# Promoting transition to adulthood for youth with physical disabilities and health impairments

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**Abstract**. Post school outcomes for individuals with disabilities have been consistently poor, when compared to individuals without disabilities, in the areas of employment and education. This article takes a look at issues involved in the transition of youth with orthopedic or physical disabilities (OPD) and other health impairments (OHI). It begins with an overview of OPD and OHI students. This is followed by information on how to improve transition from school to work and postsecondary education outcomes through assessment; effective instruction; and individualized supports.

Keywords: post school, orthopedic disabilities, physical disabilities, OPD, health impairments, transition

## 1. Introduction

A fundamental purpose of secondary school is to assist youth in their transition into adulthood by continuing to establish the foundation upon which a satisfying life emanates and progresses overtime. In order to help ensure this occurs, some youth with disabilities will need holistic planning and relevant services to help prepare them to undertake adult roles in their communities. Unfortunately, since first being reported in the 1980's post school outcomes for individuals with disabilities have been consistently poor, when compared to individuals without disabilities in the areas of education, employment and independent living (Certo & Luecking, 2011; Wehman, 2013; Wehmeyer, 2011).

One way to improve adult outcomes is to provide a student with a disability with a high quality, indi-

vidualized set of transition services. The Individuals with Disabilities Education Improvement Act (IDEIA) of 2004 defines transition services as: A coordinated set of activities for a student with a disability that:

a) *is designed to be within a results oriented process, that is focused on improving the academic and functional achievement of the student with a disability to facilitate the students movement from school to post school activities, including: postsecondary education, vocational education, integrated employment (including supported employment), continuing and adult education, adult services, independent living or community participation;*

b) *is based upon the individual student's needs, taking into account the strengths, preferences, and interests and;*

c) *includes instruction, related services, community experiences, the development of employment and other post school adult living objectives, and if appropriate acquisition of daily living skills*

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*and functional vocational evaluation (34 C.F.R. 300.43.(a);20 U.S.C.1401(34))*

The individualized education programs (IEP) for students ages 16 or older must address transition goals. "*Beginning no later than the first IEP in effect after the student turns 16 or younger if determined appropriate by the IEP Team, and updated annually thereafter, the IEP must include...* (IDEIA 2004 Sec 614[d] [1] [VIII]) It is extremely important to note that for many students waiting two years prior to leaving school is much too late to begin this important process. Educators and families need time to develop relationships with adult services, before special education entitlements end. Student involvement is also essential to improve outcomes. "*The LEA must invite a student with a disability to attend the student's IEP Team meeting if a purpose of the meeting will be the consideration of post secondary goals for the student and transition services needed to assist the student in reaching those goals under 3000.320b.* (34CFR 300.321[b])(20 U.S.C. 1414[d] [1] [B]) This invitation allows the student's voice to be heard and opens the door to develop self-determination and self-advocacy skills (Konrad & Test, 2004). IDEIA 2004 also states the student's IEP must include a statement of *a) appropriate measureable postsecondary goals based upon age appropriate transition assessments related to training, education, employment, and where appropriate independent living skills; b) the transition services (including courses of study) needed to assist the student in reaching those goals* (34 CFR300.320 [b]; 20 U.S.C.1414 [d] [1] [A] [i] [VIII]). Transition assessment is an ongoing and coordinated process.

The purpose of this article is to review issues involved in the transition of youth with orthopedic or physical disabilities (OPD) and other health impairments (OHI) into adulthood. It begins with an overview of students with OPD an d OHI in special education. This is followed by information on how to improve transition from school to work and postsecondary education outcomes by implementing appropriate assessment; effective instruction; and individualized supports.

## 2. Overview of students with OPD and OHI in special education

IDEIA and its regulations define OPD as "*a severe orthopedic impairment that adversely affects a child's educational performance. The term includes impair-* *ments caused by a congenital anomaly, impairments caused by disease (e.g., poliomyelitis, bone tuberculosis), and impairments from other causes (e.g., cerebral palsy, amputations, and fractures or burns that cause contractures* (20 U.S.C. 1401[3)]; 1401[30]). Some causes of OPD include cerebral palsy, spinal cord injury, neuromuscular disorders, and spina bifida. Students with traumatic brain injury (TBI) may also be classified as OPD if physical impairment is the primary result of the injury. In 2011, the most available data from www.ideadata.org reported that 4,410 K-12 students had an educational diagnosis of OPD, representing about 1% of all special education students that year.

