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# PEEDS-RAPEL©: A Case Conceptualization Model for Evaluating Pediatric Cases

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[1]Adapted from Neulicht, A.T. & Berens, D.E. (2004). The role of the vocational counselor in life care planning. In S. Riddick-Grisham (Ed.). Pediatric life care planning and case management (pp. 277-324), CRC Press (800/272-7737).

**Abstract**. *This article introduces PEEDS-RAPEL©, a case conceptualization model for rehabilitation professionals to use as a tool in evaluating pediatric cases. A foundation is established by reviewing several rehabilitation and related case conceptualization models. Discussion is provided on the use of PEEDS-RAPEL© in the analysis of a child's needs and development of a rehabilitation or life care plan, as well as a future earnings capacity opinion. The article concludes with a case example which illustrates each element of PEEDS-RAPEL©.*

## Introduction

The needs of a child with a disability are not a scaled down version of those required by an adult with a disability who has impairments that impact work and/or independence in performing activities of daily living. Instead, factors unique to working with children and adolescents with a disability that address emotional, social, familial, educational and prevocational needs must be considered. Rehabilitation professionals who provide expert opinions, both for pediatric and adult clients, must consistently and objectively follow a standardized model for analysis and be able to define and discuss their decision-making process (Neulicht & Berens, 2004). According to the International Academy of Life Care Planners (IALCP) Standards of Practice (2000), the functions of a life care planner include "follows a consistent method for organizing data (III.C.3.a.)." Further, the Standards also describe that "the research component of life care planning requires a consistent, valid, and reliable approach to data collection (III.5.)." A review of these Standards readily shows that consistency in methodology and organization of data is integral to the function of a life care planner. This article summarizes examples of health care and rehabilitation related case conceptualization models and introduces PEEDS-RAPEL© as a consistent, organized model for analyzing, synthesizing and displaying data on which to form reliable opinions. A case example, specifically in the area of providing a pediatric future care and earnings capacity opinion, is included to illustrate PEEDS-RAPEL©.

## An Overview of Case Conceptualization Models

Case conceptualization models provide a structure or framework for determining elements of a case as well as data to include in an analysis by explaining the key factors, constructs, or variables to be investigated. Case conceptualization models are defined in the medical, nursing and rehabilitation literature. Some examples of such models are provided in Table 1.

Table 1. Examples of Case Conceptualization Models

***Medical***

- International Classification of Functioning, Disability and Health (WHO, 2001)

***Nursing***

- Core, Care and Cure (Hall, 1963)
- Nursing Process: Assessment, Diagnosis, Outcome Identification, Planning, Implementation, Evaluation (American Nurses Association, 2004)

***Vocational Psychology/Rehabilitation Counseling/Case Management***

- Minnesota Theory of Work Adjustment (Dawis, England, Lofquist, 1964)
- Systemic, Ecological Model (Hershenson, 1998)
- INCOME (Beveridge, Heller Craddock, Liesener, Stapleton, & Hershenson, 2002)
- RECAM© (Sawyer, 2002)

***Forensic Rehabilitation***

- Vocational Expert's Approach to Wage Loss Analysis (Boyd & Toppino, 1995)
- RAPEL© (Weed, 1993; Weed, 1995; Weed, 2000; Weed & Field, 2001; Weed, 2004)

The International Classification of Functioning, Disability and Health (IFC) published by the World Health Organization (WHO, 2001) is an example of a medical case conceptualization model. The ICF focuses on how individuals live with health complications with an emphasis on measures that will optimize a person's ability to remain in the workforce and live a full life in the community. Social aspects of a disability are considered with corresponding mechanisms to document the impact of a social and physical environment on function (e.g., need for a ramp or elevator in a building). The ICF checklists include demographic information as well as impairment of body functions, body structures, activity/participation restriction, environmental factors, and other contextual information, brief health information and general information on participation and activities (mobility, self care, domestic life, interpersonal

interactions, major life areas, community/social/civic life). In 1963, Hall introduced the Core, Care and Cure Model, a theoretical framework for nursing practice. The clinical model for nursing diagnosis is now defined by the American Nurses Association (2004) as a process involving Assessment, Diagnosis, Outcome Identification, Planning, Implementation, and Evaluation.

