

## 6 MEDICAL AND INSTITUTIONAL CARE COSTS

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### 6.1 Introduction

Economic losses in medical and related costs can result from any personal injury.

Economists are most likely to play a role in estimating this category of losses when the injuries are serious and when costs are to be incurred over many months or years. Cases involving these types of losses range from medical malpractice cases at birth to cases of automobile accidents rendering persons quadriplegic or paraplegic throughout their remaining lives.

This chapter provides guidelines for the estimation of economic losses in these types of cases. A sample case, involving all major types of costs, is provided. Other issues, such as the possibilities of “double counting” losses and lines of inquiry in testimony, are also reviewed.

## **6.2 Estimating Medical, Therapy, and Similar Costs**

### *A. Possible Categories of Costs/Losses*

An initial consideration in approaching this category of potential economic losses is to ensure that all reasonable needs of the injured person, resulting from his injuries, will be addressed. The settlement or trial is the last and only chance to provide for costs which may stretch for many years, and the plaintiff’s attorney must not err by failing to envision the possibly broad scope of necessary costs.

The range of necessary treating medical specialists must be considered. This includes general practitioners, specialists such as plastic surgeons or urologists, dentists, psychiatrists, or others. Physical and occupational therapists may be needed. The newly named “physiatrists,” who coordinate needed services, are also included. Surgical procedures, X-rays, and an array of needs for medical procedures, drugs, equipment, and supplies may extend over time. Home and furniture modifications may be necessary. These are all elements of a comprehensive life care plan.

### *B. Establishing the Basis for Necessary Costs*

Medical doctors, therapists, vocational experts, and others must be used to establish necessary treatments, equipment, supplies, and other required expenditures. The economist and plaintiff’s attorney are extremely vulnerable in assuming types of treatment in the absence of testimony from these other types of experts. It may be difficult to induce these other professionals to spend adequate time to provide a report on needs or to be specific on needs at each future point in time, or to coordinate the sometimes overlapping reports of experts in this area of pre-economic analysis.

For this reason, a new specialty has emerged. These “physiatrists” are expert witnesses or firms which coordinate the process of establishing a foundation for all categories of medical, related, and even institutional care costs. In major cases, such experts are a useful liaison between the work of medical and other “foundation” specialists and the work of the economist, who reduces all of this to a “bottom line.”

### *C. What the Economist Needs*

Whatever the source of data, the economist desires three pieces of information on each type of need or treatment:

1. The type of need or treatment, e.g. electric wheelchair, 30-minute therapy session.

2. The frequency of the need or treatment. The need may extend from the injury through life expectancy or exist for a shorter period. Further, the need may exist twice a week in each year of the need or a piece of equipment, for example, may require replacement every seven years.
3. The cost of the treatment, service, or meeting of the need at each occurrence *in current dollars*.

The economist can take this array of information and project a stream of costs of care (economic losses). The economist does not want a medical doctor or other type of expert attempting to estimate future inflation or to worry about discounting to present value. At most, these “foundation” experts should use their expertise to suggest prices and costs if incurred at the present time. The economist then uses his expertise to project costs into the future and discount to present values.

#### D. *Estimating Economic Loss*

Basically, the economist must begin with the “teeter-totter” issues first addressed in Chapter 3. Whatever the array of necessary services, how will current dollar estimates be projected (increased) into the future and at what interest rates will they be discounted to present values?

First, it is recommended that projections and discounting occur using real growth rates and real interest rates, with general price inflation removed from the analysis. Otherwise, the annual cost of necessary services in future years could assume very high nominal values, which are not readily understood by juries.

Assuming that general price inflation is to be removed, it could be predicted that future price increases for necessary medical-related services would be no more than future general inflation. Thus, current dollar costs would be projected at a 0 percent growth rate. In other words, they would be held constant. This would be a very conservative approach since, in recent history, the medical cost inflation rate has exceeded the general rate of price inflation.

In Table 1, four indexes of medical/care cost inflation, relative to overall Consumer Price Index (CPI) growth, are provided. Trend rates of price/cost increases are therefore developed for the 1970–1988 period in terms of “real” cost increases, above the rate of general price inflation. The forensic economist, who removes the effects of general price inflation (the CPI), must assign various cost of care categories to relevant “net” price inflation rates above the average price increase level.

