

LEGAL NURSE CONSULTING

Volume 11 • Number 3 • July 2000

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Key words

Life care plan, job functions,
rehabilitation professional, certification

The purpose of the study reported in this article was to empirically define the job functions associated with the development of life care plans. The Life Care Planning Job Task Inventory was developed for this study and completed by 239 rehabilitation professionals who are currently providing life care planning services. With the use of exploratory principal axes factor analysis, the

following three job function areas were associated with the development of the life care plan: assessment of client's medical and independent living service needs, vocational assessment, and consultant services to the legal system. In a follow-up procedure, an expert panel rationally sorted 22 job task items that had not been retained in the initial factor analysis into the three identified job functions.

Background

Many people incur catastrophic injuries, including but not limited to spinal cord injuries, traumatic brain injuries, severe burn injuries, and multiple amputations (Chawla, 1993; Deutsch & Sawyer, 1995; DeVivo, Rutt, Stover, & Fine, 1987; Patterson et al., 1993; Scremin, Tapia, Vichick, Leach, & Salas, 1993; Wulz, 1993). Overall, an individual who sustains a catastrophic injury confronts not only an acute medical emergency, but also a long-term disabling condition and a severe alteration of his or her lifestyle and being (Deutsch, Weed, Kitchen, & Sluis, 1989). Although physicians can save the person from the immediate life-threatening crisis, they typically cannot eliminate their need for comprehensive medical and rehabilitation services.

Life care plans (LCPs) typically address the needs of persons with catastrophic injuries. The development of the LCP is based upon detailed, case-specific research on the catastrophic injury and the needs it creates for the client and family. Life care plans for people who sustain catastrophic injuries are comprehensive in nature, involving services from a variety of rehabilitation professionals who constitute the interdisciplinary rehabilitation team (Deutsch & Sawyer, 1995; Green, 1990). The team may include specialists in rehabilitation counseling, vocational evaluation, social work, occupational therapy, physical therapy, work adjustment, physical medicine, neurology, rehabilitation nursing, therapeutic recreation, and law (Green, 1990; Kessler, 1970; Rubin & Roessler, 1995). Due to the complex nature of each catastrophic injury, the interdisciplinary team is responsible for offering a diversity of services to address the injured person's needs.

To adequately meet the health and service needs of persons who sustain a multitude of physical, internal, and head injuries, a comprehensive LCP frequently is necessary. Blackwell,

Weed, and Powers (1994) define the life care plan as follows:

A comprehensive, multidisciplinary approach that systematically addresses the medical and nonmedical needs of a person with a catastrophic injury or illness and projects the costs of needed goods and services over the person's estimated life span. Along with the costs associated with the disabling condition, replacement schedules and frequency of treatments are also delineated. The life care plan is specific to the person and not generalized to a type of injury or disability. (p. 263)

LCP development involves input from the interdisciplinary team of rehabilitation professionals who are responsible for managing the individual's care after the injury; it plays a major role in determining the categories of need, frequency of treatment, and the duration of the proposed treatment plan. Often, the life care planner operates independent of the team, but obtains the endorsement of the attending physician and team members regarding specific components of the care plan.

Many rehabilitation professionals state that they complete LCPs with their clients. The LCP provides the client and extended family with an organized overview of their needs in terms of long-term disability case management; equipment, "supplies, pharmaceuticals, therapeutic modalities, education, attendant care services, and medical follow-up"; and the type, cost, and location of the services that can meet those needs (Deutsch & Sawyer, 1995, p. 7A-2).

Life care planners identify the client's type of disability, problems, and functional limitations. They also document the client's long-term care needs, the services required to meet each need, and the costs associated with those services. In so doing, they may consult with various treatment team members to identify long-term service needs and options. In addition, the life care planner identifies cost-effective resources

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to assist in the rehabilitation of those persons with disabilities. Blackwell et al. (1994) and Provder (1993) have listed several functions of the life care planner, including consulting with both defense and plaintiff attorneys to determine long-term care needs of their clients and educating juries on the long-term needs created by catastrophic injuries.

Although many authors (Anchor, 1992; Blackwell et al., 1994; Deutsch & Sawyer, 1995; Deutsch et al., 1989; Gamboa & Hanak, 1991; Mayo, 1994; Provder, 1993) have hypothesized on the job roles of life care planners, none have empirically defined that role. Such an empirical definition is a prerequisite for determining their necessary competencies. The eventual determination of those competencies will provide an essential foundation for designing the curriculum of programs in life care planning and for determining the appropriate content for a certification examination for life care planners. This study's purpose was to begin to empirically define the role of life care planners by determining the job functions associated with the development of the LCP through a survey of rehabilitation professionals who are currently providing such services. More specifically, the following research question was addressed: What are the job functions associated with the development of the LCP?

