Price Survey of Assistive Devices and Supports for Persons with Disabilities

by
Children, Youth and Social Developments Directorate
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Price Survey of Assistive Devices and Supports for Persons with Disabilities

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Abstract

This report summarizes the results of a pilot price survey of assistive devices and supports for persons with disabilities undertaken in the fall of 2001. It provides a broad sample of over 150 prices of aids, devices and supports commonly needed by persons with disabilities. The ultimate goal of this work is to create an objective and comprehensive national source of information about the prices faced by persons with disabilities, their families, and health and social service organizations. In so doing, the price survey is meant to contribute to the development of a more accurate and comprehensive portrait of the costs borne by individuals with disabilities, and should assist in the work of researchers, policy makers, service providers, and advocates.

Table of Contents

List of Tables

I. Background and Rationale for the Survey

The federal and provincial/territorial Ministers Responsible for Social Services have identified the need for development of policies to improve access to disability supports, to enhance the portability of these supports, and to help offset the cost of disability supports. However, the lack of data on disability supports has hindered the ability of governments to design and implement appropriate policies and programs.

The rationale for the price survey arises in part from the difficulty encountered by the 1991 Health and Activity Limitation Survey (HALS) in obtaining accurate figures for the cost of disability supports to the individual. An alternative method for obtaining accurate data about the costs of disability supports was needed. The ultimate goal of this work is to create an objective and comprehensive national source of information about the prices faced by persons with disabilities, their families, and health and social service organizations. In so doing, the price survey should contribute to the development of a more accurate and comprehensive portrait of the costs borne by individuals with disabilities, and should assist in the work of researchers, policy makers, service providers, and advocates.

To identify and fill such gaps in our knowledge, the Applied Research Branch (ARB) at HRDC initiated research to develop a more accurate picture of the living and working conditions faced by persons with disabilities in Canada. As one part of the strategy, ARB launched a project to determine the prices of a comprehensive sample and range of disability supports. This report summarizes these results, providing a picture of the wide variety of prices for disability support goods and services.

II. Methodology

1. Content Development

The list of products started with a base of supports included in the 1991 Health and Activity Limitations Survey (HALS) and those listed in the *Income Tax Act* regulations for the Medical Expense Tax Credit. From this base point, the Applied Research Branch worked with the Roeher Institute to enhance the draft conceptual framework of disability—related products, supports and services. From that point, consultations were undertaken with members of other disability-related non-governmental organizations (for example, the Canadian National Institute for the Blind (CNIB) and the Canadian Hearing Association) and members of the community to ensure that the framework was reasonably all encompassing and accurate (See Appendix A for a list of the organizations consulted). However, the sample is meant to be representative and not fully comprehensive of all aids/devices and supports available. The sample[1] of goods and services and average prices provided in this report is provided in Appendix B.

Prices reported reflect market prices before subsidization by national/provincial/territorial governments and/or insurance plans.

In addition, distributor, province and city data were collected. Where multiple prices were obtained from a single distributor, a distributor identifier was added.

2. Universe, Sample Frame

The Applied Research Branch worked with the Prices Division of Statistics Canada to carry out a national price survey of commercial retailers, service providers and other supports to obtain prices of goods and services.

For most of the data collected, the sample frame was created from which commercial retailers and service providers were selected for the survey from the business register, the Electronic Yellow Pages, and the Canadian Register of Psychologists. However, there were a number of exceptions.

- Supports for the blind where the CNIB was the sole source of price data. CNIB also provided sales data, and price estimates for many of these supports were developed using sales based weights;

- Drugs used in the treatment of diabetes and psychiatric conditions, results were taken from the November 2001, *Consumer Price Survey*.

[1] This "judgmental" sample was developed because there was insufficient market information concerning the sales distribution of specified goods and services to allow for a probabilistic sample.

In most cases, sampling was limited to cities currently included in the Consumer Price Index.[2]

Survey results were undertaken through the fall of 2001 and winter of 2001-02. Where possible, the prices obtained were as at October, 2001.

3. Response Rates and Sample Sizes

- Price data on disability supports was obtained from a total of 307 respondents of 851 surveyed (36%).
- A survey of disability related service fees and the costs of orthoses/prostheses were distributed to 940. Of these, 540 (58.3%) responded with fees/prices.
- Prices of drugs from 99 suppliers and prescription glasses/lenses were obtained from 114 suppliers. Both were taken from the November, 2001 Consumer Price Survey.
- Public transportation prices were obtained from 58 municipal transportation authorities and taxi fees from 57 local providers.
- Prices for van conversions were obtained from 17 respondents (44.7%) of 38 providers solicited.

4. Reporting

Chapter III provides summary results of the price survey. It also includes brief descriptions of each of the devices priced. In most cases, it then provides average prices at the national level. Where there is sufficient sample size to assure reliability, average prices are also reported for sample brands.

Nation wide average prices are always reported where there were 25 or more prices available for a product. The price is provided for smaller samples of a product (a minimum of 10) when tests using descriptive of location/dispersion statistics (coefficient of variation, skewness, kurtosis, etc.) indicate that the mean is likely a "good" point estimate of sample prices. In addition, individual Coefficients of Variation (CV) (ratios of the estimated standard error of the mean to the mean) were calculated and some data is either not reported or reported with a caution using the following criteria:

a. Where less than 16.5% are reported without an asterisk.

b. Those with a CV which lies between 16.6% and 33.3% are reported with an asterisk. The asterisk addresses caution when using these prices because the average price reported has a high standard error.

[2] Some goods and services related data was collected from other, small communities, primarily located in Atlantic Canada.

c. Where CV was greater than 33.3%, the price data was not reported.

Appendix C provides details regarding the tests undertaken and the criteria used for the decisions made.

The use of these inclusion criteria allowed the reporting of prices for support devices and aids for all disability types except assistive devices for the speaking impaired.

In two instances, where sample sizes were under 25, single price observations were excluded in the calculation of mean prices because they were "extreme outliers" and had inordinate effects on this statistic. In each instance, the price excluded was more than three times higher than the next highest price reported.

Where there is adequate sample size (at least 15 observations and Appendix C criteria are met) prices are also provided for various brands/models of a device. Where appropriate or where there are insufficient sample sizes of brands, ranges of brand/model averages are provided.

Chapter IV reports on the effect of three factors on the prices of a subset of the aids, devices and services sampled:

- Region;[3]
- Size of community (as characterized by the logarithm of the area's population);
- Distributor pricing pattern (where prices for multiple goods were provided by the same distributors).

Analysis was undertaken for classes of devices where there is sufficient sample size for each device (an average of 15 observations per region and at least 5 observations in each region) to establish clear trends using analysis of variance/covariance and each retailer (at least 4 prices) using factor analysis.[4] Differences are reported from the national mean and, where relevant, between regions in Chapter IV where, with 95% confidence, it could be inferred that average prices were either higher or lower.

In Chapter IV regional average prices are provided, where applicable. Where community size likely had a significant effect on price, the averages reported have been adjusted to remove the estimated effect of regional differences community sizes.

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[3] There was consistently inadequate sample size to allow inferences for some provinces/territories. As a result, suppliers in the Atlantic Provinces were grouped as were Manitoba and Saskatchewan. Suppliers in the territories were grouped with adjacent provinces unless there were large variations in Territorial prices vis-à-vis the rest of the country. Thus, Yukon observations were usually merged with the British Columbia samples and Northwest Territories/Nunavut prices with those of Alberta.

[4] Specifically, residuals of the prices from individual product analyses of regional/provincial differences for each class of aids/devices/services were factor analysed when outlets provided four or more prices. In each analyse, a single major factor emerged. The proportion of variance characterized by this factor was attributed to outlet-specific price variation.

III. Price Survey Results

1. Devices and Services for the Hearing Impaired/ Deaf/Deafened

In total, the price survey solicited prices for 7 types of supports for persons with some degree of hearing loss. In addition, prices were obtained for aid warranties and repairs. There was adequate sample to report prices for 6 of these:

- Hearing Aids (4 types);
- Hearing Aid Batteries;
- Text Telephones (TTY)/Telecommunication Devices for the Deaf (TDD);
- Personal Amplification Systems;
- Visual or Vibro-Tactile Alarms;
- Volume Control Telephones;
- Prices for repairs.

There was inadequate sample size to establish a reliable average price for one of the devices sampled—Message Relay System and there were too few responses to establish a price for extended hearing aid warranties.

In addition, per diem costs were provided for interpreters/interveners. The survey did not distinguish between the services required by persons who were deaf or blind.

1.1 Hearing Aids

Hearing aids are electronic devices that amplifies sound and are worn to compensate for poor hearing. A total of 105 distributors were sampled and 899 prices were obtained for 4 hearing aids classed on the basis of where they are worn:

- Completely in the Canal (CIC);
- In the Canal (ITC);
- In the Ear (ITE);
- Behind the Ear (BTE).

Table III.1 shows average costs by type of aid and for the aids sampled:

Table III.1
Hearing Aids

Product	Count	Average Price	Sample Brand Average Prices			
			A	B	C	D
CIC	212	$2,021.38	$2,247.48	$1,998.34	$1,822.03	
ITC	271	$1,456.79	$2,086.72	$1,363.11	$1,294.79	$1,021.74
ITE	237	$1,648.92	$2,109.65	$1,754.79	$1,445.94	$1,363.11
BTE	179	$1,128.76	$1,584.73	$917.99	$837.52	
Overall Average	899	$1,575.26				
Distributors Sampled	105					

The average price of hearing aids sampled was $1,575.26. CIC were on average, the most expensive, with an average price of $2,021.38. ITEs and ITCs were close to the average, with ITEs just above ($1,648.92) and ITCs just below ($1,456.79). BTEs tended to be the least expensive, averaging $1,128.76. Within each class, there is considerable variability. For example, the average cost of the highest price ITC was $2,086.72—above the price of an average CIC, while the lowest price ITC was $1,021.74—below the cost of a BTE. In assessing price differences, it is important to understand that both brand and class related differences can reflect variations in power, range of functionality and the level of the new digital technology incorporated in the aid.

1.1.1 Hearing Aid Batteries

There was very little variation in the price of hearing aid batteries. The average price for a package of 8 (or two 4-packs) was $11.03. In total, 104 prices were provided by 67 suppliers.

1.2 Volume Control Telephones

Base level volume control telephones amplify incoming sound and ring. A common feature, which increases the price of these devices, is a display providing the text of incoming messages while allowing outgoing voice transmissions (called "voice carry over"). Telephones with this feature cost an average of about $140 more than the other phones priced. The average price of the volume control telephones sampled was $235.70. In addition, two prices for sample brands are included, neither of which include voice carry over.[5]

[5] Because voice carry over phones are considerably more expensive than other types of telephones, they increase average cost. However, average prices for this type of phone were not included because of small sample size.

Table III.2 Volume Control Telephones				
	Count	Average Price	Sample Brands	
			A	B
Overall Average	86	$235.70	$220.44	$190.39
Distributors Sampled	51			

1.3 TTY/TDD Devices

A TTY (text telephone) or TDD (telecommunications device for the deaf) uses a keyboard and a display or paper readout (printer) to communicate with other such devices via a telephone line. Some new TTY/TDD devices are integrated with computer systems. A total of 18 distributors of TTYs were sampled and 50 prices were obtained. Prices were obtained for 2 types of TTY with printers and 2 with a display only.

Table III.3 Text Telephone Devices (TTY)		
Product	Count	Average Price
Printer	26	$938.93
Display Only	24	$669.81
Overall Average	50	$809.75
Distributors Sampled	18	

The average overall price was $809.75. Those with printers averaged $938.93 and those without $669.81.

1.4 Personal Amplification Systems

Personal Amplification Systems amplify and filter sound. Models which transmit sound via FM or infra-red to a receiver are considerably more expensive than systems which simply receive ambient sound and usually simply plug into hearing aids. Transmitter systems are often used as educational supports in classroom/lecture situations and at large business meetings/conferences.

Table III.4 Personal Amplification Systems					
			Sample Brands		
Product	Count	Average Price	A	B	C
Transmitter/Receiver	129	$2,162.50	$2,926.33	$2,194.25	$1,015.91
Receiver Only	78	$365.33	$407.44	$275.06	
Overall Average	207	$1,485.30			
Distributors Sampled	59				

The average price for a personal amplification system is $1,485.30. Systems including a transmitter tend to cost considerably more than the average (a mean of $2,162.50). However, within this class of product, there was a lot of variation in the price of systems. At one end is Brand C, which averaged $1,015.91, at the other, Brand A, priced at an average of just under three times more at $2,926.33. Receiver only systems tend to cost much less, with an average price of $365.33.

1.5 Visual or Vibro-Tactile Alarms

Vibro-tactile alarms vary in function and some are multifunctional. Devices include motion sensors (used, for example, by deaf mothers to warn of a baby's movement); vibrating/flashing alarm clocks; and alarms which can shake a sleeping person's bed. Table III.5 provides the overall average price for alarms and prices devices where there was enough response to allow reporting:

Table III.5
Vibro-Tactile Alarms

Product	Count	Average Price
Full Function Alarm	15	$300.72*
Portable Alarm Clock	29	$83.92
Overall Average[6]	66	$180.74
Distributors Sampled	29	

The average price for these devices is $180.74. However, because there is large variance in function, there is a commensurate difference in average price. At one end, the multi-function alarm has an average price of $300.72. This device includes a wireless doorbell, bed shaker and an alarm clock. At the other end is a portable alarm clock with an average price of $83.92.

1.6 Repair of Hearing Assistive Devices

Cheapest, average and most expensive repair costs were solicited. Table III.6 indicates that the average "cheapest repair" costs $108.27, "most expensive repairs" averaged $279.38 and an "average repair" was priced at $149.24. Overall, 66 distributors responded with at least one price.

[6] Some types of alarms are not separately reported because too few were sampled to develop a reliable estimate of the average price.

Table III.6 Repairs Costs for Hearing Assistive Devices		
Service	**Count**	**Average Price**
Cheapest repair	61	$108.27
Average repair	59	$149.24
Most expensive repair	60	$279.38
Distributors Responding	66	

1.7 Interpreters/Interveners for the Deaf/Blind

Interpreters/interveners may be used in a variety of life settings, including: medical/ health/dental, mental health/counselling services, social services, employment settings, educational, legal, personal business, government services in order to facilitate communication between persons who are deaf (through for example translation into American Sign Language) and/or blind. Per Diem rates were provided from a sample of 75 interpreter (intervener) services for the deaf and/or blind. The average daily national tariff was $401.32.