OHI is defined as "*having limited strength, vitality, or alertness, including a heightened alertness to environmental stimuli, that results in limited alertness with respect to the educational environment, that– (i) Is due to chronic or acute health problems such as asthma, attention deficit disorder or attention deficit hyperactivity disorder, diabetes, epilepsy, a heart condition, hemophilia, lead poisoning, leukemia, nephritis, rheumatic fever, sickle cell anemia, and Tourette syndrome; and (ii) Adversely affects a child's educational performance* (20 U.S.C. 1401[3]; 1401[30]). In 2011, there were 734,348 K-12 students with an educational diagnosis of OHI, representing 12.7% of all special education students.

The incidence rate of OHI among K-12 students has shown notable increases as of late. A report from the U.S. Department of Education (DOE, 2009) indicated that the percentage of students in the total K-12 population steadily increased by 400% from1995–2004 (.2% to.8%). Moreover, the second National Longitudinal Transition Study (NLTS-2), a nationally representative study of students from age 16 to early adulthood, found that over a third of students with other disability classifications had a secondary classification of OHI. Particularly high rates of OHI were found in students with emotional or behavioral disabilities and with TBI (Carter, Austin, & Trainor, 2012).

## 3. Transition from school to work and postsecondary education

A key to satisfactory adult outcomes for these students is successful transition to work and postsecondary education (Landmark, Ju, & Zhang, 2010; Test, Fowler, Richter et al., 2009; Wehman, 2013). One way to help make sure this happens is to develop a transition-rich IEP (Test & Grossi, 2011). Educators

and other professionals (i.e. transition and employment specialists) who are charged with this important responsibility must know and stay abreast of best practices in transition programming (APSE, 2009; Fabian, Simonsen, Buchanan, & Luecking, 2011; Tilson & Simonsen, 2013; Whitely, Kostick, & Bush, 2010). One framework that organizes effective practices is The Taxonomy of Transition Programming by Kohler (1996). It includes five major categories: family involvement, program structure, interagency collaboration, student focused planning and student development. The article will highlight areas in the student development category of Kohler's work by focusing on some considerations for assessment and instruction for students with OPD and OHI in secondary transition.

### 3.1. Transition assessment

Transition assessment is a specific subcategory of student development that includes curriculum based and situational assessment, as well as academic, cognitive, and adaptive behavior assessments. It is the first step in the transition planning process. Transition assessment can be used to write postsecondary goals, choose appropriate transition assessments, write individualized education program goals to support postsecondary goals, and design instruction for students. Although this article is focusing on the move from school to work or postsecondary education, it is important for the reader to recognize that transition planning may also involve activities associated with adult life (i.e. independent living skills, recreational activities, social skills and activities etc...).

Transition assessment has been identified as an ongoing process of collecting information on a student's strengths, preferences, interests and needs as they relate to future learning, living and working environments. It is a broad concept that spans all areas related to transition to adulthood which includes career and vocational assessment, academic assessment, community adjustment and independent living. Ongoing transition assessment and the student's present level of achievement guides the development of measureable postsecondary goals (Wigham et al., 2008). The postsecondary goals are then used to help determine and write annual IEP goals, plan annual activities and services including courses of study and designate responsibility.

When conducted in a thoughtful manner, assessment for transition will also lead to self-reflection. This will help ensure the plan reflects the student's desire for the future, as well as helps him make choices and understand the skills needed in various environments. The student also matures as he gains self-determination (choice, decision making and problem solving etc...) and self-advocacy skills. A thorough transition plan should also help the student have a seamless move from high school to postsecondary environments, by enabling him to gain access to accommodations and supports, social competence, secondary education and employment.