For example, a physician-related cost in a base year of 1989 would be increased by a “real” (specific-inflation with general-inflation removed) growth rate of 1.80 percent; a hospital-room cost by 4.25 percent; a total medical services cost by 2.14 percent, and medical supplies and commodities by 0.0003 percent. Services provided by nonmedical personnel would be increased by real rates of wage growth described in Chapter 3, and nonmedical supplies would be most easily kept at a real growth of zero—they would be assumed to increase only with the average inflation rate.

It is in these decisions regarding the separation of care categories into net growth rate categories that the forensic economist exercises discretion. Therefore, this “translation” process is a fruitful line of inquiry. Yet, the level of care drives the decision by the economist on cost of care, and the fundamental issues involve the level and nature of necessary care.

**TABLE 1**  
**MEDICAL CARE PRICE INCREASES COMPARED TO INCREASES IN THE CONSUMER PRICE INDEX, 1970-1988**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Year	Physician Price Index	Percent Increase	Hospital Room Price Index	Percent Increase	Total Medical Services Price Index	Percent Increase	Medical Commodities Price Index	Percent Increase	Consumer Price Index (CPI)	CPI Percent Increase	Physician vs. CPI Increases (Col. 3-Col. 11)	Hospital Room vs. CPI Increases (Col. 5-Col. 11)	Total Medical Services vs. CPI Increases (Col. 7-Col. 11)	Medical Commodities vs. CPI Increases (Col. 9-Col. 11)
1970	34.50	—	23.60	—	32.30	—	46.50	—	116.30	—	—	—	—	—
1971	36.90	6.96	26.50	12.29	34.70	7.43	47.30	1.72	121.30	4.30	2.66	7.99	3.13	-2.58
1972	38.00	2.98	28.20	6.42	35.90	3.46	47.40	.21	125.30	3.30	-.32	3.12	.16	-3.09
1973	39.30	3.42	29.60	4.96	37.50	4.46	47.50	.21	133.10	6.23	-2.80	-1.26	-1.77	-6.01
1974	42.90	9.16	32.70	10.47	41.40	10.40	49.20	3.58	147.70	10.97	-1.81	-.50	-.57	-7.39
1975	48.10	12.12	38.30	17.13	46.60	12.56	53.30	8.33	161.20	9.14	2.98	7.99	3.42	-.81
1976	53.50	11.23	43.60	13.84	51.30	10.09	56.50	6.00	170.50	5.77	5.46	8.07	4.32	.23
1977	58.50	9.35	48.60	11.47	56.40	9.94	60.20	6.55	181.50	6.45	2.89	5.02	3.49	.10
1978	63.40	8.38	54.00	11.11	61.20	8.51	64.40	6.98	195.30	7.60	.77	3.51	.91	-.63
1979	69.20	9.15	60.10	11.30	67.20	9.80	69.00	7.14	217.70	11.47	-2.32	-.17	-1.67	-4.33
1980	76.50	10.55	68.00	13.14	74.80	11.31	75.40	9.28	247.00	13.46	-2.91	-.31	-2.15	-4.18
1981	84.90	10.98	78.10	14.85	82.80	10.70	83.70	11.01	272.30	10.24	.74	4.61	.45	.77
1982	92.90	9.42	90.40	15.75	92.60	11.84	92.30	10.27	288.60	5.99	3.44	9.76	5.85	4.29
1983	100.10	7.75	100.60	11.28	100.70	8.75	100.20	8.56	297.40	3.05	4.70	8.23	5.70	5.51
1984	107.00	6.89	109.00	8.35	106.70	5.96	107.50	7.29	307.60	3.43	3.46	4.92	2.53	3.86
1985	113.30	5.89	115.40	5.87	113.20	6.09	115.20	7.16	318.50	3.54	2.34	2.33	2.55	3.62
1986	121.50	7.24	122.30	5.98	121.90	7.69	122.80	6.60	323.40	1.54	5.70	4.44	6.15	5.06
1987	130.40	7.33	131.10	7.20	130.00	6.64	131.00	6.68	335.00	3.59	3.74	3.61	3.05	3.09
1988	139.80	7.21	143.30	9.31	138.60	6.62	139.90	6.79	348.40	4.00	3.21	5.31	2.62	2.79
1970-88 Average*	8.08	10.54	8.43	6.31	6.29	1.80	4.25	2.14	.0003					

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C.