Method

Instrument: We developed the Life Care Planning Job Task Inventory (JTI) to identify the tasks of rehabilitation professionals who conduct life care planning. The development of this instrument began with the listing of 75 job task items from existing literature related to life care planning. The initial group of potential life care planning items was validated for content by 11 experts, who determined that 56 items should be retained.

The final 56 job task items were randomly distributed throughout the JTI. The following 6-point scale was used to rate the items:

- do not perform this task with any persons with whom I develop a LCP
- perform this task with approximately 1%–10% of those with whom I develop a LCP
- perform this task with approximately 11%–25% of those with whom I develop a LCP
- perform this task with approximately 26%–50% of those with whom I develop a LCP
- perform this task with approximately 51%–75% of those with whom I develop a LCP
- perform this task with more than 75% of those with whom I develop a LCP

Nine demographic items were included on the questionnaire.

Participants: The JTI was mailed to 992 individuals, broken down as follows: 193 members of the National Association

of Rehabilitation Professionals in the Private Sector (NARPPS [the organization is now the International Association of Rehabilitation Professionals]) Life Care Planning section; 282 members of the NARPPS Forensic section; the 141 graduates of a national, postgraduate educational institute that certifies life care planning for catastrophic case management; and 376 rehabilitation professionals who had expressed interest in becoming certified life care planners to the Commission on Disability Examiner Certification (CDEC). A total of 239 useable questionnaires was returned, for an overall return rate of 25%.

The typical respondent can be characterized as Caucasian (90.4%) and female (75.3%); as having a master's degree (43.9%); and being 41–50 years of age (55.2%). A total of 55.2% (132) of the respondents indicated that they had an educational background in vocational counseling and 43.1% (103) indicated a nursing background, with less than 2% (4) indicating "other." The majority of the respondents (64.9%) have been conducting life care planning for 8 years or less. Approximately half of the respondents (54.3%) indicated they also provided case management services after completing the LCP. Approximately 43% of the respondents indicated that the two disabling conditions for which they had developed the greatest number of life care plans were traumatic brain injury and spinal cord injury.

Results

To determine the job functions associated with the development of the LCP, exploratory principal axes factor analysis (SPSS, Inc., 1993) was performed on the participants' responses to the JTI. Varimax rotation was used to orthogonally rotate the resulting factor matrix, to maximize the independence between factor groupings (Cureton & D'Agostino, 1983). The Scree Test was used to help determine the optimal number of factors to extract; the test suggested a three-factor solution.

The results of the three-factor solution accounted for 31.7% of the total variance. The three factors (job functions) identified were Factor I (Assessing Client's Medical and Independent Living Service Needs), Factor II (Vocational Assessment), and Factor III (Consultant Services to the Legal System). Of the 56 job task items, 34 achieved or exceeded the loading criterion of .40 for retention. Computation of Cronbach's alpha showed relatively high reliability coefficients for each of the three factors (Factor I = .89; Factor II = .89; Factor III = .77).

Factor I contained 20 job task items and included information relating to the need and cost of medical services, adaptive equipment, supplies, occupational therapy, physical therapy, home furnishing needs, and attendant care. Factor II contained six job task items and included information

relating to assessing the need for vocational or educational services, evaluating the client's ability to pursue gainful employment, and obtaining the client's work history. Factor III contained eight job task items and included information pertaining to serving as an expert witness and assisting with the development of information for settlement negotiations.

In a follow-up procedure, the remaining 22 items that did not achieve the .40 loading criterion were rationally sorted by an expert panel consisting of 13 rehabilitation professionals who were actually providing life care planning services. These individuals were asked to assign the 22 items among the three job functions identified in the factor solution. For an item to be considered as associated with one of the job functions, at least 60% of the expert panel had to independently assign that job task to that function. The following results were obtained: 9 items (numbers 8, 10, 11, 12, 18, 29, 34, 41, and 42) were added to Factor I, and 2 items (numbers 7 and 52) were added to Factor III. No job task items met the 60% criterion for Factor II. There were 11 items (numbers 2, 4, 6, 13, 16, 24, 30, 31, 36, 40, and 44) that failed to achieve the 60% or greater agreement criterion for any of the three job functions. Table 1 reports the means and standard deviations for the job task items under each of the three job functions that survived the factor analysis and rational sort process.