2. Aid, Devices and Supports for the Mobility/Agility Impaired

Prices are reported for 13 different types of mobility/agility support devices, vehicles, furniture and devices. Included in this section are braces supports and splints, orthoses and prostheses, walking aids, wheelchairs/scooters, hoists and beds/recliners.

2.1 Braces/Supports and Splints

Braces/supports and splints are usually used to limit mobility and allow for healing by supporting injured, weakened or impaired joints (e.g. neck, elbow, wrist, knee, and ankle). However, they can also be used to support broken bones or to control some types of swelling. In this section, off-the-shelf items only are reported; all of which can be purchased without a prescription. Prices for eight items supporting three parts of the body: lower back, knee and lower leg were surveyed.[7] Seven of these can best be described as braces/supports, the other as a splint.

[7] Because of an error in the survey instrument resulting in a strong potential for misinterpretation, data collected on the prices of forearm attachments to wheeled walkers and/or standers is not reported. In addition, there was insufficient data to report on data collected for porch/chair lifts and residential elevators.

2.1.1 Knee Supports

Knee support products included 4 hinged splints/stabilizers (3 providing lighter support and a single product providing high support) and a simple elasticized knee brace.

The first part of Table III.7 summarizes these results. A total of 67 suppliers provided 165 prices for knee braces and the overall average price was $95.62. The high-support hinged stabilizer/splint averaged, $144.02; and the three lighter support products averaged $107.31. There was little variation in average price by brand for the lighter products. The average price of the brace was $36.08.

Table III.7
Knee and Lower Back Braces and Lower Leg Splint

Product	Count	Average Price	Sample Brands		
			A	B	C
Knee Supports					
Hinged, High Support	27	$144.02			
Hinged, Light Support	97	$107.31	$114.36	$112.09	$100.87
One-Way Stretch Brace	41	$36.08			
Overall Average	165	$95.62			
Distributors Sampled:	67				
Lower Back Supports					
Lumbo-Sacral Brace	73	$100.74	$106.87	$95.09	
Distributors Sampled:	55				
Lower leg Splint					
Foam Walker	38	$173.27			
Distributors Sampled	38				

2.1.2 Lower Back Supports

A total of 73 lower-back brace prices were provided by 55 distributors. These were priced at an average of $100.74, with very similar average prices for the two brands surveyed.

2.1.3 Lower Leg Splint

One type of lower leg foam walker was priced: a walker which is used as a splint, allowing mobility in case of lower leg fractures and which is also used to counter-act lower leg swelling (edema). The cost of the walker averaged $173.27.

2.1.4 Paediatric Standers

Paediatric standers allow a child unable to support himself/herself to move to a vertical position. In addition, they may allow mobility and assist other types of movement

(for example, bracing arm or neck movement). A total of 18 distributors provided 31 prices for their two best selling models. The average price was $2,479.44. However, features, engineering, and apparatus vary considerably, and so too, largely as a result, does price. Prices varied from under $500 to close to $5,000, with only a third of prices within a range of +/-$500 of the average.

2.2 Orthoses

Orthoses are externally applied mechanical devices used to provide control, correction, and/or support to a part of the body. They may be used to enhance mobility, to correct a malformed bone or to provide protection during healing. In enhancing mobility, orthosis can act as levers, substituting the action of other muscles for paralyzed, weakened or immobile muscles. In some cases, orthoses can be powered using electrical impulses from nerves. In contrast to the braces and splints previously described, orthoses are prescribed by a physician and are custom fitted, often including moulding to the recipient's body shape. Prices include fitting and custom fabricating. Orthoses for the cranium (head bone), spine and limbs were priced. Detailed specifications of the devices sampled and average prices are provided in Table III.8.

2.2.1 Cranial Orthoses

Cranial orthoses are primarily used to correct for head malformations or potential malformations in very young children (just after birth to just under two years). A basic helmet was priced. The helmet is custom-moulded from a client mould, covers the head only and includes chin strap and moisture-proof lining. A total of 29 providers responded and the overall average was $1,073.65.

2.2.2 Spinal Orthoses

Spinal orthoses act as braces and are used to provide permanent support for a variety of spinal conditions leading to malformations/weakness (for example, spina bifida or scoliosis). A total of six different types of spinal orthosis were sampled.

2.2.2.1 Cervical (neck area) Orthoses

Cervical orthosis are collars used to support and/or immobilize the cervical spine conditions (neck area) including whiplash, arthritis, post-operative weakness, and to correct malformations in this area. Two types of cervical orthoses were sampled:

- 35 prices were obtained from providers for flexible collars—averaging $152.45.
- 36 prices were obtained for collars with thoracic extensions (also called CTOs). These use a chest assembly as a base to stabilize a second apparatus which surrounds the lower jaw. The average price of this apparatus was $562.44.

2.2.2.2 Mid/Lower Back Orthoses (TLSOs)

Cervical-Thoraco-Lumbo-Sacral Orthoses (TLSO) are braces which provide support to the mid- and lower-back. Three types were priced:

- A plastic form providing support to the middle or lower back and held in place by a corset or apron covering the front part of the body. Thirty-six suppliers provided data for this device, prices averaging $790.28.
- A *Milwaukee* brace used in the treatment of lower-back scoliosis (deformities of the spine). It is girdle-like, covering the pelvis, and has an extension which is attached to the neck by vertical bars. The average price of the 35 *Milwaukee* braces was $1,381.05.
- A Scoliosis body jacket used for the treatment of more extensive scoliosis. The jacket covers the trunk of the body in a plastic form and has an extension attached to the neck by vertical bars). There were 37 prices obtained for this type of orthosis, averaging $1,742.41.

Table III.8 Orthoses			
Type of Orthosis	**Description**	**Count**	**Average Price**
Cranial			
	Helmet, head only with chin strap and moisture-proof lining	29	$1,073.65
Spinal Column			
Cervical	Flexible collar, Polyethylene foam	35	$152.45
	Thermoplastic Collar with Thoracic extension (CTO)	36	$562.44
Cervical-Thoraco-Lumbo-Sacral (TLSO)	*Milwaukee brace*, pelvic girdle only	35	$1,381.05
	Thermoplastic Posterior shell with apron or corset front	36	$790.28
	Scoliosis body jacket, with *Milwaukee* type super-structure	37	$1,742.41
Lower Limb			
Ankle-Foot (AFO)	Spring wire, dorsiflexion assist with calf band	37	$376.25
	Thermoplastic, patella-tendon bearing orthosis	42	$943.02
Knee (KO)	Double upright articulating knee orthosis, with leather thigh and calf lacers	37	$1,107.62
Knee-Ankle-Foot (KAFO)	Tubular, plastic above and below the knee. Plastic surrounds ¾'s limb, thigh and calf straps; includes front and back portions	36	$1,768.14
Hip (Paediatric)	Bilateral twist control, with hip joint, pelvic band/belt, knee and ankle joints	30	$1,062.58
	Paediatric, Legg-Perthes orthosis, Newington design	35	$1,421.85
Hip (Adult)		34	$1,074.47
Thoracic-Hip-Knee-Ankle-Foot	Rochester Parapodium	29	$2,168.16
Upper Extremities			
Hand-Finger	Dynamic Brace for M.C.P.	30	$368.48
Wrist-Hand-Finger	Cable-driven prehension orthosis	28	$746.63
Wrist-Hand	Rigid Support	38	$293.70
	Dynamic Brace	34	$451.86
Elbow-wrist-hand-finger	Rigid Support	29	$740.54
Elbow	Rigid support, thermoplastic	32	$336.67
	Elbow brace with adjustable position lock and active control	28	$1,104.01
Shoulder-Elbow-Wrist-Hand-Finger	Brachial plexus orthosis	15	$1,187.92

2.2.3 Lower Limb Orthoses

A total of 7 different lower limb orthoses were priced, providing support or corrective alignment to the foot, ankle, knee and hip. Average prices are provided in Table III.8.

2.2.3.1 Ankle Foot Orthoses (AFOs)

Ankle-foot Orthoses are used to correct a variety of neuro-muscular disorders and to provide support following surgery. Two types of AFO were priced:

- An AFO consisting of a spring wire connecting a shoe to a band at the calf. A total of 37 prices were obtained from suppliers, averaging $376.25. The spring wire assists in pulling the foot up when stepping (dorsiflexion).
- A thermoplastic AFO, taking weight off the heel and ankle by means of a band in the lower knee region and plastic form down the calf and covering the shoe sole. Forty-two prices were obtained for this device, averaging $943.02.

2.2.3.2 Knee Orthosis

Knee orthoses are similar to high-support knee braces, but are custom made. They are used for knee instability, post surgical weakness or ligament instability/weakness and to correct abnormal knee bending. One type of knee orthosis was priced. It allows for supported knee movement with a double hinge at the knee connected to girdle like supports surrounding the upper and lower leg. In total 37 prices were obtained for this type of knee orthosis, with an average price of $1,107.62.

2.2.3.3 Knee-Ankle-Foot Orthosis (KAFO)

A Knee-Ankle-Foot Orthosis is a support that stretches from the upper leg and provides support to the knee, ankle and foot. The KAFO is typically used when there is weakness in the entire leg. It is commonly used by victims of polio. The KAFO priced is tubular, plastic above and below the knee, with a double hinge at the knee and enclosing three-quarters of the limb with thigh and calf straps. In total 36 KAFO suppliers provided prices which averaged $1,768.14.

2.2.3.4 Hip Orthoses

This type of orthosis is usually used for congenital hip malformations. It usually provides support to the hip while allowing bending and twisting actions. Two children's hip orthoses and one adult were priced.

The generic children's hip orthosis was priced that also provides support to the knee and ankle. A total of 30 prices were obtained, averaging $1,062.58. However, largely because the function/complexity of these apparatus varies, there was considerable variance in the prices of the devices reported—with prices ranging from just under $500 to about $4,500.

A children's hip orthosis was priced specifically for children suffering from Legg-Perthes disease. This is a rare disease leading to destruction of the upper part of

the femur (upper leg bone). This orthosis designed specifically to provide support in and around the hip/femur joint. Variances in the prices quoted were much narrower than for the generic orthosis. In total, 35 prices of this type of orthosis were obtained, averaging $1,421.85.

Finally, a generic adult orthosis was priced. In total 35 suppliers provided data, with prices averaging $1,074.47.

2.2.3.5 Thoracic-Hip-Knee-Ankle-Foot Orthosis

The Thoracic-Hip-Knee-Ankle-Foot Orthosis provides support for both the trunk and lower limbs. One type of orthosis was priced: the *Rochester Parapodium* orthosis, a type of children's stander. A total of 29 were priced, averaging $2,168.16.

2.2.4 Upper Limb Orthoses

In addition to providing injury/post-surgical support, these types of orthosis are often used in the treatment of arthritis. Nine types of upper-limb orthoses were priced.

2.2.4.1 Hand-Finger Orthosis

A dynamic hand-finger orthosis providing support and movement at the knuckle (the MCP or metacarpophalangeal joint) was priced. A total of 30 distributors provided prices, averaging $368.48.

2.2.4.2 Wrist Hand Finger Orthosis

A cable driven wrist-hand-finger orthosis was priced. This orthosis is used to move artificial or paralyzed portions of the hand through the actions of other parts of the upper limb. Seizing or grasping (prehension) is done through a system of wires and pulley.

A total of 28 suppliers provided prices for this type of orthosis, averaging $746.63. However, prices varied widely, likely because of variance in the complexity of the devices. A significant number of prices fell in the $400-$600 range while a second cluster of prices fell in the $1,400-$2,000 range.

2.2.4.3 Wrist-Hand Orthosis

Two types of wrist-hand orthosis—a basic, stabilizing (splint) and a dynamic unit allowing supporting wrist movement were priced.

Prices were provided by 38 distributors for the splint, averaging $293.70. Thirty-four prices were provided for the more complex dynamic orthosis, averaging $451.86.

2.2.4.4 Elbow-Wrist-Hand Finger Orthosis

This type of orthosis usually provides rigid support and covers the entire areas from the elbow to the finger. A total of 29 prices were obtained, averaging $740.54.

2.2.4.5 Elbow Orthoses

Two elbow orthoses were priced. The first is a rigid, thermoplastic elbow support. In total, 32 prices were obtained, averaging $336.67. The second, for persons with a weakened or paralyzed elbow, is hinged and allows mobility by substituting the use of other arm muscles. In total 28 prices were obtained which averaged $1,104.01.

2.2.4.6 Shoulder-Elbow-Wrist-Hand-Finger

These types of orthosis provide support and provide mobility for persons with full arm incapacity. One orthoses price is reported -- a *Brachial plexus* orthosis, used by persons who have partial or full arm paralysis as a result of nerve damage in the upper spine.[8] This orthosis largely provides support. In total, 15 suppliers provided prices which averaged $1,197.92.

2.3 Prostheses—Myoelectric Limbs

Myoelectric limbs/prostheses are artificial limbs which are electrically-powered and controlled by electrical signals from the body. These limbs are contoured to the body and customized to the recipient's need. Prices include fitting, custom fabricating and temporary/test devices.

Because these prostheses can replace any number of combinations of skeletal/muscular function, it was necessary to provide detailed specifications. A total of 5 configurations were priced.

2.3.1 Myoelectric Leg Prostheses—Below the Knee

Two standard leg myoelectric prosthesis configurations were priced to replace leg functioning below the knee—one at a lower and the other at a higher price point. The two differ in the functionality provided and in the level of cosmetic material used. In total 19 prices[9] were obtained for lower and 20 for upper range configurations—the lower averaging $3,673.50 and the upper priced at an average of $6,530.14

[8] A second Shoulder-Elbow-Wrist-Hand-Finger Orthosis was priced which utilized nerve endings to control movement. However, too few suppliers provided prices to allow reporting.

[9] In total 20 prices were obtained, but a single price was excluded as an outlier.

2.3.2 Myoelectric Leg Prostheses—Knee and Lower Leg

Two myoelectric prosthesis configurations were priced for knee and lower leg functioning—again, at lower and higher ends of the cost range. The two differ primarily in the level of cosmetic material used. Both prostheses were designed for children. In total 18 prices were obtained for each. The average price for the lower-priced prosthesis averaged $5,606.77. The higher priced prosthesis averaged $9,201.90.

