5	1	1	7	92
Pharm Scripts	2	0	4	0	6	1	0	3	2	3	4	2	3	2	4	0	6	6	3	1	6	5	0	5	68
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	14	17	0	0	0	1	0	0	2	37
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	34
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	8	2	7	3	12	4	2	5	5	5	14	7	15	5	5	35	44	8	5	1	12	6	1	14	231
Srv Typ Cnt	3	1	3	2	3	3	1	2	3	2	3	3	4	3	2	2	3	2	2	1	3	2	1	3	4

Group 6 (250–299 Services): Characteristics, Health Service Use and Patterns

The People

1,584 people (five percent) of the 29,456 people who died across British Columbia had between 250–299 service events over the last two years of life. Of these people, circulatory disease was the cause of death for 27 percent, cancer for 43 percent, respiratory disease 9 percent, and external causes/other for 21 percent. The number of people with the cause of death being cancer (43 percent) was similar to group 3, 4 and 5 (43 percent, 47 percent and 45 percent).

Service Use: Patterns and Bundles

When examining service use patterns and bundles by month over the last two years of life, these people were fully self-care with no direct contact with formal health service providers 9 percent of all months, they accessed a single service or physician/ pharmaceutical services 62 percent of all months, and 30 percent of the time they had more complex service bundles.

When examining single service use in more detail, 14 percent of the months they had physician visits alone, 41 percent of the time they had physician visits in combination with pharmaceutical prescriptions and five percent of the time the only service used was pharmaceutical prescriptions. There were individual services used in other months including home support (1.1 percent) and home care one percent of the months. Single service use proportion of months for physician and pharmaceuticals was slightly lower than for previous groups.

When examining more complex service bundle use, these people had physician and acute care (3.0 percent of all months), physician, pharmaceutical and acute care (four percent), physician, pharmaceutical and home care (7 percent), physician, pharmaceutical and home support (two percent), physician, acute care and day care (five percent), and “other” (five percent) of all months over the two years.

Average Service Use

On average, these people each had 114 physician visits, 71 pharmaceutical prescriptions, 39 days of acute services, 10 facility days, 18 direct care visits, 19 hours of home support, and two days of adult day care. Service use was higher for all service types than for the previous groups.

Although they accounted for five percent of the entire cohort, they used 8 percent of all physician visits, acute care days and direct care visits, 6 percent of all pharmaceutical prescriptions and adult day care days, and two percent of all home support hours used by the entire cohort during the two year period.

Place of Death and Average Service Use

The most common place of death was hospital with 61 percent (970) of all people in this group having died in hospital, 17 percent (277) having died at home, 20 percent (322) having died in residential care, and the remaining one percent (15) having died in other places.

- On average, the people who died in hospital had 119 physician visits, 70 pharmaceutical prescriptions, 42 days of acute services, 5 days of residential care, 15 direct care visits and 20 home support hours, and two days of adult day care day over the two years.
- The people who died at home had 113 physician visits, 82 pharmaceutical prescriptions, 27 days of acute care, one day of residential care, 30 direct care visits and 18 hours of home support.
- Those who died in residential care had 99 physician visits, 66 pharmaceutical prescriptions, 42 days of acute services, 33 residential care days, 15 direct care visits, 15 hours of home support and three days of adult day care.
- Those who died elsewhere had 111 physician visits, 86 pharmaceutical prescriptions, 23 days of acute service, 19 direct visits and 37 hours of home support.

Ambulance Service Use

Of all people in this group, 1,378 (87 percent) used four ambulance trips over the last two years of life. For these people, there was a total of 5881 ambulance trips of which 3,499 (59 percent) were no siren, 1,872 (32 percent) were with siren, 106 (two percent) were air ambulance, and for 404 (7 percent) the status was unknown.

People Identified as Palliative

726 of the people in this group (46 percent) were identified as palliative, as they received a service classified as palliative. They accounted for 9 percent of all 8,071 palliative people identified in the cohort. Of these, 11 percent died of circulatory disease, 77 percent of cancer, 5 percent of respiratory disease and 8 percent of external causes or other.

On average, the people identified as palliative each had 119 physician visits, 68 pharmaceutical prescriptions, 40 days of acute services, four days of residential care, 28 direct care visits and 13 hours of home support. These people most frequently died in hospital (58 percent), 21 percent died at home and 20 percent died in residential care.

Cost of Services Used (excluding ambulance)

Service Event Group 6 [250–299]

The total cost of all services used by decedents who had between 250 to 299 service events over the last two years of life was \$58M, with the average for each person in this service event group being \$36,554.

When examined by type of services the total cost by service was \$12M for physician visits, \$5M for pharmaceutical prescriptions, \$35M for acute care, \$2M for residential services, \$2.5M for direct care visits, \$1M for home support hours and \$0.25M for adult day care days.

The average cost of services used by each person was \$7,733 for physician services, \$3,203 for pharmaceutical prescriptions, \$21,995 for acute care days, \$1,386 for residential care days, \$1,493 for direct care visits, \$602 for home support hours and \$142 for adult day care.

By Diagnostic Group

When this group of people was examined by diagnostic group, the total cost of services used over the last two years of life for those people who died of circulatory disease was \$14.5M, cancer \$25M, respiratory disease \$5.5M, external causes \$1.5M and other \$11M.

The average cost of services used by person was \$34,367 for circulatory disease, \$37,065 for cancer, \$37,930 for respiratory disease, \$34,789 for external causes, and \$38,161 for other diagnoses.

By Place of Death

When this group was examined by place of death, the total cost of services used over the last two years of life for those who died of in hospital was \$36.5M, in residential care was \$13M, at home was \$8M, and in other places was \$0.5M.

The average cost of services used by person by place of death was \$37,682 for those people who died in hospital, \$39,616 for residential care, \$29,565 for home and \$26,918 for other places.

Group 7: People Who Had 300–399 Service Events Over the Two Years

Vignette 7.1

This lady of 77 years lived in a rural setting and died at home in the Vancouver Island region of a malignant neoplasm right bronchus/lung. In the last two years of her life there were three months of the 24 months where she was completely self-care with no direct contact with any formal health service providers. She had a total of 360 service events in four types of services over the other 21 months. These included 64 physician visits, 197 pharmaceutical prescriptions and 91 direct care hours distributed across the last 21 months of life, and 8 home support hours in the last month of life.

82197400		Age: 77	Gender: F	Palliative: Y	R/U: Rural	HA: Vancouver Island (04)	Group 7																		
		Where:			00—Home																				
		UCOD:	C349																						
Service	Months Before Death																								Srv Total
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
MSP Visits	0	0	0	1	4	9	10	4	3	5	2	3	2	0	1	2	1	1	0	4	6	2	3	1	64
Pharm Scripts	0	0	0	2	4	4	19	10	10	11	10	11	1	3	7	6	11	16	4	8	14	13	11	22	197
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits	0	0	0	4	4	4	4	4	5	5	5	5	4	5	5	4	4	4	4	4	4	4	5	4	91
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Srv Total	0	0	0	7	12	17	33	18	18	21	17	19	7	8	13	12	16	21	8	16	24	19	19	35	360
Srv Typ Cnt	0	0	0	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	2	3	3	3	4	4	

Vignette 7.2

This gentleman of 73 years lived in an urban setting and died in a residential care facility in the Interior region of atherosclerotic heart disease. In the last two years of life he had direct contact with formal health service providers in all 24 months. He had a total of 392 service events in 6 types of services over the 24 months. These included 54 physician visits distributed across the two years with 10 of the visits being in the last 2 months of life, 46 pharmaceutical prescriptions distributed across the two years, 67 adult day care visits and 39 home support hours over months 19 to 5 months prior to end of life, 176 residential care days over the last five months and one day of acute care in the last month of life.

82773383		Age: 73	Gender: M	Palliative:	R/U: Urban	HA: Interior (01)	Group 7																		
		Where:			01—Residential Institution																				
		UCOD:	I251		Atherosclerotic Heart Disease																				
Service	Months Before Death																								Srv Total
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
MSP Visits	0	2	2	15	4	2	7	2	0	0	0	1	0	0	0	2	0	3	3	0	1	0	2	8	54
Pharm Scripts	1	0	1	3	3	2	1	2	3	2	1	2	0	1	2	1	0	2	0	0	0	1	5	13	46
DAD Tdays	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	10	
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	30	30	58	30	176
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Home Hours	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	11	16	10	0	0	0	0	39	
Adult Days	0	0	0	0	4	4	5	4	6	5	8	0	8	6	8	9	0	0	0	0	0	0	0	67	
Srv Total	1	2	3	23	11	8	13	8	11	7	9	3	8	7	10	12	11	21	17	28	31	31	65	52	392
Srv Typ Cnt	1	1	2	3	3	3	3	3	2	2	2	1	2	2	3	1	3	3	1	2	2	3	4	6	

Vignette 7.3

This gentleman of 89 years lived in an urban setting and died in a residential care facility in the Interior region of an “other non-rheumatic mitral valve disorder.” In the last two years of life he had direct contact with formal health service providers in all 24 months. He had a total of 396 service events in 5 types of services over the 24 months. These included 151 physician visits distributed across the two years with 29 of these visits being in the last two months of life, 225 pharmaceutical prescriptions distributed across the two years, 12 days of acute care service with 7 of these days being in the last month of life, and four residential care days and four direct care visits in the last month of life.

82733235	Age: 89	Gender: M	Palliative: Y	R/U: Urban	HA: Interior (01)	Group 7																			
	Where: UCOD: 1348		Oth Nonrheumatic Mitral Valve Disorders		01—Residential Institution																				
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	1	1	4	17	2	12	7	3	4	1	15	13	4	2	6	1	12	4	6	3	1	4	7	21	151
Pharm Scripts	4	1	2	5	3	6	4	3	6	1	5	16	19	22	24	16	1	8	7	8	7	18	22	17	225
DAD Tdays	0	0	0	0	0	2	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	7	12
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	5	2	6	22	5	20	11	6	10	2	20	32	23	24	30	17	13	12	13	11	8	22	29	53	396
Srv Typ Cnt	2	2	2	2	2	3	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	2	2	5	5

Vignette 7.4

This gentleman of 79 years lived in an urban setting and died at home in the Vancouver Island region of atherosclerotic heart disease. In the last two years of life he had direct contact with formal health service providers in all 24 months. He had a total of 303 service events in four types of services (one of these services was classified as palliative) over the 24 months. These included 139 physician visits and 81 pharmaceutical prescriptions distributed over the two years, 63 days of acute service (56 days were 19 to 20 months prior to end of life, 7 days were in the last 3 months of life) and 20 direct care visits distributed over the last 6 months of life.

82592781	Age: 79	Gender: M	Palliative: Y	R/U: Urban	HA: Vancouver Island (04)	Group 7																			
	Where: UCOD: 1251		Atherosclerotic Heart Disease		00—Home																				
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	6	2	19	16	8	11	7	1	1	0	0	2	5	8	5	3	5	1	0	0	15	9	10	5	139
Pharm Scripts	4	3	4	0	8	8	6	4	2	3	6	2	3	3	4	5	4	3	3	2	0	0	2	2	81
DAD Tdays	1	0	0	25	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	1	63
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	5	20
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	11	5	23	41	46	19	13	5	3	3	6	4	8	11	9	8	9	4	6	5	24	12	18	10	303
Srv Typ Cnt	3	2	2	2	3	2	2	2	2	1	1	2	2	2	2	2	2	2	2	2	3	2	4	3	4

Group 7 (300–399 Services): Characteristics, Health Service Use and Patterns

The People

1,964 people (7 percent) of the 29,456 people who died across British Columbia had between 300–399 service events over the last two years of life. Of these people, circulatory disease was the cause of death for 30 percent, cancer for 36 percent, respiratory disease 10 percent and external causes/other for 23 percent. The number of people with the cause of death being cancer (36 percent) was lower than for groups 3, 4, 5 and 6 (43 percent, 47 percent and 45 percent, 43 percent respectively).

Service Use: Patterns and Bundles

When examining service use patterns and bundles by month over the last two years of life, these people were fully self-care with no direct contact with formal health service providers 6 percent of all months, they accessed a single service or physician/pharmaceutical services 55 percent of all months, and 39 percent of the time they had more complex service bundles.

When examining single service use in more detail, 11 percent of the months they had physician visits alone, 37 percent of the time they had physician visits in combination with pharmaceutical prescriptions, and 5 percent of the time the only service used was pharmaceutical prescriptions. There were individual services used in other months including home support (one percent), and home care (one percent) of all months. Single service use proportion of months for physician and pharmaceuticals was slightly lower than previous groups.

When examining more complex service bundle use, these people had physician and acute care (three percent of all months), physician, pharmaceutical and acute care (five percent), physician, pharmaceutical and home care (9 percent), physician, pharmaceutical and home support (four percent), physician, acute care and day care (five percent), physician and residential care (one percent), physician, pharmaceutical and residential care (one percent), physician, pharmaceutical, home care and home support (one percent) and “other” (7 percent) of all months over the two years.

Average Service Use

On average, these people each had 125 physician visits, 89 pharmaceutical prescriptions, 47 days of acute services, 24 facility days, 22 direct care visits, 34 hours of home support and three days of adult day care. Service use was higher for all service types than the previous groups.

Although this group was 7 percent of the entire cohort, it used 11 percent of all physician visits, 9 percent of pharmaceutical prescriptions, 12 percent of acute care days, one percent of residential days, 13 percent of direct care visits, four percent of home support hours and 12 percent of adult day care used by the cohort during the two year period.

Place of Death and Average Service Use

The most common place of death was hospital with 58 percent (1,143) of all people in this group having died in hospital, 16 percent (317) having died at home, 25 percent (483) having died in residential care and the remaining one percent (21) having died in other places.

- On average, the people who died in hospital had 138 physician visits, 85 pharmaceutical prescriptions, 53 days of acute services, 10 days of residential care, 20 direct care visits and 33 home support hours, and three days of adult day care day over the two years.
- The people who died at home had 112 physician visits, 112 pharmaceutical prescriptions, 27 days of acute care, 36 direct care visits, 49 hours of home support and two adult day care visits.
- Those who died in residential care had 103 physician visits, 81 pharmaceutical prescriptions, 47 days of acute services, 71 residential care days, 16 direct care visits, 27 hours of home support, and four days of adult day care.
- Those who died elsewhere had 118 physician visits, 131 pharmaceutical prescriptions, 32 days of acute service, 32 direct visits and 27 hours of home support.

Ambulance Service Use

Of all people in this group, 1,768 (90 percent) used five ambulance trips over the last two years of life. For these people, there was a total of 8,346 ambulance trips of which 5,073 (61 percent) were no siren, 2,495 (30 percent) were with siren, 181 (two percent) were air ambulance, and for 597 (7 percent) the status was unknown.

People Identified as Palliative

813 of this group of people (41 percent) were identified as palliative, as they received a service classified as palliative. They accounted for 10 percent of all 8,071 palliative people identified in the cohort. Of these, 14 percent died of circulatory disease, 71 percent of cancer, five percent of respiratory disease and 10 percent of external causes or other.

On average, the people in this group identified as palliative each had 136 physician visits, 88 pharmaceutical prescriptions, 50 days of acute services, 8 days of residential care, 36 direct care visits, 25 hours of home support and one adult day care day. These people most frequently died in hospital (58 percent), 20 percent died at home and 21 percent died in residential care.

Cost of Services Used (Excluding Ambulance)

Service Event Group 7 [300–399]

The total cost of all services used by decedents who had between 300 to 399 service events over the last two years of life was \$89M with the average for each person in this service event group being \$45,314.