Case conceptualization models historically also appear as an integral component of the counseling process. Counseling models include: Swenson's Model of Problem Conceptualization (1968) that defines deviant behavior as a function of the degree of stress, maladaptive behaviors, habits and defenses versus supports, strengths and adaptive habits/defenses; CAB (Cognitive, Affective, Behavioral), a framework developed by Seay (1978); and BASIC ID (Behavior, Affect, Sensation, Imagery, Cognition, Interpersonal relationships, Drugs) developed by Lazarus (1971 as cited in Lazarus, 1996). With regard to vocational psychology, rehabilitation counseling and case management, case conceptualization is exemplified in the literature with the Minnesota Work Adjustment Theory (Dawis, England, & Lofquist, 1964), Systemic, Ecological Model (Hershenson, 1998), INCOME framework (Beveridge, Heller Craddock, Liesener, Stapleton, & Hershenson, 2002), and RECAM© (Sawyer, 2002).

The Minnesota Theory of Work Adjustment (Dawis, England, & Lofquist, 1964), grew out of the psychology of individual differences, or how people differ from one another, i.e., human variability (Dawis, 2005). The Theory of Work Adjustment (TWA) has, as its basic constructs, satisfaction, satisfactoriness, needs, values, skills, and abilities. The model seeks to facilitate congruence or correspondence between a person and his/her [work] environment in order to satisfy the basic constructs. As a case conceptualization model, TWA can be used to organize facts, aid conceptualization, and suggest approaches to intervention (Dawis, 2005).

In the Systemic, Ecological Model, Hershenson (1998) proposes that the rehabilitation process is best explained by social systems theory. Understanding the relationship between individuals and the larger settings/environments that exert influence is important. At the center of Hershenson's model is the consumer system which includes the client, family, school/learning environment and peer socialization/reference groups with consideration of the impact of cultural issues. Interactive components of the client's subsystem include personality, competencies, and goals. Using concentric circles, the influence of work and independent living environments, provider system as well as the broader cultural, political, and economic environments are considered. Onset of disability, whether congenital or acquired, is the precipitating event that forms the macrosystem of disability and rehabilitation. Hershenson recommends that a rehabilitation counselor consider aspects of each subsystem as well as the influences of the macrosystem before undertaking an intervention. Roles of the counselor (counseling, coordinating, consulting and critiquing) should be matched to the individual needs of a client.

Another case conceptualization model, INCOME (Beveridge et al., 2002), uses an acronym for Imagining (awareness, fantasy, reality-based imaging), iNforming (self, world of work, opportunities), Choosing (integrating information into choice), Obtaining (putting choice into action), Maintaining (adapting, performing, sustaining) and Exiting (leaving current situation, e.g., fired, retired, promoted, etc.). The INCOME framework is designed to guide the application of career development theories and intervention strategies for persons with disabilities. Beveridge et al. (2002) propose a set of statuses in which the interaction of the individual (e.g., needs, values, interests, skills, abilities, aptitudes), environment, and culture/subcultures is considered. Further, the context must be considered as individuals with pre-

career onset, midcareer-onset, and episodic disabilities undergo different career development processes.

The RECAM© or Rehabilitation Evaluation and Case Analysis Method (Sawyer, 2002) is a comprehensive case development methodology from case referral to completion with sections applied, as appropriate, to each unique case. Steps in the process include case referral and acceptance, initial case review, client interview/ rehabilitation evaluation, case analysis/plan, case report/recommendations and case update.

In the forensic arena, Boyd & Toppino (1995) published a 12 step model to guide the vocational expert's approach to wage loss analysis which includes consistent evaluation of the following elements: medical and/or psychiatric reports/diagnoses, medical restrictions, functional capacities, formal educational level, current level of aptitudinal function, employment history, age, prior specific vocational preparation, transferable skills assessment, labor market access, and wage rate data. Further, a vocational diagnostic interview should be routinely conducted when possible (an option that may not be available for those retained by defense attorneys).