Table III.9
Myoelectric Prostheses

Prosthesis	Description	Count	Average Price
1. Leg—Trans-Tibial (Standard) (below the knee)			
Low price configuration	*Trans-tibial moulded socket and discardable test socket, Moulded supracondylar suspension, Pelite insert with build-ups for supracondylar suspension, laminated exo-shank, Seattle ankle block, Seattle child's play foot*	19	$3,673.50
High price configuration	*Trans-tibial moulded socket and discardable test socket, endo-shank, foot and ankle, tube-adaptor, short aluminum, CP Foot, College Park Truper, tuble clamp Adaptor (aluminium), Socket adaptor with pyramid, Socket attachment block, skin Spray, shuttle lock, endo-shank cover, silicone Icecross liner*	20	$6,530.14
***2. Leg*--Trans-Femoral (at the knee)**			
Low price configuration	*Trans-femoral moulded and test socket, endo-thigh, Socket attachment, Socket Adaptor-Children's, Modular knee single axis, endo-shank, foot and ankle, Seattle Child's play foot, Seattle ankle foot attachment pyramid, children's tube adaptor, endo-shank and thigh cover*	18	$5,606.77
High price configuration	*Trans-femoral moulded and test socket, Suction suspension socket, endo-thigh, socket attachment block med, socket adaptor-children's, knee , endo-shank, foot and ankle, CP Foot, College Park Truper, endo-shank and thigh cover, USMC GD Valve*	18	$9,201.90
3. Arm Transradial (below the elbow)			
Trans-Radial with Adult Suva Hand	*Moulded and Test Socket, Elbow Obturator (3/4 Socket), Supracondylar Socket, Two-Piece Forearm to Socket, Lightweight Carbon Acrylic, Protective Glove, Lamination Collar, Quick Disconnect Electric Hand, Lamination Ring, Coupling piece, Coaxial plug, Electrode Cable Myobock Electrode 6V Analog, Battery Mounting Set, Battery Charger, Connection Cable, Lithium Battery*	17	$14,204.90*
Trans-Radial Child Prosthesis with OB 2000 Hand	*Moulded and Test socket, Elbow Obturator (3/4 socket), Supracondylar Socket, Two-piece forearm to socket, Lightweight carbon-acrylic, Custom made pull-in tube, Protective Glove, Children's Myoelectric hand, Lamination Collar, Omni Wrist for hand, Myobock Electrode, Electrode Cable, Cable with Plug Connector, Cable with Connector, Four in One Controller, on/off switch connector, Battery Connection Cable, Charger, Winchester Connector, custom omni and internal batteries*	15	$14,564.00

2.3.3 Myoelectric Lower Arm Prostheses

Adult and child lower arm configurations were priced. The adult configuration includes a hand which is able to transmit information about grip strength and make quick adjustments. A total of 17 prices for this configuration were obtained, averaging $14,204.90.

The children's configuration includes a similar configuration, but uses a slightly newer technology that further enhances grip and movement. The average price, based on 15 responses, was $14,564.00.

2.4 Walking Aids

Two types of walking aids were sampled: specialty canes and fore-arm crutches. Because of the large number of manufacturers of each, prices of best-selling brands were solicited. In particular, the price of canes can vary with the degree factors such as style and materials used and as a result, there was high variability in the prices provided. Prices are provided in Table III.10.

2.4.1 Specialty Canes

Prices were solicited for each supplier's two best selling adult and paediatric specialty canes (i.e. canes with tri- or quadric-pods). Table III.10 indicates that a total of 104 distributors provided 185 prices for adult canes and 20 distributors provided prices for 37 paediatric canes (some suppliers provided a single price). Overall, the average cost of an adult specialty cane was $43.95, while children's canes average $65.28.[10]

Table III.10
Walking Aids: Best Selling Models

Product	Count	Average Price
Specialty Canes (Tripod/Quad)		
Adult	185	$43.95
Distributors Sampled:	104	
Children	37	$65.28
Distributors Sampled:	20	
Forearm Crutches	152	$129.83
Distributors Sampled:	93	

2.4.2 Fore-arm Crutches

Prices were also solicited for each supplier's two best selling fore-arm crutches. A total of 93 providers provided 152 prices (many suppliers provided a single price). The average of the 152 prices provided was $129.83.

[10] Walking cane and walking cane accessories are priced in section 7.1.1, as part of the pricing of devices for the blind. These data were developed from the Canadian Institute of the Blind price list.

2.5 Scooters and Wheelchairs

Prices were provided for scooters and both manual and motorized wheelchairs. Average prices for all of the devices reported can be found in Table III.11 below.

2.5.1 Scooters

Scooters are small three and four wheel battery-powered one-seater motorized vehicles used for the most part by persons with mild to moderate degrees of ambulatory mobility limitations. They can be differentiated from wheel chairs primarily because they use a handle bar mechanism for steerage.

There are large variations in features provided such as power, speed, range, quality of suspension system and the presence of lights for night operation. The prices here are for base models. It is often necessary to add additional features to allow for the specifics of a disability or specialized daily living requirements.[11]

A total of 67 scooter distributors provided prices for up to 11 different scooters. Table III.11 provides the average overall price of scooters sampled and prices for readily available brands. The average of the 342 prices sampled was $3,991.47. The average price of the 6 most frequently priced brands/models varied from a high of $4,550.68 to a low of $3,206.98. Included in this list are examples of both adult and paediatric devices. A single list is provided because, unlike many of the other devices reported, there were no discernable differences found in the price of paediatric and adult scooters.

[11] Prices for scooters and wheelchairs are for base models only and do not include numerous accessories and upgrades. Prices for specific configuration of power chairs were solicited but there were inadequate responses to these questions.

Table III.11 Scooters/Wheelchairs and Batteries									
Product	Count	Average Price	Sample Brands						
			A	B	C	D	E	F	G
Scooters	342	$3,991.97	$4,550.68	$4,218.07	$4,046.70	$3,415.80	$3,412.08	$3,206.98	
Distributors Sampled	67								
Motorized Wheelchairs	367	$6,094.37	$9,358.23	$7,147.94	$5,840.91	$5,287.17	$5,120.90	$4,230.81	
Distributors Sampled	59								
Manual Wheelchairs									
Heavy Use Models	302	$2,473.67	$3,080.27	$3,027.17	$2,913.96	$2,458.73	$2,082.83	$1,382.74	$1,218.28
Light Use Models	114	$483.05	$754.25	$474.98	$326.45				
Overall Average	416	$1,928.16							
Distributors Sampled	78								
Scooter/Wheelchair Batteries									
Gel	48	$160.80							
Acid	23	$124.24							
Overall Average	71	$148.96							
Distributors Sampled	50								

2.5.2 Motorized Wheel Chairs

Motorized wheelchairs tend to provide considerably more support than scooters and can be used by persons with moderate to severe levels of mobility limitation. They are usually steered through the use of a joystick mechanism located on the arm-rest of the chair, have either four or six wheels and are battery powered. Steering mechanisms, however, can be adapted to the needs of quadriplegics, for example, through attachments which react to tongue or facial movements or sip/blow air movements. A number of factors such as higher levels of support, more complex steering mechanisms, power, and type of suspension system can all translate into higher prices for these than for scooters.

A total of 59 distributors provided motorized wheelchair prices (See Table III.11). In total 12 different types of motorized wheel chairs were priced. The average of the 367 motorized wheelchair prices sampled was $6,094.37. The average price of the 6 most frequently priced brands varied from a high of $9,358.23 to a low of $4,230.81.

2.5.3 Batteries for Power Wheelchairs/Scooters

Wheelchairs/scooters require rechargeable batteries to operate. These vary in price slightly with the size /range/ capacity/ operating speed of the device and the electrolyte used. There are two broad types of electrolyte used—gels (batteries also tend to be

sealed) are usually more expensive, than acid (requiring occasional water re-fills). Typically, these batteries need to be replaced after about 2 years.

A total of 50 distributors provided 71 battery prices for their best selling brands. The overall average price was $148.96. The 48 gel battery prices received average $160.80, while the 23 acid battery prices averaged $124.24.

2.5.4 Manual Wheel Chairs

Manual wheelchairs can be classified in terms of whether or not they are predominantly self-propelled. Models built to be self-propelled tend to be the principal means of mobility for paraplegics. They thus often need to stand up to heavy use and should be very light, rigid, easily manoeuvrable and resilient. As a result, these are far more expensive than "hospital" wheelchairs which tend to be light-use models—which are either usually pushed by others or used only on an occasional basis. A total of 78 distributors provided manual wheelchair prices for 14 different manual wheelchairs—3 light use models and 11 heavier use models. Table III.11 provides the average overall price of scooters sampled and prices for readily available brands. The average of the 416 manual wheelchair prices sampled was $1,926.16. The average price of the 7 frequently priced heavier use models varied from $3,080.27 to $1,218.26, with an overall average of $2,473.67. The average price of the 3 lighter use models varied from a high average price of $754.25 to a low of $326.45, with an overall average price of $483.05.

2.6 Specialty Furniture and Lift Devices

Prices were obtained for two types of furniture commonly and specifically used by persons with mobility impairment: homecare beds and lift-chairs. In addition, lifting devices designed to move persons to/from beds/ambulatory devices and to lift/lower persons into the bathtub were priced.

2.6.1 Homecare Beds

Homecare beds are designed for persons able to remain in the home but who are required to spend a large part of their day in a reclining position. They usually include a number of adjustments allowing for movement and support in differing positions and/or heights (i.e. sitting up, lying vertically, etc.). Price variation occurs to a large extent as a result of two factors:

- The degree to which position adjustment mechanisms are electrically assisted; and
- The presence of air sacks/compartments which inflate/deflate various parts of the mattress to adjust pressure points. This is important for persons who require constant bed rest or who have very limited mobility in order to avoid bedsores and/or to enhance blood circulation. Lower end models require manual adjustment by

pumping/releasing air. Premium mattresses have computer mechanism for redistributing air (termed "low air-loss mattresses).

A total of 54 distributors provided 119 prices for 3 broad types of homecare beds. Table III.12 shows that the overall average price was $2,223.24. The average price for the 39 "entry level" adult bed frame/mattresses requiring fully manual adjustment was $1,146.45. The 39 quotes for beds with mid-range bed frames all of which had pressure-relief mattresses averaged $1,805.59. The 48 prices received for high-end bed frames with fully motorized adjustment mechanisms with low air-loss pressure relief mattresses averaged $3,891.52.

Table III.12
Homecare Beds

Product	Count	Average Price
Entry-level bed frame (manual), standard mattress	39	$1,146.45
Mid-range bed frame with pressure relief mattress	32	$1,805.59
High-end bed frame (fully electric) with low air-loss mattress	48	$3,891.52
Overall Average	119	$2,223.24
Distributors Sampled:	54	

2.6.2 Lift Chairs

Lift chairs are motorized, upholstered 3-position recliners which can have mechanical or motorized mechanisms to adjust the occupant's position to/from largely horizontal from/to sitting positions and which, further, use a motorized apparatus to lift the occupant to a standing position. The 61 distributors responding provided 92 prices for 2 lift chair brands, averaging $1,117.57. The lower cost brand averaged $989.90, the other $1,294.43.

Table III.13
Lift Chairs

			Sample Brand	
Product	Count	Average Price	A	B
Overall Average	92	$1,117.57	$1,294.43	$989.90
Distributors Sampled:	61			

2.6.3 Portable Person Lifts

Lift devices are small cranes. One type is designed to lift a person from a bed or bath. Another is used to change body position, usually in the bath. Two types of lifts were priced: hydraulics mechanisms designed to lift a person to/from a prone position, usually to or from a bed, stretcher or wheelchair; and an apparatus designed to either move a person to/from the bath or change position in the bath.

Table III.14 Portable Lifts		
Product	**Count**	**Average Price**
Hydraulic Lifts		
Manual, adjustable base	28	$1,468.66
Power, heavy duty, adjustable base	31	$3,159.42
Portable Bath Lift	42	$1,877.76
Distributors Sampled:	44	

A total of 44 distributors provided prices for a total of 101 prices for the three different lifting systems. Two types of portable hydraulic lift were sampled—a manual and power assisted model. A single, fully powered bath lift was priced. A total of 28 distributors provided prices for the manual system—with an average price of $1,468.66, while the average price of 31 heavy duty power systems was $3,159.42. A total of 42 prices were obtained for the bath lift, which averaged $1,877.76.

2.7 Modifications to the Home—Elevator systems

Home lift elevator devices move persons with mobility limitations from one elevation (floor or exterior ground level to another. Three types of devices were sampled:

A porch lift, a chair lift (a seat moving parallel to a staircase) and a 2-floor residential elevator. In each case the sample size is small and care should be taken in utilizing these figures, because prices can vary considerably depending upon the engineering requirements needed in installing these devices.[12] The prices for the three devices are provided in Table III.15.

A total of 17 suppliers provided porch lift prices. These averaged $4,616.94. Sixteen provided chair lift prices, averaging $3,165.13. Finally, a 1 floor, 2 stop elevator price was provided by 11 suppliers, averaging $6,922.10.

Table III.15 Home Elevator Systems		
Product	**Count**	**Average Price**
Porch lift	17	$4,616.94
Chair Lift	16	$3,165.13*
Elevator: 1 Floor, 2 Stop	11	$6,922.10*

[12] One supplier's price is excluded because it was an extreme "outlier".

2.8 Van/Automobile Conversions for persons with Mobility/Agility Limitations

In total, 5 detailed examples of vehicle conversions are provided. Three allow the persons to operate a motor vehicle and to ride in the vehicle as a passenger, two allow passenger access only. Each of the five conversions allows for a differing level of functional loss. The cost of motor vehicle conversion can vary substantially and is largely dependent upon the complexity and degree of vehicle redesign required to compensate for functional loss.

2.8.1 Modifications Allowing Driver Control[13]

2.8.1.1 Person with side weakness resulting from a stroke

In this example, the person has weakness of right side functioning as a result of a stroke (formally, a right cerebrovascular accident (CVA)). The person is able to fully utilize a hand and leg and is able to sit in a standard automobile seat. Three modifications are added to a mid-size automobile:

- Left foot accelerator;
- Spinner-knob (a knob on the steering wheel allowing one hand steering); and
- Sure-grip hand control

No structural modifications are required to the vehicle.

A total of 14 suppliers provided prices of whom 12 of whom provided itemized quotes. The average cost of these modifications was $1,200.34. Most of the complete quotes provided were within +/$200 of this figure.