When examined by type of services the total cost by service was \$17M for physician visits, \$8M for pharmaceutical prescriptions, \$52M for acute care, \$6.5M for residential services, \$3.6M for direct care visits, \$2M for home support hours and \$0.5M for adult day care days.

The average cost of services used by each person was \$8,477 for physician services, \$3,988 for pharmaceutical prescriptions, \$26,360 for acute care days, \$3,345 for residential care days, \$1,848 for direct care visits, \$1,080 for home support hours, and \$217 for adult day care.

By Diagnostic Group

When this group of people was examined by diagnostic group, the total cost of services used over the last two years of life for those who died of circulatory disease was \$26.5M, cancer \$33M, respiratory disease \$9M, external causes \$2.5M and other \$18M.

The average cost of services used by person was \$44,362 for circulatory disease, \$46,530 for cancer, \$45,219 for respiratory disease, \$39,085 for external causes, and \$45,635 for other diagnoses.

By Place of Death

When this group was examined by place of death, the total cost of services used over the last two years of life for those who died in hospital was \$54M, in residential care was \$24M, at home was \$10.5M, and in other places was \$0.75M.

The average cost of services used by person by place of death was \$47,166 for those people who died in hospital, \$49,644 for residential care, \$32,705 for home and \$35,329 for other places.

Group 8: People Who Had 400–549 Service Events Over the Two Years

Vignette 8.1

This lady of 78 years lived in a rural setting and died in hospital in the Vancouver Island region of congestive heart failure. In the last two years of life she had direct contact with formal health service providers in all 24 months. She had a total of 494 service events in five types of services (one of these services was classified as palliative) over the 24 months. These included 124 physician visits and 303 pharmaceutical prescriptions distributed across the two years, 22 direct care visits and 24 home support hours over the last three months of life, and 21 days of acute care service of with 19 these being in the last month of life.

82569734	Age: 78	Gender: F	Palliative: Y	R/U: Rural	HA: Vancouver Island (04)	Group 8																			
	Where: UCOD: I500	02—Hospital, School, Other Institution																							
	Congestive Heart Failure																								
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	3	4	4	11	7	4	3	1	3	1	3	1	3	4	5	2	2	3	6	4	4	26	9	11	124
Pharm Scripts	6	7	9	10	10	5	12	14	15	8	11	18	10	10	10	18	8	15	19	12	17	18	5	36	303
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	19	21
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	22
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	20	24
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	9	11	13	21	17	9	15	15	18	9	14	19	13	15	16	20	10	20	25	16	21	51	26	93	494
Srv Typ Cnt	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	2	2	3	2	2	2	3	4	5	5

Vignette 8.2

This lady of 71 years lived in an urban setting and died at home in the Fraser region of septicaemia (unspecified). In the last two years of life she had direct contact with formal health service providers in all 24 months. She had 472 service events in four types of services (one of these services was classified as palliative). These included 288 physician visits and 143 pharmaceutical prescriptions distributed over the two years, 34 days of acute service (27 of which were in the last month of life), and 7 direct care visits in the last month of life.

82567405	Age: 71	Gender: F	Palliative: Y	R/U: Urban	HA: Fraser (02)	Group 8																			
	Where: UCOD: A419	00—Home																							
	Septicaemia Unspecified																								
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	11	10	5	4	8	7	5	17	28	21	16	17	9	9	12	9	11	7	9	10	9	11	16	27	288
Pharm Scripts	2	5	8	1	14	2	4	10	4	4	7	6	10	7	9	7	4	2	5	5	7	3	9	8	143
DAD Tdays	0	0	0	0	0	0	0	0	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	27	34
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	13	15	13	5	22	9	9	27	33	25	29	23	19	16	21	16	15	9	14	15	16	14	25	69	472
Srv Typ Cnt	2	2	2	2	2	2	2	2	3	2	3	2	2	2	2	2	2	2	2	2	2	2	2	4	4

Vignette 8.3

This gentleman of 75 years lived in an urban setting and died in a hospital in the Vancouver Island region of dementia (unspecified). In last two years of his life there were four months where he was completely self-care with no direct contact with any formal health service providers. He had a total of 408 service events in five types of services over the other 20 months. These included 62 physician visits distributed over 17 of the 24 months, 16 pharmaceutical prescriptions distributed over 11 of the 24 months, 301 hours of home support over the last 9 months of life (144 of these were over the last two months of life), 22 days of adult day care from month 9 to the 3rd month prior to the end of life, and 7 days of acute service (6 of these days were in the last month of life).

82685274	Age: 75	Gender: M	Palliative:	R/U: Urban	HA: Vancouver Island (04)	Group 8																				
	Where:			02—Hospital, School, Other Institution																						
	UCOD: F03		Unspecified Dementia																							
	Months Before Death																									
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total	
Service																										
MSP Visits	2	2	1	0	7	0	4	0	4	0	2	11	1	10	1	0	0	0	1	2	1	1	4	8	62	
Pharm Scripts	0	0	0	0	0	0	0	0	2	0	0	1	0	2	2	1	1	1	0	0	1	2	1	2	16	
DAD Tdays	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	7	
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	20	20	20	20	38	29	55	89	301	
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4	5	3	4	4	0	0	0	22	
Srv Total	3	2	1	0	7	0	4	0	6	0	2	12	1	12	4	12	25	26	24	26	44	32	60	105	408	
Srv Typ Cnt	2	1	1	0	1	0	1	0	2	0	1	2	1	2	3	3	3	3	3	3	4	3	3	4	5	

Vignette 8.4

This lady of 78 years lived in an urban setting and died in a residential care facility in the Interior region of chronic obstructive pulmonary disease. In the last two years of life she had direct contact with formal health service providers in all 24 months. She had 496 service events in 6 types of services. These included 93 physician visits and 140 pharmaceutical prescriptions distributed over the two years. She also received 167 hours of home support over month 23 to five months prior to the end of life, 30 direct care visits over month 23 to 18 months and month 7 to five months prior to the end of life, 38 days of acute service (30 of these were over month 7 to five months prior to the end of life, 8 days were in the last two months of life), and 28 days of residential service in the last month of life.

82687905		Age: 78	Gender: F	Palliative:	R/U: Urban	HA: Interior (01)	Group 8																							
		Where: UCOD:	J449	COPD Unspecified	01—Residential Institution																									
Service	Months Before Death																								Srv Total					
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0						
MSP Visits	1	3	1	0	3	2	2	1	1	1	6	5	2	1	1	3	13	14	6	2	9	1	6	9	93					
Pharm Scripts	8	3	3	2	7	5	0	6	2	2	7	8	1	0	8	2	8	0	9	12	14	7	7	19	140					
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	21	7	0	0	0	7	1	38					
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	28					
Direct Visits	3	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	4	4	4	0	0	0	0	0	30					
Home Hours	13	14	15	8	8	8	9	8	9	9	8	4	5	4	5	4	4	22	10	0	0	0	0	0	167					
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Srv Total	25	23	22	13	21	18	11	15	12	12	21	17	8	5	14	9	31	61	36	14	23	8	20	57	496					
Srv Typ Cnt	4	4	4	3	4	4	2	3	3	3	3	3	3	2	3	3	5	4	5	2	2	2	3	4	6					

Group 8 (400–549 Services): Characteristics, Health Service Use and Patterns

The People

1,683 people (6 percent) of the 29,456 people who died across British Columbia had between 400–549 service events over the last two years of life. Of these people, circulatory disease was the cause of death for 34 percent, cancer for 26 percent, respiratory disease 13 percent and external causes/other for 27 percent. The number of people with the cause of death being cancer (26 percent) was lower than for group 2 through 7 (ranged from 34 percent to 47 percent).

Service Use: Patterns and Bundles

When examining service use bundles and patterns by month over the last two years, these people were fully self-care with no direct contact with formal health service providers five percent of all months, they accessed a single service or physician/ pharmaceutical services 44 percent of all months, and 50 percent of the time they had more complex service bundles.

When examining single service use in detail, 8 percent of the months they had physician visits alone, 29 percent of the time they had physician visits in combination with pharmaceutical prescriptions and 4 percent of the time the only service used was pharmaceutical prescriptions. There were individual services used in other months including home support (two percent) and residential care (one percent of all months).

When examining more complex service bundle use, these people had physician and acute care (four percent of all months), physician, pharmaceutical and acute care (five percent), physician, pharmaceutical and home care (8 percent), physician, pharmaceutical and home support (7 percent), physician, pharmaceutical, home care and home support (three percent), physician, acute care and direct care (6 percent), physician and residential care (three percent), physician, pharmaceutical and residential care (three percent), physician, pharmaceutical, acute care and residential care (one percent) and “other” (9 percent) of all months over the two years.

Average Service Use

On average these people each had 130 physician visits, 108 pharmaceutical prescriptions, 56 days of acute services, 63 facility days, 25 direct care visits, 81 hours of home support and three days of adult day care. Service use was higher for all service types than for the previous groups.

Although this group was 6 percent of the entire cohort, it used 10 percent of all physician visits, 9 percent of pharmaceutical prescriptions, 12 percent of acute care days, three percent of residential days, 12 percent of direct care visits, 7 percent of home support hours and 13 percent of all adult day care used by the cohort during the two years.

Place of Death and Average Service Use

The most common place of death was hospital with 54 percent (915) of all people in this group having died in hospital, 13 percent (219) having died at home, 32 percent (536) having died in residential care, and the remaining one percent (13) having died in other places.

- On average, the people who died in hospital had 149 physician visits, 112 pharmaceutical prescriptions, 62 days of acute services, 32 days of residential care, 24 direct care visits, 81 home support hours and four days of adult day care over the two years.
- The people who died at home had 120 physician visits, 138 pharmaceutical prescriptions, 30 days of acute care, three days of residential care, 44 direct care visits, 127 hours of home support, and two days of adult day care.
- Those who died in residential care had 101 physician visits, 87 pharmaceutical prescriptions, 55 days of acute services, 142 residential care days, 18 direct care visits, 65 hours of home support and four days of adult day care.
- Those who died elsewhere had 172 physician visits, 220 pharmaceutical prescriptions, 53 days of acute service, 19 direct visits and 11 hours of home support.

Ambulance Service Use

Of all people in this group, 1,520 (90 percent) used five ambulance trips over the last two years of life. For this group, there was a total of 8,237 ambulance trips of which 5,066 (62 percent) were no siren, 2,369 (29 percent) were with siren, 173 (two percent) were air ambulance, and for 629 (8 percent) the status was unknown.

People Identified as Palliative

568 of this group of people (34 percent) were identified as palliative, as they received a service classified as palliative. They accounted for 7 percent of the 8,071 palliative people identified in the cohort. Of these, 17 percent died of circulatory disease, 61 percent of cancer, 7 percent of respiratory disease and 15 percent of external causes or other.

On average, the people identified as palliative each had 145 physician visits, 117 pharmaceutical prescriptions, 57 days of acute services, 18 days of residential care, 43 direct care visits, 81 hours of home support and 1 adult day care day. These decedents most frequently died in hospital (54 percent), 19 percent died at home and 26 percent died in residential care.

Cost of Services Used (Excluding Ambulance)

Service Event Group 8 [400–549]

The total cost of all services used by decedents who had between 400 to 549 service events over the last two years of life was \$99M with the average for each decedent in this group being \$58,684.

When examined by type of services the total cost by service was \$15M for physician visits, \$8M for pharmaceutical prescriptions, \$52M for acute care, \$15M for residential services, \$3.5M for direct care visits, \$4.5M for home support hours, and \$0.5M for adult day care days.

The average cost of services used by each person was \$8,822 for physician services, \$4,843 for pharmaceutical prescriptions, \$31,147 for acute care days, \$8,909 for residential care days, \$2,084 for direct care visits, \$2,605 for home support hours, and \$275 for adult day care.

By Diagnostic Group

When this group was examined by diagnostic group, the total cost of services used over the last two years of life for those people who died of circulatory disease was \$32M, cancer \$26M, respiratory disease \$12.5M, external causes \$3M, and other \$25M.

The average cost of services used by person was \$56,292 for circulatory disease, \$59,408 for cancer, \$58,771 for respiratory disease, \$55,102 for external causes, and \$61,678 for other diagnoses.

By Place of Death

When this group was examined by place of death, the total cost of services used over the last two years of life for those who died in hospital was \$54.5M, in residential care was \$35M, at home was \$9M and in other places was \$0.75M.

The average cost of services used by person by place of death was \$59,462 for those who died in hospital, \$65,282 for residential care, \$39,610 for home, and \$53,297 for other places.

Group 9: People Who Had 500–699 Service Events Over the Two Years

Vignette 9.1

This lady of 91 years lived in an urban setting and died in a residential care facility in the Vancouver Island region of heart failure (unspecified). In the last two years of life she had direct contact with formal health service providers in all 24 months. She had a total of 586 service events in 4 types of services over the 24 months. These included 119 physician visits distributed across the two years with the majority being in the last 13 months of life, 117 pharmaceutical prescriptions distributed across the months 23 to 15 months prior to the end of life, 230 days of acute care service over month 10 to three months prior to the end of life, and 120 residential care days of services over the last four months of life.

82813416	Age: 91	Gender: F	Palliative:	R/U: Urban	HA: Vancouver Island (04)	Group 9																				
	Where:			01—Residential Institution																						
	UCOD:	I509	Heart Failure Unspecified																							
	Months Before Death																									
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total	
Service																										
MSP Visits	2	0	1	0	0	0	0	0	0	0	1	3	15	29	18	23	8	4	7	1	2	1	3	1	119	
Pharm Scripts	15	12	12	15	9	12	15	12	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	117	
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	20	30	30	30	30	30	30	30	0	0	0	230	
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	30	30	30	120	
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Srv Total	17	12	13	15	9	12	15	12	15	0	1	3	15	49	48	53	38	34	37	31	62	31	33	31	586	
Srv Typ Cnt	2	1	2	1	1	1	1	1	1	0	1	1	1	2	3	2	2	2	4							

Vignette 9.2

This gentleman of 90 years lived in an urban setting and died in a residential care facility in the Northern region of congestive heart failure. In the last two years of life he had direct contact with formal health service providers in all 24 months. He had 680 service events in 4 types of services over the two years. These included 54 physician visits, 191 hours of home support over month 23 to 14 months prior to the end of life, 429 residential service days over the last 13 months of life, and 6 days of acute service in month 10 prior to the end of life.

82618057	Age: 90	Gender: M	Palliative:	R/U: Urban	HA: Northern (05)	Group 9																			
	Where:			01—Residential Institution																					
	UCOD:	I500	Congestive Heart Failure																						
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	2	1	2	2	1	1	2	1	2	1	2	0	5	10	5	2	2	3	1	3	3	1	0	2	54
Pharm Scripts	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	6
Facility Days	0	0	0	0	0	0	0	0	0	0	0	12	30	30	57	30	30	30	30	30	30	30	30	30	429
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Home Hours	17	22	23	18	22	20	0	14	25	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	191
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	19	23	25	20	23	21	2	15	27	31	14	30	35	73	35	32	32	33	31	33	33	31	30	32	680
Srv Typ Cnt	2	2	2	2	2	2	1	2	2	2	2	1	2	3	2	1	2	4							

Vignette 9.3

This lady of 54 years lived in an urban setting and died in a hospital in the Vancouver Coastal region of chronic ischemic heart disease (other forms of chronic IHD). In the last two years of life she had direct contact with formal health service providers in all 24 months. She had 618 service events in three types of services over the two years. These included 246 physician visits distributed over the two years, 272 pharmaceutical prescriptions the majority of which were over month 23 to 9 months prior to the end of life, and 100 days of acute service distributed over 12 of the 24 months. Two of these days were in the last month of life.