The RAPEL model (Weed, 1993, Weed, 1995, Weed, 2000; Weed & Field, 2001; Weed, 2004) is a widely accepted and recognized format for summarizing future care needs and earnings capacity opinions. RAPEL includes consideration of the elements of a Rehabilitation plan to determine future medical care/life care planning needs, Access to the labor market, Placeability and employability factors, Earnings capacity analysis, and Labor force participation.

As with any tool, a case conceptualization model must outline relevant issues and fit the needs of a particular case. PEEDS-RAPEL©, illustrated in Figure 1, is such a model for pediatric cases and expands the RAPEL approach (Weed, 1993, et al.).

The PEEDS portion of PEEDS-RAPEL© analyzes relevant data specific to the child, including:

- **PARENTAL/FAMILY OCCUPATIONS**: Obtain family work history (occupations and skill levels). Include information from parents, older siblings, aunts/uncles, grandparents and/or those adults that are likely to provide a role model for the child. Also include military experience, volunteer/community service, and/or avocational activities. Consider vocational assessment of parents, as appropriate, to determine a pattern of aptitudes or trait profile.

- **EDUCATIONAL ATTAINMENT**: Establish family patterns of educational attainment including information from the immediate and extended family (as above). Determine not only the academic level/degrees earned, but the skills obtained through education and training. Administer or coordinate a referral for achievement and/or intellectual assessment of parents as needed

- **EVALUATION RESULTS**: Determine the child's functional capacities through interviews and formal assessment of physical, cognitive, emotional and vocational capacity. Consider academic skills, interests, aptitudes, personality, assessment of independence/ADLs and family patterns of hobbies/leisure activities. When appropriate, compare to pre-incident status and function.

- **DEVELOPMENTAL STAGE**: Consider the normal developmental tasks of a particular age (e.g., ADLs, career development). Determine the effects of a disability on function

and ability to achieve developmental milestones. Provide recommendations for remediation and/or accommodations to facilitate the optimum level of function for the child.

- **SYNTHESIS**: Integrate results of the interview, parental/family occupations, educational attainment, evaluation results, developmental stage, and opinions regarding functional capacities to determine the impact of the disability and the likely options that are, within reasonable probability, available to the child. Consider any "pre-existing" or non incident related conditions that may have an impact on development, but are not appropriate to consider in a life care plan.

**Case Example**

To illustrate the application of PEEDS-RAPEL© to a specific case, the authors introduce Abe. Abe is a 6-year-old boy with left Brachial Plexus Palsy (BPP) as a result of a birth injury. He is status-post brachial plexus exploration and neurolysis. He lives with his single mother in a home shared by maternal grandparents and extended family. School records indicate a diagnosis of Attention Deficit Hyperactivity Disorder (ADHD) and frequent visits to the principal's office due to behavior issues. Within the context of PEEDS-RAPEL©, the elements of Abe's case are summarized in Figure 2. The reader is referred to Neulicht & Berens (2004) for additional case details.

**Conclusion**

In formulating expert opinions, it is expected that rehabilitation professionals follow a consistent and generally accepted model that provides a reliable and valid provisional framework of a child's presenting problems. By using PEEDS-RAPEL©, rehabilitation experts can analyze relevant information specific to a child with a disability and follow a logical, comprehensive model to facilitate the decision-making process regarding future medical/rehabilitation needs as well as future employment and earnings capacity opinions. PEEDS-RAPEL© provides a framework with terms that can be operationalized so as to help the consultant anticipate, understand, and effectively manage case information, as well as, analyze the data in a logical, comprehensive way, and consistently explain it to others, including the client, family/caregivers, and, where applicable, the trier of fact.

Figure 1. PEEDS-RAPEL© Case Conceptualization Model

## *PEEDS-RAPEL©*

***P*ARENTAL/FAMILY OCCUPATIONS** Obtain family work history (occupations and skill levels). Include information from parents, older siblings, aunts/uncles, grandparents and/or those adults that are likely to provide a role model for the child. Also include military experience, volunteer/community service, and/or avocational activities. Consider vocational assessment of parents, as appropriate, to determine a pattern of aptitudes or trait profile.