2.8.1.2 Person with paraplegia

This modification is to a van and is designed for a person who has suffered a spinal injury at the 10th vertebrae (lower back) resulting in complete leg paralysis. This system priced does not require the vehicle to be substantially modified. Prices include a lift system with power sliding door, and the substitution of hand controls for all vehicle operations. In addition, it includes a number of safety features (cellular phone, emergency equipment) and a redundant set of controls to enabling an able bodied person to handle the vehicle. Pricing is based upon the following detailed specification:

- Power sliding door (which can be operated manually);

[13] Suppliers providing price estimates often provided incomplete or partial quotes for these modifications. As a result, tests used in determining the reliability of price estimates could not be used. In all cases, the prices reported should be used with considerable caution.

- Remote control to operate sliding door and lift;
- Magnetic switch located in rear tail light to be used as a back-up remote deactivation switch;
- Switches to operate lift and door located on dash;
- Fully automatic lift to accommodate wheelchair width of 27½" which can also be operated manually;
- Anti-skid flooring;
- Raised roof - mini top;
- Reinforcement cage;
- Raised doors in order to accommodate lift;
- Specialized seatbelt;
- Tie-down for wheelchair;
- Steering wheel hand control;
- Parking brake control modification to allow hand access;
- Remote control to operate ignition;
- 6 way Power seat base Cellular phone for emergency communication; and
- Fire extinguisher and winter survival kit.

Overall, 13 suppliers provided prices. However, some suppliers did not price all of the items listed above and 2 only provided a total job quote. An average of 9 suppliers provided prices for each of the items listed above. The average price of each these items was calculated, then summed and averaged again. This average was then merged with the total job quotes, to produce an estimated overall average price. The composite price thus calculated was $20,990.91 within $2,000 of the all of complete quotes provided.

Adding the cost to a full-sized North American van price at approximately $29,000 would produce a total estimated cost of $49,990.91.

2.8.1.3 Person with severe quadriplegia

In this scenario, adaptations are provided to a van for a person who has suffered a "broken neck" or more formally, injury to fifth and sixth nerve of the cervix. The resultant C5/6 Quadriplegia results in complete functional loss of hands and legs.

This system uses a toggle to control functions like windshield wipers, windows, heater, etc. and joystick mechanisms to control driving functions (brakes, accelerator, steering wheel). It also includes the mechanism to allow wheel chair entry to the vehicle (ramp, kneeling mechanism) and equipment required when riding as a passenger.

A major expense (just over 20%) is the re-engineering of the vehicle to allow the wheelchair in the driver's location (in particular, lowering the automobile floor).

It includes a number of safety features (cellular phone, emergency equipment) and a redundant set of controls to allow an able bodied person to drive as well.

The following detailed specification was provided:

- Power sliding doors with manual back-up;
- Remote control to operate sliding doors, ramp, door locks, ignition and alarm;
- Magnetic switch located in rear tailgate to be used as back-up remote deactivation switch;
- Fully automatic kneeling suspension;
- Fully automatic under floor ramp;
- Inside controls for operation of door and ramp, located on the dash;
- 8" lowered floor;
- Anti-skid flooring;
- Removable seat bases in both the passenger and driver positions;
- Safety-tested powered tie-down for wheelchair when client is in the driver and passenger positions; docking device to be installed on client's power wheelchair;
- Safety-tested manual tie-down for wheelchair and occupant restraint for client when traveling as a passenger;
- Automatic shoulder belt.
- Chest strap to attach to modified wheelchair;
- Horizontal steering offset to the right;
- Tri-pin steering device;
- 8" diameter steering wheel;
- Zero effort steering;
- Electrical back-up;
- Spinner knob on the steering wheel to enhance control for able bodied driver;
- Electronic gas/brake (EGB);
- Joystick to be programmed for "pull" for brake;
- EGB Tri-pin;
- Electric parking brake compatible with EGB;
- Voice activated switch to operate: turn signals, horn, wiper, washer, dimmer and cruise control;

- Touch switches for: keyless ignition, keyless starter, electric gear shift, power windows for both driver's side and passenger side windows, power door locks, headlights, power mirrors, power tie-down, interior lights, rear window wiper, heater/air conditioner controls
- Radio control to be modified so that client can access them;
- Auxiliary battery system; and
- Safety items including: winter survival kit, fire extinguisher, and voice operated cellular phone for emergency communication.

Overall, 11 suppliers provided prices—but many did not include all items. An average of 6 provided prices for each item and another 2 provided all-inclusive quotes. Because of the small sample size, large variance in the estimated costs of structural modifications to the vehicle and, as a result, high sample variance, median price is likely a more reliable indicator. The median price for this configuration was $87,645, the average price $95,931.28.

These items when added to a full-sized North American van price at approximately $29,000 produced a total vehicle price of $124,931.28.

2.8.2 Modifications Allowing Access to a Passenger with Mobility Limitations

2.8.2.1 Person with right side weakness resulting from a stroke, restricted to a wheelchair

In this example, the person has function loss as a result of right CVA (cerebrovascular accident), that is a stroke affecting right side functioning. As a result, the person is confined to a wheel chair and is unable to move directly from the wheelchair to an automobile seat. Two modifications are added to a van:

- Swivel Seat with power up/down feature; and
- Wheelchair lifter

No structural modifications are required to the vehicle.

A total of 12 suppliers provided prices, and an average of 11 pricing each item. The average cost of these modifications was $11,682.08. All but one of the suppliers who provided both of these costs had estimates within a $1,000 of the mean.

2.8.2.2 Conversion for person with severe quadriplegia

In this example, the person had suffered a “broken neck” or more formally, injury to fourth nerve of the cervix or neck. The resultant C4 Quadriplegia results in complete functional loss of hands and legs.

The configuration includes requirements to access a van (lift system, modifications of doors) and a lowered floor to allow for adequate head room. This latter item, which involves structural changes to the vehicle, made up about a third of the costs of the modifications.

This system includes a number of safety features (cellular phone, emergency equipment) and a redundant set of controls to permit an able bodied person to also drive.

The following were specified as requirements:

- Fully automatic lift with split platform and dual entry;
- 6" double lowered floor (lowered floor in driver passenger and cargo area);
- Anti-skid flooring;
- Raised roof with roll cage;
- Raised doors for clearance through doorway (client with this condition cannot flex head forward);
- Tie-downs for power and manual wheelchairs;
- Occupant restraint system with shoulder belt;
- Manual bi-fold sofa bed;
- Rear heater/air conditioner;
- Fire extinguisher and winter survival kit;
- Voice operated cellular phone for emergency communication;
- Insulation package;
- Lighting package; and
- Side windows for visibility with privacy tint

Overall, 13 suppliers provided prices—but many did not include all items. On average, 8 provided prices for each item and another 2 provided all inclusive prices. The average price for this configuration was $38,807.04. Quotes, however, varied from just over $30,000 to about $45,000. Much of this large variance is a result of differences in the estimated costs of structural modifications to the vehicle (i.e. lowering the floor, raising the roof).

These items were added to a full-sized North American van priced at approximately $29,000 to produce an estimated vehicle price of $67,807.04.

2.9 Mobility/Agility Support—Physiotherapy

The basic aim of physiotherapy is to help alleviate pain and restore normal movement and function patterns by the use of therapy which, for example, can involve manual handling; movement enhancement; electrotherapy; functional training, counselling and exercise plans; and the provision of supports or appliances.

The survey reported prices for various session time lengths. However, in most cases, data provided was for a one-hour session and thus data reported are for this length of service.[14]

Physiotherapy usually involves an initial assessment and, where necessary, a subsequent program of therapy. A total of 219 assessment fees and 217 therapy session fees were provided by respondents. An additional 27 service providers provided fees for a specific function--conditioning. Nationally, the average price for assessment was $47.61, for a therapy session $38.75 and for a conditioning session $37.73.[15]

Table III.16
Physiotherapy Service Prices

Service	Count	Average Price
Assessment	219	$47.61
Therapy session	217	$38.75
Conditioning	27	$37.73

3. Devices for Persons with Breathing Impairments

Price data are reported in this section for oxygen delivery systems enriching oxygen supply for persons with breathing difficulties and devices for assuring air passageways remain open during sleep (apnoea related devices). There were an inadequate number of responses for other breathing supports surveyed. These include all rented systems, low-flow oxygen cylinder systems, percussors (a device used to loosen mucous in the lung), postural drainage boards, resuscitators, ventilators and suction equipment.[16]

3.1 Oxygen Delivery Systems

An oxygen cylinder system with basic accessories was priced as well as a common accessory: an oxygen conserving device. In addition, an oxygen concentrator which increases the percentage of oxygen available from ambient air was priced. These prices are presented in Table III.17.

3.1.1 Base Cylinder Systems

Oxygen cylinder systems deliver "bottled" concentrated oxygen. They include an oxygen supply, connectors, an apparatus regulating oxygen flow and a mask. In total, 16 prices were obtained for 2 types of oxygen systems. These varied in the size of the oxygen cylinder and both included regulator, mask and other disposable items. However there

[14] Where respondents provided fees for service lengths used in their practices (per shift, per week etc.) only, these were converted to fees per hour. Where multiple service lengths were provided, these were averaged

[15] Eight respondents also provided a price for a re-conditioning session. The average price for this service is not provided because of the small sample size.

[16] Survey respondents indicated that many of these devices are frequently rented. This may be the reason for the large number of devices for which adequate sample size was not obtained.

was no significant difference in the prices of the two systems. Table 111.17 indicates that the average price of these systems was $399.42.

3.1.2 Pulse Dose Oxygen conserving device

A pulse dose oxygen conserving device is an accessory usually used with an oxygen delivery system which regulates oxygen flow from a cylinder or elsewhere so that it is delivered only when necessary (during the early part of the inhalation process). Using an oxygen conserving device considerably extends oxygen cylinder life. A total of 22 pulse dose oxygen conserver prices were obtained from 16 providers. The average price of oxygen conservers was $1,173.35.

3.1.3 Oxygen Concentrator

Oxygen concentrators are mechanical/electronic devices which increase the level of oxygen available from regular air. Prices for 20 concentrator devices averaged $2,064.87.

Table III.17
Devices for Persons with Breathing Impairments

Product	Count	Average Price
Oxygen Cylinder System (including gaseous contents, cylinder, regulator, disposable mask, tubing)	16	$399.42*
Distributors Sampled:	12	
Pulse dose oxygen conserver	22	$1,173.35*
Oxygen concentrator with oxygen sensor device (5 lpm)	20	$2,064.87
Distributors Sampled:	16	
CPAP Devices		
Simple CPAP Device	53	$1,375.92
Distributors Sampled:	25	
Bi-level CPAP Device	21	$3,283.05
Distributors Sampled:	16	

3.2 CPAP Systems

CPAP (Continuous Positive Airway Passage) devices assist persons who have difficulty breathing while they sleep (a condition called sleep apnoea). Apnoea is usually a result of an obstruction in the air passageway due to muscle relaxation in surrounding tissue during sleep (in less serious cases, this is a cause of snoring). CPAP devices deliver sufficient air pressure to slightly inflate the passage way to assure that it remains open. They are usually combined with an air humidifier allowing the air passage way remains adequately moist.

Fifty-three simple CPAP prices (6 different brands/models) were obtained from 25 distributors. These averaged $1,375.92. There was very little difference in the

price of CPAPs among the 6 different brands/models priced. The average price varied from a low of about $1,300 to a high of just under $1,500.

A second more complex type of CPAP, a bi-level positive airway pressure apparatus was also priced. Instead of just providing air at a constant, steady pressure during sleep, the machine "senses" breathing levels and varies pressure accordingly. Bi-level CPAPS provide needed higher pressure to prevent apnoeas when inhaling but reduce pressure when exhaling, thus reducing the work of breathing out.[17] There were 21 bi-level systems priced (5 brands/models) from 16 distributors. The average price was $3,283.05. Most of the prices for these devices were within a few hundred dollars of the average.

4. Ostomy, Colostomy, Urostomy and Incontinence Products

Three types of waste elimination systems/aids were priced: ostomy pouch systems and their elements, catheters and incontinence diaper products. Prices for two types of catheters (indwelling[18] and condom) and for washable incontinence briefs were not reported due to insufficient sample sizes.

4.1 Ostomy, Colostomy, Urostomy Products

Ostomy systems, designed to capture bowel and/or bladder waste connect to a surgically-created opening called a stoma in the abdomen. These are required when surgery has been required to remove the bowel or urinary system.

An ostomy system usually includes a paste or powder which creates a seal between the device and the skin and prevents leakage; a wafer which adheres to the skin and a pouch. In one piece systems, the entire apparatus is removed, in two piece systems, the wafer and pouch are connected through a flange system, allowing the removing of the pouch while leaving the wafer/paste in place. Wafers can vary in size and shape, depending upon physiology and the placement of the stoma. Some wafer products, designed for extended use are slightly more expensive. Bags are open ended (drainable for re-use) or close ended (disposable). Depending on the type of ostomy a filter may be added, for elimination of gaseous odours—these add about $2 to the cost of a 10 count package.

4.1.1 Stoma Paste

The average of 80 prices provided by 44 distributors for a tube of stoma paste (2 brands) was $14.48. As table III.18 shows, there was little variance in the price between brands.

[17] One of the models priced was a VPAP system which senses and compensates for pressure differences due to mask air leakage. However the prices of this device provided were not significantly different than the other Bi-level Bi-Pap systems sampled.

[18] Prices for indwelling and condom catheters are not provided due to insufficient sample. Indwelling catheters are rarely purchased by users. Rather, they are almost always inserted by a medical practitioner and are covered through provincial health programs.

4.1.2 Two Piece Systems (Separate Wafers and Bags)

A total of 257 prices were obtained from 40 distributors for 9 different types of wafers. The average price was $33.63 for a package of 5.[19] The prices of 4 commonly available brands/products are reported below. There was little variation in the price of standard wafer barriers—most brands varied in and around $30.00. However, there are more expensive products (for example, brand A priced at an average of $46.49) which require less frequent replacement.

