

Determining Type and Quantity of Household Services Required for Persons with Disabilities: Using Time Use Survey Data

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Abstract

One of the most important and perhaps costly categories in a life care plan is Home Care Services. This may include personal attendant care, facility care, and/or household services for persons with disabilities. This article focuses upon household services which, for the purpose of this article, refer to all of the services required to maintain a home such as yard work, home repairs, home renovations, and housecleaning.

In developing a life care plan, life care planners are faced with the challenge of determining:

- I. Which activities should be considered for inclusion in the life care plan?
- II. What amount of hired services should be allocated for assistance with household activities for individuals with disabilities?
- III. What is an appropriate age for reduction and eventual cut-off of household services due to aging?

This article provides an overview of currently available American and Canadian Time Use Survey data and its application to life care planning in each of the three areas outlined above. In some parts of Canada, a number of life care planners are currently using time use survey data to assist with determining the amount of funding to allocate for household services. When used appropriately, such data and its activity classification systems can take the guesswork out of determining what type and amount of household services should be allocated for clients who are limited from performing such activity due to their disability. A case study also is offered.

I. Determining Which Activities to Include Under Household Services

Time Use Survey data is a helpful resource to assist in determining what activities should be included in a life care plan. Both the United States and Canada have conducted time use surveys to determine the types of activities Americans and Canadians engage in during a typical day and how much time they spend performing those activities. The American study is called the American Time Use Survey or ATUS (U.S. Bureau of Labor Statistics, 2006) and the most current Canadian study is called Overview of the Time Use of Canadians in 2005 (Statistics Canada, 2006).

American Time Use Survey (ATUS)

The American Time Use Survey was officially added to the Federal Government's list of statistical surveys in December 2000 (Shelley, 2005). The roots of the survey date back to 1991 when a Congressional bill called The Unremunerated Work Act of 1991 prompted the

Bureau of Labor Statistics to investigate a way to measure unpaid work and the value of non-market production. One of the most important undertakings in the process of developing a method of collecting time use data was first designing an activity classification scheme for categorizing activities that survey respondents reported upon during the time-diary portion of the interview (Shelley, 2005).

After two years of research, ATUS data collection began in January 2003. The survey is sponsored by the U.S. Bureau of Labor Statistics and conducted by the U.S. Census Bureau. There is now time use survey data available for 2003, 2004, and 2005. The 2005 ATUS is based on data collected from interviewing approximately 13,000 U.S. civilian non-institutionalized individuals 15 years and older. Respondents were asked to report their activities during a 24-hour period. Coders were trained to translate statements made by individuals into activity categories (Shelley, 2005).

The ATUS classification system, which includes activity categories, is called the Activity Coding Lexicon. This is a three-tiered system, with 17 major or first tier categories. Some of the first tier categories include: Personal Care; Household Activities; Purchasing Goods and Services; Caring for and Helping Household Members; and Working and Work-Related Activities (Shelley, 2005).

Under the first tier category, Household Activities, the second tier subcategories include the following:

- Housework
- Interior Maintenance, Repair, and Decoration
- Exterior Maintenance, Repair, and Decoration
- Lawn, Garden, and Houseplants
- Animals and Pets
- Vehicles
- Appliance and Tools
- Household Management

The following provides an example of one of the second tier subcategories, Exterior Maintenance, Repair, and Decoration, and its third tier subcategory breakdown with activity examples:

Exterior Maintenance, Repair, and Decoration

(a) Exterior Cleaning

Activity examples: sweeping deck/patio/porch
 shoveling snow
 cleaning gutters
 washing outside windows

(b) Exterior Repair, Improvements, and Decoration

Activity examples: putting a new roof on the house
 building a fence
 hanging outdoor lights
 painting house exterior

(c) Exterior Maintenance, Repair, and Decoration, not elsewhere classified (n.e.c.)