\*These figures do not reflect the average of the individual annual increases because of rounding error.

### 6.3 Estimating Home Care Assistance Costs and Losses

#### A. General

Several levels of necessary assistance are possible. These range from occasional assistance by a parent or spouse; to frequent such assistance; to care by hired attendants, LPN's and RN's; to the extreme of institutional (nursing home) care. Combinations of types of care may exist. For example, parental care may be possible for several years with some attendant, LPN, or RN assistance. At some point, because of the age of the parents or of the injured party, greater outside help and institutionalization may be necessary or desirable.

What is clear is that an economist does not have the expertise to assess the nature and extent of necessary home care and assistance. Medical doctors, related experts, and sometimes even parents or spouses must lay the basis for assumptions made by the economist.

#### B. Parental/Spousal Care

As stated above, the economist must have a basis for assuming a certain number of years for which such care is likely to be required, perhaps through age 18 of a minor or through a certain age of a parent or spouse. If the parents or spouse choose to perform the necessary care themselves for this period of time, does an economic loss result? In our opinion, the answer is "yes."

In the most obvious case, assume that the mother of an injured child quits her job to care for the child. Economic loss would at least be her lost wages and possibly fringe benefits. Even when earnings are not directly foregone, the relative providing care should not be penalized because he or she chooses to provide the care instead of choosing to use outside resources. Economic loss, under one alternative, is the hours of care (beyond those hours of service which a parent or spouse might otherwise have provided) multiplied by the "opportunity cost" which the care provider could have received in taking these hours to the marketplace. What if a father, for example, clearly gave up a moonlighting 3-hour-per-night job at \$10/hour to provide these hours in care? In the other alternative, the number of care or service hours (above those otherwise provided) would be valued at the wage of an attendant who could be hired at a going market wage.

#### C. Costs of Housekeeper or Attendant

Outsiders other than nursing or other professionals may need to be hired or the family may desire to hire them if the family has the funds. Again, persons other than the economist should lay the basis for the number of necessary hours per week of such services over time. The economist can value these hours at going hourly rates for such persons, with data provided by local Offices of Employment Security or professional placement agencies. One hourly fee may cover the costs or, if the person is hired directly by the family, hourly costs will include basic wages plus legally required fringe benefits.

#### D. LPN or RN Care

In serious injuries, many hours per week of either Licensed Practical Nurse or Registered Nurse services may be needed. Testimony may provide the foundation for two or even three 8-hour shifts of a nurse in some cases, although institutional care alternatives may need to be estimated.

When the number of necessary hours of LPN and/or RN care through time are provided to the economist as a sound foundation, it is fairly easy to value these hours. Hourly rates of part-time and live-in nurses can be attained in the relevant locale, and fringe benefit payments, if necessary, can be easily estimated. Further, good data usually exist on the rate of growth in wage costs for nurses.

#### *E. Estimating Economic Loss*

Whatever is assumed about the nature and combination of home care services, the economist will take a number of weekly or annual hours and value them in current dollars based upon local data, if it can be obtained. The growth rate of costs, after inflation, is ideally based upon a history of attendant or nurse wage growth rates in that area or nationally. Discounting will be at real interest rates as previously described, and the period of necessary home care will be provided by other experts.

### **6.4 Estimating Institutional Care Costs**

#### *A. Length and Nature of Care*

The economist cannot decide when institutional care should start and end or the nature of necessary care. Medical professionals can testify as to a likely start date for care in an institution and as to a likely life expectancy in an institution, if this differs from a usual life expectancy. Medical personnel may also provide information on the level of necessary care. One classification system, for example, divides care levels into residential care, intermediate care, skilled nursing care, and locked facilities.<sup>1</sup>

Each succeeding level requires more personnel and/or more skilled personnel, involving increasing costs. Medical experts may testify to the need and desirability for semi-private versus private rooms in an institutional care environment. They may testify concerning therapy and other "add ons" to daily rate charges. Finally, the testimony of family members may also be necessary in establishing when institutionalization of the injured party may be reasonable and necessary.