Table III.18
Ostomy Products

			Sample Brand			
Product	**Count**	**Average Price**	**A**	**B**	**C**	**D**
Stoma Paste	80	$14.48	$14.76	$14.16		
Distributors:	44					
Two Piece Systems						
Wafers (prices are for 5 or half of 10 pack)	257	$33.63	$46.49	$31.22	$30.62	$30.27
Distributors:	40					
Pouches						
Closed End (30 count)	102	$61.23	$64.05	$58.93		
Open End (10 count)	118	$35.56	$32.05	$30.90		
Distributors:	40					
One Piece Systems						
Closed End (15 count)	26	$56.06				
Open End (10 count)	59	$49.61				
Distributors:	34					

Disposable closed-end pouches come in larger packages than the open models. A total of 102 closed-end pouch prices (4 brands) were obtained. A 30-count package of these pouches had an average price of $61.23. A total of 118 10-count packages of re-useable open-ended pouch prices (4 brands) were obtained. The prices of these packages averaged $35.56.

4.1.3 One Piece Systems (Wafer and Bag Fused)

Three different one piece systems were priced—two with an open (drainable) bag, and one with a closed bag. The average price of the 59 open bag systems (10-packs) was $49.61. The average price of the 26 close ended system prices (15-packs) was $56.06.

[19] Packages containing different numbers of wafers were priced. Prices were adjusted to the most common size—a five count.

4.2 Catheters

These are products inserted into the urinary tract to allow for elimination either for a protracted period (indwelling) or intermittent use (inserted into the urinary tract) or condom (used by men and covering the urinary tract opening). Sufficient data was only available for intermittent catheters. The average price provided by the 32 suppliers for a box of 100 intermittent catheters was $107.85.

4.3 Incontinence Products

These products are variants on adult diapers. Some products are disposable, others are washable and they provide different levels of absorbency. Sufficient data was available to report on disposable brands only. There are also two types of products—briefs and pads (inserted into briefs or held in place through a belt device).

A total of 150 prices from 70 distributors were obtained. The overall average was $24.39.[20] There was relatively little difference in brand average prices--these varied from a low of $23.07 to a high of $26.83.

Table III.19
Incontinence Briefs/Pads

			Sample Brand		
Product	Average Price	Count	A	B	C
Briefs					
Disposable (22-26 pack)[21]	$24.39	150	$26.83	$25.58	$23.07
Distributors:		70			
Pads	$26.81	124	$31.41	$16.70	
Distributors:		73			

A total of 124 prices were obtained from 73 suppliers of absorbent pads. The average price of pads was $26.81. Brand A noted above provided extra-absorbency and was priced at an average of $31.41, while brand B, average of $16.70.

5. Diabetes Control Products

Two types of diabetes control products were priced: glucose monitoring system and insulin/insulin needles.

[20] Note that unit counts in packages varied from 22 to 26. In addition, product varied in absorbency levels. Smaller packages tended to contain more bulky "extra-absorbency" garments.

[21] Package size varies with the size of the brief.

5.1 Glucometers and Related Supplies[22]

Glucometers report blood sugar levels. They are used with disposable lancets which extract small amounts of blood and disposable chemically treated test strips used in making readings.

A total of 113 glucometer prices were obtained from 29 distributors. The overall average reported was $35.20. Price variability was not large between brands—average prices by varied from just under $30 to just under $40. The average price of 100 test strips, obtained from 23 suppliers was $86.31. Two brands of lancets, each of which came in boxes of 200 were obtained from 30 distributors. The average price was $16.11. There was little variability in the two brands of lancets priced—the less expensive brand averaging about $13, the other, just under $19.

Table III.20
Glucometers and Related Supplies

Product	Count	Average Price
Glucometers	113	$35.20
Distributors	29	
Test Strips	23	$86.31*
Lancets	53	$16.11
Distributors	30	

5.2 Insulin and Insulin Needles/Pens

There are a number of different insulin products available, dependent upon the nature of the diabetic condition. The most common types/brands of insulin were priced: Humulin N. and Novolin GE NPH. Both are injectable, come in 100 units per millilitre concentrations and were in 10 ml. vials. Humulin N provides intermediate-acting insulin with a slower than average action onset and a longer duration of activity (up to 24 hours) than a "typical" insulin. Novolin GE NPH is used to treat insulin-resistant patients needing high doses. The average of the 101 prices for Humulin N was $21.69, for Novolin GE NPH $21.56.

Insulin needles also vary in type, depending on the needs of the diabetic. Three types of needles were sampled varying in gauge and size (1 brand was specifically for children). All deliver up to .5 cc's of insulin.[23] There were no significant variations in the 61 prices obtained from 31 distributors. The average cost of the 100 lot needles sampled was $28.02.

[22] Glucometers also may require normalization solutions, used for recalibration. These were not sampled.

[23] Insulin can also be delivered through a pen system. With the needle system priced. Insulin is first extracted from a vial. With the pen, insulin is already stored in the delivery system.

Table III.21 Insulin Syringes/Glucometers and Related Supplies		
Medication/Product	**Count**	**Average Price**
Insulin (Injectable, 100 Unit/ml 10ml vial)		
Humulin N.	101	$21.69
Novolin GE NPH	101	$21.56
Syringes/Insulin Pens, 100 Count	61	$28.02
Distributors	31	

6. Treatment of Psychiatric conditions

The costs of typical prescriptions for the treatment of four psychiatric conditions and the costs of a single 1-hour session of psychotherapy were priced.

6.1 Drugs used in treating psychiatric conditions

A selection of seven drugs which are used in the treatment of common psychiatric conditions were priced from a total of 100 suppliers. Prescription dispensing charges are included in the price of these drugs. A total of 8 sets of prices were collected, 2 brands of one type of drug, and a single brand of 6 other drugs. These drugs are frequently used in the treatment of four common psychiatric conditions. However, some of these also are found to be useful in the treatment of other brain-related disorders (e.g. seizures and extreme sleep disorder).

The seven drugs priced were:

- Two antidepressants:
  - Paroxetine used to reduce anxiety and depression. The average price of this drug was $82.99 for 40 tablets containing 20 milligram doses; and
  - Sertraline used to treat depression, obsessive-compulsive disorders and panic attacks. On average, this drug was priced at $82.61 for 40 tablets containing 50 milligram doses.
- Two anti-psychotic Medications:
  - Olanzapine used in the treatment of schizophrenia. The average price of this drug was $231.66 for 28 tablets containing 10 milligram doses and
  - Risperidone used in treating hallucinations, delusions, and hostility. On average, this drug was priced at $144.02 for 40 tablets containing 3 milligram doses.
- Two brands of Methylphenidate, used in treating children with attention-deficit hyperactivity disorder (ADHD). This medication is also used to treat narcolepsy (uncontrollable desire for sleep or sudden attacks of deep sleep). Brand A has an average price of $42.87 for 60 tablets containing 20 milligram doses, while Brand B is priced at $24.23 for 80 tablets containing 10 milligram doses.

- Two manic-depressive (bipolar) disorder treatments (both medications have other applications):
  - Carbamazepine (also commonly used in the treatment of seizures and, certain types of nerve-related pain relief). This medication is priced at an average of $63.99 for 80 tablets containing 400 milligram doses; and
  - Lithium Carbonate (also used an antipsychotic and antidepressant) with an average price of $18.00 for 90 tablets containing 300 milligram doses.

These data, with counts of distributors providing price data, is summarized in Table III.22.

Table III.22
Drugs Used in Treating Psychiatric Conditions

Medication	Count	Average Price
Anti-depressants		
Paroxetine (40 tablets, 20 milligrams)	99	$82.89
Sertraline (40 tablets, 50 milligrams)	91	$82.61
Anti-psychotic Agents		
Olanzapine (28 tabs, 10 Milligrams)	99	$231.66
Risperidone (40 tabs, 3 Milligrams)	95	$144.03
Attention Deficit Hyperactivity Disorder Medication:		
Methylphenidate Brand A (60 tabs, 20 Milligrams)	99	$42.87
Brand B (80 tabs, 10 Milligrams)	98	$24.23
Bi-Polar Disorder Medications (both have other uses)		
Carbamazepine (80 tabs, 400 milligrams)	89	$63.99
Lithium Carbonate (90 tabs, 300 milligrams)	90	$18.00

6.2 Psychotherapy Services

A total of 96 prices for one hour assessments and 177 prices for one hour therapy sessions were provided. An additional 29 psychotherapy service providers gave prices for other services/psychological testing.

The average price for assessment nationally was $115.63, for a therapy session $104.02 and for other services (i.e. psychological testing) was $115.00.[24]

[24] Respondents also provided prices for 30 minute sessions but these were, with one exception, within $2 of half the price of a one hour session. In addition, 9 therapists provided prices for administering the *WAIS-III* intelligence test. The average price for this service is not provided because of the small sample size.

Table III.23 Psychotherapy Service Prices		
Service	**Count**	**Average Price**
Assessment fee	96	$115.63
Fee for one therapy session (1 hr.)	177	$104.02
Other services/psychological testing	29	$115.00

7. Supports for Person who are Blind and Persons with Sight Impairment

Two sets of supports are provided for persons with significant sight impairment and those with near or complete sight loss (persons who are blind) because of the different needs of these two populations. For persons who are blind, support primarily involves aid in using non-visual sensory data. For those with severe sight impairment, supports primarily involves magnifying or enlarging, brightening and enhancing contrast in visual displays or cues.[25]

As noted above, the methodology utilized for collecting these prices departs significantly from that of other parts of the survey. The Canadian National Institute for the Blind (CNIB) is the primary source for many devices for the sight impaired/blind, and as a result, with the exception of eye-glasses/contact lenses, prices reported are from the CNIB price list for the period 2000-01. For very commonly purchased devices, national sales data for the top 100 best-selling sales items are also used. Prices reported for these goods are from the CNIB list weighted by the number of items sold of each of the brands/models available. Volumes of sales are included to provide the reader with a flavour for the demand for these types of goods. For eye-glass/contact lens prices, data was taken from the October, 2001 consumer prices survey.

One very commonly used set of items—Braille books and large type books were not priced because of the higher variability in the price/type of these items.

7.1 Supports for the Blind

7.1.1 Canes and Accessories

Two different brands/types of canes were priced—a mobility cane used in way-finding or the other, used to provide support. Each is available in three, identically priced models. In 2000, 1,278 canes were sold at an average price of $21.78.

The mobility cane folds, comes with a rubber tip grip bottom, handle and connecting elastics. The average price for the 626 way finding canes sold was $20.00.

[25] In the context of colour blindness, cue substitution (shape for colour, for example) is often used.

The support cane is made of moulded plastic, has a height adjustment and a rubber tip grip bottom. A total of 652 of these were purchased at an average price of $23.50. These types of cane can also be used by some persons with mobility limitations.

In addition, three frequently purchased accessories were priced:

- Replacement cane elastics for the folding mobility canes—163 were purchased at a price of $0.30.
- Roller tips used for some types of mobility canes (the cane slides on a ball bearing allowing continuous contact with the ground, providing an alternative method for way finding—a sweeping motion rather than the more common tapping motion)—163 of these were purchased at $11.00.
- Flip-up ice spikes which replace grip bottoms on support canes—166 were purchased at a price of $8.80.

Table III.24
Canes/Accessories for the Blind

Product	Count	Average Price
Canes	1,278	$21.78
Way Finding Canes	626	$20.00
Support Canes	652	$23.50
Accessories		
For Way finding Canes:		
Replacement cane plastics	163	$0.30
Roller Tips	163	$11.00
For Support Canes:		
Ice Spikes (flip-up)	166	$8.80

7.1.2 Writing Aids/Stationery

Writing and reading for the blind primarily uses the Braille system of embossed dot patterns. Braille embossers are devices designed to produce Braille writing on paper. They can be as simple as slates/frames and stylus or manual, Braille typewriters such as the Perkins Brailler. However, there are also more advanced computerized brailing devices such as the Mountbatten Brailler. There are also high speed computer Braille printers.

7.1.2.1 Braille Slates/Frames and Styluses

Braille slates/frames and stylus systems are used to manually emboss Braille dots. Braille slates are part of a frame such that a two-line slate can be stepped down a page with a hinge system to give a whole page of Braille. Plastic slates are lighter than metal ones but tend to have a lower life expectancy. Frames without hinges only work with a fixed size of paper, but are very popular as a highly portable note-taking device.

The stylus handle design significantly affects the ease of use. The easier to use, large handle styluses, however are less convenient to carry.

The weighted average price of the 16 slates commonly purchased at the CNIB is $56.61. A total of 790 basic, 4-line plastic slates were sold at $6.50. However, this was the minimum price slate—and prices varied to a maximum of $158.50 for a 28-line, full page heavy duty, metal slate.

The average price of the 6 CNIB styluses available at CNIB is $6.00. The "Erasable" stylus is priced at $21.50.

7.1.2.2 Braille Typewriters

The average price of the five manual Perkins Braillers sold at CNIB is $1,393.20. The electric Perkins Brailler is priced at $1,750.

7.1.2.3 Note takers

Note takers are computerized devices which have either standard or Braille-input keyboards. They usually have built-in speech output and/or Braille displays. They may be either palmtop or laptop devices. Standard-key note takers are used by persons with vision impairment, Braille note takers by persons who are blind.

Common features that come with note takers include word processing, diary, telephone directory, database and communications functions, and plugs which allow the user to connect peripheral devices such as printers, modems and Braille embossers.

The note taker available at CNIB provides a Braille-input keyboard and Braille display/computer output at a price of $5,365.00.

7.1.2.4 Common Stationery

Three types of Braille paper were priced. (See Table III.25) Each is rawhide tag manila and regular weight, and contains approximately 250 sheets per package. The average price paid for 1094 purchases of the best selling Braille paper was $24.34.

In addition, CNIB sells a number of Braille calendars. In 2000-01 532 were sold at a price of $2.00.

Table III.25 Braille Paper		
Product	Count	Average Price
Braille Paper (250 sheet package)	1,094	$24.34
8.5 x 11 inches	560	$14.25
11 x 11 inches	322	$17.75
Computer paper, 12.5 x 11 Cerlox	212	$61.00
Embossing Sheets	1,319	$3.00
Braille Calendar	532	$2.00

7.1.3 Variable Speed Tape Recorders

A total of 12 cassette recorders were available from CNIB at an average price of $263.33. Prices varied from a minimum of $62.50 for a portable to $528.50 for a large, desk-top model. Most prices were near or at the overall average.

7.1.4 Computer Voice Synthesizer Software

Five types of common computer software used by persons who are blind are available from CNIB. Three of these convert data from either a file or a screen display to voice. The average price of this software was $1,328.33. Two also included scanning capacity and convert written documents to computer files, as well as providing a voice synthesizer. The averaged price of these two packages was $1,795. These software packages can also be used with electronic Braille display systems (see below).