One of the benefits of the ATUS is that hours are provided not only for the second tier subcategories, but also the third tier subcategories. The reader may view the full classification

system with activity examples at: www.bls.gov/tus/lexiconwex2005.pdf

Canadian Time Use Survey

Similar to the United States, Canada has also published time use survey data representing Canadians' involvement in unpaid work. Methodologies were initially developed in the mid 1970's. The most recently published time use study is called Overview of the Time Use of Canadians in 2005 and may be viewed at the following website: www.statcan.ca/english/freepub/12F0080XIE/2006001/tables/tab1_canada.htm

The target population for Canada's time use survey included non-institutionalized persons 15 years of age and older. A total of 19,597 people were interviewed. Information on each of the respondent's activities during a 24-hour period was collected so that the number of hours per day that Canadians spend performing a wide range of household work could be determined (Statistics Canada, 2006).

The Canadian classification system is called Daily Activity Codes and is also a three-tiered system, with nine major or first tier categories, and two additional levels of detail or second and third tier subcategories. Some of the first tier categories include: Paid Work and Related Activities; Household Work and Related Activities; Education and Related Activities; and Sleep, Meals and Other Personal Activities (Statistics Canada, 1995). Similar to ATUS, there is a category for Household Activities, but it is called Household Work and Related Activities.

Under this major category, the second tier subcategories include the following:

- Cooking/Washing Up
- Housekeeping
- Maintenance and Repair
- Other Household Work
- Shopping for Goods and Services
- Child Care

(Statistics Canada, 2006)

The following provides an example of one of the second tier subcategories, Maintenance and Repair, and its third tier subcategories:

- (a) Interior Maintenance and Repair
- (b) Exterior Maintenance and Repair
- (c) Vehicle Maintenance
- (d) Other Home Improvements

(Statistics Canada, 2006)

Application of Time Use Classification Systems into the Life Care Plan

Time use surveys represent household activities that the "average" Canadian and American spend time performing. The classification systems and associated activity breakdown have a variety of different applications to the life care planning field.

An assessment form has been created (see Appendix) from the categories and specific activities listed in the Activity Coding Lexicon to assist the life care planner with identifying what types of activities the client may require assistance with. Along with this assessment form, the life care planner may also wish to refer to the specific activities listed under each

category in the Activity Coding Lexicon to create a more comprehensive checklist or standardized questions to ask each client during the interview.

The classification structure for household type activities in both time use surveys can be used to organize and document the services an individual requires in the life care plan. Activities under each of the subcategories can be further classified by the life care planner into regular (i.e., those performed daily/weekly), monthly, annual, and non-annual tasks. For example, under the Exterior Maintenance, Repair, and Decoration category in ATUS, regular tasks include sweeping the deck/porch/patio and shoveling snow; annual tasks include cleaning gutters and washing outside windows; and non-annual tasks include painting the house exterior and building or fixing the fence.

II. Determining How Much Hired Help Should be Allocated for Assistance with Household Activities

Life care planners are expected to determine how many hired hours clients should be allocated with various household activities such as housecleaning, household maintenance and repair, and yard work, if they can no longer perform such work themselves as a result of functional limitations related to their disability.

An experienced life care planner likely knows approximately how many hours it takes to clean different size homes, how often the lawn will need to be mowed in certain geographic regions, and how many hours will be required for seasonal yard work. If a client is young and not yet established in a certain geographic region, it can be difficult at times to determine hours for hired household services such as yard maintenance. Even for an older, more established client, it can be difficult to determine hours required for home tasks that are not performed at a set time each year or that are not completed on an annual basis (i.e., repairing the fence, painting the house, interior home repairs, etc.). Understandably, there are a number of unpredictable variables for individuals of all ages. It is, therefore, helpful to look to the data available from time use surveys to identify the types of household activities people typically report performing and how much time they dedicate to non-paid domestic work.

As an informational resource, Table 1 provides an example of some of the types of data available from the American and Canadian Time Use Surveys for Home Maintenance and Repair for individuals age 15 and over.