Employment and income are important determinants of life satisfaction for individuals with OPD and OHI, as well as their peers. Additionally, employment is crucial to the transition process for youth with OPD and OHI. Employment is critical to financial independence which enables an individual to more readily attain independent living, transportation, health care benefits, and recreational activities. Therefore, career development and planning is an essential part of transition planning. Awareness of one's aptitudes, interests and skills is a key element that must be combined with knowledge of realistic employment options and educational demands. Some students will go to work. Others will choose to pursue additional education or training to prepare for a career. Regardless of the direction, each student will need to focus on developing an appropriate career plan.

### 3.2. Functional approach to assessment

Regardless of a student's academic skills and educational goals, assessment for transition needs should take a very functional approach. School and community-based work experience programs are ideal for assessing functional abilities and limitations in work and postsecondary education settings. During transition planning the team should ensure assessment includes a close look at the areas listed in Table 1. The team must assess the student's current situation while considering future needs. This includes considering various types of supports. Supports will need to be individualized as each student will have a different need based on personal, environmental and other situational factors.

### 3.3. Supports

Two supports that may be particularly beneficial to students with OPD and OHI in both employment and postsecondary education that the team may not be familiar with are: personal assistance services and assistive technology (AT) or rehabilitation engineering

Table 1
Considerations for transition to adult environments

**Bathroom use:** schedule, requirements to access bathrooms, plan to address toileting accidents, personal assistance etc...

**Work endurance:** length of time on task without needing a break, type of tasks, break room accessibility, ability to take unscheduled breaks without being noticed or stopping work slow down, requesting a break, need for job coach etc...

**Eating and drinking:** schedule, special diet, storage of food, access to eating areas, personal assistance etc...

**Communication:** secondary communication modes if those within the student's repertoire are not functioning in new settings, education of others (i.e. coworkers, supervisors etc...) on effective communication etc...

**Grooming:** personal hygiene and the type and appearance of clothing; access to bathing and laundry facilities, access to shopping etc...

**Hand use:** ability to grasp and manipulate small and large objects, hand and arm strength related to lifting, and amount of control over hands and arms etc...

**Vision and Hearing:** ability to see and hear in typical environments etc...

**Medical needs:** current health and any limitations, ongoing need for medical monitoring; ability to take medication, access to services, plans to bridge pediatric and adult health services etc...

**Mobility:** access to various areas in and outside and across environments, distances that can be safely or independently travelled, street crossing etc...

**Transportation:** ability to get to and from various places (i.e. work, shopping, places for recreation) from home, access to modified vehicles to drive, access to specialized transportation etc...

**Social interaction:** opportunities for social interaction, responses to stress, criticism, pressure to perform, ability to make friends, greet others etc...

**Academic skills:** current reading, writing, and mathematics skills (be sure to consider functional skills too) etc...

**Learning:** best ways to teach the student new information, impact of environmental stimuli and other conditions on new learning etc...

**Assistive technology:** types of AT used, how cared for etc...

**Personal assistive service:** when and where, for what etc...

**Other supports:** type, when, where and for what etc...

**\*\*\*CONSIDERATION must be given to individualizing supports to promote the student's ability to succeed at work, post secondary education, independent living etc...\*\*\***

in post-school environments. Transition team members should be familiar with both.

### 3.3.1. Personal assistance services

The World Institute on Disability defines personal assistance services (PAS) as "assistance, under maximum feasible user control, with tasks that maintain well-being, comfort, safety, personal appearance, and interactions within the community and society as a whole" (Holt, Chambless, & Hammond, 2006). In general, PAS is used by persons with disabilities to perform tasks that the person would perform for him/herself if s/he did not have a disability. It can include tasks that range from reading, communication, and performing manual tasks (e.g., turning pages) to bathing, eating, toileting, personal hygiene, and dressing (Silverstein, 2003). The primary value of personal assistance services is in that they allow people with severe OPD and

OHI to participate more fully in community settings and activities, including employment. A personal assistant can fill in the gaps between the requirements or demands of a particular setting and the functional limitations of the individual.

During childhood and adolescence, the personal assistance needs of students with orthopedic and health impairments are typically filled by parents and other family members; in school, teachers, aides, or other students provide assistance. During the transition process, personal assistance needs as they relate to the workplace and other community-based environments should be addressed (Turner, 2007).