7.1.5 Electronic Braille Display Systems

An electronic Braille display system is a device designed to present computer screen text as Braille. A Braille Display uses a series of electronic "pins", which are either in the up or down position. Text on the screen is displayed as Braille through the pattern of up and down pins. Braille Displays make excellent computer access devices for Braille literate persons but are very expensive. The model available at the CNIB is priced at $18,708.

7.1.6 Talking Time Pieces

Three types of time pieces were priced—talking clocks, wrist watches and a talking key chain. All prices include batteries.

A total of 1,406 talking clocks were purchased in 2000 at an average price of $20.65. The cost of the four different devices ranged from a low of $14.95 to a high of $28.50.

In 2000, a total of 4,650 talking wrist watches were purchased, at an average price of $19.24. Four different brands were commonly sold, varying from a price of $9.00 to a

high of $65.00. Price varies considerably with watch style and features. For example, the more expensive watches have a gold or silver casing and choice of alarm sounds, while the lower range watches are encased in plastic. Prices for the brands noted in Table III.26 are the same for both men's and women's styles.

Talking, time-keeping key chains cost an average of $11.00 and in 2000, 1,652 were sold.

Table III.26
Talking Time Pieces

			Sample Brand							
			A		B		C		D	
Product	Count	Average Price	Count	Average Price	Count	Average Price	Count	Average Price	Count	Average Price
Talking Clocks	1,278	$21.78	255	$28.50	327	$20.50	281	$14.95	543	$20.00
Talking Wrist Watches	4,650	$19.24	583	$65.00	491	$24.00	2,358	$11.50	218	$9.00
Talking Key Chain	1,652	$11.00								

7.1.7 Sunglasses with Non-Corrective Lenses

A total of 4,570 regular sunglasses were sold by CNIB in 2000 at an average price of $12.35. Sunglasses with UV protection were most popular. A total of 3,544 pairs were sold in 2000 at an average price of $13.00. The remaining 631 pairs of regular sunglasses were sold at $8.00.

7.1.8 Interpreters for the Blind/Deaf

See Section 1.7, Interpreters/Interveners for the Deaf/Blind.

7.2 Supports for the Sight Impaired

7.2.1 Visual Aids

Two major types of visual aids were priced glasses/contact lenses and various types of magnifiers. In addition, one popular accessory—flip-top sunglasses was also priced.

7.2.1.1 Eye-Glasses/Contact Lenses

A total of 116 prices were gathered from retailers for eye glass/lenses only and eye glass/frame combinations as well as 114 prices for contact lenses through the *Consumer Price Index Survey*. The average price for lenses only was $70.49. Glasses with plastic frames averaged $162.04 while metal frames were, on average, slightly more expensive ($168.21). The average price for contact lenses was $95.59.

Table III.27 Eye Glasses and Contact Lenses		
Product	**Count**	**Average Price**
Eye Glasses		
Lenses Only (Plastic)	116	$70.49
Glasses with plastic frames	116	$162.04
Glasses with metal frames	116	$168.21
Contact Lenses	114	$95.59

7.2.1.2 Accessories: Clip-on Sunglasses

Clip-on sunglasses are a glasses accessory which is among the top-100 sellers at the CNIB. In the year 2000, a total of 576 clip-on glasses were sold at a price of $2.50.

7.2.1.3 Binoculars/Binocular Systems

These systems binoculars/telescope systems usually attach onto glasses to magnify text or images. Prices range from $100.00 for binoculars on a glass frame to computer/infrared systems that constantly adjust magnification levels based upon the distance of the image being viewed. An example of such a system, which is integrated with an eye-glass apparatus, is priced at $1,062.70.

7.2.1.4 Hand Held Magnifiers

Magnifiers vary in strength and can come with small lights or "illuminators". The average price of the 4,531 magnifiers sold in the year 2000 by the CNIB was $33.70. At one end of the spectrum in this group are simply designed light, plastic magnifiers, which are priced in the $9.50-$14.50 range (for example, Brand A and B in Table III.28). At the other are more solidly built models with glass lenses and/or illuminators which are priced in the $43.50 to $50.00 Range.

Magnifying sheets were also priced. These are plastic covers that fit over and magnify book or newspaper pages. A total of 2,180 sheets were sold in 2000 at a price of $2.20.

Table III.28 Hand Held Magnifiers								
			Sample Brand					
			A		B		C	
Product	**Count**	**Average Price**	**Count**	**Average Price**	**Count**	**Average Price**	**Count**	**Average Price**
Magnifiers/Hand Readers	4,521	$33.70						
3.5-4.4X magnifier	1,514	$32.52	164	$10.75	396	$9.50	784	$50.00
5X–11X magnif. w/light	1,076	$43.50						

7.2.1.5 Video Magnifiers/CCTVs

Screen magnifiers enlarge what is displayed on a computer monitor so people with vision problems can read the text on the screen. Closed Circuit Televisions (CCTVs) are devices that use a camera to magnify printed text and images placed under it. These are then presented enlarged on a television screen or computer monitor.

CNIB has two electronic video magnifiers that connect to an ordinary TV. The black and white only magnifier is priced at $1,119, while the colour model costs $1,499.

CNIB also has a number of full CCTV systems which include the monitor and TV screen, and which can, further, be connected to a computer. The average price of the black and white CCTVs offered is $2,875 and the colour CCTVs has an average price of $4,348.

7.2.1.6 Screen Magnification Software

Screen Magnification software significantly enlarges screen text and graphics to a size that a vision impaired user can easily view. CNIB offers two such products at an average price of $814.50

7.2.2 Other Aids for the Sight Impaired

7.2.2.1 Stationery

Three different writing pads with bolded lines were priced. These pads include 100 white sheets of black thick lined writing paper. In total, 1,200 pads were purchased in 2000, each at $3.80.

In addition, 10,829 large print calendars were purchased at a price of $2.00.

7.2.2.2 Large Button Telephones

Two prices for large button telephones with high sales volumes were obtained from the CNIB price list. The first model phone also has speaker phone capacity. A total of 244 of these phones were sold in 2000 at a price of $33.00.

The second phone provides features for persons who are also hearing impaired—a hearing aid attachment and an adjustable very loud ringer. In 2000, 226 of these were sold at $70.00.

Table III.29 Large Button Telephones		
Product	**Count**	**Average Price**
Phone with speaker phone capacity	244	$33.00
Phone for hearing impaired	226	$70.00

8. General Support Services—Nursing and Support in Undertaking Daily Activities

Prices were obtained for a range of general support services required to treat and/or support persons with various health and activity limitations. These include nursing services and support in home related activities. The survey of support services reported on prices for various lengths of sessions. However, in most costs, these were either directly or very close to multiples of one-hour sessions. As a result, in this chapter, fees reported are for a single, one-hour session.[26]

8.1 Nursing Services

Four types of nursing services were surveyed: 2 tasks performed by a registered nurse (RN): regular services and special tasks (such as dialysis), and regular tasks performed by an RN assistant, and by an orderly. Fees provided are averages per hour of service. A total of 69 service providers provided fees for RNs, averaging $36.82. Fifty-five provided special task fees for RNs—averaging $40.35. A total of 61 RN Assistant fees were gathered, averaging $26.68/hour and finally, 29 orderly fees were received, averaging $17.40.

Table III.30 Nursing Service Fees		
Service	**Count**	**Average Price**
Registered Nurse	69	$36.82
Registered Nurse (Special tasks)	55	$40.35
Registered Nurse Assistant	61	$26.68
Orderly	29	$17.40

8.2 Support in Undertaking Daily Activities

Three types of support service fees for providing support in undertaking daily activities were priced: personal supports (i.e. help with dressing, bathing, eating, etc. as required), home services (cleaning, housekeeping, etc. as required) and companion services (providing services such as support in travel, reading, etc.). Table III.31 shows that the

[26] Where respondents provided fees for service lengths used in their practices (per shift, per week etc.) only, these were converted to fees per hour. Where multiple service lengths were provided, these were averaged. In the case of nursing services, per hour fees tended to be slightly higher (5%)--ranging from about $1.75/hour for normal activities of a registered nurse to $.85/hour for an orderly.

average of the 69 fees received for an hour of personal supports is $17.04, that the 72 home service prices received $15.64 on average and that the 57 companion service fees received an average of $14.41.

Table III.31
Supportive Service Fees

Service	Count	Average Price
Personal Supports	69	$17.04
Home Services	72	$15.64
Companion	57	$14.41

9. Local Transportation Fares

In this section, the results are presented of a survey of public transit authorities and taxi services providing transport to persons with disabilities. Data was obtained from 58 public transit authorities and 57 taxi services covering most mid- and large-size Canadian municipalities.

9.1 Public Transit

The fare structure among municipalities providing public transit fare information for persons with disabilities does not usually include separate fares for persons with disabilities. Rather, there are, in most cases four standard fare classes: adult, children, students and seniors. Furthermore, in many cases, there are discounts for using tickets and longer term passes (usually monthly). Table III.32 provides cash fares for single ticket/token prices and monthly pass costs.

Table III.32
Public Transit Single Fares and Monthly Bus Pass Prices

Non-senior Adults	Municipal Services Reporting	Average Fare	% Discount vis-à-vis Non-senior Adults
Cash	57	$1.97	
Tickets/Tokens	57	$1.80	
Monthly Pass	29	$55.54	
Students			
Cash	57	$1.88	
Tickets/Tokens	57	$1.69	24.6%
Monthly Pass	29	$46.02	58.6%
Children			
Cash	57	$1.78	
Tickets/Tokens	57	$1.65	29.8%
Monthly Pass	25	$42.63	80.0%
Seniors			
Cash	57	$1.88	
Tickets/Tokens	57	$1.72	22.8%
Monthly Pass	27	$40.78	74.1%

All but one city had cash/ticket token fares. The average fare paid in these 57 cities for non-senior adults was $1.97 cash or $1.80 in tickets/tokens.

Exactly half of the surveyed municipalities had monthly bus passes. The average monthly bus pass in the 29 cities where these were available (roughly half of all municipalities) was $55.54.[27]

In some cities, students, children and/or seniors received discounts. In 24.6% (or 14) cities, students paid lower cash/ticket/token fares, 29.8% (19) had lower fares for children and 22.8% (13) had lower fares for seniors. On average, students and seniors paid about a dime less, while children paid about $0.15 less. However, where passes were available, a majority (58.6% or 15 cities) of students paid less—by an average of $9.52/month, 80% of municipalities (20) had children paying less—leading to an average saving of $12.91 and 74.1% of cities (21) had seniors passes that were less—with an average saving of $14.76.

9.2 Taxi Services

A total of 57 cities provided fares for a "typical trip" using local taxi services. Fares reported are for the transportation of a handicapped person with a wheelchair in a taxi and do not include waiting time, hourly rates, special rates for trips such as shopping and going to an airport, or rates for deluxe vehicles. The average fare reported was $7.30.

[27] A few cities reported multi-price fare structures. These include zone pricings (2 cities), express fares (2 cities) daily passes (5 cities) and annual passes (1 city). Because these more complex structures are relatively rare, these fares are not reported.

IV. Factors Affecting Price Variations for Selected Assistive Devices, Aids and Services

In this chapter, exploratory analyses of the effect of three factors which can affect pricing are examined for a subset of aids, devices and services: region, area size and supplier pricing (see Chapter II for details and for a description of the methodology used).

Descriptions of the various aids/devices and services sampled can be found in the previous chapter.

1. Hearing Related Assistive Devices and Services

1.1 Devices used by the Hearing Impaired[28]

Sufficient data was available to undertake analysis for hearings aids (8 brands) and average repair costs. Table IV.1 provides average prices by region.[29]

Table IV.1
Average Prices—Hearing Aids, Hearing Device Repairs by Region

	Atlantic		Quebec		Ontario		Manitoba/ Saskatchewan		Alberta		British Columbia	
Device	Count	Average Price	Count	Average Price	Count	Average Price	Count	Average Price	Count	Average Price	Count	Average Price
CIC A	8	$2,307	15	$2,438	33	$2,036	8	$2,114	9	$2,412	11	$2,543
CIC C	12	$1,926	13	$2,081	32	$1,644	8	$1,543	15	$1,931	10	$2,038
ITC A	11	$2,102	10	$2,287	31	$1,880	8	$1,859	11	$2,421	9	$2,348
ITC C	8	$1,241	12	$1,753	30	$1,121	x	x	x	x	11	$1,352
ITE D	10	$884	13	$1,316	31	$897	7	$878	10	$1,216	8	$1,050
ITC A	7	$2,098	9	$2,387	29	$1,942	7	$2,104	7	$2,264	8	$2,286
ITE C	7	$1,466	13	$1,837	31	$1,265	8	$1,412	6	$1,455	9	$1,513
ITE D	x	x	7	$1,553	30	$1,231	6	$1,317	x	x	7	$1,293
BTE A	6	$1,551	11	$1,790	29	$1,408	x	x	x	x	10	$1,950
BTE C	8	$845	15	$737	31	$826	6	$769	9	$1,024	9	$899
Av. Repair	7	$299	12	$287	24	$261	x	x	7	$339	6	$306

[28] Prices from a total of 105 suppliers were used for this part of the analysis (12 from British Columbia, 14 from Alberta, 11 from Manitoba/Saskatchewan, 37 from Ontario, 18 from Quebec and 13 from Atlantic Canada).

[29] Here and below regional averages are reported where there are more than 5 observations. Where sample sizes are five or fewer, an "x" is shown rather than the count and average prices.

Average prices for hearing aids and repairs were:

- Lower in Ontario and Manitoba/Saskatchewan in comparison to other parts of the country. On average, prices in these provinces were about 9% lower than the national average;
- Highest in Quebec, averaging 15% above national average;
- Prices were an average of 8.5% higher than the national average in Alberta; and
- Within 1% of the national average in Atlantic Canada

On average, regional differences in prices accounted for just under a third of the total differences in the costs of these devices/services.

Another fifteen percent of price differences is a result of the tendency for suppliers to consistently charge high, medium or low prices, irrespective of the product and the region.

1.2 Interpreters/Interveners for the Deaf/Blind

There were no discernable differences in price on the basis of the population size of the communities where the distributors were located. Table IV.2 shows some price difference in the averages across the regions but there is insufficient statistical evidence to infer that these were not caused by random variation. Further, there was no evidence of differences in rates by size of community.