82703857	Age: 54	Gender: F	Palliative:	R/U: Urban	HA: Fraser (02)	Group 9																				
	Where:			02—Hospital, School, Other Institution																						
	UCOD:	I258	Other Forms of Chronic IHD																							
	Months Before Death																									
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total	
Service																										
MSP Visits	0	2	7	14	2	2	4	29	5	11	2	2	0	4	14	20	21	10	26	23	14	11	12	11	246	
Pharm Scripts	18	18	18	31	26	16	19	9	27	20	27	10	11	10	0	0	0	0	0	10	0	1	0	1	272	
DAD Tdays	0	0	3	1	0	0	0	7	10	1	0	0	0	0	9	19	13	18	8	9	0	0	0	2	100	
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Srv Total	18	20	28	46	28	18	23	45	42	32	29	12	11	14	23	39	34	28	34	42	14	12	12	14	618	
Srv Typ Cnt	1	2	3	3	2	2	2	3	3	3	2	2	1	2	3	1	2	1	3	3						

Vignette 9.4

This lady of 91 years lived in an urban setting and died in a residential care facility in the Vancouver Coastal region of malignant neoplasm right breast (part unspecified). In the last two years of life she had direct contact with formal health service providers in all 24 months. She had 694 service events in five types of services over two years. These included 71 physician visits distributed over 18 of the 24 months, one pharmaceutical prescription in the last month of life, 72 days of acute service over month 20 to 17 months prior to the end of life, 27 hours of home support over month 23 to 19 months prior to the end of life, and 522 residential service days over the 17 months prior to the end of life.

82715843	Age: 91	Gender: F	Palliative:	R/U: Urban	HA: Vancouver Coastal (03)	Group 9																			
	Where:			01—Residential Institution																					
	UCOD:	C509																							
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	0	0	1	19	15	10	2	1	3	1	3	1	0	0	0	3	0	1	0	1	2	4	1	3	71
Pharm Scripts	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
DAD Tdays	0	0	0	11	30	1	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72
Facility Days	0	0	0	0	0	0	12	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	522
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Home Hours	6	8	6	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	6	8	7	36	47	11	44	31	34	31	33	31	30	30	30	33	30	31	30	31	32	34	31	34	694
Srv Typ Cnt	1	1	2	3	3	2	3	2	3	2	2	2	1	1	1	2	1	2	1	2	2	2	2	3	5

Group 9 (550–699 Services): Characteristics, Health Service Use and Patterns

The People

1,069 (four percent) of the entire cohort (29,456 decedents) had between 550–699 service events over the last two years of life. Of these, circulatory disease was the cause of death for 36 percent, cancer for 18 percent, respiratory disease for 13 percent and external causes/other for 33 percent. The number of people with the cause of death being cancer (18 percent) was lower than for groups 2 through 8, which ranged from 26 percent to 47 percent.

Service Use: Patterns and Bundles

When examining service use patterns and bundles by month over the last two years of life, these people were fully self-care with no direct contact with formal health service providers for three percent of all months, they accessed a single service or physician/ pharmaceutical services for 35 percent of all months, and 62 percent of the time they had more complex service bundles.

When examining single service use in detail, four percent of the months they had physician visits alone, 22 percent of the time they had physician visits in combination with pharmaceutical prescriptions, and four percent of the time the only service used was pharmaceutical prescriptions. There were individual services used in other months including home support (two percent), residential care (two percent) of all months, and acute care, home care and adult day care were each used less than 0.5 percent of the months.

When examining more complex service bundle use, these people had physician and acute care (three percent of all months), physician, pharmaceutical and acute care (four percent), physician, pharmaceutical and home care (6 percent), physician, pharmaceutical and home support (9 percent), physician, pharmaceutical, home care and home support (five percent), physician, acute care and direct care (five percent), physician and residential care (6 percent), physician, pharmaceutical and residential care (7 percent), physician, pharmaceutical, acute care and residential care (one percent), pharmaceutical and residential care (two percent), and “other” (10 percent) of all months over the two years.

Average Service Use

On average, these people each had 127 physician visits, 135 pharmaceutical prescriptions, 59 days of acute services, 131 facility days, 27 direct care visits, 131 hours of home support, and 7 days of adult day care. Service use was the same or higher than the previous groups.

Although this group was four percent of the entire cohort, it used 6 percent of all physician visits, 7 percent of pharmaceutical prescriptions, 8 percent of acute care days, four percent of residential days, 9 percent of direct care visits, 7 percent of home support hours and 16 percent of all adult day care used by the cohort during the two years.

Place of Death and Average Service Use

The most common place of death was hospital with 51 percent (549) of all decedents in this group having died in hospital, 10 percent (103) having died at home, 38 percent (404) having died in residential care, and the remaining one percent (13) having died in other places.

- On average, the people who died in hospital had 153 physician visits, 141 pharmaceutical prescriptions, 68 days of acute services, 74 days of residential care, 32 direct care visits and 139 home support hours, and 7 days of adult day care day over the two years.
- The people who died at home had 141 physician visits, 206 pharmaceutical prescriptions, 39 days of acute care, 12 days of residential care, 40 direct care visits, 173 hours of home support and three days of adult day care.
- Those who died in residential care had 89 physician visits, 104 pharmaceutical prescriptions, 52 days of acute services, 243 residential care days, 14 direct care visits, 108 hours of home support and 8 days of adult day care.

- Those who died elsewhere had 125 physician visits, 246 pharmaceutical prescriptions, 10 days of acute service, 7 residential care days, 82 direct visits, 132 hours of home support and 2 days of adult day care.

Ambulance Service Use

Of all decedents in this group, 977 (91 percent) used 6 ambulance trips over the last two years of life. For these people, there was a total of 5,567 ambulance trips of which 3,600 (65 percent) were no siren, 1,527 (27 percent) were with siren, 76 (one percent) were air ambulance, and for 364 (7 percent) the status was unknown.

People Identified as Palliative

257 of the decedents in this group (24 percent) were identified as palliative, as they received a service classified as palliative. They accounted for three percent of all 8,071 palliative people identified in the cohort. Of these, 19 percent died of circulatory disease, 53 percent of cancer, 7 percent of respiratory disease and 22 percent of external causes or other.

On average, the people identified as palliative each had 151 physician visits, 155 pharmaceutical prescriptions, 60 days of acute services, 54 days of residential care, 47 direct care visits and 137 hours of home support, and 6 adult day care days. These people most frequently died in hospital (56 percent), 15 percent died at home and 28 percent died in residential care.

Cost of Services Used (excluding ambulance)

Service Event Group 9 [550–699]

The total cost of all services used by decedents who had between 550 to 699 service events over the last two years of life was \$78M with the average for each person in this service event group being \$73,006.

When examined by type of services the total cost by service was \$9M for physician visits, \$6.5M for pharmaceutical prescriptions, \$35M for acute care, \$20M for residential services, \$2.5M for direct care visits, \$4.5M for home support hours and \$0.6M for adult day care days.

The average cost of services used by each person was \$8,649 for physician services, \$6,044 for pharmaceutical prescriptions, \$32,733 for acute care days, \$18,596 for residential care days, \$2,279 for direct care visits, \$4,181 for home support hours and \$524 for adult day care.

By Diagnostic Group

When this group of people was examined by diagnostic group, the total cost of services used over the last two years of life for those who died of circulatory disease was \$28M, cancer \$13M, respiratory disease \$11M, external causes \$2.5M and other \$23.5M.

The average cost of services used by person was \$73,046 for circulatory disease, \$67,951 for cancer, \$76,782 for respiratory disease, \$58,895 for external causes, and \$76,392 for other diagnoses.

By Place of Death

When this group was examined by place of death, the total cost of services used over the last two years of life for those who died in hospital was \$40M, in residential care was \$32M, at home was \$5M and in other places was \$0.5M.

The average cost of services used by person by place of death was \$73,165 for those people who died in hospital, \$79,424 for residential care, \$51,508 for home and \$37,200 for other places.

Group 10: People Who Had 700–849 Service Events Over the Two Years

Vignette 10.1

This lady of 85 years lived in an urban setting and died in a residential care facility in the Vancouver Island region of Alzheimer’s disease (unspecified). In the last two years of life she had direct contact with formal health service providers in all 24 months. She had a total of 738 service events in two types of services over the 24 months. These included 17 physician visits and 721 residential care days distributed across the two years.

82585373	Age: 85	Gender: F	Palliative:	R/U: Urban	HA: Vancouver Island (04)	Group 10																			
	Where:			01—Residential Institution																					
	UCOD:	G309	Alzheimer's Disease Unspecified																						
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	1	1	0	1	0	1	1	1	1	0	0	2	0	0	0	1	1	0	2	0	0	0	1	3	17
Pharm Scripts	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Days	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	31	30	30	721
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	31	31	30	31	30	31	31	31	31	30	30	32	30	30	30	31	31	30	32	30	30	31	31	33	738
Srv Typ Cnt	2	2	1	2	1	2	2	2	2	1	1	2	1	1	1	2	2	1	2	1	1	1	2	2	2

Vignette 10.2

This gentleman of 74 years lived in an urban setting and died in hospital in the Vancouver Coastal region of a malignant lesion oesophagus (unspecified). In the last two years of life he had direct contact with formal health service providers in all 24 months. He had a total of 701 service events in three types of services (one of these services was classified as palliative) over the 24 months. These included 85 physician visits and 602 pharmaceutical prescriptions distributed across the two years and 14 days of acute care service in the last month of life.

82801428	Age: 74	Gender: M	Palliative: Y	R/U: Urban	HA: Vancouver Coastal (03)	Group 10																			
	Where: UCOD: C159	02—Hospital, School, Other Institution																							
	Malignant Lesion Oesophagus Unspecified																								
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	1	2	0	1	0	3	1	2	2	3	0	1	8	4	1	2	1	3	4	0	0	1	17	28	85
Pharm Scripts	4	4	1	3	0	5	3	3	8	3	0	28	54	44	46	54	44	45	54	45	44	55	44	11	602
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	14
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	5	6	1	4	0	8	4	5	10	6	0	29	62	48	47	56	45	48	58	45	44	56	61	53	701
Srv Typ Cnt	2	2	1	2	0	2	2	2	2	2	0	2	2	2	2	2	2	2	2	1	1	2	2	3	3

Vignette 10.3

This lady of 84 years lived in a rural setting and died in hospital in the Vancouver Coastal region of a gastrointestinal haemorrhage. In the last two years of life she had direct contact with formal health service providers in all 24 months. She had a total of 721 service events in two types of services over the 24 months. These included 1 physician visit 8 months prior to the end of life and 720 days of residential care service distributed over the two years.

82789274	Age: 84	Gender: F	Palliative:	R/U: Rural	HA: Vancouver Coastal (03)	Group 10																			
	Where: UCOD: K922	02—Hospital, School, Other Institution																							
	Gastrointestinal Haemorrhage NOS																								
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Pharm Scripts	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Days	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	720
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	31	30	30	30	30	30	30	30	721
Srv Typ Cnt	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	2

Vignette 10.4

This gentleman of 87 years lived in a rural setting and died in a residential facility in the Interior region of Alzheimer’s disease (unspecified). In the last two years of life he had direct contact with formal health service providers in all 24 months. He had 747 service events in two types of services over the 2 years. They included 27 physician visits in 18 of the 24 months and 720 days of residential service distributed over all 24 months prior to the end of life.

82636455	Age: 87	Gender: M	Palliative:	R/U: Rural	HA: Interior (01)	Group 10																			
	Where:				01—Residential Institution																				
	UCOD:	G309	Alzheimer's Disease Unspecified																						
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	3	2	2	1	1	1	1	1	2	0	0	2	2	1	0	0	0	2	1	1	1	1	0	2	27
Pharm Scripts	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Days	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	720
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	33	32	32	31	31	31	31	31	32	30	30	32	32	31	30	30	30	32	31	31	31	31	30	32	747
Srv Typ Cnt	2	2	2	2	2	2	2	2	2	1	1	2	2	2	2	1	1	1	2	2	2	2	1	2	2

Group 10 (700–849 Services): Characteristics, Health Service Use and Patterns

The People

3,291 people (11 percent) of the 29,456 people who died across British Columbia had between 700–849 service events over the last two years of life. Of these people, circulatory disease was the cause of death for 38 percent, cancer for 7 percent, respiratory disease 18 percent and external causes/other for 37 percent. The number of people with a cause of death being cancer (7 percent) was lower than all previous groups.

Service Use: Patterns and Bundles

When examining service use bundles and patterns by month over the last two years, these people were fully self-care with no direct contact with formal health service providers less than one percent of all months, they accessed a single service or physician/pharmaceutical services 29 percent of all months, and 71 percent of the time they had more complex service bundles.

When examining single service use in detail, one percent of the months they had physician visits alone, pharmaceutical prescriptions or acute care, and four percent of the time they had physician visits in combination with pharmaceutical prescriptions. In 24 percent of the months residential services were used alone. It is important to note this proportion of months of residential care use, as this pattern was found only in this group.

When examining more complex service bundle use, these people had physician and acute care (one percent of all months), physician, pharmaceutical and acute care (one percent), physician, pharmaceutical and home care (one percent), physician, pharmaceutical and home support (three percent), physician, pharmaceutical, home care and home support (two percent), physician, acute care and day care (one percent), physician and residential care (34 percent), physician, pharmaceutical and residential care (15 percent), physician, pharmaceutical, acute care and residential care (one percent), pharmaceutical and residential care (8 percent) and “other” (two percent) of all months over the two years.

Average Service Use

On average, these decedents each had 53 physician visits, 52 pharmaceutical prescriptions, 25 days of acute services, 591 facility days, 6 direct care visits, 44 hours of home support and two days of adult day care. Service use was significantly lower for physician visits, pharmaceutical prescriptions, days of acute service, and direct care visits than the previous five to 7 groups. The average number of facility days of 591 was much higher than all previous groups and showed that these people received 591 days of residential care service out of the total possible 730 days in the two year period under study.

Although this group was 11 percent of the entire cohort, it used 8 percent of all physician visits, 9 percent of pharmaceutical prescriptions, 11 percent of acute care days, 49 percent of residential days, 6 percent of direct care visits, 7 percent of home support hours and 12 percent of all adult day care used by the cohort during the two years.

Place of Death and Average Service Use

The most common place of death was hospital with 27 percent (896) of all people in the group having died in hospital, two percent (72) having died at home, 70 percent (2,313) having died in residential care, and the remaining 10 having died in other places.

- On average, the people who died in hospital had 76 physician visits, 82 pharmaceutical prescriptions, 55 days of acute services, 449 days of residential care, 13 direct care visits, 92 home support hours and three days of adult day care over the two years.
- The people who died at home had 124 physician visits, 222 pharmaceutical prescriptions, 31 days of acute care, 102 days of residential care, 25 direct care visits, 259 hours of home support and 12 days of adult day care.
- Those who died in residential care had 42 physician visits, 34 pharmaceutical prescriptions, 14 days of acute services, 663 residential care days, 2.5 direct care visits, 18.5 hours of home support and one day of adult day care.
- Those who died elsewhere had 110 physician visits, 220 pharmaceutical prescriptions, 29 days of acute service, 185 residential care days, 16 direct visits, 193 hours of home support and 10 days of adult day care.