The economist must glean from the above sources a start date of institutional care, level of care at each point in time, and probable end date of care (life expectancy). He may produce multiple estimates with differing assumptions on all of these variables.

#### *B. Pricing of Care*

Both the dollars devoted to institutional care in the U.S. and the proportion of these expenditures in relation to total health care expenditures have increased in recent years. The more relevant issue is how to price each year of necessary institutional care services, as discussed in the above section.

It seems especially appropriate in cases of necessary institutional care to rely upon specific survey data for levels of care in the area in which institutionalization would occur. We have found no national survey of institutional care costs useful,

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<sup>1</sup> See Skilled Nursing Facilities Regulations, California Administrative Code Title 22, Division 5, Chapter 2.

as actual costs vary so greatly by type of need, sophistication of facility, and area.

Our own 1989 (nonscientific) survey of many counties in Pennsylvania, Kentucky, Ohio, Tennessee, Virginia, and West Virginia indicate room charges averaging around \$25,000 annually, but these charges may be triple or more in certain metropolitan areas. The variation is significant within each state. We recommend that a specific survey be made to assess costs at institutions in an area which seems appropriate in light of the particular case.

### *C. Estimating Economic Loss*

The loss is estimated for each year. Future costs, with inflation removed, should be increased by the excess of medical cost inflation over general inflation levels. In a parallel fashion, discount rates less inflation (real discount rates) are used to discount to present values.

## **6.5 Illustrative Case of Kristi Doe**

### *A. Specialized Report Used By Economist*

For major cases involving medical and related costs, it may be advisable to retain a specialist to translate the medical condition and needs of the injured party into the care, services, and equipment which will be needed by him or her over a defined period. Such specialists are sometimes called "physiatrists." Portions of the report of one such specialist are provided in Appendix 1 for the illustrative case of Kristi Doe.

It will be recalled from Chapter 3 that the Jack Doe of our prior illustrations had an older daughter, Kristi. She was born on April 6, 1975 and was severely injured in an automobile accident on February 14, 1989. Kristi was rendered a quadriplegic as a result of the accident. Her situation was carefully evaluated by a life care specialist, whose report in Appendix 1 was the foundation for work by the forensic economist.

Note in Appendix 1 that the scheme of care has been systematically developed for the economist, and includes the time period, frequency, and current cost for each category of services, equipment, or supplies. Only one-half day of attendant-level care is suggested in this report. One set of decisions for the economist is how to associate each category with a real rate of growth in costs, above the rate of growth in the generalized Consumer Price Index (CPI). Table 1 provides four groupings of such real growth rates in a 1970–1988 base period, as has previously been described. Categories of physician services in the Appendix 1 report would be increased by the 1.80 percent annual real growth in the Physician Price Index; further hospitalization costs might be increased at the 4.25 percent real growth in the hospital room index; and many drug and supply items would be associated with the 0.0003 real growth in medical commodity prices (effectively, no difference exists with general price inflation trends). Attendant care costs might be increased by the 0.84 percent real compensation growth of U.S. workers from 1970–88, and the 2.14 percent real growth of total medical services prices is available for items which do not neatly fit into other categories. Finally, supplies, equipment, and services not specifically related to the medical sector can be associated with the general CPI, so that the real trend of price growth above the CPI would be zero.

### B. *Economic Estimate*

The economist will produce several tables of projected costs through the life expectancy of Kristi Doe, the number depending primarily upon the number of real growth rates which must be used. Projected costs for future years are discounted to present values at real interest rates that also have CPI growth removed. As explained in the teeter-totter discussions of Chapter 3, it is critical that general inflation (CPI) growth either be added to *both* growth rates and interest (discount) rates or removed from *both* sides of the equation. The removal of inflation from both the growth in costs and discounting is recommended, as juries can best understand the need to maintain necessary purchasing power for future services at future price levels. No annual cost estimate for future years appears unreasonable, and the "bottom line" is very close to the conclusion reached when general inflation effects are explicitly shown. The annual loss estimates may also move up and down irregularly, whether or not general inflation effects are removed, as medical procedures reoccur and necessary equipment is replaced on an established schedule.