Table 1, Time Use Data from ATUS and Canadian Survey in Home Maintenance and Repair Category, by Gender

	Males (hours per day)	Females (hours per day)
ATUS (2005 data)		
Interior Maintenance, Repair, and Decoration	0.11	0.07
Exterior Maintenance, Repair, and Decoration	0.11	0.04
Vehicle Repair and Maintenance	0.08	0.01
Appliance and Tool Set-up and Repair	0.03	0.01
Total ATUS for Maintenance and Repair	0.33	0.13

Canadian Survey (2005 data)

Total for Maintenance & Repair	0.30	0.10
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(Data Source: U.S. Bureau of Labor Statistics, 2006; Statistics Canada, 2006)

Note: The Canadian study only provides statistics for the general category of

maintenance and repair, not for each of the third tier subcategories that are included in the American time use survey (e.g., interior maintenance and repair, exterior maintenance and repair, vehicle maintenance, and other home improvements).

As calculated from the daily hours identified above, according to ATUS, the average amount of time males spend per year on maintenance and repair is 120 hours, while females spend 47 hours. According to the Canadian study, on an annual basis, males spend 110 hours per year on such activities and females spend 37 hours.

These hours can serve as a baseline for determining how many hours of hired household support to allocate for clients. These hours can then be multiplied by a researched hourly rate in order to determine annual replacement costs for the services.

Guidelines for Using Data from Time Use Surveys

The time use survey data is best viewed as a baseline or starting point for assisting the life care planner with determining the number of hours of hired household services an individual with a disability may require. Life care planners who are considering using time use survey data as a resource to help identify how many hours of hired help for household services should first review the available websites to become familiar with the classification systems, methodologies, and available data.

In determining how many hours an individual requires with various household activities, the following guidelines are recommended for life care planners to consider:

- (1) Consider what types of activities are included under the second and third tier subcategories from which statistics are being used.
- (2) Consider the client's pre-injury or disability involvement in household work.
- (3) Make a productivity adjustment for paid domestic workers or contractors.

Below is a detailed explanation of each guideline.

- (1) Consider what types of activities are included under the second and third tier subcategories from which statistics are being used.

In the Canadian study, under the second tier category, Housekeeping, the following third tier subcategories are included:

- Indoor Cleaning
- Outdoor Cleaning
- Laundry, Ironing, Folding,
- Mending/Shoe care
- Dressmaking and Sewing.

The Canadian study provides the average number of hours per day for Housekeeping only, not a specific break down of hours spent for each of the third tier categories. Further, the Housekeeping subcategory also includes a mixture of activities with light and heavier physical demands (i.e., laundry typically is less physically demanding than indoor or outdoor cleaning). However, if an individual can perform some lighter tasks, it would be inappropriate to base the total number of hours for hired housekeeping on the total hours quoted in the Canadian study. In this example, the life care planner should consider whether or not the client can perform lighter aspects of housekeeping and only requires assistance with more arduous tasks, thereby adjusting the average number of hours per day according to the client's needs.

In comparison, the American study, under the second tier category, Housework, the following third tier subcategories are included:

- Interior Cleaning
- Laundry
- Sewing, repairing, and maintaining textiles
- Storing interior household items, including food
- Housework, n.e.c.

In contrast to the Canadian study, data on hours spent performing the activity is available for each of the third tier subcategories listed under Housework, and some of this data is available on the U.S. Bureau of Labor Statistics website (<http://www.bls.gov/news.release/pdf/atus.pdf>). A note of caution, however, is that data from a number of the third tier subcategories must be specifically requested from the U.S. Bureau of Labor Statistics website (www.bls.gov).

Given that the demographics of the American population are relatively similar to the Canadian population, Canadian life care planners may wish to consider relying on ATUS data when a more specific breakdown of hours (specifically third tier activities) is required for household tasks.

(2) Consider the client's pre- injury or disability involvement in household work

In determining amount of time spent performing household activities, life care planners should consider the client's level of participation in household work prior to the injury or disability. For example, it would be inappropriate for a life care planner to suggest that an individual should receive assistance with home repairs if, prior to the disability, they had hired help for a significant portion of this type of work. Factors that can increase or decrease the number of hours spent on household work include division of labor in the home, size of family, age of children, geographic area, type of residence, etc.

The life care planner should estimate, as close as possible, what percentage of household work (i.e., 10%, 25%, 33%, 50%, 75% or 100%) the client performed himself/herself prior to the disability. This can then be used as a baseline and multiplied by the hours provided in the time use statistics. If the client is young (i.e., child), the life care planner should also estimate what percentage of household work the client would have likely performed himself/herself had the disability not occurred.