Ambulance Service Use

Of all people in this group, 1,875 (57 percent) used 5 ambulance trips over the last two years of life. For these decedents, there was a total of 8,767 ambulance trips of which 6,371 (73 percent) were no siren, 1,679 (19 percent) were with siren, 77 (1 percent) were air ambulance, and for 640 (7 percent) the status was unknown.

People Identified as Palliative

196 of the people in this group (6 percent) were identified as palliative, as they received a service classified as palliative. They accounted for 2 percent of all 8,071 palliative people identified in the cohort. Of these, 21 percent died of circulatory disease, 39 percent of cancer, 16 percent of respiratory disease and 24 percent of external causes or other.

On average, the people identified as palliative each had 126 physician visits, 156 pharmaceutical prescriptions, 57 days of acute services, 213 days of residential care, 41 direct care visits and 175 hours of home support and five adult day care days. These people most frequently died in hospital (56 percent), 12 percent died at home, and 31 percent died in residential care.

Cost of Services Used (Excluding Ambulance)

Service Event Group 10 [700–849]

The total cost of all services used by decedents who had between 700 to 849 service events over the last two years of life was \$349M with the average for each person in this service event group being \$106,069.

When examined by type of services the total cost by service was \$12M for physician visits, \$8M for pharmaceutical prescriptions, \$47M for acute care, \$276M for residential services, \$1.5M for direct care visits, \$4.5M for home support hours, and \$0.5M for adult day care days.

The average cost of services used by each person was \$3,603 for physician services, \$2,328 for pharmaceutical prescriptions, \$14,192 for acute care days, \$83,904 for residential care days, \$496 for direct care visits, \$1,418 for home support hours, and \$128 for adult day care.

By Diagnostic Group

When this group was examined by diagnostic group, the total cost of services used over the last two years of life for those people who died of circulatory disease was \$133M, cancer \$23M, respiratory disease \$66M, external causes \$6M and other \$122M.

The average cost of services used by person was \$106,375 for circulatory disease, \$101,132 for cancer, \$109,027 for respiratory disease, \$94,693 for external causes, and \$105,755 for other diagnoses.

By Place of Death

When this group was examined by place of death, the total cost of services used over the last two years of life for those who died in hospital was \$96M, in residential care was \$248M, at home was \$4.5M, and in other places was \$0.7M.

The average cost of services used by person by place of death was \$107,507 for those people who died in hospital, \$107,060 for residential care, \$61,644 for home, and \$67,962 for other places.

Group 11: People Who Had 850–999 Service Events Over the Two Years

Vignette 11.1

This lady of 92 years lived in an urban setting and died in a residential care facility in the Fraser region of gastrointestinal haemorrhage. In the last two years of life she had direct contact with formal health service providers in all 24 months. She had 907 service events in three types of services over the two years. These included 29 physician visits, 148 pharmaceutical prescriptions and 730 days of residential service distributed over all 24 months prior to the end of life.

82173315	Age: 92	Gender: F	Palliative:	R/U: Urban	HA: Fraser (02)	Group 11																				
	Where:			01—Residential Institution																						
	UCOD: K922		Gastrointestinal Haemorrhage NOS																							
	Months Before Death																									
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total	
Service																										
MSP Visits	1	3	3	0	2	3	0	0	1	2	2	0	0	1	0	1	0	0	1	1	2	2	1	3	29	
Pharm Scripts	8	10	7	6	5	10	2	10	0	4	5	6	8	6	5	5	7	5	5	5	9	5	6	9	148	
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Facility Days	19	30	30	30	30	30	30	30	30	30	30	51	30	30	30	30	30	30	30	30	30	30	30	30	730	
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Srv Total	28	43	40	36	37	43	32	40	31	36	37	57	38	37	35	36	37	35	36	36	41	37	37	42	907	
Srv Typ Cnt	3	3	3	2	3	3	2	2	2	3	3	2	2	3	2	3	2	2	3							

Vignette 11.2

This lady of 91 years lived in an urban setting and died in a residential care facility in the Interior region of Alzheimer’s disease (unspecified). In the last two years of life she had direct contact with formal health service providers in all 24 months. She had 876 service events in three types of services over the two years. These included 39 physician visits distributed over 16 of the 24 months, 117 pharmaceutical prescriptions and 721 days of residential service distributed over the 24 months prior to the end of life.

82535846	Age: 91	Gender: F	Palliative:	R/U: Urban	HA: Interior (01)	Group 11																			
	Where:	G309	Alzheimer's Disease Unspecified	01—Residential Institution																					
	UCOD:																								
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	1	2	0	0	0	0	1	3	2	0	3	1	0	0	0	3	2	2	3	3	3	2	2	6	39
Pharm Scripts	0	6	6	5	6	6	5	0	5	4	6	4	4	4	4	2	5	4	6	9	6	6	0	14	117
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Days	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	720
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	31	38	36	35	36	36	36	33	37	34	39	35	34	34	34	35	37	36	39	42	39	38	32	50	876
Srv Typ Cnt	2	3	2	2	2	2	3	2	3	2	3	3	2	2	2	3	3	3	3	3	3	3	2	3	3

Vignette 11.3

This lady of 93 years lived in an urban setting and died in a residential care facility in the Vancouver Coastal region of benign hypertension. In the last two years of life she had direct contact with formal health service providers in all 24 months. She had 862 service events in three types of services over the two years. These included 20 physician visits distributed over 11 of the 24 months, 112 pharmaceutical prescriptions and 730 days of residential service distributed over the 24 months prior to the end of life.

82573516	Age: 93	Gender: F	Palliative:	R/U: Urban	HA: Vancouver Coastal (03)	Group 11																			
	Where:	I110		01—Residential Institution																					
	UCOD:																								
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	0	0	3	2	0	0	2	1	1	1	0	0	0	1	0	3	0	2	0	0	2	0	0	2	20
Pharm Scripts	4	6	5	7	4	1	5	4	5	4	6	5	1	4	5	8	6	4	3	5	6	5	4	5	112
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Facility Days	13	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	57	30	30	30	30	30	30	30	730
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	17	36	38	39	34	31	37	35	36	35	36	35	31	35	35	41	63	36	33	35	38	35	34	37	862
Srv Typ Cnt	2	2	3	3	2	2	3	3	3	3	2	2	2	3	2	3	2	3	2	2	3	2	2	3	3

Vignette 11.4

This gentleman of 91 years lived in an urban setting and died in a residential care facility in the Fraser region of atherosclerotic heart disease. In the last two years of life he had direct contact with formal health service providers in all 24 months. He had 884 service events in four types of services over the two years. They included 52 physician visits, 97 pharmaceutical prescriptions and 731 days of residential service distributed over the 24 months prior to the end of life. He also had four days of acute service during the 8 months before the end of life.

82672096	Age: 91	Gender: M	Palliative:	R/U Urban: HA: Fraser (02)	Group 11																				
	Where:			01—Residential Institution																					
	UCOD: I251		Atherosclerotic Heart Disease																						
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	1	2	2	1	1	1	3	0	1	2	1	4	2	2	3	8	4	1	2	1	1	3	4	2	52
Pharm Scripts	3	5	7	4	4	4	6	0	4	4	5	4	7	5	2	5	6	5	3	3	3	4	4	0	97
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4
Facility Days	22	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	49	30	30	30	731
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	26	37	39	35	35	35	39	30	35	36	36	38	39	37	35	47	40	36	35	34	53	37	38	32	884
Srv Typ Cnt	3	3	3	3	3	3	3	1	3	4	3	2	4												

Group 11 (850–999 Services): Characteristics, Health Service Use and Patterns

The People

1,984 people (7 percent) of the 29,456 people who died across British Columbia had between 850–999 service events over the last two years of life. Of these, circulatory disease was the cause of death for 42 percent, cancer for 8 percent, respiratory disease 17 percent and external causes/other for 33 percent. The number of people with the cause of death being cancer (8 percent) was similar to group 10 and lower than all previous groups.

Service Use: Patterns and Bundles

When examining service use bundles and patterns by month over the last two years, these decedents were fully self-care with no direct contact with formal health service providers less than 1 percent of all months, they accessed a single service or physician/pharmaceutical services 7 percent of all months, and 93 percent of the time they had more complex service bundles.

When examining single service use in detail, in less than 0.5 percent of the months they had physician visits or a pharmaceutical prescription alone, and four percent of the time they had physician visits in combination with pharmaceutical prescriptions. There were individual services used in other months including home support (one percent) and residential care (two percent) of all months.

When examining more complex service bundle use, these decedents had physician and acute care (one percent of all months); physician, pharmaceutical and acute care (one percent); physician, pharmaceutical and home care (one percent); physician, pharmaceutical and home support (three percent); physician, pharmaceutical, home care and home support (two percent); physician, acute care and day care (two percent); physician and residential care (7 percent); physician, pharmaceutical and residential care (54 percent); physician, pharmaceutical, acute care and residential care (three percent); pharmaceutical and residential care (16 percent); and “other” (three percent) of all months over the two years.

Average Service Use

On average, these people each had 73 physician visits, 142 pharmaceutical prescriptions, 25 days of acute care services, 592 residential care facility days, 9 direct care visits, 67 hours of home support, and two days of adult day care.

Service use was similar to group 10 with the exception of pharmaceutical services, which at 142 was higher than all previous groups. The average number of residential care facility days of 592 was higher than the first 9 groups and showed that these decedents each received an average of 592 days of residential care out of the total possible 730 days over the two years.

Although this group was 7 percent of the entire cohort, they used 7 percent of all physician visits, 14 percent of pharmaceutical prescriptions, 6 percent of acute care days, 30 percent of residential days, five percent of direct care visits, 7 percent of home support hours and 7 percent of all adult day care used by the cohort during the two years.

Place of Death and Average Service Use

The most common place of death was hospital with 26 percent (511) of all people in this group having died in hospital, three percent (50) having died at home, 71 percent (1,417) having died in residential care, and 6 people having died in other places.

- On average, the people who died in hospital had 100 physician visits, 174 pharmaceutical prescriptions, 47 days of acute services, 430 days of residential care, 18 direct care visits, 142 home support hours and 2.5 days of adult day care day over the two years.
- The people who died at home had 102 physician visits, 265 pharmaceutical prescriptions, 27 days of acute care, 95 days of residential care, 48 direct care visits, 376 hours of home support and 13 days of adult day care.
- Those who died in residential care had 62 physician visits, 125 pharmaceutical prescriptions, 17 days of acute services, 669 residential care days, three direct care visits, 30 hours of home support and one day of adult day care.
- Those who died elsewhere had 158 physician visits, 488 pharmaceutical prescriptions, five days of acute service, 122 residential care days, 107 direct visits and 11 hours of home support.

Ambulance Service Use

Of all people in this group, 1,545 (78 percent) used five ambulance trips over the last two years of life. For these people, there was a total of 7,514 ambulance trips of which 5,468 (73 percent) were no siren, 1,542 (21 percent) were with siren, 39 (one percent) were air ambulance, and for 465 (6 percent) the status was unknown.

People Identified as Palliative

149 of the people in this group (8 percent) were identified as palliative, as they received a service classified as palliative. They accounted for two percent of all 8,071 palliative people identified in the cohort. Of these, 30 percent died of circulatory disease, 28 percent of cancer, 12 percent of respiratory disease and 30 percent of external causes or other.

On average, the people identified as palliative each had 116 physician visits, 216 pharmaceutical prescriptions, 59 days of acute services, 321 days of residential care, 39 direct care visits and 161 hours of home support and two adult day care days. These people most frequently died in hospital (60 percent), 11 percent died at home, and 28 percent died in residential care.

Cost of Services Used (Excluding Ambulance)

Service Event Group 11 [850–999]

The total cost of all services used by decedents who had between 850 to 999 service events over the last two years of life was \$222M, with the average for each person in this service event group being \$112,148.

When examined by type of services the total cost by service was \$10M for physician visits, \$12.5M for pharmaceutical prescriptions, \$27M for acute care, \$166M for residential services, \$1.5M for direct care visits, \$4M for home support hours and \$0.25M for adult day care days.

The average cost of services used by each person was \$4,986 for physician services, \$6,387 for pharmaceutical prescriptions, \$13,771 for acute care days, \$84,005 for residential care days, \$722 for direct care visits, \$2,155 for home support hours, and \$123 for adult day care.

By Diagnostic Group

When this group was examined by diagnostic group, the total cost of services used over the last two years of life for decedents who died of circulatory disease was \$92.5M, cancer \$17M, respiratory disease \$38M, external causes \$4M and other \$70M.

The average cost of services used by person was \$111,337 for circulatory disease, \$107,514 for cancer, \$114,272 for respiratory disease, \$96,421 for external causes, and \$114,383 for other diagnoses.

By Place of Death

When this group was examined by place of death, the total cost of services used over the last two years of life for those who died of in hospital was \$55M, in residential care was \$164M, at home was \$3M and in other places was \$0.4M.

The average cost of services used by person by place of death was \$108,145 for those people who died in hospital, \$115,492 for residential care, \$64,316 for home and \$61,964 for other places.

Group 12: People Who Had 1000–2899 Service Events Over the Two Years

Vignette 12.1

This lady of 81 years lived in an urban setting and died in a hospital in the Fraser Region of renal failure (unspecified). In the last two years of life she had direct contact with formal health service providers in all 24 months. She had 1,099 services events in six types of services over the two years. These included 239 physician visits and 253 pharmaceutical prescriptions distributed over the 24 months prior to the end of life, five direct care visits over month 19 to month 15 and 35 home support hours in month 17 prior to the end of life, 135 days of acute service (62 days were in month 17 to 15 and 73 days were in the last three months of life) and 432 days of residential care over month 14 to one month prior to the end of life.

82174361	Age: 81	Gender: F	Palliative:	R/U: Urban	HA: Fraser (02)	Group 12																				
	Where:			02—Hospital, School, Other Institution																						
	UCOD:	N19	Unspecified Renal Failure																							
	Months Before Death																									
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total	
Service																										
MSP Visits	4	7	7	8	10	10	19	15	12	6	8	4	5	4	3	2	1	5	5	11	23	16	20	34	239	
Pharm Scripts	3	2	7	1	7	11	1	0	23	15	8	13	15	11	11	16	18	19	10	19	14	26	3	0	253	
DAD Tdays	0	0	0	0	0	0	2	30	30	0	0	0	0	0	0	0	0	0	0	0	0	29	14	30	135	
Facility Days	0	0	0	0	0	0	0	0	0	22	30	30	30	30	30	30	30	30	30	30	47	33	30	0	432	
Direct Visits	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
Home Hours	0	0	0	0	0	0	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Srv Total	7	9	14	9	18	22	58	46	66	43	46	47	50	45	44	48	49	54	45	60	84	104	67	64	1,099	
Srv Typ Cnt	2	2	2	2	3	3	5	3	4	3	4	4	2	6												

Vignette 12.2

This lady of 79 years lived in an urban setting and died in a hospital in the Interior region of chronic obstructive pulmonary disease (unspecified). In the last two years of life she had direct contact with formal health service providers in all 24 months. She had 1,565 service events in five types of services over the two years. These included 72 physician visits, 195 pharmaceutical prescriptions, 93 direct care visits and 1,126 home support hours distributed over the 24 months. She also had 79 days of acute service, 32 of these days were in month 20 to 19, four days were in month 6 and 43 days were across the last 4 months of life.