In Appendix 2, the present value of the various life care categories of costs is shown. This represents the combination of the Life Care Plan for Kristi Doe in Appendix 1 with appropriate growth rates in costs and proper discount rates. A lump sum of \$4,616,099 is needed in 1989 to exactly pay for the future stream of necessary care, services, equipment, and supplies.

Also shown in Appendix 2 are costs of various types of care which might be prescribed as alternatives to attendant care. For example, a \$2,592,171 lump sum would be necessary for a nursing assistant level of home care, two shifts per day, seven days per week, at a current hourly cost of \$8.50. A lump sum of \$5,489,547 would be necessary to cover the same hours of care with the skill level of a Licensed Practical Nurse and current hourly cost of \$18.00. A lump sum of \$7,014,128 would be required to ensure Registered Nurse care at a \$23.00 hourly cost. A lump sum of \$1,922,246 would be necessary under the alternative of nursing home care at a \$70 per day cost. Obviously, the exact scenario of necessary care can make an enormous difference in the estimate of economic loss.

## 6.6 Other Issues and Refinements

### A. *Personal Consumption "Double Counting"*

The deduction of likely personal consumption expenditures is an issue for most jurisdictions in wrongful death cases. Interestingly, it can also become an issue in a serious injury case, where both lost earning capacity and institutional care costs have been projected.

One can argue that some portion of the injured person's earnings would have been spent on his own food, clothes, etc. At the same time, much of the costs of institutional care cover food, clothing and shelter. By simply adding earning capacity and institutional care costs, the economist is double-counting at least the direct costs of food and clothing to the injured person. (Dependents may still need their house, automobile, etc. while the injured person is institutionalized.) This double counting can be eliminated by making selective deductions from institutional care costs. Perhaps a more straightforward method is to reduce the lost earning



capacity estimate by the amounts which the injured person would have exclusively spent on himself had he lived at home. Then total institutional costs can be added without a double counting.

#### B. *Collateral Sources*

In a pure estimate of net economic loss to an injured person and/or family, likely medical, institutional care, or similar costs would be reduced by the amounts covered under public or private health insurance programs. The family, for example, must only pay those dollars in excess of medical insurance reimbursements. Of course, the insurance company, and ultimately its customers, must bear these costs.

As a matter of law in many jurisdictions, a deduction of medical insurance reimbursements is *not* made in economic loss estimates. The consideration of reimbursements by third parties, or “collateral sources,” is not allowed.

#### C. *Income Taxes*

In jurisdictions where the effects of income taxes must be considered in wage loss estimates, two major effects occur. A downward effect occurs on the “bottom line” lump sum because before-tax wages must be converted to after-tax wages. An upward effect also occurs. The lump sum must be raised so that income taxes can be paid on the interest earnings necessary to restore the after-tax stream of wage loss. As was suggested in Chapter 3, the net effect is often to raise the lump sum estimate of loss.

If and when the effects of income taxes are considered in medical loss estimates, lump sum loss estimates can only be higher. The downward effect is not relevant, as the costs of medical, institutional, or related services must be met regardless of personal income taxes on earnings. Yet, the upward effect still exists. Lump sum loss estimates must be raised so that interest can be earned on the lump sum, income taxes can be paid on these interest earnings, and there will remain a stream of dollars sufficient to match the costs projected for each future year.

## 6.7 Testimony

### A. *Plaintiff Side*

A major consideration in direct examination is to lay a foundation for the economic expert, which a jury can understand and accept. Medical specialists must effectively convey the needs for distinct types of treatment and current costs, and administrators from nursing homes may be helpful witnesses. The economist should make clear how he uses this support data to arrive at loss estimates, and charts, overheads, etc. may be useful to establish this “walk-over.” Local cost data on medical and hospital costs should be used *vis-a-vis* national data for credibility. Further, necessary assumptions should appear reasonable, such as the assumed age at which the injured person might enter an institutional care facility.

Because large dollar amounts may be involved, the economist should remove the effects of general inflation from the analysis and from his testimony. He may also display data on the very high rates of medical cost inflation, especially as these make his projections appear conservative.