(3) Make a productivity adjustment for paid domestic workers or contractors

Time use survey data is based on the average time spent on household activities by Canadians or Americans (U.S. Bureau of Labor, 2006; Statistics Canada, 2006). Hired workers are generally expected to be more productive than the average person performing his/her household work as they can focus strictly on the job at hand for which they are being paid. In contrast, the homeowner may be interrupted, take additional breaks, or multi-task, all which may decrease his/her productivity and efficiency in performing the task. Hired workers, particularly those who perform home repairs and renovations, are also hired for their skill and experience, thus increasing efficiency.

According to Cara Brown, an experienced economist in the area of valuation of housekeeping capacity, she recommends using a downward adjustment of 25% when relying on a client's reported pre-disability housekeeping hours as the basis for determining replacement hours of a hired domestic worker. This is based on her research showing a 25%

difference in wage rates for entry-level housekeepers versus those with 10 to 20 more years of experience (Brown, 2005).

The downward adjustment of 25% suggested by Brown can also be applied by life care planners to the time use survey data when using this as the basis for determining hours required for hired workers. For example, consider a female who is found to be completely disabled from performing any household cleaning. In the ATUS study, the average American female spends 4 hours per week on interior cleaning (U.S. Bureau of Labor Statistics, 2006). Considering a 25% adjustment for hired help, the life care planner would have sound basis for recommending 3 hours per week of paid assistance with housecleaning.

III. What is an appropriate age for reduction and eventual cut-off of household services due to aging

Time use survey data shows that activity patterns tend to change and people tend to spend more time on household services as they age (Statistics Canada, 2006). It does not seem logical, however, to increase the amount of funding for household activities in the life care plan as a client ages. With the passage of time (i.e., aging), an individual's reduced efficiency in performing household services may be due to a general decline in health and functioning related to age that would not impact hired help.

When completing a life care plan, it can be difficult to predict the level of support the individual would have required in their later years irrespective of the disability but due to aging factors. When planning for the future care and needs of individuals with disabilities, it is important to consider when individuals generally reduce and then cease to engage in certain household activities due to age related factors. One can consider the individual's pre-disability health and involvement in household work prior to the disability, as well as rely on the age related research to assist with making this determination.

The health and independence of seniors (aged 65+) is very wide ranging, with some individuals remaining independent with all household activities until a late age, while others require home care services or institutionalization. A relatively small number (4.5% of the U.S. population who are 65+) live in nursing homes, although the percentage increases significantly with age, ranging from 1.1% for persons 65-74 years to 18.2% for persons 85+. In addition, approximately 5% of the elderly live in senior housing of various types, many of which have supportive services available (U.S. Administration on Aging, 2006).

Another age-related factor applicable to the performance of household services is the concept of independence. Independence is measured largely in terms of individuals' ability to perform personal care and domestic activities (Martel, Belanger, & Berthelot, 2002). Based on statistics collected by the U.S. Administration on Aging, 57% of persons over the age of 80 reported a severe disability and 30% of the over age 80 population reported that they required assistance (U.S. Administration on Aging, 2006).

The likelihood of requiring assistance with household activities varies not only with age, but is also dependent on the physical demands of the activity. For example, the level of assistance required with heavy housework (i.e., washing walls, yard work) and everyday housework is different (Martel, Belanger, & Berthelot, 2002). According to the Canadian National Population Health Survey conducted with seniors living in private households, the following percentage of the female population required assistance with heavy housework: age 75-79: 48%; age 80-84: 63%. For men, the following is the percentage at various age ranges requiring assistance with heavy housework: age 75-79: 31%, age 80-84: 46% (Martel, Belanger, & Berthelot, 2002).