***E*DUCATIONAL ATTAINMENT** Establish family patterns of educational attainment including information from the immediate and extended family (as above). Determine not only the academic level/degrees earned, but the skills obtained through education and training. Administer or coordinate a referral for achievement and/or intellectual assessment of parents as needed.

***E*VALUATION RESULTS** Determine the child's functional capacities through interviews and formal assessment of physical, cognitive, emotional and vocational capacity. Consider academic skills, interests, aptitudes, personality, assessment of independence/ADLs and family patterns of hobbies/leisure activities. When appropriate, compare to pre-incident status and function.

***D*EVELOPMENTAL STAGE** Consider the normal developmental tasks of a particular age (e.g., ADLs, career development). Determine the effects of a disability on function and ability to achieve developmental milestones. Provide recommendations for remediation and/or accommodations to facilitate the optimum level of function for the child.

***S*YNTHESIS** Integrate results of the interview, parental/family occupations, educational attainment, evaluation results, developmental stage, and opinions regarding functional capacities to determine the impact of the disability and the likely options that are, within reasonable probability, available to the child. Consider any "pre-existing" or non incident related conditions that may have an impact on development, but are not appropriate to consider in a life care plan.

***R*EHABILITATION PLAN** Determine the rehabilitation plan based on the client's vocational and functional limitations, vocational strengths, emotional functioning, and cognitive capabilities. This may include testing, counseling, training fees, rehabilitation technology, job analysis, job coaching, placement, and other needs for increasing employment potential. Also consider reasonable accommodation. A life care plan may be needed for catastrophic injuries.

***A*CCESS TO THE LABOR MARKET** Determine the client's access to the labor market. Methods include use of computer programs for transferability of skills (or worker trait) analysis, disability statistics, and experience. This may also represent the client's loss of choice and is particularly relevant if earnings potential is based on very few positions.

***P*LACEABILITY** This represents the likelihood that the client could be successfully placed in a job. This is where the "rubber meets the road." Consider the employment statistics for people with disabilities, employment data for the specific medical condition (if available), economic situation of the community and availability (not just existence) of jobs in chosen occupations. Note that, where appropriate, the client's or family's attitude, personality, and other factors will influence the ultimate outcome.

***E*ARNINGS CAPACITY** Based on the above, what is the pre-incident capacity to earn compared to the post-incident capacity to earn? Consider categories and examples of occupations (e.g., unskilled, semiskilled, or skilled as a result of elementary/middle school, high school, technical school or college educational attainment) that are representative of the type of occupations a child could reasonably have been expected to perform pre- and post-incident. Determine the ability to be educated (sometimes useful for people with acquired brain injury). Utilize relevant research data and computer analysis, as appropriate, based on family work patterns and/or client's worker traits.

***L*ABOR FORCE PARTICIPATION** This represents the client's work life expectancy. Determine the amount of time that is lost, if any, from the labor force as a result of the disability. Issues include additional time to find employment, part-time vs. full-time employment, medical treatment or follow up, earlier retirement, etc. Display data using specific dates or percentages. For example, the ability to work an average of four hours a day may represent a 50% loss.

**PEEDS-RAPEL© Neulicht & Berens, 2003; Adapted from RAPEL© Roger O. Weed, 1993**

Figure 2. Case Example Utilizing PEEDS-RAPEL©

## *PEEDS-RAPEL©*

***P*ARENTAL/FAMILY OCCUPATIONS** Mother's work history includes jobs as a fast foods worker, screen printer, general office clerk and assembler. Father has held jobs as a fast foods worker and material handler. Maternal grandfather and great grandfather were maintenance mechanics. Maternal grandmother currently works as an EKG technician with past work as a fast foods manager and industrial fabricator. One close cousin is a sheriff and another, an established rap music artist.

***E*DUCATIONAL ATTAINMENT** Mother is a high school graduate who has completed pharmacy technician coursework at a local community college. Father is a high school graduate with one year of college coursework in welding. Maternal grandmother as well as aunts and uncles have completed technical school training. Paternal grandmother has completed an AA degree; other paternal educational history is unknown.