### B. *Cross-Examination By Defense*

The defense should clearly attack where a poor foundation, or “walk-over,” exists for the economic estimate, in terms of needed care or the cost of care. Similarly, the use of price data from national surveys can be questioned when local or regional costs are lower. Special federal and state efforts to lower the rate of inflation in medical care costs may be mentioned in questioning. However, the defense attorney should study Table 1 before indiscriminately attacking real rates of growth in costs. Real rates of growth in medical costs were greater in the 1980’s, when cost containment was a publicized issue, than in the 1970’s. It should be determined if a lost earning capacity estimate and institutional care cost estimate constitute a double counting, as previously mentioned.

A special issue in this area of cross examination is that a strong attack can be made on a logical and economic basis which might not be strategically wise due to emotional and sympathy factors. The prime example involves a plaintiff projection of institutional care costs for a normal life expectancy, when medical testimony can support that the severely injured person has much less than a normal life expectancy. The shorter life expectancy, when argued by the defense, can mean several hundreds of thousand dollars less in economic loss. The argument itself may actually increase a jury award, since the severe injury was the cause of the lowered life expectancy.

### **6.8 Summary**

In cases of serious personal injury, medical and other “support” testimony should lay the basis for economic loss estimates. The economist can use a variety of assumptions and approaches in projecting a stream of economic losses, and combinations of assumptions about types and prices of care may be necessary. Finally, plaintiff and defense attorneys should be aware of personal consumption, income tax, and other special considerations which may be usefully applied in direct and cross examination.

**APPENDIX 1****LIFE CARE AND SERVICES PLAN FOR KRISTI DOE**

**FACTS:** Kristi Doe; white female; date of birth 4/6/75; life expectancy 79.7 years; automobile accident February 14, 1989; Traumatic Quadriplegic

	Ages or period of costs or services	Frequency	Item or unit cost (1989 Dollars)
<b>INITIAL MEDICAL/REHABILITATION EVALUATIONS</b>			
Psychiatrists	Initial	One Time Evaluation	\$250.00
Urological	Initial	One Time Evaluation	\$140.00
Family Doctor	Initial	One Time Evaluation	\$65.00
Nutritional (Dietitian)	Initial	One Time Evaluation	\$60.00
Orthopedic	Initial	One Time Evaluation	\$110.00
Neurological	Initial	One Time Evaluation	\$125.00
Psychological	Initial	One Time Evaluation	\$500.00
Physical Therapy	Initial	One Time Evaluation	\$150.00
Occupational Therapy	Initial	One Time Evaluation	\$150.00
<b>THERAPEUTIC MODALITIES, FUTURE MEDICALS, AND ROUTINE EVALUATIONS</b>			
Family Doctor	Life	Average Yearly	\$600.00
Neurological	Life	Average Yearly	\$250.00
Orthopedic	Life	Average Yearly	\$250.00
Urological	Life	Average Yearly	\$375.00
Surgical (decubitus ulcers, Harrington rods, spinal cord surgery re: pain)	Life	Average Yearly	\$6,000.00
Pain Clinic	When Needed	One Time	\$9,000.00
Physical Med and Rehab MD	Life	Average Yearly	\$380.00
Psychologist (personal/family)	Life	Average Yearly	\$600.00
Dental Care	Life	Average Yearly	\$50.00
Dietitian	Life	Average Yearly	\$200.00
Physical/Occupational Therapy	Life	Average Yearly	\$7,680.00
Future Hospitalization/Rehab Re-Eval.	Life	Average Yearly	\$3,381.00
Rehospitalization/Complications	After 50	Average Yearly	\$6,000.00
Recreation Costs	Life	Average Yearly	\$100.00
Heavy House Cleaning	Life	Average Yearly	\$8,736.00

