

Life Expectancy Projections Supporting Life Care Planning

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ABSTRACT:

Patients, following catastrophic injuries or illnesses, frequently question health care providers regarding prognosis including life expectancy. Projecting life expectancy is important in medicolegal cases due to its impact on determining the extent of damages. Developing an individualized Life Care Plan is also impacted by the patient's life expectancy. This is a retrospective review of life expectancy estimates provided in medicolegal reports for catastrophically impaired individuals. This study shows that careful individualized analysis of the impact of a catastrophic injury or illness on an individual can be used to project life expectancy.

INTRODUCTION:

The impetus for writing medical articles is variable, but this one has a unique genesis. While providing testimony during a trial in North Carolina, one of the authors (Bonfiglio) was requested by opposing council to provide an opinion regarding whether or not individuals for whom testimony had previously been provided were still alive. A total of 19 individuals who had been evaluated during the previous 14 years were included. As is typical after providing expert testimony, no attempt had been made to follow these individuals after conclusion of the legal cases.

However, the cross examination served as a stimulant for retrospectively determining the fate of these individuals. All of the individuals had suffered serious medical problems or traumatic injuries including brain and/or spinal cord injuries. Contact was made with the plaintiff attorneys involved in the cases. Information was obtained regarding each of the individuals as delineated in Table 1.

One case was not included since the individual had died prior to testimony being provided. Further review of this case showed that this was a wrongful death case involving a nursing home patient who had died from extensive pressure ulcers. Developing an individualized life expectancy requires a comprehensive review of all available patient medical records, a thorough physical examination, substantial medical experience, and knowledge of medical literature regarding the impact of medical conditions on life expectancy. Review of the medical records must focus on medical conditions and associated complications that have occurred to the person and the diagnostic testing and treatments required. Each medical problem and complication should be analyzed regarding the ease of its diagnosis and management, and whether it can be prevented or managed efficiently. Determination of its impact on life expectancy directly or through additional complications is needed. For example,

some children following birth related hypoxic ischemic encephalopathy require recurrent hospitalizations for secondary complications including repeated respiratory and urinary tract infections, pressure ulcers, poorly controlled seizures, and failure to thrive. The prognosis for these children is potentially impacted by these conditions and the life expectancy is likely reduced versus those children with a similar level of brain injury but without a history of recurrent acute complications and frequent hospitalizations.

The physical examination can provide additional information regarding the impact of disease processes on the individual. For example, examination of an individual suffering from recurrent pressure ulcers may reveal extensive scar tissue or thin and damaged skin overlying a bony prominence. Even when no active pressure ulcer is present, the likelihood of recurrent breakdown is increased by the evidence of damaged skin on examination. Without extensive management including a pressure relieving mattress and wheelchair cushion and meticulous daily care, such an individual is likely to develop recurrent pressure ulcers. Nutritional support and monitoring is also essential in such cases. Surgical intervention including a rotational flap is sometimes required.

Review of diagnostic testing may further aid in a determination of the impact of recognized medical conditions on the individual. For instance, for a person with diabetic peripheral neuropathy, electrodiagnostic testing including nerve conduction studies can determine the severity and distribution of protective sensory loss, especially on the distal aspect of the lower limbs where skin breakdown may occur. Enhancing life expectancy for such an individual requires careful monitoring and management of the diabetes with normalization of the hemoglobin A1C level, podiatric management of foot and nail care, and appropriate footwear.

METHODS:

The plaintiff attorneys who had referred the individuals for evaluations were contacted. Updated patient information was obtained including whether or not the individuals were still living. The life expectancy projections had been made between 3 and 14 years before the review with an average of 7 years.