The transition individualized education program (IEP) team should identify the anticipated personal assistance needs of the student, as well as the available resources, formal and informal, for meeting those needs. For many daily functions, family, friends, or

volunteers can provide work-related assistance without stigmatizing the student. For example, transportation to and from work can be provided by a family member or co-worker. In many, if not most, workplaces, supportive co-workers can be found who will assist the student with getting from one area to another or with eating; however, it is unusual to find co-workers willing to assist with toileting at work, to clean up after toileting accidents, to administer injections, or to take care of other personal and medical needs. A paid assistant is a viable option for those students who would feel stigmatized by having a family member come to the workplace for these purposes (Turner, 2007). Although the use of a personal assistant in the workplace may initially seem unusual to co-workers, the arrangement should eventually become accepted, particularly if the student hires, trains, and pays the assistant.

It is important to keep in mind that the need for PAS can frequently be affected by the lack of physical accessibility or by the need for adaptive equipment. Whenever modifications and technology can be used to enhance independence, they should be considered. When a personal assistant is hired it is important for the individual to take on the responsibility of hiring and managing the personal assistant to the greatest degree possible, which means completely for those who have their mental faculties intact.

### 3.3.2. Assistive technology

Students with severe OPD and OHI may use specialized AT equipment and procedures to gain more control, independence, and efficiency in day-to-day activities and to participate more fully in community-based vocational and social activities (Wehmeyer et al., 2006). In most states, this is a service offered by the state's vocational rehabilitation (VR) agency. Team members should contact their state office and become familiar with ways to access rehabilitation engineering services and investigate other similar resources. The ability to use accommodations and supports helps bridge the transition from youth to adulthood. However, findings from the NLTS-2 (Cameto, Newman, & Wagner, 2006) indicate that only 6% of students' transition plans included needed accommodations and supports. This is regrettable given the fact that accommodation and supports can be critical to achieving quality adult life outcomes (e.g., work, recreating, and independent living) for youth with OPD and OHI. This finding may also help shed light on the dismal post-school employment rates of individuals with disabilities. It also seems to indicate that transition team members (which include

the student and family) need more information on this topic.

For students with OPD and OHI, technology can include an array of assistive devices, from very simple pointing devices to motorized wheelchairs, robotic limbs, and voice and eye gaze–activated computer programs that help users to achieve greater independence in communication and environmental control. Examples of technological support for students with OHI are ventilators to aid respiration, intravenous nutrition, and mobility aids. For students with complex communication needs, the use of augmentative and alternative communication strategies such as speech generating devices, written messages, gestures, sign language and communication displays help support their interactions with the world and enable them to take on greater responsibility for expressing their needs.

While many products have been developed specifically for youth and adults with disabilities, sometimes those used by the public at large can be used to meet the student's educational and transitional needs. As an example, DePompei et al. (2008) and Gentry, Wallace, Kvarfordt, and Bodisch Lynch (2008) describe practical applications of use of personal digital assistants (PDAs), smart phones, and other digital devices for students and adults with cognitive problems that compensate for deficits in memory, concentration, and attention that are frequently associated with TBI. Among those uses are: personal calendars with alarms for reminders of important events, meetings, etc., contact lists with automatic dialing for reaching peers, family members, employers, etc. and global positioning system (GPS) that can assist with way finding in the community.

One of the benefits of these devices is that they are ubiquitous – just about everyone has one – and they are relatively inexpensive in relation to many products developed exclusively for individuals with disabilities. Thus, they are far less likely to stigmatize the student than are disability-specific technologies, and are much more financially practical.

## 4. Instructional content and teaching strategies for work

Transition assessment should guide instruction in terms of what skills to teach and how to best teach those skills (i.e. the methodology to best meet the student's learning needs). It should also be used to determine courses and related experiences a student will need to

complete in high school to support postsecondary goals such as employment. Assessment provides insight into a student's existing skills, possible talents, and support needs.

This information is used to determine what is needed to ensure the student is prepared for future success at work. It can also be used to modify instruction if needed and should help students identify a course of study, including electives that will help prepare them for postsecondary goals, such as postsecondary educational or training goals (i.e. university preparation to enter School of Engineering, technical school training in culinary arts etc...) and employment (i.e. community based work experiences, summer or part time work while in school etc...) (Getzel & Briel, 2013).