82506042	Age: 79	Gender: F	Palliative:	R/U: Urban	HA: Interior (01)	Group 12																			
	Where: UCOD: J449		UCOD: COPD Unspecified	02—Hospital, School, Other Institution																					
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	0	0	1	8	3	1	2	0	4	0	1	0	0	2	1	5	3	3	0	12	0	9	6	11	72
Pharm Scripts	2	4	3	3	0	6	3	3	4	2	3	2	5	1	3	5	3	14	18	14	40	24	21	12	195
DAD Tdays	0	0	0	2	30	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	10	2	18	13	79
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits	5	5	5	5	5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	6	93
Home Hours	9	9	9	8	3	40	58	60	56	60	60	62	60	62	62	59	61	52	61	61	37	59	29	89	1,126
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	16	18	18	26	41	50	66	66	67	65	67	67	68	68	69	72	70	76	82	90	90	97	80	128	1,565
Srv Typ Cnt	3	3	4	5	4	4	4	3	4	3	4	3	3	4	4	4	4	5	3	4	4	5	5	5	5

Vignette 12.3

This lady of 78 years lived in an urban setting and died at home in the Vancouver Island region of a malignant neoplasm of her brain (unspecified). In the last two years of life she had direct contact with formal health service providers in all 24 months. She had 996 service events in six types of services (one of these services was classified as palliative). These included 107 physician visits and 96 pharmaceutical prescriptions distributed over the 24 months, 13 days of acute service in month 8, one day of residential care two months prior to the end of life, and 145 direct care visits and 634 home support hours distributed over month 8 to the end of life.

82512046	Age: 78	Gender: F	Palliative: Y	R/U: Urban	HA: Vancouver Island (04)	Group 12																			
	Where: UCOD: C719		UCOD: Malignant Neoplasm of Brain Unspecified	00—Home																					
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	2	3	2	1	3	4	3	1	6	2	2	4	5	2	5	23	3	3	7	9	7	6	1	3	107
Pharm Scripts	1	1	3	1	1	1	5	2	2	3	3	1	1	4	2	1	3	4	5	11	6	9	6	20	96
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	13
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	16	14	19	19	14	14	18	14	145
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	26	10	172	151	77	90	92	634
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	3	4	5	2	4	5	8	3	8	5	5	5	6	6	7	54	38	47	41	211	177	106	116	129	996
Srv Typ Cnt	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	4	4	4	4	4	4	5	4	6

Vignette 12.4

This gentleman of 79 years lived in an urban setting and died in a hospital in the Interior region of diabetes mellitus (unspecified). In the last two years of life he had direct contact with formal health service providers in all 24 months. He had 1,060 service events in five types of services. These included 88 physician visits, 242 pharmaceutical prescriptions and 720 days of residential service distributed over the 24 months, 6 direct care visits over the four months prior to the end of life, and four days acute service in the last month of life.

82550287	Age: 79	Gender: F	PalliativeY	R/U: Urban	HA: Interior (01)	Group 12																			
	Where:			02—Hospital, School, Other Institution																					
	UCOD:	E148																							
	Months Before Death																								
Service	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
MSP Visits	2	3	3	6	3	1	3	3	1	6	6	6	1	2	2	2	4	5	3	2	1	3	7	13	88
Pharm Scripts	12	12	12	13	13	1	12	10	10	13	12	12	10	0	10	11	10	10	12	12	11	10	2	12	242
DAD Tdays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
Facility Days	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	720
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	6
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	44	45	45	49	46	32	45	43	41	49	48	48	41	32	42	43	44	45	45	44	44	45	41	61	1,060
Srv Typ Cnt	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	4	4	4	5	5

Vignette 12.5

This lady of 72 years lived in an urban setting and died in a hospital in the Fraser region of renal failure (unspecified). In the last two years of life she had direct contact with formal health service providers in all 24 months. She had 1,418 service events in four types of services. These included 502 physician visits distributed over the 24 months, 139 pharmaceutical prescriptions and 660 days of residential service distributed over month 23 to one month prior to the end of life, and 117 days of acute service (52 days over month 17–16, 64 days distributed over the last three months of life).

82558425	Age: 72	Gender: F	Palliative:	R/U: Urban	HA: Fraser (02)	Group 12																			
	Where:			02—Hospital, School, Other Institution																					
	UCOD:	N19	Unspecified Renal Failure																						
	Months Before Death																								
Service	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
MSP Visits	17	19	17	13	23	13	44	27	25	22	15	15	15	15	12	27	15	24	20	20	17	24	37	26	502
Pharm Scripts	7	6	5	5	9	4	3	8	7	8	8	3	7	10	6	7	9	6	6	2	5	7	1	0	139
DAD Tdays	0	0	0	0	0	0	22	30	0	0	0	0	0	0	0	1	0	0	0	0	0	4	30	30	117
Facility Days	25	30	30	30	30	30	30	7	30	30	30	30	30	30	30	30	30	30	30	30	30	30	28	0	660
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Home Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	49	55	52	48	62	47	99	72	62	60	53	48	52	55	48	65	54	60	56	52	52	65	96	56	1,418
Srv Typ Cnt	3	3	3	3	3	3	4	4	3	3	3	3	3	3	3	4	3	3	3	3	3	4	4	2	4

Group 12 (1000–2899 Services): Characteristics, Health Service Use and Patterns

The People

1,672 people (6 percent) of the 29,456 people who died across British Columbia had between 1,000–2899 service events over the last two years of life. Of these, circulatory disease was the cause of death for 41 percent, cancer for 11 percent, respiratory disease 16 percent and external causes/other for 32 percent. The number of people with the cause of death being cancer (11 percent) was slightly higher than group 10 and 11, and lower than all other previous groups.

Service Use: Patterns and Bundles

When examining service use patterns and bundles by month over the last two years, these decedents were fully self-care with no direct contact with formal health service providers for less than one percent of all months, they accessed a single service or physician/pharmaceutical services 10 percent of all months and 90 percent of the time they had more complex service bundles.

When examining single service use in detail, less than one percent of the months they had physician visits alone, 6 percent of the time they had physician visits in combination with pharmaceutical prescriptions and less than one percent of the time the only service used was pharmaceutical prescriptions and two percent of the time home support was used.

When examining more complex service bundle use, this group had physician and acute care (one percent of all months); physician, pharmaceutical and acute care (two percent); physician, pharmaceutical and home care (two percent); physician, pharmaceutical and home support (10 percent); physician, pharmaceutical, home care and home support (13 percent); physician, acute care and day care (five percent); physician and residential care (three percent); physician, pharmaceutical and residential care (32 percent); physician, pharmaceutical, acute care and residential care (three percent); pharmaceutical and residential care (four percent); and “other” (12 percent) of all months over the two years.

Average Service Use

On average, decedents in this group each had 115 physician visits, 252 pharmaceutical prescriptions, 42 days of acute services, 313 facility days, 32 direct care visits, 598 hours of home support, and 6 days of adult day care.

Service use of physician visits was higher than group 10 and 11 but similar to groups 6 through 9. Pharmaceutical service use of 252 prescriptions was higher than all previous groups with the next highest being group 11 at 143 prescriptions. Residential care facility days were lower than group 10 and 11 but higher than all other groups. Home support service use at 598 hours was higher than all other groups, with the next highest being 131 hours on average per person.

Although they accounted for 6 percent of the entire cohort, they used 9 percent of all physician visits, 21 percent of pharmaceutical prescriptions, 9 percent of acute care days, 13 percent of residential care days, 16 percent of direct care visits, 49 percent of home support hours and 22 percent of all adult day care used by the cohort during the two years.

Place of Death and Average Service Use

The most common place of death was hospital with 45 percent (752) of all decedents in this group having died in hospital, 11 percent (178) having died at home, 44 percent (732) having died in residential care and the remaining one percent (10) having died in other places.

- On average, the people who died in hospital had 135 physician visits, 270 pharmaceutical prescriptions, 54 days of acute services, 213 days of residential care, 38 direct care visits, 692 home support hours and 6 days of adult day care day over the two years.
- The people who died at home had 95 physician visits, 285 pharmaceutical prescriptions, 24 days of acute care, 29 days of residential care, 54 direct care visits, 1,125 hours of home support and 12 days of adult day care.
- Those who died in residential care had 99 physician visits, 221 pharmaceutical prescriptions, 34 days of acute services, 488 residential care days, 20 direct care visits, 369 hours of home support and five days of adult day care.
- Those who died elsewhere had 182 physician visits, 626 pharmaceutical prescriptions, 54 days of acute service, 16 residential care days, 29 direct visits and 842 hours of home support.

Ambulance Service Use

Of all people in this group, 1,525 (91 percent) used 7 ambulance trips over the last two years of life. For these people, there was a total of 10,330 ambulance trips of which 6,925 (67 percent) were no siren, 2,716 (26 percent) were with siren, 35 (less than one percent) were air ambulance, and for 654 (6 percent) the status was unknown.

People Identified as Palliative

294 of the people in this group (18 percent) were identified as palliative, as they received a service classified as palliative. They accounted for four percent of all 8,071 palliative people identified in the cohort. Of these, 27 percent died of circulatory disease, 29 percent of cancer, 9 percent of respiratory disease and 35 percent of external causes or other.

On average, the people identified as palliative each had 132 physician visits, 255 pharmaceutical prescriptions, 58 days of acute care services, 122 days of residential care, 60 direct care visits, 860 hours of home support and five adult day care days. These people most frequently died in hospital (61 percent), 19 percent died at home and 20 percent died in residential care.

Cost of Services Used (Excluding Ambulance)

Service Event Group 12 [1,000–2,899]

The total cost of all services used by decedents who had between 1,000 to 2,899 service events over the last two years of life was \$183M, with the average for each person being \$109,351.

When examined by type of services, the total cost by service was \$13M for physician visits, \$19M for pharmaceutical prescriptions, \$39M for acute care, \$74M for residential services, \$4.5M for direct care visits, \$32M for home support hours and \$0.8M for adult day care days.

The average cost of services used by each person was \$7,841 for physician services, \$11,318 for pharmaceutical prescriptions, \$23,501 for acute care days, \$44,408 for residential care days, \$2,684 for direct care visits, \$19,123 for home support hours and \$476 for adult day care.

By Diagnostic Group

When this group was examined by diagnostic group, the total cost of services used over the last two years of life for those people who died of circulatory disease was \$75M, cancer \$19M, respiratory disease \$29M, external causes \$4.6M, and other \$55M.

The average cost of services used by person was \$108,926 for circulatory disease, \$104,053 for cancer, \$108,286 for respiratory disease, \$93,258 for external causes, and \$114,165 for other diagnoses.

By Place of Death

When this group was examined by place of death, the total cost of services used over the last two years of life for those who died of in hospital was \$81M, in residential care was \$87M, at home was \$14M and in other places was \$1M.

The average cost of services used by person by place of death was \$107,496 for those people who died in hospital, \$118,875 for residential care, \$78,436 for home and \$101,965 for other places.

Group 13: People Who Had 2,900+ Service Events Over the Two Years

Vignette 13.1

This gentleman of 47 years lived in an urban setting and died in hospital in the Fraser region of infantile cerebral palsy (unspecified). In the last two years of life he had direct contact with formal health service providers in all 24 months. He had a total of 3,458 service events in five types of services over the 24 months. These included 42 physician visits distributed across the two years with 24 being in the last 3 months of life, 387 pharmaceutical prescriptions, 2,878 home support hours and 115 direct care visits distributed across the two years, and 37 days of acute care service with 22 of the days in the last month of life.

82609647	Age: 47	Gender: M	Palliative:	R/U: Urban	HA: Fraser (02)	Group 13																			
	Where:			02—Hospital, School, Other Institution																					
	UCOD:	G809	Infantile Cerebral Palsy Unspecified																						
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	1	1	1	0	0	1	0	0	0	0	0	0	7	3	0	0	3	1	0	0	0	3	4	17	42
Pharm Scripts	16	18	12	11	18	13	12	16	12	12	16	12	14	18	16	16	20	16	20	16	16	20	23	24	387
DAD Tdays	2	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	6	0	0	0	0	1	2	22	37
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	4	4	4	4	4	4	115
Home Hours	102	114	107	111	112	106	113	112	114	108	117	122	122	130	139	139	118	126	150	131	145	149	138	59	2,878
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	126	138	124	126	135	124	129	133	130	124	137	138	152	156	160	160	152	147	174	151	165	177	171	126	3,458
Srv Typ Cnt	5	4	4	3	3	4	3	3	3	3	3	3	5	4	3	3	5	4	3	3	3	5	5	5	5

Vignette 13.2

This lady of 74 years lived in an urban setting and died at home in the Vancouver Island region of a urinary tract infection (unspecified). In the last two years of life she had direct contact with formal health service providers in all 24 months. She had a total of 3,148 service events in five types of services over the 24 months. These included 155 physician visits, 65 pharmaceutical prescriptions, 240 direct care visits and 2,660 home support hours distributed across the two years. She had 29 days of acute care service of which 21 were in month 19 prior to the end of life and one day was in the last month of life.

82798702	Age: 73	Gender: F	Palliative:	R/U: Urban	HA: Vancouver Island (04)	Group 13																			
	Where:			00—Home																					
	UCOD:	N390	Urinary Tract Infection Site Not Spec																						
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	1	3	2	20	12	9	8	14	15	1	6	8	2	1	4	19	5	4	5	1	6	0	5	4	155
Pharm Scripts	2	3	1	0	4	4	4	4	2	0	6	1	3	1	2	5	4	3	2	3	3	0	0	8	65
DAD Tdays	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	1	29
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	11	11	10	10	10	10	10	240
Home Hours	110	105	107	71	71	123	110	118	120	116	123	104	120	112	124	114	100	115	115	123	115	117	122	110	2,660
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	123	120	120	100	117	146	132	146	146	126	145	123	135	123	139	154	118	132	132	137	134	127	137	133	3,148
Srv Typ Cnt	4	4	4	3	5	4	4	4	4	3	4	4	4	4	4	5	4	4	4	4	4	2	3	5	5

Vignette 13.3

This lady of 50 years lived in an urban setting and died in a hospital in the Fraser region of a urinary tract infection (site not specified). In the last two years of life she had direct contact with formal health service providers in all 24 months. She had 4,455 service events in five types of services. These included 147 physician visits, 850 pharmaceutical prescriptions and 3,422 hours of home support distributed over the 24 months. She also had 23 days of acute service (four days in month 16 and 24 days in the last two months of life).

82507066	Age: 50	Gender: F	Palliative:	R/U: Urban	HA: Fraser (02)	Group 13																			
	Where:			02—Hospital, School, Other Institution																					
	UCOD:	N390	Urinary Tract Infection Site Not Spec																						
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	4	3	10	5	5	5	3	13	6	6	2	8	7	4	3	6	0	3	5	3	6	2	28	10	147
Pharm Scripts	16	10	17	19	16	16	14	12	7	14	12	36	73	56	64	59	56	65	54	52	61	50	47	24	850
DAD Tdays	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	17	28
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Home Hours	151	143	150	155	145	147	143	130	181	157	138	133	140	135	140	135	134	138	135	145	138	128	140	145	3,422
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	171	156	177	179	166	168	160	159	194	177	152	177	221	195	207	200	190	206	194	200	205	180	222	196	4,455
Srv Typ Cnt	4	4	4	4	4	4	4	5	4	4	4	4	4	4	4	4	3	4	4	4	4	4	5	5	5

Vignette 13.4

This gentleman of 85 years lived in an urban setting and died in a hospital in the Fraser region of a malignant neoplasm of his prostate. In the last two years of life he had direct contact with formal health service providers in all 24 months. He had 3,697 service events in five types of services. These included 58 physician visits over 16 of the 24 months, 50 pharmaceutical prescriptions distributed over the 24 months, 55 direct care visits distributed over month 23 to three months prior to the end of life and 3,526 hours of home support distributed over the 24 months.