RESULTS:

Gender	Ethnicity	Age at Injury	Normal Life Expectancy at Injury	Disability (its)			Year of Evaluation	LCP Life Expectancy at Year of Evaluation	Status Now	Age Now Present Day	Age at Death	Cause of Death
				SCI - ASIA Scale	TBI Severity	Other Specify						
Female	White	41	83	Tetraplegia C6 Asia C			2003	83	Alive	52		
Female	Hispanic	24	81			HIE	2004	81	Alive	35		
Female	White	Birth	80			HIE	2007	80	Alive	13		
Male	White	3 months	76			Meningitis	2010	69	Alive	5		
Male	White	11	78		Moderate		2007	78	Alive	20		
Male	Black	3 months	71			HIE	2010	64	Alive	3		
Male	White	58	81	C5 Asia C			2006	81	Deceased		67	Pneumonia
Male	White	Birth	76			DSA	2010	69	Alive	6		
Female	Black	Birth	77			HIE	2007	77	Alive	9		
Female	White	67	86			SNI	2005	86	Alive	78		
Female	White	29	83	C5 Asia A			2003	75	Alive	42		
Female	White	51	84			Stroke	1999	76	Alive	77		
Female	Black	50	81			QA	2002	81	Alive	64		
Male	White	1 month	76			Burn	2008	76	Alive	5		
Female	White	Birth	80			HIE	2008	72	Alive	5		
Male	White	42	83			Stroke	2005	75	Alive	52		
Female	Black	94					2004	Deceased	Deceased		95	Unknown
Female	White	53	81		Moderate		2006	81	Alive	61		

HIE – Hypoxic Ischemic Encephalopathy

DSA – Diffuse Septic Arthritis

QA – Quadrilateral Amputations

SNI – Sciatic Nerve Injury

Thus, 16 of the 18 individuals evaluated are still alive. One died at age 93, exceeding the average life expectancy of her peers. In only one case did the individual die from pneumonia 10 years earlier than the average of his peers. The average age of the surviving individuals is 29.7 years, but the range is 3 to 78. Ten of the survivors are females and six are males.

CONCLUSIONS:

Life expectancy projections are often based on population studies. Such projections are useful when analyzing a single disease process like coronary artery disease, diabetes, or hypertension or a single life style choice like cigarette smoking. However, in real world situations with individuals with complex medical histories, these statistical studies are less predictive. Additionally, statistical studies do not take into account the impact of care provision as delineated in Life Care Plans. Increased daily, medical, and rehabilitative care as delineated in most Life Care Plans has a positive impact on life expectancy. Additionally, life expectancy tables are often based on data collected prior to current day medical advances and service delivery and may therefore underestimate life expectancy.

Life expectancy projections for individuals status post traumatic brain and spinal cord injuries is also complicated by the extent of injury. The majority of individuals suffering brain injuries have what the literature categorizes as “mild.” Despite being in the mild category, such injuries often have dramatic impact on the individual’s level of functioning. There is less impact on life expectancy. Of the estimated 1.7 million individuals with traumatic brain injuries per year, less than 1% is categorized as severe. Similarly, individuals with higher spinal cord injury levels and more complete spinal cord injuries are more functionally impaired and may have a reduced life expectancy.

A careful clinical analysis of an individual’s acute medical course and secondary complications can serve as a reasonable methodology and guide for life expectancy determinations for individuals status post catastrophic injury or illness. An individualized assessment should take into account the person’s acute and chronic medical conditions, available literature regarding each of these medical conditions, the associated complications that have occurred or are likely to occur, and the level of care available to the individual. This analysis provides advantages over solely depending on statistical analysis of cohort information that does not take into account individual patient variations, especially the level of care provided.

Although no statistical analysis of the data obtained in this study was undertaken, considering the results, the projections for continued survival have proved accurate thus far. Following these individuals over a longer time period will provide further evidence regarding the accuracy of the life expectancy projections. However, some of the individuals have already lived longer than the projections provided by the defense life expectancy experts. When developing a Life Care Plan for an individual involved in litigation, it is important that the plan covers the person’s entire life. Underestimates of life expectancy are problematic since funding and implementation of the life care plan by itself has a positive impact on the person’s life expectancy.

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