***E*VALUATION RESULTS** Left UE deficits with minimal ability to functionally use non-dominant arm/hand (no overhead activity, limited lifting, nearly functionless hand, no ability to straighten fingers, use of arm only as an assist). Per physician, current deficits are indicative of functional limitations with regard to future work and independent living capacity. Borderline to low average cognitive skills with performance compromised by attention deficits, noncompliance and motor difficulties. Educationally, qualifies for services as a student with developmental disabilities (DD) with consultation from a special education teacher. Behavior program has been implemented.

***D*EVELOPMENTAL STAGE** Abe expresses an intense interest in becoming a rapper and demonstrates play behavior indicative of this. Abe is currently functioning in the fantasy stage of career development and is too young to express viable vocational goal(s).

***S*YNTHESIS** Restrictions, limitations and/or deficits are consistent with BPP/limited use of an upper extremity which include exertional and functional limitations in the areas of lifting, carrying, pushing, pulling, climbing, crawling, bilateral reaching/handling/fingering, finger/manual dexterity, feeling/sensation, motor coordination and eye-hand-foot coordination. Residual capacity indicative of accommodated work in the sedentary to light exertional category. Further evaluation/intervention for attention deficits, cognitive and psychological issues is needed.

***R*EHABILITATION PLAN** Proactive rehabilitation services are recommended to maximize Abe's function and vocational/independent living success to include rehabilitation case management, continued hand/occupational therapy, psychological assessment/adjustment counseling, specialized vocational assessment, vocational counseling and career development activities, and use of a job coach to facilitate and maintain vocational success.

***A*CCESS TO THE LABOR MARKET** Access limited by physical/functional deficits. The effects of psychiatric/adjustment disorders resulting from physical deficits as well as the impact of ADHD on academic skill, educational achievement and work-related capacity cannot be determined at this time although research indicates that Abe is at greater risk for problems. Borderline IQ also presents challenges for future academic pursuits and work. Based on the combined effects of Abe's ADHD/behavior outbursts, borderline cognitive ability and physical deficits, his prognosis for fully independent competitive work is guarded.

***P*LACEABILITY** Abe has sustained a moderate to severe impact in his ability for placement in the competitive labor market. Abe will not be physically capable of performing unskilled positions that require bilateral upper extremity use, nor the types of positions his parents have performed. He will likely require job accommodation to achieve/maintain any type of employment.

***E*ARNINGS CAPACITY** Pre-incident: Per data from the US Census Bureau (2003) and Bureau of Labor Statistics (2004), males with a high school diploma and no injury are most likely employed in service occupations ( Police and sheriff's patrol officers, Security Guards, Cooks), followed by construction/extraction occupations (Carpenters), and transportation/material moving occupations (Drivers/sales workers and truck drivers, Laborers and freight, stock, and material movers). According to state Occupational Employment Statistics (2005) in Abe's Metropolitan Statistical Area (MSA), mean entry wage is $8.24 per hour or $17,139 per year for the above occupations. The experienced worker earns, on average, $13.12 per hour or $27,290 per year.

Post-incident: Supported employment in an integrated work setting utilizing a job coach/natural employer supports is the likely placement option for Abe. Results of a longitudinal study of the Vocational Rehabilitation service program (Hayward, & Schmidt-Davis, 2003) indicate that consumers are typically placed in service occupations earning *at best*, $13,104 - $14,187 per year (Mean: 33.6 hours per week at $8.12 per hour; Median: 40 hours per week at $6.30 per hour). Individuals who do not achieve competitive employment earn $7, 020 - $8, 188 per year (Mean: 29 hours per week at $5.43 per hour; Median: 30 hours per week at $4.30 per hour).

***L*ABOR FORCE PARTICIPATION** Even with rehabilitation assistance, skill or specialized training and workplace adaptation/personal assistance, Abe is likely to require additional time to find suitable employment. Due to the combination of cognitive psychiatric/behavioral and physical limitations/deficits, Abe's options for competitiveness, lateral and upward mobility have been restricted. Some loss of worklife expectancy is expected but cannot reasonably be measured at this time.

**PEEDS-RAPEL© Neulicht & Berens, 2003; Adapted from RAPEL© Roger O. Weed, 1993**

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