Instructional content decisions should address the following question: What to teach and how to teach it? For some students with OPD and OHI, especially those with significant disabilities, this may mean teaching skills related to independence like employment skills through community based instruction, as well as paid work (Wehman, 2013). The challenge is to explore career paths that interest, excite and motivate the student. For instance, a "career using computers" is a typical first solution for many individuals with OPD or OHI. Obviously, many youth will not have an interest in this area and they need to know that there are a wide variety of options available to them.

A number of predictors have emerged related to the key variables in successful transition to employment, especially for those with multiple and significant disabilities. A consistent predictor is community based work experience while youth are still in high school, particularly paid jobs where students work in real workplaces alongside others without disabilities. Not volunteer work not sheltered work, but simply a real job for the going wage in the community (Luecking, 2009; Simonsen, 2010; Test, Mazzotti, et al., 2009; Wehman, 2013).

As with assessment, teaching students with OPD and OHI in paid or unpaid work settings should take a very functional approach. Sharpton and West (1991) summarized this approach: "If a work skill or task can be taught, teach it; if it can't be taught, adapt it; if it can't be taught or adapted, support it" (p. 16). For students with orthopedic and health impairments, but without cognitive impairments, jobsite interventions often focus less on training in specific job tasks and more on adaptations of the work environment or job duties and support for the student/worker, the supervisor, and co-workers (Targett & Griffin, 2013).

### 4.1. Work adaptations and supports to overcome physical limitations

The use of adaptations and support strategies in work settings for students with physical limitations has been labeled "jobsite enabling" (Inge & Moon, 2011), a term that captures the importance of adaptation and support for future employment success. For problems or performance impairments in each of the functional areas described in the preceding section, the transition IEP team members should explore the feasibility of the following adaptation and support strategies (Inge & Moon, 2011):

- Redesign the sequence of the task or activity to eliminate difficult steps.
- Determine alternative means of performing the task or activity that are within the student's physical capacity.
- Rearrange the environment to permit easier access to work areas and materials.
- Position the equipment or materials to make the job easier for the individual to reach or manipulate.
- Enhance existing cues (e.g., signs, buttons, and instructions) or develop alternative types of cues that the student can discriminate.
- Make or purchase assistive devices that alleviate difficulties with mobility, movement, discrimination, work speed, visual acuity, and so forth.
- Have a co-worker or other support person complete tasks that the student cannot.

Regardless of the applied strategy, it is important that the student perceive the usefulness of strategies and participate in the planning process. Therefore, the team should ensure the student is involved in their development.

## 5. Transition to work

Some students with OPD and OHI are able to locate, obtain, and maintain employment without specialized vocational support services; others are not. These students will require more intensive or advocacy level work support services such as those offered in a supported employment approach (Wehman, 2013). For a student with a more significant physical disability, which may be paired with cognitive problems, an inordinate amount of time could be spent trying to get the person ready to conduct a job search or other prevocational activities, when in reality it is highly unlikely

Table 2
Supported employment

- The employment specialist spends time getting to know the student. During community outings or vocational situational assessments the person's vocational interests, strengths and potential work support needs are explored.

- The employment specialist meets with employers to learn about operations and their needs. Then as applicable the employment specialist recommends ways to create work opportunity for the job seeker and describes various work supports that will assist the person on the job if hired.

- Given that both the employer and jobseeker are both agreeable a meeting is set up between the all parties (jobseeker, employer and employment specialist). Oftentimes, this is when the employer makes a decision about whether or not to offer the person a position; and the person choose whether or not to accept it.

- Once hired the employment specialist accompanies the new employee to work to provide and facilitates an array of workplace supports often called job site enabling. *Note: At this time, depending on the nature of the work and the new hire's abilities to get the job done the employment specialist may also help ensure the work is completed. At this time, the employment specialist also helps ensure the person has support outside the work place that may impact job retention (i.e. transportation, grooming etc...). For instance, during transition planning the student's available resources are identified, including both formal and informal support mechanisms and now a plan to access these as needed is put into place.