Table IV.2
Average Daily Tariff, Interpreters for Blind/Deaf Persons by Region

Region	Count	Average Price
Atlantic	11	$401.36
Quebec	13	$379.23
Ontario	21	$406.86
Manitoba/Saskatchewan.	6	$383.33
Alberta	15	$400.67
British Columbia	9	$433.33

2. Mobility Related Devices Services

2.1 Mobility Aid and Devices

There was sufficient data to analyse price patterns for 7 types/brands of mobility aids and devices—canes, fore-arm crutches, 3 types of scooters, 1 type of manual wheel chair (a low-cost "hospital" model) and one model of lift chair. Prices from a total of 105 suppliers were used for this part of the analysis (12 from British Columbia/Yukon, 11 from Alberta, 18 from Manitoba/Saskatchewan, 27 from Ontario, 23 from Quebec and 15 from Atlantic Canada). Average prices are provided by region in Table IV.3.

Table IV.3
Average Prices--Selected Mobility Devices by Region

	Atlantic		Quebec		Ontario		Manitoba/Sask.		Alberta		British Columbia/Yukon	
Item	Count	Average Price	Count	Average Price	Count	Average Price	Count	Average Price	Count	Average Price	Count	Average Price
Adult Cane	11	$35	21	$44	16	$56	19	$37	9	$57	11	$42
Forearm Crutch	12	$138	22	$89	20	$149	16	$116	10	$146	11	$154
Scooter F	7	$2,861	7	$3,357	16	$3,180	8	$3,148	X	x	7	$3,283
Scooter B	7	$4,075	7	$4,314	20	$4,200	7	$4,020	X	x	9	$4,261
Scooter C	7	$3,914	7	$4,021	19	$3,992	7	$3,934	X	x	8	$4,122
Manual Wheelchair C	10	$309	14	$328	14	$302	6	$350	X	x	7	$350
3-Position Lift Chair	12	$938	7	$1,067	14	$982	10	$1,046	X	x	5	$1,052

It was found that there was no significant relationship between area and the sales price of either scooter B or the 3-position lift chair. For the other devices:

- Prices were consistently lower, averaging about 5% lower than the national average in Manitoba/ Saskatchewan and the Atlantic provinces.
- Prices were consistently higher in Alberta and British Columbia/Yukon by an average of about 10%.
- There was no consistent pattern in Quebec or Ontario.

Regional differences in prices accounted for approximately one-fifth of the total differences in the costs of these seven devices.

There was a weak tendency for suppliers to consistently provide high, medium or low prices for scooters and wheelchairs only. This accounted for approximately one-sixth of differences in prices reported for these items.

Finally, as in the analysis of this group of mobility devices, there were no discernable differences in cost on the basis of the population size of the communities where the distributors were located.

2.2 Physiotherapy

Sufficient data was available to estimate the effect of regional differences and population size for an assessment and therapy sessions.

Fees tended to be slightly higher in larger population centres. Fees in cities with population of about 1,000,000 were estimated to be on average about $3 (6%) higher per session for an assessment and $2 (5%) higher per hour for a therapy session than cities of 100,000.

Table IV.4 provides average fees charged by region after removing the effects of regional differences in the size distribution of communities. For both services, average prices in Ontario are significantly higher than the national average, followed closely by Alberta. Average assessment fees in Manitoba/Saskatchewan are well below those of Ontario and Alberta but still significantly above those in other parts of the country.

Table IV.4
Average Physiotherapy Fees by Region

Region	Count	Assessment Average Price	Count	Therapy Average Price
Atlantic Canada	51	$43.35	51	$37.54
Quebec	42	$43.14	42	$38.07
Ontario	36	$57.58	32	$44.55
Manitoba/Saskatchewan	31	$49.39	31	$36.83
Alberta	24	$54.44	26	$40.80
British Columbia./Yukon	35	$42.46	35	$36.19

Differences resulting from these factors accounted for about a 20% of price variance in assessment fees and 15% of variance in therapy charges.

3. Supports for Psychiatric Conditions

3.1 Drugs used to treat Psychiatric Conditions

Examination of drug price data indicated a need to separate price data from the territories from that of other areas of the country. As a result, 7 regions—rather than the six used in other regional price difference discussions were used here. Sufficient data was available for all except one of the drugs sampled to make interferences for each of the seven regions—5 for each analysis category. After adjusting for community size differences where applicable, it was found that:

- Average prices were higher by an average of about 25% in the Territories in comparison to the remainder of the country;
- Ontario had average prices that were 8% higher than the national average for Bi-Polar Disorder Medications;
- In Alberta, average prices were consistently below the national average;
- Atlantic Canada, Manitoba/Saskatchewan and Quebec prices tended to straddle the middle. However, Atlantic Canada had the higher average prices for Anti-psychotic agents, averaging 4% above national average prices.

Table IV.5
Average Prices of Drugs used to Treat Psychiatric Conditions by Region

	Atlantic		Quebec		Ontario		Man/Sask		Alberta		BC		Territories	
	Count	Average Price	Count	Average Price	Count	Average Price	Count	Average Price	Count	Average Price	Count	Average Price	Count	Average Price
Anti-depressants														
Paroxetine (40 tabs, 20 mg)	26	$81.92	13	$83.44	19	$83.96	15	$80.34	9	$78.45	12	$81.39	x	x
Sertraline (40 tabs, 50 mg)	24	$86.31	12	$81.47	19	$83.17	11	$79.86	9	$76.45	11	$80.34	x	x
Anti-psychotic Agents														
Olanzapine (28 tabs, 10 mg)	26	$238.17	13	$228.41	19	$228.03	15	$226.93	9	$222.68	12	$218.37	x	x
Risperidone (40 tabs, 3 mg)	22	$148.86	13	$141.33	19	$143.07	15	$140.05	9	$135.42	12	$137.63	x	x
Attention Deficit Hyperactivity Disorder														
Brand A (60 tabs, 20 mg.)	26	$42.94	13	$42.78	19	$43.88	15	$40.23	9	$41.24	12	$41.70	x	x
Brand B (80 tabs, 10 mg.)	26	$23.22	13	$28.07	18	$25.37	15	$22.36	9	$20.60	12	$23.43	x	x
Bi-Polar Disorder Medications														
Carbamazepine (80 tabs, 400 mg)	24	$64.98	13	$64.78	18	$65.68	11	$61.33	8	$57.68	12	$61.01	x	x
Lithium Carbonate (90 tabs, 300 mg)	25	$16.79	13	$16.82	18	$20.31	10	$16.76	7	$16.77	12	$18.35	x	x

For two drugs (Carbamazepine, and one brand of methylphenidate), average prices were significantly higher in smaller urban areas. The estimated difference between the price of Carbamazepine in a city of 100,000 and 1,000,000 was about $3.10 (5% of the average national price), for methylphenidate, Brand A $1.65, (3%)

Just under half of the total variation in drug prices can be ascribed to regional and population size differences—primarily because of higher prices in the Territories. Another quarter of variance can be ascribed to consistently high or low pricing among individual pharmacies.

3.2 Psychotherapy

Table IV.6 provides average fees charged for psychotherapy region after removing the effect regional differences in community sizes where relevant. It shows large regional differences in average fees. On the one hand, Quebec has significantly lower fees for therapy sessions than anywhere else in Canada. At the other extreme, Ontario fees for both assessment and therapy tend to be the highest in the country. Fees in the remainder of the country tend to sit half way between these two extremes.

Table IV.6
Average Psychotherapy Fees by Region

	Assessment		Therapy	
Region	Average Price	Count	Average Price	Count
Atlantic Canada	$108.90	26	$102.69	44
Quebec	$81.09	17	$70.81	44
Ontario	$154.79	19	$137.46	32
Manitoba/Saskatchewan	$117.40	13	$107.16	25
Alberta	$114.61	8	$106.74	11
British Columbia/Yukon	$115.84	13	$120.28	21

There was no discernable difference in assessment fees attributable to community size differences. However, therapy charges tended to increase substantially with city size. It is estimated that fees in cities with population of about 1,000,000 had fees which averaged about $10 (or about 10%) per session higher for a therapy session than cities of about 100,000.

Differences resulting from regional and community size differences accounted for about a third of price variance in assessment fees and just under 60% of variance in therapy charges.

4. Aids for the Vision Impaired--Eye Glasses, Lenses and Contact Lenses

Table IV.7 indicates that there are significant regional differences in eye glass prices, accounting for about 15% of the variations in glasses and eye glass lens prices. Prices tended to be lower than the national average in Atlantic Canada and in Ontario by between 10% and 15% (except for metal frames).

Eye glass prices tended to be lower in smaller centers. In particular, prices for plastic frame glasses increased by an estimated $20.00 (about 10%) as city size increased from 100,000 to 1,000,000.

Finally, there was a very limited influence due to store-related pricing strategies of providing consistently higher or lower prices. However, the supplier prices of plastic and metal framed glasses were highly related.

Table IV.7
Average Eye Glasses and Contact Lenses by Region

	Lenses Only		Glasses/ Plastic Frames	Glasses/ Metal Frames	Contact Lenses	
Region	Count	Average Price	Average Price	Average Price	Count	Average Price
Atlantic Canada	31	$62.38	$143.96	$137.26	31	$89.94
Quebec	15	$75.05	$195.95	$182.96	15	$93.54
Ontario	19	$60.27	$139.48	$167.48	18	$89.83
Manitoba/Sask.	20	$74.48	$185.07	$180.94	19	$95.73
Alberta/NWT	14	$80.87	$172.13	$173.55	14	$115.33
BC/Yukon	17	$79.49	$154.89	$193.08	17	$97.35

Region, community size differences and supplier pricing accounted for about a fifth of the variation in lenses and eye glasses pricing.

At first glance, Table IV.7 indicates a high average price in Alberta/NWT for contact lenses. However because contact lenses prices varied considerably within regions no inference could be made about this regional difference. Overall, no factors were significant in accounting for price variations for this aid.

5. General Support Services—Nursing and Help in Undertaking Daily Activities

5.1 Nursing Services

The potential of regional and city size variations in area were examined for three Registered Nurse (RN) professions where adequate sample size was available.

Table IV.8 provides regional averages for these services. It indicates that irrespective of the service, fees tend to be the lowest in Atlantic Canada—averaging 15% below the national average while Ontario fees tend to be the highest (10%-15% above the national average). Fees for registered nurse and registered nurse special task services in Alberta were also above the average—but below those of Ontario.

There were no significant differences in fees attributable to community size differences.

Table IV.8
Average Nursing Fees by Region

Region	Registered Nurse		Registered Nurse (Special Tasks)		Registered Nurse Assistant	
	Count	Average Fee	Count	Average Fee	Count	Average Fee
Atlantic Canada	16	$31.77	14	$32.95	17	$21.56
Quebec	12	$36.72	6	$37.69	12	$26.50
Ontario	22	$40.00	17	$44.51	20	$31.25
Manitoba/Sask	8	$36.52	6	$39.05	x	x
Alberta/NWT	7	$38.09	7	$44.88	7	$26.63
BC/Yukon	x	x	x	x	x	x

Roughly a third of the variance in RN special tasks and RN assistant fees could be attributed to regional differences, but only about a sixth of RN fees.

5.2 Support in Undertaking Daily Activities

As with nursing services, fees in Atlantic Canada averaged well below the national average—in this case by roughly a third. On the other hand, B.C./Yukon had average fees in all three categories above the national average--by about 10%-15%.

There is no significant difference in the price of these services with city size.

Table IV.9
Average Supportive Service Fees by Region

	Personal Supports		Home Services		Companion	
Region	Count	Average Fee	Count	Average Fee	Count	Average Fee
Atlantic Canada	19	$12.34	21	$11.34	17	$11.21
Quebec	10	$16.10	12	$15.62	10	$14.79
Ontario	21	$18.85	18	$18.34	15	$16.12
Manitoba/Sask.	6	$18.50	7	$15.83	x	x
Alberta/NWT	7	$18.89	8	$16.24	6	$15.28
BC/Yukon	6	$23.51	6	$21.62	x	x

Roughly a half of the variance in all three personal support services could be attributed to regional differences.

6. Local Transit Fares[30]

6.1 Public Transit

Table IV.10 shows that generally, public transit fares tend to increase moving west from Atlantic Canada to Ontario and Manitoba/Saskatchewan, and then decline, reaching their lowest levels in Alberta and BC/Yukon. The exceptions are children's cash/ticket fares in Ontario, which on average are below fares elsewhere.

Table IV.10
Public Transit Fares by Region

	Atlantic		Quebec		Ontario		Manitoba/Sask		Alberta/NWT		BC/Yukon	
Average by Region	**Count**	**Average Price**	**Count**	**Average Price**	**Count**	**Average Price**	**Count**	**Average Price**	**Count**	**Average Price**	**Count**	**Average Price**
Non-Senior Adults												
Cash	6	$1.91	12	$2.06	14	$2.18	9	$1.98	7	$1.76	9	$1.72
Tickets/ Tokens		$1.80		$1.81		$1.94		$1.93		$1.57		$1.58
Monthly Passes	2	$45.50	7	$51.16	9	$62.67	2	$65.98	4	$51.88	5	$51.60
Students												
Cash	6	$1.91	12	$1.98	14	$2.00	9	$1.93	7	$1.66	9	$1.67
Tickets/ Tokens		$1.80		$1.63		$1.77		$1.87		$1.50		$1.54
Monthly Passes	2	$42.50	7	$39.51	9	$50.42	2	$50.08	4	$46.00	5	$47.00
Children												
Cash	6	$1.83	12	$1.98	14	$1.67	9	$1.93	7	$1.56	9	$1.67
Tickets/ Tokens		$1.73		$1.75		$1.51		$1.87		$1.55		$1.54
Monthly Passes	2	$36.00	6	$37.43	6	$44.33	2	$50.08	4	$42.00	5	$47.00
Seniors												
Cash	6	$1.83	12	$1.98	14	$2.04	9	$1.93	7	$1.66	9	$1.67
Tickets/ Tokens		$1.73		$1.77		$1.77		$1.87		$1.55		$1.54
Monthly Passes	2	$36.00	6	$31.55	9	$45.89	2	$50.08	3	$30.50	5	$47.00

Approximately a third of the total variation in fares can be attributed to regional variations.

6.2 Taxi Fares

Table IV.11 shows the regional averages for taxi services. Average fares increase from east to west from a low of $6.15 in Atlantic Canada and $6.33 in Quebec to a peak of $9.71 in Alberta/NWT.