	Ages or period of costs or services	Frequency	Item or unit cost (1989 Dollars)
<b>MEDICATION/DIET/LAB</b>			
Flexoril	Life	Average Yearly	\$292.00
Betadine	Life	Average Yearly	\$370.00
Macrochantin	Life	Average Yearly	\$174.00
Zantac	Life	Average Yearly	\$352.00
Aldomet	Life	Average Yearly	\$100.00
Colase	Life	Average Yearly	\$50.00
Vitaments	Life	Average Yearly	\$120.00
Laboratory/Drug Interaction	Life	Average Yearly	\$400.00
Special Diet/Vit/Meds	Life	Average Yearly	\$600.00
Lubjel	Life	Average Yearly	\$15.00
<b>SUPPORT SERVICES</b>			
Care Giver			
Attendant and Relief Attendant	Life	12 hours/day 7 days/week	\$25,133.50
Cosmological Pedicurist	Life	Average Yearly	\$500.00
<b>VOCATIONAL/EDUCATIONAL SERVICES</b>			
Vocational/Educational	Initial Non Acute	One Time Evaluation	\$950.00
Ergonomic Specialist	Initial Non Acute	One Time Evaluation	\$250.00
Recreation Therapist	Initial Non Acute	One Time Evaluation	\$225.00
Rehab Counseling	To Age 25	During Schooling	\$3,840.00
Vocational Training	To Be Determined	To Be Determined	
Tutoring	To Be Determined	To Be Determined	
Self-Help Skill Development	To Be Determined	To Be Determined	
Work Adjustment	To Be Determined	To Be Determined	
Supported Employment or Sheltered Workshop	To Be Determined	To Be Determined	
<b>THERAPEUTIC FUNCTIONAL FURNISHINGS, SUPPLIES, AND EQUIPMENT</b>			
Food Processor	Life	Every 6 Years	\$65.00
Microwave Oven	Life	Every 20 Years	\$250.00
Adapted Feeding Equipment	Life	Yearly	\$35.00
Anti Scald Guard	Life	Every 15 Years	\$50.00
Adaptive Clothing/Orthotics (corrective/spreading hand feeding & positioning splints)	Life	Average Yearly	\$350.00
Additional Splinting	After 50	Average Yearly	\$350.00
Braces (long leg)	Life	Every 3 Years	\$575.00
Anti Skid Tape	Life	Average Yearly	\$10.00
Gloves, Bags, Tubing, Cath Kits	Life	Average Yearly	\$3,500.00

	Ages or period of costs or services	Frequency	Item or unit cost (1989 Dollars)
Quad Power Bicycle	Life	Every 20 Years	\$18,000.00
Generator	Life	Every 30 Years	\$900.00
Halo/Hydraulic System	Initial	One Time	\$5,000.00
Therapy Pool	Initial	One Time	\$7,000.00
Misc. Therapy Equipment	Life	Every 20 Years	\$575.00
Fire Escape	Initial	One Time	\$150.00
Table Mats	Life	Every 15 Years	\$435.00
Therapy Putty	Life	Every 5 Years	\$36.00
Standing Desk and Support Ergonomic Recline Lambs	Life	Every 25 Years	\$580.00
Wheelchair	Life	Every 20 Years	\$485.00
Therapy Rolls	Life	Every 20 Years	\$162.55
Wheelchair Carpet	Life	Every 10 Years	\$765.00
Power Safety Doors	Life	One Time	
		W/Maintenance	\$550.00
Fire Alarms/Smoke Detectors	Life	Every 20 Years	\$868.00
Transfer Device & Board	Life	Every 15 Years	\$102.90
Suspension Aide	Life	Every 20 Years	\$1,490.00
First Aid Kit	Life	Every 4 Years	\$25.00
Thermometers	Life	Every 6 Years	\$39.00
Hands Free Phone/Memo-Recorder	Life	Every 4 Years	\$195.00
House Modifications	Initial	One Time	\$14,418.00
Bowling Shoot/Loop	One Time	One Time	\$59.00
Environmental Control System	Life	Every 20 Years	\$5,000.00
Power Chair/Standing	Life	Every 6 Years	\$4,200.00
Manual Recline Chair	Life	Every 8 Years	\$999.00
Wheelchair Pouch	Life	Every 3 Years	\$35.00
Wheelchair Umbrella	Life	Every 2 Years	\$28.00
Batteries	Life	Every 2 Years	\$150.00
Wheels/Tires	Life	Every 2 Years	\$150.00
Chair Tray	Life	Every 8 Years	\$125.00
Adapted Posture Seat	Life	Every 5 Years	\$250.00
Nail Care Equipment	Life	Every 2 Years	\$6.00
Shower Chair	Life	Every 6 Years	\$140.00
Bath and Utility Life	Life	Every 15 Years	\$580.00
Bath Pillow	Life	Every 2 Years	\$52.00
Hand Shower HD W/Safety	Life	Every 8 Years	\$180.00
Bathtub Support Bench	Life	Every 5 Years	\$158.40
Beverage Holder	Life	Every 4 Years	\$5.00
Inspection Mirror	Life	Every 5 Years	\$18.00
Reacher	Life	Every 4 Years	\$35.00