- Eventually, as the employee begins to meet the employer's job performance standards and expectations (as evidenced by data collection) the employment specialist fades his presence away from the job site, however, he continues to monitor how things are going and provides or facilitates additional work support to the employee or employer (Wehman 2013).

that the learning that takes place in the classroom will ever generalize into the real world (Wehman & Kregel, 2011). This has been called a "train and place approach" and is based on the assumption that individuals with disabilities must acquire a general skill set and demonstrate "work readiness" prior to seeking employment. These services are provided outside the work place. Notably, Nazarov, Golden, & von Schrader (2012) found that prevocational services may have a detrimental effect on individuals with disabilities.

One specialized vocational service that will be described in more detail below is supported employment. In a supported employment approach a vocational rehabilitation professional known as an employment specialist works closely with the person with a disability. From the start there is an immediate focus on job development. Then, once the job seeker is hired, on-the-job support is provided to assist the new employee with learning how to perform the job and related duties to meet the employer's expectations. After the new hire has stabilized at work long term ongoing follow up services are provided that last throughout the duration of the employee's job retention. Resources focus on employment now or "work first" (Kiernan, Hoff, Freeze, & Mank, 2011), rather than "getting ready to get ready to work." Notably, in light of knowing about how evidenced-based practices, like supported employment, can assist people with disabilities in gaining and maintaining employment, prevocational services that require individuals with significant disabilities to "get ready" to work continue to be valued and offered. Furthermore, we have seen an increase in sheltered workshops (i.e. place where individuals with disabilities congregate together to perform various work tasks) and segregated day programs (Butterworth et al., 2011; Butterworth, Smith, Hall, Migliore, & Winsor, 2009; Callahan, Griffin, & Hammis, 2011). Policy and organizational factors sustaining prevocational services need to change (Nazarov, Golden, & von Schrader, 2012; Rogan & Mank, 2011; Wehman, 2011).

## 5.1. Supported employment

Individuals with physical disabilities have motor impairments related to a variety of diagnoses including cerebral palsy, muscular dystrophy, multiple sclerosis, rheumatoid arthritis, traumatic brain injury, and spinal cord injury. In addition, some individuals may have cognitive deficits and concomitant disabilities, such as sensory or medical conditions. This may translate into multiple needs and some students will require assistance in mobility, communication, learning, self-care, or decision making. Many of these individuals will benefit from a supported employment. Supported employment is a federally funded program to facilitate competitive employment for individuals with the most severe disabilities who require ongoing support to work. As previously mentioned, in this approach an employment specialist works one to one with the person who has a severe disability to assist him or her with gaining and maintaining a job in the community (Wehman, 2013). And while the individualization of services leads to variation in implementation, the approach typically includes the steps briefly outlined in Table 2.

Modifications, adaptations, and compensatory strategies are often used to assist an employee with a physical disability with functioning more independently. Other services from an occupational therapist, physical therapist, or speech-language therapist may be needed to assist with positioning, mobility, adaptive equipment, and communication needs. Due to the lack of a single agency being assigned responsibility for the coordination of services for individuals with physical disabilities, employment specialists may find themselves identifying and gaining access to services from other agencies or service providers, normally the role of a service coordinator. Similarly, not having an agency responsible for the delivery of services has created additional limitations with funding, administering, and staffing ongoing follow-along services, all of which are essential for SE. Transportation problems can further restrict employment options because specialized services or lift-equipped buses are often necessary.

Decisions regarding employment choices are also affected by the same issues confronted during service delivery. Communication, motor, and sensory impairments can make it difficult for an individual to express his or her preferences and be accurately understood by another person. The use of augmented communication systems and adaptive equipment can enhance one's ability to express choices and participate in the ongoing decision-making process. Emphasizing the physical environment (e.g., calm, comfortable, free of stress) and providing ample time (e.g., not rushing, waiting during pauses) are critical for valid choice making. Slow or uncontrolled motor movement and unclear speech should not be interpreted as an inability to choose, but rather as a signal to the employment specialist to utilize adaptations, modifications, or other techniques to make communication easier for the individual. Often just spending time together, listening to how an individual speaks, and observing his mannerisms of expression can eliminate the need to utilize additional supplemental aids.