82612698	Age: 85	Gender: M	Palliative:	R/U: Urban	HA: Fraser (02)	Group 13																			
	Where:			02—Hospital, School, Other Institution																					
	UCOD:	C61	Malignant Neoplasm of Prostate																						
	Months Before Death																								
	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Srv Total
Service																									
MSP Visits	0	2	1	2	1	5	5	6	1	0	0	0	0	2	0	0	5	3	6	0	1	2	6	10	58
Pharm Scripts	2	2	1	4	2	1	1	6	1	1	3	0	1	1	3	1	4	1	2	2	3	2	1	5	50
DAD Tdays	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	8	8
Facility Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct Visits	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	0	0	1	1	0	0	0	55
Home Hours	139	103	153	149	154	151	140	155	152	154	148	155	156	130	155	149	152	155	144	154	24	149	147	263	3,526
Adult Days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Srv Total	145	110	157	158	160	159	149	170	156	158	154	158	159	136	161	153	163	159	152	157	29	153	154	285	3,697
Srv Typ Cnt	3	4	4	4	4	4	4	5	4	3	3	2	3	4	3	3	4	4	4	3	4	4	4	5	5

Group 13 (2899+ Services): Characteristics, Health Service Use and Patterns

The People

93 people (less than one percent) of the 29,456 people who died across British Columbia had 2,900 or more service events over the last two years of life. Of these, circulatory disease was the cause of death for 32 percent, cancer for 10 percent, respiratory disease 19 percent and external causes/other for 39 percent. The number of people with the cause of death being cancer (10 percent) was similar to groups 10, 11 and 12 and lower than all other previous groups.

Service Use: Patterns and Bundles

When examining service use bundles and patterns by month over the last two years, these decedents were fully self-care with no direct contact with formal health service providers less than 0.5 percent of all months, they accessed a single service or physician/pharmaceutical services 5 percent of all months and 95 percent of the time they had more complex service bundles.

When examining single service use in detail, one percent of the time they had physician visits in combination with pharmaceutical prescriptions and home support was used (3.5 percent) of all months.

When examining more complex service bundle use, these people had physician and acute care (two percent of all months); physician, pharmaceutical and acute care (one percent); physician, pharmaceutical and home care (two percent); physician, pharmaceutical and home support (7 percent); physician, pharmaceutical, home care and home support (36 percent); physician, acute care and day care (9 percent); physician and residential care (one percent); and “other” (29.8 percent) of all months over the two years.

Average Service Use

On average, each decedent had 107 physician visits, 341 pharmaceutical prescriptions, 111 days of acute services, 12 facility days, 124 direct care visits, 3,525 hours of home support and five days of adult day care.

Pharmaceutical service use of 341 was higher than all previous groups with the next highest being group 12 at 252 prescriptions. Acute care days of service at 111 on average, was higher than all other groups with the next highest being 59 days of service. Residential facility days used was low. Home support service use at 3,525 hours was not comparable to any of the other groups, with the next highest being group 12 with 598 hours per person, followed by group 9 with 131 hours per person, on average.

While they accounted for less than 1 percent of the entire cohort, they used less than one percent of all physician visits, two percent of pharmaceutical prescriptions, one percent of acute care days and adult day care, three percent of direct care visits and 16 percent of all home support hours used by the cohort during the two years.

Place of Death and Average Service Use

The most common place of death was hospital with 48 percent (45) of all people in this group having died in hospital, 38 percent (35) having died at home, and 14 percent (13) having died in residential care.

- On average, the people who died in hospital had 105 physician visits, 375 pharmaceutical prescriptions, 54 days of acute services, 11 days of residential care, 125 direct care visits, 3,604 home support hours and four days of adult day care day over the two years.
- The people who died at home had 117 physician visits, 223 pharmaceutical prescriptions, 209 days of acute care, 6 days of residential care, 130 direct care visits, 3690 hours of home support and 9 days of adult day care.
- Those who died in residential care had 85 physician visits, 537 pharmaceutical prescriptions, 47 days of acute services, 32 residential care days, 101 direct care visits and 2,806 hours of home support.

Ambulance Service Use

Of all people in this group, 80 (86 percent) used 8 ambulance trips over the last two years of life. For these people, there was a total of 626 ambulance trips of which 401 (64 percent) were no siren, 168 (26 percent) were with siren, 11 (two percent) were air ambulance, and for 46 (7 percent), the status was unknown.

People Identified as Palliative

21 of the people in this group (23 percent) were identified as palliative, as they received a service classified as palliative. They accounted for less than one percent of all 8,071 palliative people identified in the cohort. Of these, 43 percent died of circulatory disease, 14 percent of cancer, 10 percent of respiratory disease and 33 percent of external causes or other.

On average, the people identified as palliative each had 130 physician visits, 214 pharmaceutical prescriptions, 344 days of acute services, two days of residential care, 125 direct care visits, 4,466 hours of home support and 17 adult day care days. These people most frequently died at home (48 percent), 33 percent died in hospital and 19 percent died in residential care.

Costs of Services Used (Excluding Ambulance)

Service Event Group 13 [2,900+]

The total cost of all services used by decedents who had 2,900+ service events over the last two years of life was \$19.5M, with the average for each person in this service event group being \$210,101.

When examined by type of services the total cost by service was \$0.7M for physician visits, \$1.5M for pharmaceutical prescriptions, \$6M for acute care, \$0.2M for residential services, \$1M for direct care visits, \$10.5M for home support hours and \$0.4M for adult day care days.

The average cost of services used by each person was \$7,229 for physician services, \$15,263 for pharmaceutical prescriptions, \$62,188 for acute care days, \$1,698 for residential care days, \$10,520 for direct care visits, \$112,793 for home support hours and \$405 for adult day care.

By Diagnostic Group

When this group was examined by diagnostic group, the total cost of services used over the last two years of life for those people who died of circulatory disease was \$9M, cancer \$1M, respiratory disease \$3M, external causes \$0.7M, and other \$6M.

The average cost of services used by person was \$293,309 for circulatory disease, \$126,917 for cancer, \$150,220 for respiratory disease, \$349,806 for external causes, and \$182,185 for other diagnoses.

By Place of Death

When this group was examined by place of death, the total cost of services used over the last two years of life for those who died of in hospital was \$8M, in residential care was \$2M, at home was \$9.3M and in other places was \$1M.

The average cost of services used by person by place of death was \$181,711 for those people who died in hospital, \$158,977 for residential care, \$265,590 for home, and \$0 for other places.

5. Physician Services—Primary and Specialist

For this study, a quantification of the visits done by physicians with their patients at the end of life, according to the following types of physicians, was conducted and is presented here.

Physician visits were grouped into five types, including patient visits to:

- General practice physicians;
- Diagnostic services physicians: pathology, radiology, medical microbiology;
- Internal medicine physicians;
- Specialist group 1 physicians: anaesthesia, ophthalmology, psychiatry, general surgery, podiatry, urology, orthopaedic surgery; and
- Specialist group 2 physicians: all other specialist physicians.

Of the total 2.22 million physician visits, general practice physicians provided 1.0 million visits (49 percent of total visits), diagnostic services physicians provided 485,000 (22 percent of total visits), internal medicine provided 292,000 (13 percent of total visits), all specialists in group 1 provided 211,000 (10 percent of total visits) and all other specialists in group 2 provided 141,000 visits (6 percent of total visits).

When examined across service event groups, general practice physicians were the primary physicians who provided the majority of physician services used by decedents in all groups, followed by diagnostic services physicians, internal medicine specialists, the specialists in group 1 and then all other specialists.

The decedents in service event groups 1, 2 and 3 discussed earlier included 37 percent of all decedents in the cohort, but they used only 19 percent of all physician visits provided.

The distribution of the types of physician visits provided across service event groups was found to be constant. For example, the people in service event group 7 used 300 to 399 services over the two years and accounted for 7 percent of all decedents. When their use of physician visits was examined, they used 11 percent of all general practice visits, specialist group 1 and all other specialist visits; and 12 percent of diagnostic services physicians and internal medicine physician visits. Similarly, service event group 4 used 12 percent of all general practice, diagnostic services physicians and specialist group 1 visits; 11 percent of internal medicine visits; and 13 percent of other specialist physician visits.

For the 29,456 decedents, physicians completed the assessment, authorized access and directly coordinated 2.2 million physician visits, almost 2 million pharmaceutical prescriptions and 761 thousand acute care days of service. In total, the services they authorized resulted in 4.97 million service events. The estimated cost of these services was \$667 million.

Of the total 2.22 million physician visits done, general practice physicians provided 1.0 million visits (49 percent); diagnostic physician services provided 485,000 (22 percent); internal medicine provided 292,000 (13 percent); specialist physicians including anaesthesia, ophthalmology, psychiatry, general surgery, podiatry, urology and orthopaedic surgery when combined provided 211,000 visits (10 percent); and all other specialists provided 141,000 visits (6 percent).

When examined across service event groups, general practice physicians were the primary physician providing the majority of physician services used by the people in all service event groups, followed by diagnostic services, internal medicine specialists, the specialists group as listed above and then all other specialists.

Although the study did not examine the nature, complexity or quality of physician practice with patients at the end of life, the data confirmed the active involvement and varied roles that physicians play in the assessment, access and care of persons at the end of life in BC. The findings underscore the critical importance of palliative care approaches being embedded into physician education and practice, including undergraduate, post-graduate and continuing medical education initiatives.

6. Authorization and Coordination of Care

It is well-known that people near the end of life and their family members can benefit from having a primary health care provider or contact through which coordinated, sensitive care can be arranged. Wilson (2004) argues that a single coordinator at the end of life, as opposed to a network of care providers who coordinate single aspects of care, is one of the most critical factors needed to ensure effective communication and care is provided at the end of life. In British Columbia, physicians, case managers and home care nurses are primarily responsible for the authorization, access and coordination of services for people at the end of life.

Physicians, particularly general practitioners, play multiple roles by directly providing medical services to patients as well as being the primary provider responsible to complete necessary medical assessments, authorize access to specialist physicians, write pharmaceutical prescriptions, determine when admission to acute care and/or residential care services is indicated, and provide consultations to a variety of members of the inter-disciplinary team.

In the community, Home and Community Care (HCC) case managers and home care nurses determine eligibility and complete rigorous standardized assessments for clients to access services, including access to residential care, direct care (home care nursing, physiotherapy and occupational therapy), home support, adult day care and other services. These workers play critical roles in liaising with physicians and other members of the inter-disciplinary team, along with family and friends, to ensure appropriate care coordination and delivery across services at the end of life.

The study found that physicians completed the assessment, authorized access and directly coordinated 2.2 million physician visits, almost 2 million pharmaceutical prescriptions and 761 thousand acute care days of service. In total, the services they authorized resulted in 4.97 million service events. The estimated cost of these services was \$667 million.

The study also found that case managers and home care nurses completed the assessment, authorized and directly coordinated 3.97 million residential care days, 330 thousand direct care visits, 2 million home support hours and 45 thousand adult day care days. In total the services they authorized resulted in 6.4 million service events. The estimated cost of these services was \$660 million.

The tables below illustrate the service authorizations provided by physicians alongside case managers (including home care nurses), across the thirteen service event groups.

Physician Authorization					Case Manager Authorization					
British Columbia	Service Counts									Palliative
Service Event Group	Total Clients	MSP Visits	Pharm Scripts	DAD Tdays	Facility Days	Direct Visits	Home Hours	Adult Days	Client Count	
Group 1–7 Primarily Self Care and Simple Single Service Use	19,664	1,348,140	753,239	393,043	84,346	159,887	145,794	13,499	6,586	
Group 8–13 Increased Dependency and Primarily Dependent	9,792	878,132	1,233,040	368,779	3,887,856	170,275	1,883,052	32,334	1,485	
Total Services	29,456	2,226,272	1,986,279	761,822	3,972,202	330,163	2,028,846	45,833	8,071	
Total Service Events	4,974,373				6,377,043					

Physician Authorization					Case Manager Authorization				
British Columbia	\$ by Service (Thousands)								
Service Event Group	Total Clients	MSP Visits	Pharm Scripts	DAD Tdays	Facility Days	Direct Visits	Home Hours	Adult Days	Total \$
Group 1–7 Primarily Self Care and Simple Single Service Use	19,664	91,539	33,775	220,104	11,977	13,590	4,665	1,053	376,704
Group 8–13 Increased Dependency and Primarily Dependent	9,792	59,625	55,290	206,516	552,076	14,473	60,258	2,522	950,760
	29,456	151,164	89,065	426,620	564,053	28,064	64,923	3,575	1,327,463
Total Cost of Services Authorized	666,849				660,615				

Physician Authorization					Case Manager Authorization				
British Columbia	\$ by Service—Percent of Total								
Service Event Group	Total Clients	MSP Visits	Pharm Scripts	DAD Tdays	Facility Days	Direct Visits	Home Hours	Adult Days	Total \$
Group 1–7 Primarily Self Care and Simple Single Service Use	67%	61%	38%	52%	2%	48%	7%	29%	28%
Group 8–13 Increased Dependency and Primarily Dependent	33%	39%	62%	48%	98%	52%	93%	71%	72%

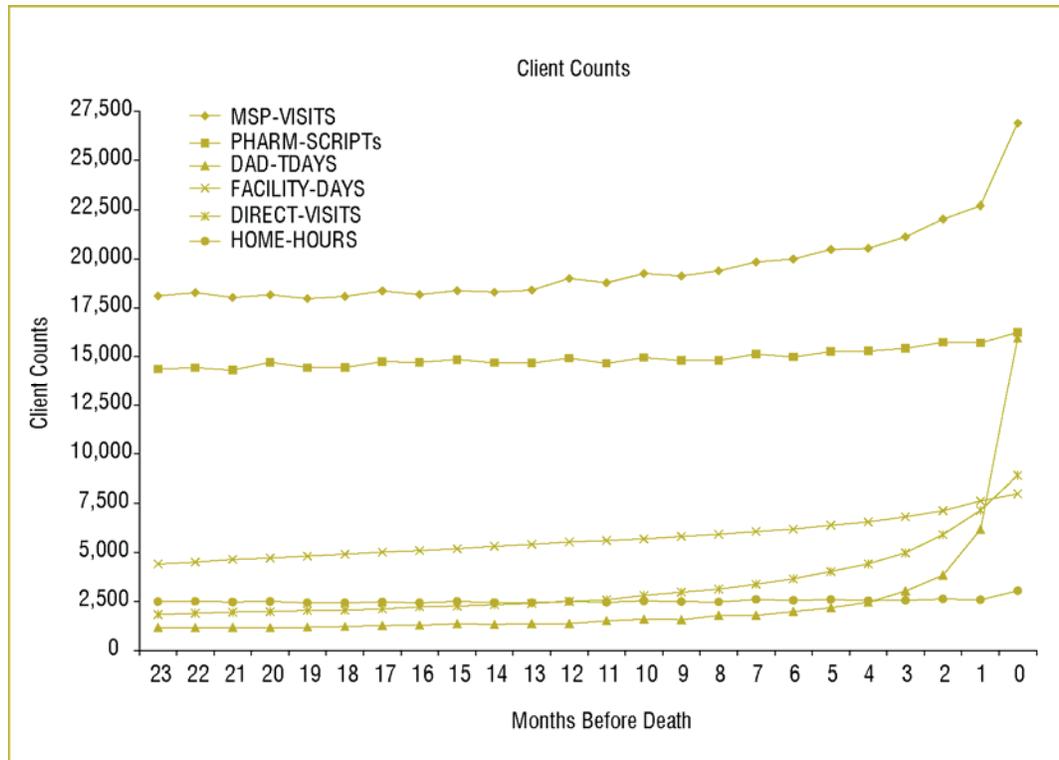
Although no literature or data was found at the time of the study that described how physicians, case managers and home care nurses in BC work together to support persons at the end of life, it must be acknowledged that these providers routinely consult each other and play critically important, complementary roles to support people and their families at the end of life.