Discussion

The LCP is a document that comprehensively addresses all of the care needs of a person who sustains a catastrophic injury, and provides the payer with organized charted material. The LCP also facilitates a smooth continuum of care for the patient, allowing for a flow of services across rehabilitation disciplines.

The primary objective of this study was to identify the job functions of persons who develop LCPs. Factor analysis yielded three distinct factors (job functions) associated with the development of the LCP. These job functions were Assessing Client's Medical and Independent Living Service Needs, Vocational Assessment, and Consultant Services to the Legal System.

Overall, the study results are compatible with the job functions that had previously been identified in the nonempirical literature on the job tasks of the life care planner. For example, Factor I is compatible with the LCP development job tasks related to "identifying the types and cost of services that will assist the client in maximizing functional capacity" as reported by Gamboa and Hanak (1991). Accordingly, the following items listed under Factor I in Table 1 received the following mean ratings:

- specifies cost for physical therapy services (item 26, $M = 5.55$)
- determines the client's adaptive equipment needs (item 53, $M = 5.51$)

- determines costs of needed medical services in the client's LCP (item 48, $M = 5.78$)
- determines the client's need for counseling services (item 49, $M = 5.51$)
- reviews current catalogs to determine the costs of assistive devices needed by the client (item 35, $M = 5.53$)
- projects associated costs for non-medical diagnostic evaluations (e.g., recreational, nutritional) of the client (item 19, $M = 5.19$)

Blackwell et al. (1994) have also hypothesized the job tasks associated with the development of the LCP. Their medical case management job tasks associated with the development of the life care plan are compatible with the following items within Factor I:

- determines needed medical supplies (item 37, $M = 5.75$)
- determines the client's needs for attendant care (item 54, $M = 5.66$)
- identifies the need for physical therapy services (item 14, $M = 5.55$)

Deutsch and Sawyer (1995) define the vocational assessment job function of the life care planner as "assessing when the patient may be able to engage in rehabilitation, gainful employment, or sheltered employment" (pp. 7.03-7.04). Factor II results in this study support this function as a major part of the life care planner's role. For example, life care planning job tasks of this function include the following:

- assesses the client's need for vocational services (item 55, $M = 5.03$)
- identifies the need for long-term vocational/educational services (item 39, $M = 5.09$)
- gathers a work history from the client (item 33, $M = 5.10$)

The life care planner often serves as a consultant to those in the legal system. Anchor (1992) has suggested that a life care planner consults with both defense and plaintiff attorneys to identify the needs of clients who require long-term care, and recommends to the attorneys additional professionals who can discuss the client's needs as identified in the LCP. The importance of these job tasks is supported by the tasks found under Factor III in Table 1. Some of these job task items include the following:

- assists with the development of information for settlement negotiations (item 21, $M = 4.16$)
- consults with a plaintiff attorney to reasonably map out what long-term care services will be needed for a client (item 46, $M = 4.04$).

This study can be viewed as an empirical clarification of LCP development job functions. This clarification can help guide content development of the preservice or inservice education program curricula in the field of life care planning. Knowledge

Table 1. Item Mean Ratings (*M*) and Standard Deviations (*SD*) for Professionals Developing Life Care Plans