Sometimes, a person who has severe functional limitations cannot perform some of the tasks that an employer expects of his or her employees. For example, an employee with mobility impairments may be able to

Table 3
Examples of work supports

| Employee Description | Work supports |
|---|---|
| • John has cerebral palsy that causes unsteady movement in both hands and arms. He works as a customer service representative for a large business. One of his primary job duties is to create identification badges for personnel using a computerized photo system. | • Extended the focus knobs on the camera. This reduced the need to reach and made them easier to manipulate.<br>• Purchased office chair that swiveled to make getting up and down easier. The chair also had arms that increased stability.<br>• Trackball mouse was purchased to replace the standard mouse.<br>• Job coach performed other job duties while he learned to use the computerized/photo system to create identification badges. |
| • John also had to find ways to use the men's restroom with limited or no assistance. | • A small cabinet was installed on the wall in the bathroom and a urinal was purchased and stored there for his use.<br>• John had a seamstress replace the zippers in his pants with Velcro for ease of removal as needed. |
| • Samantha has a spinal cord injury. She uses a wheelchair and has problems using her right and left hand. She also has problems seeing, has a history of seizures and difficulties learning new things. Samantha works as an Office Assistant for bookkeeper in mid sized family owned business. One of her primary job duties involves processing and organizing files. | • Additional on the job skills training (4 weeks) on primary functions with intensive skills training from employment specialist.<br>• Slowed productivity due to inability to handle small paper clips. Large paper clips were substituted for small ones.<br>• Slowed work speed due to inability to use manual stapler. Purchased electric stapler.<br>• Can not see who enters the office. A mirror was placed over her workstation so she may see who enters without turning around. |
| • Samantha had to also consider ways to use the restroom with no or limited assistance. She had problems opening and closing the door to the restroom even after installation of a handle type door knob. | • A decorative curtain tie back was placed around the knob. This allowed Samantha to pull open and close the door. |
| • Samantha relies on specialized transportation carrier to take her to and pick her up from work. The carrier has a history of showing up late. | • Samantha keeps enough money for a Taxi ride home in her wallet. She also has the numbers of several cab companies who have accessible transportation. Samantha and the employment specialist try to keep the drivers of the specialized carrier service attuned to her concerns and needs through brief discussions and reinforcement etc. |

complete work at a computer or copier, but not deliver finished products or visit customers. One technique that is often used in this type of situation is called *job carving*, which involves negotiating work duties based on the job seeker's strengths and abilities and reassigning those tasks that are too difficult or impossible to others. Typically, reshuffling job duties to accommodate the worker makes business operations more efficient. Or sometimes a "no tech" solutions like rearranging a work space or access to work materials are all that is required.

Supportive and emerging technologies, like assistive technology, job carving, workplace accommodations and supported employment can help mitigate the effects of cognitive, physical, and psychosocial impairments resulting from physical disabilities. To further illustrate this concept, a couple of examples of work supports for employees with OPD are described in Table 3.

## 6. Transition from school to postsecondary education or training

Students with disabilities are enrolling in postsecondary schools in increasing numbers, although the exact proportion is not known because disability disclosure is voluntary. However, they continue to lag far behind those without disabilities in terms of participation in postsecondary education and training (Kiernan & Hart, 2011).

Preparation for postsecondary education includes learning those skills necessary to cope with academic and social challenges. Just because a student with OPD or OHI is academically capable of going to college, it should not be assumed that preparation is not needed (Kochhar-Bryant, Bassett & Webb, 2009; Shaw, Madaus & Dukes, 2010). Without proper planning and preparation, a student may become overwhelmed and have trouble adapting to the new setting (Hughes, 2009). To prevent this, transition planning must begin early. For instance, students need to take the necessary pre-requisites to enter a desired institution (Kochlar-Bryant et al., McGuire, 2010, 2009; Shaw et al., 2010), work on developing study skills and learning strategies (Getzel, 2008; Shaw et al., 2010), and understand rights and responsibilities related to requesting any accommodations, special services, or other supports (Getzel, 2008; Webb, Patterson, Syverud, & Seabrooks-Blackmore, 2008). Students who fail to go through the established process will not be able to gain access to supports designed to give them equal access to educa-

tion (Getzel, 2008; Getzel & Thoma, 2008; Troiano, Liefeld, & Trachenberg, 2010).