7. The Provider Profile—Service Production, Workload, Costs

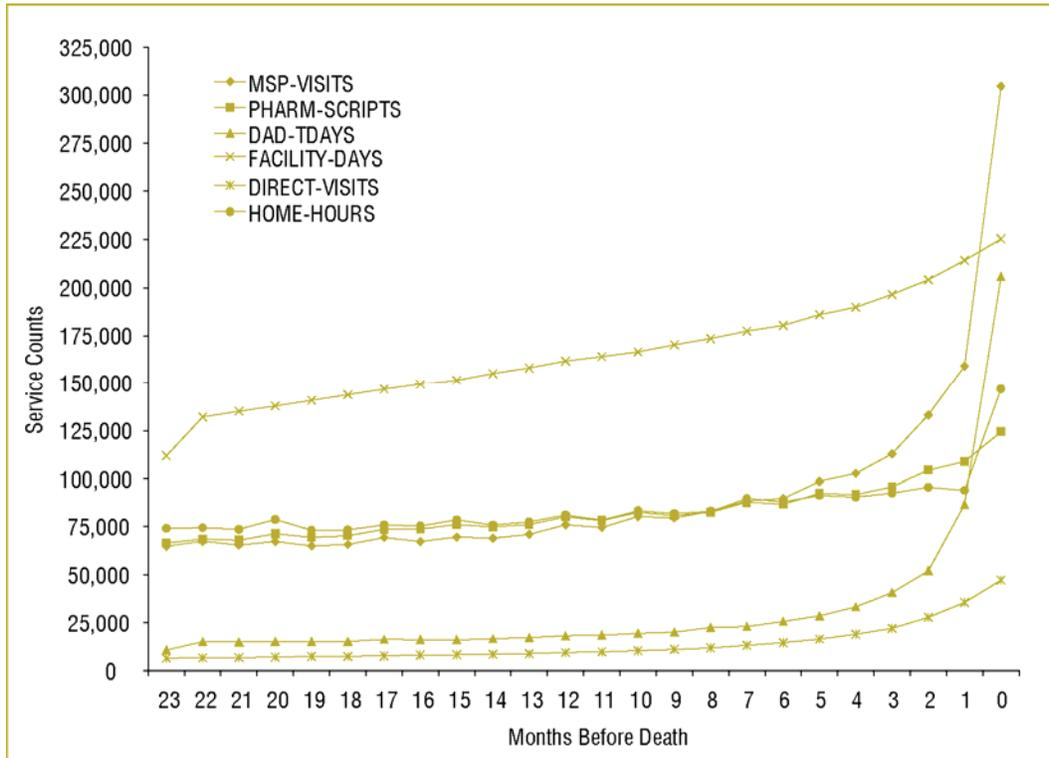
The services used by all people in the last two years of life in this study were provided by general practice and specialist physicians (noted below as “MSP visits,” i.e.: Medical Services Plan), the Ministry of Health Services’ Palliative Care Drug Program and pharmacists in community pharmacies (see “Pharm Scripts” below), HCC case managers and home support providers (see “Home Hours” below), direct care and home care nurses (see “Direct Visits” below), acute care hospitals (see DAD TDays” below), and health authority owned and operated or contracted residential care/hospice palliative care service providers (see “Facility Days” below).

To describe and understand the provider profile with patterns of health system service production and workload, the number of clients served and services delivered monthly over the two years were identified and examined. The following explains.

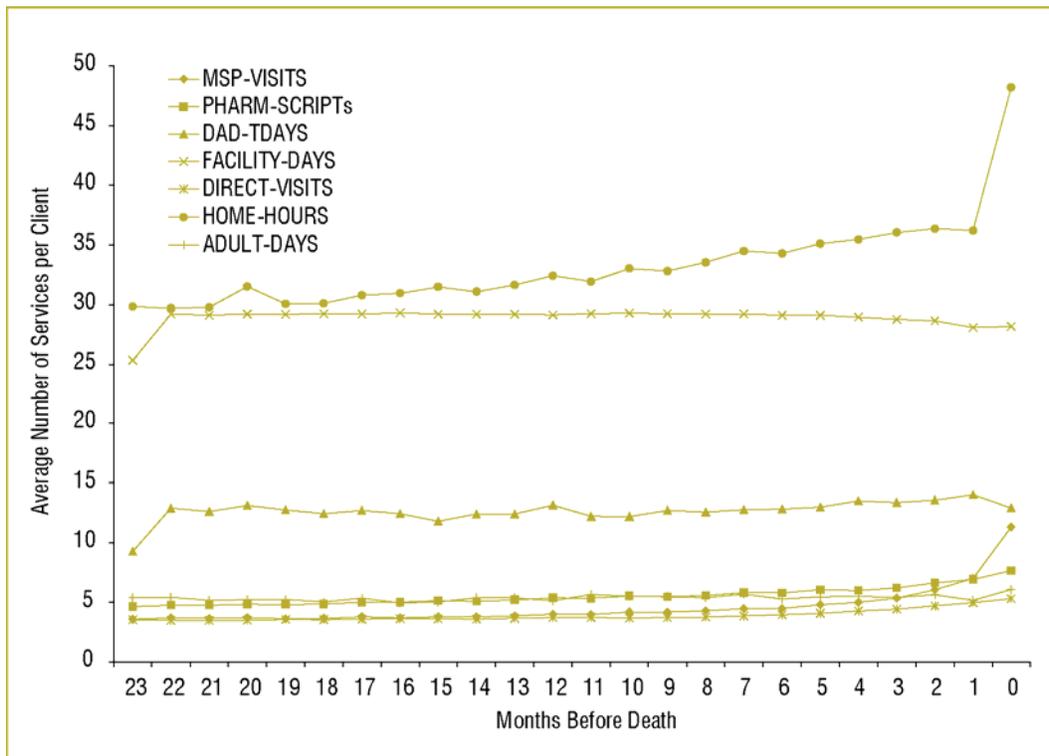
7.1. How Many Clients?



7.2. How Many Services?



7.3. How Many Services on Average per Client?



7.3.1. Physician Visits

There were 18,115 people of the 29,456 who died who received physician services in the twenty-fourth month prior to the end of life. By the 12th month prior to the end of life, the number increased by four percent to 19,002 people who received physician services in that month.

Over the last year of life, the number of people who received physician services per month increased by roughly one to four percent per month to where in the second month prior to the end of life 22,717 people received physician services. In the last month of life a large increase of 18 percent was found, where 26,900 of the total 29,456 people who died received physician services.

In the 24th to 6th month prior to the end of life, on average each person had four physician visits. In the last 6 months of life the number of visits per person per month increased from five to 7 and in the last month of life to 11 physician visits per person.

The total number of physician visits provided per month over the last two years of life for the entire cohort ranged from 64,869 visits in the 24th month prior to the end of life, to 159,612 in the second last month of life, and 304,612 in the last month of life. In total, there were 2,226,272 physician visits provided over the last 24 months of life to the 29,456 people who died.

7.3.2. Pharmaceutical Prescriptions

There were 14,382 people of the 29,456 who died who had pharmaceutical prescriptions filled in the twenty-fourth month prior to the end of life. By the 12th month prior to the end of life, the number increased by two percent to 14,932 people who had pharmaceutical prescriptions filled in that month.

Over the last year of life the number of people who received pharmaceutical services per month increased by zero to three percent per month, to where in the last month of life 16,244 of the total 29,456 people who died received pharmaceutical services.

In the 24th to 6th month prior to the end of life, on average each person had five to 6 pharmaceutical prescriptions filled per month. In the last six months of life the number of pharmaceutical prescriptions filled per person per month increased from 6 to 7 and in the last month of life to 8 pharmaceutical prescriptions filled per person.

The total number of pharmaceutical prescriptions filled over the last two years of life for the entire cohort ranged from 66,594 in the 24th month prior to the end of life to 124,379 in the last month of life. In total there were 1,986,279 pharmaceutical prescriptions filled over the last 24 months of life for the 29,456 people who died.

7.3.3. Acute Care

There were 1,164 people of the 29,456 who received acute care services in the twenty-fourth month prior to the end of life. By the 12th month prior to the end of life, the number increased by 18 percent to 1,381 people who received acute services in that month.

Over the last year of life, the number of people who received acute care services per month increased by zero to 61 percent per month. By the second month prior to the end of life 6,177 people received acute care services. In the last month of life there was a large increase of 61 percent, where 15,952 of the total 29,456 people who died received acute care services.

In the 24th to 6th month prior to the end of life, on average, each person had 13 acute care days of service. In the last 6 months of life the number of acute care days per person per month remained stable at 13 to 14 days per person.

The total number of acute care days provided per month over the last two years of life for the entire cohort ranged from 10,777 days in the twenty-fourth month prior to the end of life to 86,630 days in the second last month of life, and 205,909 in the last month of life. In total there were 761,822 acute care days provided over the last 24 months of life to the 29,456 people who died. At 85 percent occupancy, that volume of days accounted for 2,455 days of the acute care bed capacity over the two years.

7.3.4. Residential Care

There were 4,416 people of the 29,456 who received residential care services in the twenty-fourth month prior to the end of life. By the 12th month prior to the end of life, the number increased by 25 percent to 5,545 people who received residential care services in that month.

Over the last year of life, the number of people who received residential care services per month increased by one to 7 percent per month, to where in the second month prior to the end of life 7,622 people received residential care services, and in the last month of life 7,997 of the total 29,456 people who died received residential care services.

In the 24th to 6th month prior to the end of life, on average, each person had 25 to 29 residential care days of service. In the last 6 months of life, the number of residential care days per person per month remained stable at 29 days per person.

The total number of residential care days provided per month over the last two years of life for the entire cohort ranged from 111,914 days in the 24th month prior to the end of life to 214,119 days in the second last month of life, and 225,466 in the last month of life. In total there were 3,972,202 residential care days provided over the last 24 months of life to the total 29,456 people who died. At 95 percent occupancy, that volume of days accounted for 11,455 days of the residential care bed capacity over the two years.

7.3.5. Direct Care

There were 1,833 people of the 29,456 who received direct care services in the twenty-fourth month prior to the end of life. By the 12th month prior to the end of life, the number increased by 32 percent to 2,505 people who received direct care services in that month.

Over the last year of life, the number of people who received direct care services per month increased by three to 24 percent per month to where in the second month prior to the end of life 7,163 people received direct care services. In the last month of life there was a large increase of 24 percent, where 8,912 of the total 29,456 people who died received direct care services.

In the 24th to 6th month prior to the end of life, on average each person had four direct care visits. In the last 6 months of life the number of visits per person per month increased from four to five.

The total number of direct care visits provided per month over the last two years of life for the entire cohort ranged from 6,502 visits in the 24th month prior to the end of life to 35,586 in the second last month of life, and 47,254 in the last month of life. In total there were 330,162 direct care visits provided over the last 24 months of life to the 29,456 people who died.

7.3.6. Home Support

There were 2,485 people of the 29,456 who died that received home support services in the twenty-fourth month prior to the end of life. By the 12th month prior to the end of life, the number increased slightly to 2,505 people who received home support services in that month.

Over the last year of life, the number of people who received home support services varied slightly by month, where in the second month prior to the end of life 2,595 people received home support services. In the last month of life there was a large increase of 17 percent, where 3,046 of the total 29,456 people who died received home support services.

In the 24th to 6th month prior to the end of life, on average, each person had 29 to 35 home support hours. In the last 6 months of life the number of home support hours per person increased to 36 and then to 48 hours in the last month of life.

The total number of home support hours provided per month over the last two years of life for the entire cohort ranged from 74,201 hours in the 24th month prior to the end of life to 94,050 in the second last month of life, and 146,856 in the last month of life. In total, there were 2,028,846 home support hours provided over the last 24 months of life to the 29,456 people who died.

7.3.7. Adult Day Care

There were 377 people of the 29,456 who received adult day care services in the twenty-fourth month prior to the end of life. That volume of clients per month remained stable to the 12th month prior to the end of life.

Over the last year of life the number of people who received adult day care services decreased by two to 13 percent to where in the last month of life 252 of the total 29,456 people who died received adult day care services.

Over the 24 months, on average each person had five to 6 adult day care sessions per month.

The total number of adult day care sessions provided per month over the last two years of life for the entire cohort ranged from 2,039 in the 24th month prior to the end of life to 1,503 in the second last month of life, and 1,530 in the last month of life. In total there were 45,833 adult day care sessions provided over the last 24 months of life to the 29,456 people who died.

Home and Community Care case managers and home care nurses were found to have completed the assessment, authorized and directly coordinated 3.97 million residential care days, 330 thousand direct care visits, 2 million home support hours and 45 thousand adult day care days. In total, the services they authorized resulted in 6.4 million service events. The estimated cost of these services was \$660 million.

7.3.8. Costs

The average cost for each service in 2003/2004 as provided by the Ministry of Health Services was:

Dollars per Service Count						
MSP Visits	Pharm Scripts	DAD Tdays	Facility Days	Direct Visits	Home Hours	Adult Days
\$67.90	\$44.84	\$560.00	\$142.00	\$85.00	\$32.00	\$78.00

Based on these costs, the total cost of health services used by all decedents over the last two years of life was \$1.3 billion. This included \$151 million for physician visits, \$89 million for pharmaceutical prescriptions, \$426 million for acute care days, \$564 million for residential care days, \$28 million for direct care visits, \$65 million for home support hours, and \$3.6 million for adult day care visits provided.

The combined cost for all services used in the last two years by the 5,100 people who died at home was \$98.2M, which was 7 percent of the total cost of services for all people who died. When examined by service, these decedents accounted for 15 percent (\$22M) of the total cost of physician services, 16 percent (\$14M) of pharmaceutical services, 9 percent (\$37M) of acute care services, less than one percent (\$3M) of facility services, 25 percent (\$7M) of direct care visits, 22 percent (\$14M) of home support hours, and 14 percent (\$0.5M) of adult day care days provided.

The combined cost of all services used over the last two years by the 7,825 decedents who died in residential care was \$633M, which was 48 percent of the total cost of services for all people who died. When examined by service, these decedents accounted for 24 percent (\$36M) of the total cost of physician services, 32 percent (\$28M) of pharmaceutical services, 26 percent (\$110M) of acute care services, 77 percent (\$436M) of residential facility services, 20 percent (\$6M) of direct care visits, 24 percent (\$16M) of home support hours, and 34 percent (\$1M) of adult day care days provided.

The combined cost of all services used over the last two years by the 15,580 decedents who died in hospital was \$587M, which was 44 percent of the total cost of services for all people who died. When examined by service, these decedents accounted for 60 percent (\$91M) of the total cost of physician services, 51 percent (\$45M) of pharmaceutical services, 65 percent (\$276M) of acute care services, 22 percent (\$124M) of facility services, 53 percent (\$15M) of direct care visits, 53 percent (\$34M) of home support hours and 52 percent (\$2M) of adult day care days provided.