	<i>M</i>	<i>SD</i>
Factor I: Assessing Client's Medical and Independent Living Service Needs		
8. Examines the relationship between the client's needs and existing functional capacities	5.93	3.61
9. Determines costs of needed equipment for the client	5.87	0.51
29. Lists the medication prescribed for the client	5.86	0.50
11. Reviews all medical records	5.79	0.77
48. Determines costs of needed medical services in the client's life care plan	5.78	0.71
56. Identifies costs of supplies needed weekly/monthly by the client	5.76	0.75
18. Assesses the client's potential for long-term independent functioning	5.75	0.72
37. Determines needed medical supplies	5.75	0.78
10. Determines a feasible support system for the client	5.66	0.78
54. Determines the client's needs for attendant care	5.66	0.80
47. Determines assistive devices needed by the client	5.60	0.85
5. Provides an assessment of the client's potential for self-care	5.55	1.04
26. Specifies cost for physical therapy services	5.55	1.00
14. Identifies the need for physical therapy services	5.55	1.04
35. Reviews current catalogs to determine the costs of assistive devices needed by the client	5.53	1.00
50. Specifies the cost of occupational therapy services	5.52	1.00
53. Determines the client's adaptive equipment needs	5.51	0.99
49. Determines the client's need for counseling services	5.51	0.93
25. Identifies the need for occupational therapy	5.36	1.18
15. Specifies costs for maintaining the client's exercise equipment	5.35	1.14
34. Specifies costs for case management services for the client	5.34	1.23
19. Projects associated costs for nonmedical diagnostic evaluations (e.g., recreational, nutritional) of the client	5.19	1.32
20. Specifies costs for necessary home furnishings	5.16	1.45
1. Determines the client's home furnishing needs	5.11	1.45
42. Assesses the client's recreational equipment needs	5.05	4.23
22. Identifies the need for nutritional counseling	4.25	1.64
51. Identifies the need for audiological services	4.01	1.79
41. Identifies the need for pharmaceutical counseling	3.94	1.78
12. Identifies the need for musical therapy	2.38	3.58
Factor II: Vocational Assessment		
33. Gathers a work history from the client	5.10	1.50
39. Identifies the need for long-term vocational/educational services	5.09	1.52
55. Assesses the client's need for vocational services	5.03	1.60
23. Determines the client's ability to pursue gainful employment	4.82	1.70
27. Obtains information on past occupational/educational performance for purposes of vocational planning	4.79	1.67
32. Specifies cost for long-term vocational/educational services for the client	4.76	1.75
Factor III: Consultant Services to the Legal System		
38. Determines costs of needed social services for the client	5.30	1.27
45. Makes referrals for assessments of the client	4.63	1.61
21. Assists with the development of information for settlement negotiations	4.16	1.79
17. Serves as an expert witness in a court case for an individual who sustains a catastrophic injury	4.10	1.82
46. Consults with a plaintiff attorney to reasonably map out what long-term care services will be needed for a client	4.04	1.77
7. Consults with a defense attorney to reasonably map out what long-term care services will be needed for a client	3.84	4.37
3. Provides information located in the LCP to an official of the court	3.83	1.82
28. Consults an economist for an estimate of the lifetime costs of the LCP	3.65	2.04
43. Recommends other expert witnesses to a client's attorney	3.63	1.78
52. Advises the client's attorney on the cross-examination of opposing counsel's expert witness	3.46	4.36

of the life care planning job functions also can help to establish a standard job description for people who develop LCPs. Such a description could, in turn, help to establish a job analysis-based guide to determine appropriate content for credentialing examination for life care planners.

The curriculum for life care plan training needs to be developed. The results of this study can, by offering empirical evidence of life care planners' job functions, provide those who are involved in training life care planners with a better understanding of the field. Knowledge of specific job functions will allow trainers to better determine the competencies needed to carry out those functions. Once those role-based competencies are identified, they can serve to guide the design of a curriculum for such training. Any curriculum for life care planning that is based on the results of the current study could be seen as multidisciplinary in nature, because it could be adopted by many professional disciplines to prepare their practitioners to perform life care planning in addition to their other responsibilities.

The results of this study can be used to help the CDEC establish the content validity of its credentialing examination, based upon the extent of correspondence between the focus of the test items and the empirically derived job functions (Shimberg, 1981).

The life care planning Job Task Inventory was developed by compiling a list of job tasks from life care planning literature and input from rehabilitation professionals. Although every effort was made to include all life care planning job tasks, it is unlikely that the JTI contained a complete list of tasks. Therefore, while the current study should provide a relatively comprehensive picture of life care planners' job functions, that picture may still have some undeveloped areas that will have to be addressed by future research.

The sample was composed of rehabilitation professionals involved in life care planning. The listings were assumed to include a representative sample of life care planners. However, the extent to which these individuals are representative of the entire population under study is unknown. Therefore, the results of this study should only be generalized with caution.

Future research should address the relationship between life care planning job functions and the entity that has retained life care planning services. For example, a rehabilitation professional developing the life care plan is retained by an attorney or an insurance firm. Both the attorney and the insurer have separate purposes for the life care plan. The relationship between these purposes and the life care plan development job functions should be addressed in future research.

More than half of the respondents (54.3%) indicated that they provided case management services to the client after developing the LCP. Future research should investigate case management job functions after development of the life care plan. These functions could be infused into the content of the current curricula in life care planning.

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