	Ages or period of costs or services	Frequency	Item or unit cost (1989 Dollars)
Scotchlite Tape	Life	Average Yearly	\$25.00
Biobed	Life	Every 15 Years	\$1,400.00
Alt Pres Pads	Life	Every 6 Years	\$350.00
Silicone Waterproof Sheets	Life	Yearly	\$.50
Modified Bidet W/Safety Rails	Life	Every 8 Years	\$350.00
Bed Safety Rails	Life	Every 25 Years	\$62.00
Bedside Refrigerator	Life	Every 15 Years	\$100.00
Over Bed Table	Life	Every 15 Years	\$149.00
Adapted Scale	Life	Every 12 Years	\$69.99
Bed Pan When Ill	Life	Every 25 Years	\$36.00
Port Telephone	Life	Every 6 Years	\$800.00
Swim Vest	Life	Every 6 Years	\$35.00
Mirrors (20 Degree)	Life	Every 20 Years	\$65.00
Toilet Footstool	Life	Every 15 Years	\$55.87
Blood Pressure Machine	Life	Every 10 Years	\$45.00
Circulation Socks/Binder	Life	Yearly	\$160.00
Van W/Accessories/Salvage	Life	Every 6 Years	\$30,000.00
Transportation/MD & Therapy	Life	Average Yearly	\$300.00
Handicapped Parking Sticker	Life	Yearly	\$5.00
Tire Pump/Park Clear Sign	Life	Every 8 Years	\$35.00
<b>ANCILLARY COSTS</b>			
House Maintenance	Life	Average Yearly	\$500.00
Add Electricity, Heat & AC	Life	Average Yearly	\$1,800.00
Extra Tax	Life	Average Yearly	\$150.00
Misc. Supplies/Med Alert	Life	Average Yearly	\$650.00
Maintenance On Systems	Life	Average Yearly	\$390.00

**POSSIBLE COMPLICATIONS:** Hemorrhoids, infections, dehydration, chronic diarrhea, malnutrition, urological infections, anemia, thrombophlebitis, thrombosis, decubitus ulcers (plastic surgery), deformities, spasticity-flaccidity, motor and sensory loss, depression, osteoporosis (fractures), bowel and bladder (sphincter incontinency), traumatic injuries, hypothermia (burns/frostbite), autonomic dysreflexia (rise in blood pressure), recreation will have to be accomplished with additional cost of bringing in help, Virchow's Triad, contractures, voiding desires, autonomic hyperreflexia, swelling, headaches, profuse sweating, vasodilation of skin, paroxysmal hypertension, paresthesias, obstructions, pain sensations.

SOURCE: Adapted from report of Dr. Robert L. Lessne, Rehabilitation Services, Inc., 10765 S.W. 104 Street, Miami, Florida 33176.

**APPENDIX 2**  
**SUMMARY OF THE PRESENT VALUE OF COSTS OF CARE**  
**FOR KRISTI DOE, 1989-2054**

Grouped categories from life care plan	Present value of costs
Professional Services	\$ 527,439
Hospitalizations/Clinics	1,243,436
Equipment, Supplies and Commodities	466,858
Support Services	1,406,892
Routine Evaluations	971,474
<b>Present Value of Economic Loss</b>	<b>\$4,616,099</b>
<i>Some Alternative Care Options*</i>	
Nursing Assistant Care at 2 Shifts Per Day	\$2,592,171
Licensed Practical Nurse (LPN) Care at 2 Shifts Per Day	\$5,489,547
Registered Nurse (RN) at 2 Shifts Per Day	\$7,014,128
Nursing Home Care	\$1,922,246

\*Based upon West Virginia surveyed rates of \$8.50/hour for Nursing Assistant, \$18/hour for LPN's, \$23/hour for RN's, and \$70/day for nursing home care. Source information also provided by Joni Yeager & Associates of Florence, Kentucky and Lawrence Forman & Associates of Miami, Florida.