The cost of all services used over the last two years by the 951 decedents who died in other places (for example, on the street, highway or other) was \$8M, which was less than one percent of the total cost of services for all who died. When examined by service, these decedents accounted for two percent (\$2.5M) of the total cost of physician services, two percent (\$1.5M) of pharmaceutical services, two percent (\$3M) of acute care services, two percent (\$0.4M) of direct care visits, and two percent (\$0.5M) of home support hours provided.

8. Summary of Key Findings

“Among all vulnerable people, dying people are arguably the most vulnerable. The dying process is often difficult as a result of emotional and physical challenges. Although death and dying may be an intensely personal matter, end of life care is an important public obligation.” Lynn (2003)

8.1. Describing Service Use at The End of Life

When undertaking this study as part of the broader Western Canadian study conducted by CIHI, a key goal of the Ministry of Health Services was to build demographic profiles of the people who died in 2003/2004, including a reconstruction of actual service use and patterns during the last 24 months of life.

The study found that some people lived rural—others urban, some lived alone—while others had networks of family and community supports. Some had few health issues, while others had complex health conditions to deal with. Some died young and others died at a very old age, while some remained independent until the end of life and others were fully dependent on publicly-funded health services.

The 29,456 people who died in 2003/2004 received many health services during their last two years of life. These included 2.2 million physician visits, 1.99 million prescriptions, 0.76 million acute care days, 3.97 million residential care days, 0.33 million direct care visits, 2.0 million home support hours and 0.045 million adult day care visits being provided. The estimated total cost of these services was \$1.32 billion. From a capital-capacity perspective, these resources required 2,455 acute care beds (at 85 percent occupancy) and 11,455 residential care beds (at 95 percent occupancy) to deliver care.

When examined by service event groups, it was found that 3,778 people (13 percent) were primarily self-care; 15,876 people (53 percent) were self-care with simple single service use; 2,752 (10 percent) of people had increased dependence on publicly-funded health services and used services frequently in complex bundles, and the remaining 7,040 people (24 percent) were primarily dependent on the publicly-funded health care system. Of the 7,040 people that were dependent 5,000 primarily used residential services over the 24 months and 1,765 used a complex bundle and high volume of services.

The average cost of services used by each person varied by the volume and complexity of services used. For those people who were primarily self-care in the last 24 months of life the cost was \$2,159 while on the other end of the spectrum, for those people dependent on the publicly-funded health system in the last two years of life, the average cost per person was \$106,000 to \$210,000.

When each person's service event use in each month over the last 24 months of life was recreated through anonymous linked data, and when individual vignettes and sub-sets of people grouped by service event groups were examined, thirteen unique groups were identified. Identifying and describing these groups has been an important step that will help inform the future planning and delivery of end of life care services across BC.

8.2. Palliative Care—Flags, Identification And Sub-Groups

8.2.1. Palliative Flags and Identification

In the study, through the quantification of palliative service flags identified in the administrative dataset, 8,071 persons (27 percent of the cohort) were found to have received palliative care services, and thus were classified officially as being clinically “palliative.” The data could not be analyzed further to identify why the other 73 percent who also died in the same period were not flagged as palliative.

8.2.2. Palliative Care Sub-Populations and Service Use

Based on a recommendation from the Provincial End of life Working Group, the sub-groups used by Palliative Care Australia (PCA) that describe the needs of the palliative care population were reviewed to inform the data analysis. The groups are described below.

Sub-Group A: People whose palliative care needs are met through their own resources including informal caregivers, or with the support of primary care practitioners, community nurses, local hospitals and residential care providers. These people do not require access to specialist palliative care. This is the largest group.

Sub-Group B: People with life-limiting illness that have sporadic exacerbations of pain or other symptoms, or experience social or emotional distress. They may have a temporary increase in their level of need and may require periodic specialist palliative care services for consultation or advice. This group continues to receive palliative care from primary care providers.

Sub-Group C: Palliative care patients who have the greatest needs and are often those with physical, social, psychological and spiritual needs that do not respond to simple or established protocols of care. They usually require highly individualized care plans be developed, implemented and evaluated by specialist practitioners in partnership with primary care providers. This group is most likely the smallest of the three sub-groups.

Although there was insufficient data to determine if the BC decedents flagged as palliative had clinical characteristics similar to those within the sub-groups of Palliative Care Australia, the study did find the decedents' needs ranged from those who were self-care through to those who had increasing reliance on complex bundles of services, up to and including primary dependence on publicly-funded services including residential care.

Specifically, of the 8,071 people identified as palliative in the BC study, 261 people (three percent) were self-care, 6,325 people (78 percent) were self-care with simple single service use, 825 people (10 percent) had increased dependence on publicly-funded health services and used services frequently in complex bundles, and the remaining 660 people (8 percent) were primarily dependent on publicly-funded health services. Of the people that were dependent, 345 people primarily used residential services of the last 24 months of life and 315 people used complex service bundles and a high volume of services. This sub-group and these findings did not allow comparison with Australia's palliative sub-groups.

It would be useful if further clinical analyses of BC's sub-group of palliative decedents could be undertaken to determine if their palliative care needs and service utilization patterns are in any way similar to the sub-groups identified by Palliative Care Australia. For example, if they are, then the Australian model could help inform strategic policy and planning decisions to implement an effective palliative care approach within and across BC.

8.3. Self-Care—Unknown Need

An interesting finding was the number of people who did not access services at all for substantial periods of time. These included the 3,788 people (13 percent of the cohort) who used up to 49 services over the last two years of life and were self-care with no contact with formal health service providers 74 percent of all months, and the 3,524 people (12 percent) who used up to 100 services over the last two years of life and were self-care 36 percent of the months. When combined, these 7,312 decedents were 25 percent of the entire cohort that died in 2003/2004, yet they accounted for only 3 percent of the total cost of services used.

It is an important finding that a high number of decedents did not use many, or any services, and some for long periods of time. The implications of this finding are unknown and warrant further study, particularly with respect to examining and describing the potential service and support provided by informal caregivers.

8.4. Coordination of Care—Physician and Case Manager

The province of British Columbia and the Ministry of Health Services value the delivery of timely, coordinated, high quality end of life care services when clients and their families need them. Wilson (2004) argues that a single coordinator at the end of life, as opposed to a network of care providers who coordinate single aspects of care, is one of the most critical factors needed to ensure effective communication and care is provided at the end of life. In British Columbia, physicians, case managers and home care nurses are primarily responsible for the authorization, access and coordination of services for people and their families at end of life.

Through the study reported here, the importance of physicians' services, particularly general practice family physicians, became apparent when it was discovered that general practice physicians were the primary care doctors who provided the majority of physician services used by nearly all decedents across all service event groups. The importance of Home and Community Care case managers and home care nurses as coordinators of care was confirmed also in the study, as they completed eligibility assessments, authorized access to residential, home support and adult day care, and also helped to coordinate care across all service types.

Two limitations of the study were that the methodology and existing data did not allow validation of anecdotal reports from the End of Life Care Working Group that HCC case managers and home care nurses routinely refer clients to their primary care physicians, and second, that the existing data could not be broken down or analyzed further to describe the distinct role of home care nurses as coordinators of care at the end of life.

As integrated health networks emerge in British Columbia in the future, it will be important to examine all of these roles further and in the context of the wider interdisciplinary team to learn how it can most effectively work together to support and serve clients and their families at the end of life. For example, in the BC Ministry of Health Services document, "Primary Health Care Charter—a collaborative approach" (2007), the long term goal is that "all British Columbians who are facing end of life will receive competent, compassionate and respectful care. Primary health care providers will work closely with other stakeholders to support death with dignity and comfort in the setting that best meets the needs of patients and family caregivers." Working to achieve this goal will bring doctors, case managers, home care nurses and others together as they strive to deliver best practices to support clients and their families at the end of life.

8.5. Diagnostic Groups—Challenges in Predicting Trajectory and Time to Death

In past, policy makers, service managers and clinicians relied heavily upon physicians' diagnostic and prognostication abilities as key factors upon which to estimate actual and future potential service requirements. As well, researchers have combined diagnoses with conceptual descriptions of "trajectories of dying" to describe service use patterns that may support improved planning and care.

It was beyond the scope and methodology of this study to statistically quantify and analyze if a significant, predictive relationship existed between the decedents' patterns of service use and their time of death across the four main diagnostic groups (circulatory, cancer, respiratory and external causes). It was found, however, that the "external causes" diagnostic group had a larger proportion of people that were self-care and used few services. All four diagnostic groups included people who fell into every service event group, from those who were primarily self-care and used very few services to those who were primarily dependent and used complex service bundles and a high number of services.

8.6. Location of Death

Increasingly, people planning for their own end of life care want more choices to support them and their families, including options to die comfortably at home and in home-like settings. Provincial policies and health authority service planning both support achievement of this goal, and indicators to monitor and measure progress are being developed. Additionally, there is desire for British Columbia to work with the Canadian Institute for Health Information, the Canadian provinces and territories, and other stakeholders to improve and standardize the categorization, data collection methods and analyses of location of death reporting. Such standardization will enable important comparisons to be made between and across the provinces and territories over time that will better support evidence-based policy, planning and improved service delivery both provincially and nationally.

In this study, only anonymous retrospective data was examined to quantify and describe where individuals died and their patterns of service usage. The categories of locations of death were limited to the categories prescribed by the Vital Statistics Agency of the Ministry of Health Services, and data quality and reliability was dependent on the degree to which the required rules and processes were followed as data was collected and processed. A significant limitation of the data was that there was no option in BC at the time leading up to the study for hospice-based deaths to be a unique location separate from residential-based and hospital-based deaths. Thus, hospice-based deaths are not reported, and the number of deaths reported as taking place in residential care and in acute care, of which both contain hospice-palliative care beds, are over-reported.

Finally, no qualitative questions were posed in the study to explore if clients or families had expressed wishes in advance about the location of death as they prepared for it to occur. The findings are limited to the categories below.

8.6.1. People Primarily Self-Care or Used Simple Single Services: Mainly Died in Hospital

In British Columbia, 1,769 (47 percent) of the people who were primarily self-care and 10,143 (64 percent) of the people who were primarily self-care with simple single service use over the last 24 months of life died in hospital. Together, these people accounted for 65 percent of the cohort who died in hospital.

For these people, services were used in an episodic fashion; the self-care group had no contact with formal health services 74 percent of the months. Within the 10,143 people who were primarily self-care with simple single use—even those people with the higher service volume and a broader range of services, still used single services 55 percent of the months and had only short periods of more complex service use where physician and acute care services or physician and home support services were used in a single month.

8.6.2. People Who were Dependent—Using Residential Services: Mainly Died in Residential Care and Hospital

For the 5,275 people who were primarily dependent and used residential services for the majority of the last 24 months of life, 3,848 (70 percent) died in residential care and 1,427 (27 percent) died in hospital.

8.6.3. People Dependent—Using Complex Service Bundles: Died in a Variety of Locations

Of the 1,765 people who were primarily dependent on publicly-funded services and had high volume and complex bundles of services including extensive home and community supports, 797 (45 percent) died in hospital, 745 (42 percent) died in residential care and 213 (12 percent) died at home.

8.7. Cross-System Knowledge Enhancement and Sharing

The data compiled in this study was developed to quantitatively describe the characteristics and patterns of one cohort of British Columbians during their last two years of life. It provides a useful description of the volume and patterns of service utilization by decedents of provincially-available resources and services over time. Although it was beyond the scope of the study to consider family, informal caregiver or provider experiences in relation to actual service delivery and outcomes, never-the-less a firm foundation of new knowledge has been laid upon which important new questions and next steps can be taken to support better planning for end of life care services in BC.

9. Conclusions

This study identifies, analyzes and describes the entire cohort of individuals who died in British Columbia during 2003/2004. A profile was built for each decedent using retrospective anonymous data to show their individual utilization of selected Home and Community Care services, physician visits, and Palliative Drug Program benefits during each decedent's last 24 months of life. When all the profiles were examined together to discover utilization trends and patterns, four patterns and thirteen service event groups emerged.

The four patterns of service utilization include those decedents who were found to be (1) primarily self-care (13%), (2) primarily self-care with simple single service use (34%), (3) having increased dependency (9%), and (4) those who were primarily dependent (18%). The thirteen service event groups included:

- Group 1: 3,778 persons who used 0–49 services;
- Group 2: 3,524 persons who used 50–99 services;
- Group 3: 3,572 persons who used 100–149 services;
- Group 4: 3,042 persons who used 150–199 services;
- Group 5: 2,190 persons who used 200–249 services;
- Group 6: 1,584 persons who used 250–299 services;
- Group 7: 1,964 persons who used 300–399 services;
- Group 8: 1,683 persons who used 400–549 services;
- Group 9: 1,069 persons who used 550–699 services;
- Group 10: 3,291 persons who used 700–849 services;
- Group 11: 1,984 persons who used 850–999 services;
- Group 12: 1,672 persons who used 1000–2899 services; and
- Group 13: 93 persons who used 2900+ services.

Further conclusions and implications are noted below.

9.1. Policy, Program Development and Practice Implications

A major finding of the study was that for many decedents, health service use peaked in the last 3–6 months of life. The findings also showed that for many with chronic illnesses and co-morbid conditions, in addition to those with cancer, many had increased need for, and did receive, complex bundles of services in the end of life period well before the last 3 to 6 months of life. Additionally, these individuals received frequent, personalized case management services that, from a qualitative point-of-view, would be highly interesting to examine in future to determine the extent to which they enabled the delivery of high quality end of life care aligned with client needs and personal choices.

These findings suggest that policy-makers, health planners and clinicians may wish to value a “palliative approach” being embedded in public and clinical policy so it can be offered to consenting, terminally-ill patients sooner than in the last three to 6 months of

life. The intent of such policy would be to ensure that individuals with life-limiting, terminal conditions, **and not only those with cancer**, may have their palliative care needs recognized and planned for by the inter-disciplinary team as appropriate.

Another important finding was that primary care physicians and case managers, including home care nurses, were the main providers who authorized and coordinated access to most services used by decedents at the end of life across all service event groupings. This finding has important implications as models of care are redesigned and delivered in future to support persons nearing end of life.

Other interesting findings were that cancer cases were distributed across the service event groups, and that cancer patients disproportionately accessed palliative services. While this finding was expected, given the historic origins of palliative care within the cancer care field, it does raise important questions:

- What policy and practice changes are needed to ensure appropriate palliative care services are available to support people with illnesses other than cancer, across all care settings? and,
- What additional clinical and administrative data are required to establish, monitor and evaluate these services?

Other unanswered questions for future consideration include:

- Do the province of BC and its health authorities have the right care models, resources and monitoring mechanisms in place to ensure that people at the end of life are identified early enough to be provided with the opportunity to plan for their care? Are the palliative care needs of different groups, for example across rural/urban communities, ethnic groups and socioeconomic categories, being identified and addressed?
- While reliable prognostication about when death might occur may continue to be elusive, can clinicians and the health care system identify patient groups and sub-groups whose decline can be anticipated, thus allowing for improved planning and more timely access to appropriate palliative services?
- What are the opportunities to link people with resources earlier in their trajectory so that they may plan their own care, and what would be the impact of this upon the health care system?

Last but not least, many activities have been underway in BC since the study was undertaken, and planning continues to establish and standardize high quality end of life care as an integral part of the provincial health care system. Each health authority is implementing new end of life care services while engaging in longer-term planning to ensure an appropriate array of end of life care services and programs are in place to increase residents' choices to die at home and meet future need. This study, its findings and the important questions raised are a helpful starting point to design a blueprint for a firm foundation upon which better end of life care may be built across BC.

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