While any student can benefit from the use of technology and software; using it may be particularly important to a student with OPD or OHI. The use of technology can enhance success in postsecondary education and thereby lead to improved career outcomes (Getzel & Briel, 2013). Students need time to try out and customize technologies to compensate for disability, before entering higher education (Briel & Getzel, 2009). This will make the student aware of existing technologies that can help him (Shaw et al., 2010) and might include technology and software that assists them in organizing textbook materials or the development of a paper, text to speech software for reading, writing and taking exams, or hand held technologies to assist in time management (McManus, Smith, & Jones, 2010). The IEP team can help the student identify and customize supports by collaborating with technology specialist and other resources.

In addition, the transition planning process should include decisions about which educational institutions the student will apply for admission—decisions made on the basis of physical accessibility, available accommodations, and the student's educational goals and abilities. The student and his or her family should be encouraged to arrange visits to schools to meet with service coordinators, tour the campus and buildings in which the student will have classes, and talk with instructors and other students with disabilities. If student housing will be needed, then the accessibility of rooms and the availability of domestic assistance can be assessed. These site visits provide more valid information than any college catalog.

After acceptance at a postsecondary school, the coordinator of services for students with disabilities at that school should be invited to become a member of the transition planning team so that proactive planning can occur, even if services will not be sought immediately upon admission. The case example on the following page offers some insight into how this process might work and illustrates some possible roles of the disability services coordinator.

## 7. Summary

IEP team members (including families and to the degree possible the student) must be aware of best practices for designing and implementing a transition related IEP to move the student closer to obtaining his

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Case Example
Transition to Postsecondary Education

Mike is an 18 -year-old man. Due the nature of his OPD/OHI he requires ongoing medical care and sometimes hospitalization. Despite periodic absences during relapses and treatments, he maintained good grades in high school and wanted to attend college to pursue an engineering degree. Mike's mother was supportive of his goals however he will need to apply for financial aid to finance his education.

Several planning meetings were held in his junior year to help ensure he would meet his goal of going to college. During the first meeting, the team established several criteria: 1) the university should be accessible and Mike's class schedule should be designed in way that he could get around without excessive fatigue, and 2) the faculty should be willing to make allowances for Mike's periodic absences from class by giving him additional time to complete course work if needed and 3) Mike wanted to live on campus and have an opportunity to join a fraternity.

Over the summer of his junior year in high school, Mike and his mother visited five universities, touring the campuses, and meeting with faculty and disability service coordinators. Mike chose one of the State supported universities for the following reasons. Although the campus was large, it had an extensive bus system that connected the residence halls, library, and most of the buildings in which Mike would have classes. The university had comprehensive student health services with on-campus clinics. Faculty members of the school of engineering seemed willing to accommodate Mike's absences if necessary. The disability services coordinator impressed them with her knowledge and advocacy skills. For instance she assured Mike that she could arrange for note takers on short notice if Mike had to miss class. She had also made arrangements prior to their visit for them to talk with a student with a disability who had received similar services to describe his experience.

During Mike's senior year, the transition IEP team worked on the application process by planning for unforeseen contingencies. In addition, since the university was close by the disability services coordinator joined the transition IEP team and was instrumental in identifying problems they might encounter. For instance, Mike applied for on-campus housing, but the service coordinator informed them that there are never enough dormitory rooms to meet the demand. In case on-campus housing was unavailable, their contingency plan was that Mike would find an apartment on the bus route to campus and a roommate to split expenses.

Another problem area was finances. Mike's mother could not afford his tuition, housing, and meal plan. The service coordinator brought financial aid applications to the transition IEP meeting so Mike could apply for scholarships and work-study. Between transition IEP meetings, the service coordinator met with the university's work-study coordinator and identified potential jobs for Mike on campus that would not be too strenuous and would not be jeopardized if he had to be hospitalized for a week or so. Mike is now in his sophomore year. He works part-time in a mathematics lab. His health has been relatively stable, and he has not missed many classes.

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or her adult life goals. Some students will need supports like assistive technology, personal assistants, or advocacy level services like supported employment or education to achieve goals. Following best practices should increase these young adults odds of meeting their life goals.

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