The statistics on aging (U.S. Administration on Aging, 2006; Brown, 2005; Brown & Bruce, 1998; Martel, Belanger, & Berthelot, 2002) suggest that not all household services in the life care plan should be funded to life expectancy. A reduction in funding with heavy or arduous household work (i.e., home maintenance, yard work, seasonal housecleaning) should be considered at approximately the age of 75. As dependence may not occur all at once due to the general effects of aging, a gradual reduction (i.e., 20% each year after age 75) can be considered until the age of 80. At the age of 80, funding for such services should cease (Brown, 2005; Brown & Bruce, 1998). In contrast, there is support in the aging related literature to fund many light and less arduous instrumental activities of daily living (i.e., everyday housework, meal preparation, shopping for necessities, etc.) to a much greater age (Martel, Belanger, & Berthelot, 2002).

IV. Case Study

Mr. Smith is a 50 year old accountant who was injured in a motor vehicle accident resulting in a complete C6 spinal cord injury. Prior to the accident, he did most of his own home maintenance such as cleaning the gutters, painting the trim on his house, and washing the windows. He also performed all basic home repairs. He hired out for household jobs such as exterior house painting and major renovation work. According to the 2005 ATUS survey data, men age 15-65+ spend on average 120 hours per year on Maintenance and Repair (U.S. Bureau of Labor Statistics, 2006). From the description of Mr. Smith's pre-accident household involvement, he did approximately 75% of such work himself and hired out for approximately 25% of the work. Taking this into consideration (75% of 120 hours = 90 hours), as well as making a productivity adjustment for increased efficiency of hired workers (further downward adjustment of 25% of 90 hours), it can be determined that Mr. Smith should receive approximately 67.5 hours of hired assistance with home maintenance and repair activities per year. Due to the non-accident related effects of aging and based on the data described in this article, a gradual reduction in funding for maintenance and repair services is recommended after age 75, with termination of funding at age 80. A 20% reduction in hired hours could be considered each year starting at age 76.

Table 2 provides a summary of the recommended number of hours of funding for Mr. Smith in the category of Home Maintenance and Repair as a result of functional limitations related to his accident, based on statistics from ATUS and the general aging literature.

Table 2, Summary of Recommended Hours of Hired Assistance with Home Maintenance and Repair for Mr. Smith due to the Accident, by age

Mr. Smith's Age	Hours Per Year of Hired Help with Home Maintenance and Repair
50-75	68 hours (100%)
76	54 hours (80%)
77	43 hours (60%)
78	34 hours (40%)
79	27 hours (20%)
80	0 hours (0%)

Conclusion

The American and Canadian time use survey activity classification systems and, in some cases, the data itself, are very similar. The classification systems provide guidance to the life care planner regarding the average amount of time individuals spend performing certain types of household activities, which could then be considered when determining replacement services for inclusion in a life care plan.

While time use survey data is by no means flawless, there has been considerable time and expertise dedicated to researching and gathering this information in order to identify time spent by the average North American performing non-paid activities such as household work. Time use survey data can provide a baseline of hours from which to start forming the life care plan. This allows for a more sound determination of a reasonable number of hours to allocate for various household services for clients with a disability.

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About the Author

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Appendix A: Household Activity Involvement – Pre and Post Disability

Client name: _____

Date of Assessment: _____

Activity	Pre-Disability	Post-Disability
Housework		
Interior cleaning		
Laundry		
Sewing, repairing, & maintaining textiles		
Storing interior household items, including food		
Food and Drink Preparation, Presentation, and Clean-up		
Food and drink preparation		
Food presentation		
Kitchen and food clean-up		
Interior Maintenance, Repair, and Decoration		
Interior arrangement, decoration, & repairs		
Building and repairing furniture		
Heating and cooling		
Exterior Maintenance, Repair, and Decoration		
Exterior cleaning		
Exterior repair, improvements, & decoration		
Lawn, Garden, and Houseplants		
Lawn, garden, & houseplant care		
Ponds, pools, & hot tubs		
Animals and Pets		
Care for animals and pets (not veterinary care)		
Vehicles		
Vehicle repair and maintenance (by self)		
Appliances and Tools		
Appliance and tool set-up, repair, & maintenance (by self)		
Household Management		
Financial management		
Household and personal organization & planning		
Household and personal mail & messages (except e-mail)		
Household and personal		
e-mail & messages		
Home security		

Checklist adapted from U.S. Bureau of Labor Statistics, Activity Coding Lexicon (2005).