[30] The information provided in this section is publicly available. As a result, data are presented in this section for samples of five or fewer. Note also that no data was made available concerning area population size for these services.

Table IV.11 Average Taxi Fares, average Trip by Region		
	Count	**Average Price**
Atlantic Canada	17	$6.15
Quebec	8	$6.33
Ontario	9	$7.79
Manitoba/Saskatchewan	11	$7.93
Alberta/NWT	4	$9.71
BC/Yukon	8	$8.13

7. Broad Trends in Price Variations in Selected Aid, Devices and Services

Table IV.12 provides a summary of the pricing trends reported above. Broadly speaking it shows that price variations are in line with the following general trends:

- Fees for support services tend to be highest in the high-cost labour markets of Ontario and Alberta, and for physiotherapy and psychotherapy in larger urban areas;
- The costs of goods where there are relatively large markets and significant competition—hearing aids and eye glasses--tend to be lower (in particular Ontario);
- Atlantic Canada, with relatively low labour costs tended to have the lowest fees for nursing and supports in undertaking daily living tasks. Costs also tended to be lower for public transportation, mobility aids and eye glasses.
- In one area where there was sufficient sample to examine prices in the territories (drugs used in treating psychiatric disorders) prices were considerably higher.

Table IV.12
Summary of the Estimated Effects of Region, Community Size and Supplier on the Prices of Selected Aids, Devices and Services

	Region							Other Factors	
Aid/Device/ Services	**Atlantic**	**Quebec**	**Ontario**	**Man/Sask**	**Alberta**	**BC**	**Territories**	**Community Size**	**Supplier Pricing**
Hearing									
Hearing Devices		High	Low	Low	High	High	–	No	Yes
Hearing/Sight Interpreters	No Significant Differences Found Related to Region or Area Size								
Mobility and Agility									
Mobility Devices	Low for most aids			Low for most aids	High for most aids	High for most aids	–	No	Yes– Scooters, Wheelchairs only
Physiotherapy			High	High– Assessment fees only	High		–	Yes–higher in large centers	–
Psychiatric Conditions									
Medication	High for one type of med.		High for one type of medic.		Low		High	No	
Psychoanalysis		Low	High				–	Yes— Therapy higher in large centers	–
Sight Impaired									
Eye Glasses, Lenses	Low		Low					Yes—plaster frame glasses higher in large centers	No
Contact Lenses	No Significant Differences Found Related to Region or Area Size								
General Support Services									
Nursing Services	Low		High		High		–	No	–
Support in Undertaking Daily Living Tasks	Low					High	–	No	–
Public Transportation									
Bus Fares			High (except for children's fares)	High	Low	Low	–	–	–
Taxi Fares	Low	Low			High		–	–	–

Appendix A

Table A.1
Organizations Which Participated in Survey Development

1.	Neil Squire Foundation
2.	Canadian Paraplegic Association
3.	Canadian Centre on Disability Studies
4.	Learning Disabilities Association of Canada
5.	Canadian Injured Workers Alliance
6.	Canadian Mental Health Association (Toronto)
7.	Canadian National Association of the Deaf-Blind
8.	Canadian Association for Community Living
9.	Canadian Association of the Deaf
10.	Canadian Institute for Child Health
11.	Roeher Institute

Appendix B

Table B.1
Full Price List of Average Prices for Disability Related Devices and Supports

Device/Service	Type of Device/Service	Features	Average Price
1.Hearing			
Hearing Aid	CIC		$2,021.38
	ITC		$1,456.79
	ITE		$1,648.92
	BTE		$1,128.76
	Batteries	Package of 8	$11.03
TTX/TDD		With Printer	$938.93
		Display Only	$669.81
Volume Control Telephone			$235.70
Amplification Systems		Transmitter/Receiver	$2,162.50
		Receiver Only	$365.33
Visual/Vibro-tactile alarms		Full Function Alarm	$300.72
		Portable Alarm Clock	$83.92
Repairs		Cheapest Average Most Expensive	$108.27 $149.24 $279.38
Interpreters for the Deaf/Blind	Daily Per Diem	Canada Average	$401.32
2. Mobility/Agility			
Braces Supports and Splints	Knee Support	Hinged High Support	$144.02
		Hinged Light Support	$107.31
		One-Way Stretch Brace	$36.08
	Lower Back Support	Lumbo-Sacral Brace	$100.74
	Lower-leg Splint	Foam Walker	$173.27
	Paediatric Stander		$2,479.44
Orthoses	Cranial (Head)		$1,073.65
	Cervical (Neck)	Flexible collar	$152.45
		Collar with Thoracic extension (TCO)	$562.44
	Spinal Column	Milwaukee Brace Pelvic girdle	$1,381.05
		Posterior Shell with corset/apron front	$790.28
		Scoliosis body jacket	$1,742.41
	Ankle-Foot (AFO)	Dorsiflexion assist and calf band	$376.25
		Patella-tendon bearing orthosis	$943.02
	Knee (KO)	Articulating knee orthosis	$1,107.62

Table B.1
Full Price List of Average Prices for Disability Related Devices and Supports

Device/Service	Type of Device/Service	Features	Average Price
	Knee-Ankle-Foot (KAFO)	Tubular surrounding limb/thigh/calf	$1,768.14
	Hip/Knee/Ankle (Paediatric)	Hip/knee ankle joints with band/belt	$1,062.58
		Legg-Perthes disease treatment	$1,421.85
	Hip (Adult)		$1,074.47
	Back/Hip/Knee Ankle Foot (Paediatric)	Children's Stander	$2,168.16
	Hand-Finger	Brace w/joint for knuckle movement	$368.48
	Wrist-Hand-Finger	Allows paralyzed area flexing by transfer of upper arm movement	$746.63
	Wrist-Hand	Brace	$293.70
		Dynamic Brace	$451.86
	Elbow-Wrist-Hand-Finger	Brace	$740.54
	Elbow	Brace	$336.67
		Brace with adjustable position, and active control	$1,104.01
	Shoulder-Elbow-Wrist-Hand-Finger	Brace for Paralysis due nerve damage	$2,168.16
Prostheses (Myoelectric Limbs)	Below the Knee	Low Priced High Priced	$4,308.59 $6,530.14
	At the Knee	Low Priced High Priced	$5,606.77 $9,201.90
	Arm-Below the Elbow	Adult Child	$14,204.90 $14,564.00
Canes and Crutches	Cane	Adult Child	$43.95 $65.28
	Fore-arm Crutch		$129.83
Wheelchairs and Scooters	Scooters		$3,991.97
	Motorized Wheelchairs		$6,094.37
	Manual Wheelchairs	Light Duty Daily Mobility	$483.05 $2,473.67
	Scooter/Motorized Wheelchair Battery	Gel Acid	$160.80 $124.24
Special Furniture	Homecare beds	Entry level Mid-range High-end	$1,146.45 $1,805.59 $3,891.52
	Lift Chairs		$1,117.57
Portable Personal Lifts		Regular Heavy duty	$1,468.66 $3,159.42
	Bath Lift		$1,877.76

Table B.1 Full Price List of Average Prices for Disability Related Devices and Supports			
Device/Service	**Type of Device/Service**	**Features**	**Average Price**
Elevator Systems	Porch		$4,616.94
	Chair		$3,165.13
	Home Elevator		$6,922.10
Van/Automobile Conversions	Modification Allowing Driver Control	For mild stroke victim	$20,990.91
		For Severe Quadriplegia	$95,931.28*
	Modification allowing Passenger Access	Stroke right-side weakness in wheelchair	$11,682.08
		For Severe quadriplegia	$38,807.04
Physiotherapy	Assessment	One Hour Session	$47.61
	Therapy	One Hour Session	$38.75
	Conditioning	One Hour Session	$37.73
3. Breathing Impairment Supports			
Oxygen Delivery Systems	Oxygen Cylinders System	Oxygen/cylinder/ regulator/disposable mask/tubing	$399.42
	Pulse dose oxygen conserver		$1,173.35
Oxygen concentrator		with oxygen sensor device	$2,064.87
CPAP Devices		Simple Bi-level Device	$1,375.92 $3,283.05
4. Waste Elimination Supports			
Ostomy, Colostomy, Urostomy Products		Stoma Paste	$14.48
	Two Piece Pouch System	Wafers (5 pack)	$33.63
		Open, Drainable Bag (10 count) Closed Bag (30 count)	$61.23 $35.56
	One Piece (with wafer)	Open, Drainable Bag (15 count) Closed Bag (10 count)	$56.06 $49.61
Urinary Tract Catheter	Intermittent		$107.85
Incontinence Products	Briefs	Disposables	$24.39
	Pads		$26.81
5. Diabetes Control Equipment			
Glucometers and Related Supplies	Glucometer		$35.20
	Lancets		$86.31
	Test Strips		$16.11
Insulin Syringes/Pens		100 count	$28.02

Table B.1 Full Price List of Average Prices for Disability Related Devices and Supports			
Device/Service	**Type of Device/Service**	**Features**	**Average Price**
Insulin	Humulin N. Novolin GE NPH	100 units per ml/10 ml vial	$21.69 $21.56
6. Treatment of Psychiatric conditions			
Anti-depressants	Paroxetine	40 tabs, 20 Mgm.	$82.99
	Sertraline	40 tabs, 50 Mgm.	$82.61
Anti-psychotic Agents	Olanzapine	28 tabs, 10 Mgm.	$231.66
	Risperidone	40 tabs, 3 Mgm.	$144.02
Attention Deficit Hyperactivity Disorder Medication	Methylphenidate	Brand A (50 tabs, 20 Mgm) Brand B (80 tabs, 10 Mgm)	$42.87 $24.23
Bi-Polar Disorder Medications	Carbamazepine	80 tabs, 400 milligrams	$63.99
	Lithium Carbonate	90 tabs, 300 milligrams	$18.00
Psychotherapy	Assessment fee	1 hour session	$115.63
	therapy session	1 hour session	$104.02
	Other services/ psychological testing	1 hour session	$115.00
7. Supports for Person who are Blind and Persons with Sight Impairment			
a. Supports for the Blind			
Canes/ Accessories	Way Finding Canes		$21.78
	Accessories	Replacement cane elastics	$0.30
		Roller Tips	$11.00
Support Canes			$23.50
	Accessory	Ice Spikes (flip-up)	$8.80
Writing Aids/ Stationery	Braille` Slates/Frames Styluses		$56.61 $6.00
	Braille Typewriter	Manual Electric	$1,393.20 $1,750.00
	Braille Notetaker		$5,365.00
	Braille Paper	Standard (8.5 x 11 in) Standard (11 x 11 in) Computer Paper (12.5 x 11 in)	$14.25 $17.75 $61.00
	Embossing Sheets		$3.00
	Braille Calendar		$2.00
Variable Speed Tape Recorders			$263.33
Electronic Braille Display Systems			$18,708.00
Talking Time Pieces	Watch Key chain		$19.24 $11.00

Table B.1 Full Price List of Average Prices for Disability Related Devices and Supports			
Device/Service	**Type of Device/Service**	**Features**	**Average Price**
	Clock		$21.78
Sunglasses			$8.00
b. Supports for the Vision Impaired			
Eyeglasses/ Contact Lenses	Complete Eye glasses Lenses only	Plastic Frame Metal Frame	$162.04 $168.21 $70.49
	Contact Lenses		$95.59
	Clip on Sunglasses		$2.50
	Binoculars/ Binocular Systems		$1,062.70
	Hand-Held Magnifiers	3.5-4.4X magnification With light	$32.52 $43.50
Video Magnifiers/ CCTVs	Electronic Magnifier	B/W Colour	$1,119.00 $1,499.00
	CCTV	B/W Colour	$2,875.00 $4,348.00
Screen Magnification Software			$814.50
Bolded Lines Writing Pads			$3.80
Large Type Calendar			$2.00
Telephone	Large Button		$33.00
	Large Button for hearing impaired.		$70.00
8. Support Services—Nursing, Help in Undertaking Daily Activities **(Fees per one hour session)**			
Nursing Services	Registered Nurse		$36.82
	Registered Nurse (Special tasks)		$40.35
	Registered Nurse Assistant		$26.68
	Orderly		$17.40
Support Services	Personal Supports		$17.04
	Home Services		$15.64
	Companion		$14.41

Table B.1 Full Price List of Average Prices for Disability Related Devices and Supports			
Device/Service	**Type of Device/Service**	**Features**	**Average Price**
9. Transportation Fares			
Public Transit	Regular	Cash Ticket Monthly Pass	$1.97 $1.80 $55.54
	Student	Cash Ticket Monthly Pass	$1.88 $1.69 $46.02
	Child	Cash Ticket Monthly Pass	$1.78 $1.65 $42.63
	Senior	Cash Ticket Monthly Pass	$1.88 $1.72 $40.78
Taxi Service		Average Fare	$7.30

Appendix C

Tests Utilized in Choosing to Report Average Prices

The following tests were applied to price data where 10 or more but 25 or less prices were obtained for a given product:

1. Coefficient of Variation (CV) test:

   Where less than 16.5% prices are reported without an asterisk.

   a. Those with a coefficient of variation between 16.6% and 33.3% are reported with an asterisk. Caution is to be used in reporting on these prices because of higher levels of sample variance

   b. Where CV was greater than 33.3% data was not reported

2. Skewness test: the absolute value Hildebrand measure was used:

   Absolute (estimated. mean – estimated median divided by estimated. standard deviation)

   a. where less than .2, no asterisk is added

   b. where equal to .2 but less than .4 an asterisk is added. This indicates that the data has a moderate skew.

   c. Where the measure is greater than .4, the statistic is not reported.

   Note: using the Pearsonian measure of skewness and values of absolute 1 and 2 yield similar results.

3. Kurtosis Test:

   a. Where between -2 and 2, no asterisk is added.

   b. Where greater than 2 but less than 4 an asterisk is added indicating that the distribution is flatter than a normal distribution

   c. Where greater than 4, the mean is not reported, since there is not a high degree of "central tendency" in the distribution

Tests were applied to the price distributions of the following products:

- Text Telephone Device (with display only)
- Vibro Tactile Full Function Alarm
- Shoulder-Elbow-Wrist-Hand-Finger Orthosis
- All Prostheses
- Scooter/Wheelchair Acid Battery
- Porch Lift
- Chair Lift
- Elevator
- Bi-level CPAP Device
- Glucometer Test Strips

Because of the nature of the data collected, the tests could not be applied to van/automobile conversion data or data concerned supports for the blind/persons with severe sight impairment.