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Task Analysis for a Food Processing Facility: A Social Enterprise for Persons from Underemployed Populations

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Task Analysis for a Food Processing Facility: A Social Enterprise for

Persons from Underemployed Populations.

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A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree

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School of Health and Natural Sciences

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This thesis, written under the direction of the candidates' thesis advisor and approved by the Chair of the Master's program, has been presented to and accepted by the Faculty of the Occupational Therapy Department in partial fulfillment of the requirements for the degree of Masters of Science in Occupational Therapy. The content, project, and research methodologies presented in this work represent the work of the candidates alone.

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- Louise, Jeremy, and Jessi

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Abstract

Social enterprises aim to be agents of recovery for consumers of mental health services but lack knowledge of how to accurately identify workplace supports, accommodations, and modifications that are appropriate for their clients. Graduate occupational therapy students were contacted to assist with an activity analysis at a food processing facility that serves persons with mental illnesses. Occupational therapy is well suited to assist with task analysis and consult on work environments for persons with mental illnesses. In three sessions over five months a task-oriented analysis of work tasks at a food processing facility that employed people with mental illnesses was conducted. In the first visit project managers conducted an initial interview of workers and supervisors and observed work tasks. They then presented a report of the findings that included recommendations for modifying tools for safety and ways to improve communication between workers and supervisors. In the second visit, project managers identified the physical aspects of the job tasks that could cause musculoskeletal injuries and collaborated with workers to alter the physical environment to improve task ergonomics. In the final session, workers and supervisors were filmed and photographed performing tasks with and without new modifications of the work environment. The product of the analysis was a report that made recommendations to improve food processing safety and an educational manual that provided resources on best practices for hiring and retaining employees with mental illnesses. Managers of the social enterprise said that they strongly agreed with the statement that they anticipated the manual and report would help them to hire or retain employees in the future.

Task Analysis for a Food Processing Facility: A Social Enterprise for Persons from
Underemployed Populations.

Introduction and Statement of the Problem

Disability is a physical or mental impairment that substantially limits one or more major life activities (ADA, 2010). The World Health Organization's International Classification of Functioning, Disability, and Health, recognizes that anyone can experience a decrease in health and as such, some form of disability (World Health Organization, 2011). This acknowledgement of disability as a common experience of humanity shifts the focus of disability from causes of disabling conditions to the impact that disability has on activities and participation. In terms of disability and associated mental illness, this shift in paradigms empowers and transforms people with disabilities and is exemplified by the psychiatric rehabilitation model of recovery. In this model, empowerment of consumers of mental health services is the goal which helps consumers to identify less with their diagnoses and more as whole persons ready for improved quality-of-life and participation in communities.

According to the Substance Abuse and Mental Health Services Administration [SAMHSA] (2011, December 22), recovery is "a process of change through which individuals improve their health and wellness, live a self-directed life, and strive to reach their full potential" (Recovery from Mental Disorders and Substance Use Disorders section). Health, home, purpose, and community are four major dimensions that support a life in recovery. Work is a meaningful daily activity that gives people with mental illnesses purpose in their lives (SAMHSA, 2011).

People's Harvest is an endeavor of Buckelew Employment Services that aims to serve the North Bay community by preparing locally grown produce for hospitals and public schools while employing underemployed populations from the community. The intent of this organization is to employ marginalized populations, such as individuals with mental and physical disabilities, people in traumatic recovery from addictions, and people who have been incarcerated for non-violent and non-sexual crimes. Increasing the employment opportunities of populations that have limited access to work is a common goal of many organizations and governing bodies. In fact, Healthy People 2020 objective MHMD 8 calls for an increase in the employment rate of people with severe mental illness from 54.4% to 64.4% by the year 2020 (U.S. Department of Health and Human Services, 2011).

Social enterprises like People's Harvest aim to be agents of recovery for marginalized populations but lack knowledge of how to accurately identify supports, accommodations, and modifications needed for employment of marginally employed populations. Occupational therapy is an allied-health profession perfectly suited to support this cause. This deficit of knowledge can be filled by occupational therapists with experience in mental illness and its impact on functioning. The profession of occupational therapy is well positioned to work with social enterprises that wish to employ marginalized populations because of the professions focus on participation. Utilization of work as therapy was a founding principle of occupational therapy and remains within the domain of occupational therapy practice (American Occupational Therapy Association, 2008). In addition, employment of underemployed populations

coincides with the ethic of occupational justice which guides occupational therapy practice (Gutman et al., 2010).

Review of the Literature

Introduction and Overview

People with severe mental illnesses make up five percent of adults between 18 and 50 years of age (National Institute of Mental Health, 2008). Severe mental illnesses may cause behavioral, mental or emotional disruptions that impair function and inhibit one or more occupations (DSM-IV). People with mental illnesses have among the lowest rates of employment. But as psychotropic medications become more effective, people with mental illnesses are able to expand their roles in the community and participate in more meaningful occupations (Auerbach & Jeong, 2005).

In order to be effective advocates for clients with mental illnesses, occupational therapists must understand the person-environment fit and possess knowledge of advocacy principles, best practices, laws, and law contexts (Stergiou-Kita, Moll, Walsh, Gewurtz, 2008). Person-environment fit consists of the job itself (job demands and accommodations), the worker (needs, goals and abilities), and the workplace (stakeholders and organizational perspective). This requires knowledge of the "essential job duties and job demands (e.g. physical, cognitive, communication, psychosocial, behavioral); performance expectations (e.g. quality, quantity, speed); limitations that may affect work performance (e.g. impairments, balance between home and work demands); and strategies that may enhance work performance" (Stergiou-Kita et al., 2008, p. 219)

To achieve person environment fit, Kirsh et al., (2009) recommend that therapists follow six principles. These principles are:

1. Establish a shared view of authentic work participation;

2. Reflection on the intervention philosophy supporting work intervention outcomes;

3. Access to supports, professional and workplace;

4. Provide access to employment and/or accommodations congruent with the needs of the persons, the demands of the occupation and resources in the work environment;

5. Focus on opportunities to address attitudinal or environment barriers to work participation;

6. Apply best practices in and across groups (Kirsh et al., 2009, p. 400).

Before these principles can be applied, the tasks that comprise a job must be understood.

Best Practices for Task Analysis

Occupational therapists conduct analyses of occupations, activities, tasks, and functional capacities of jobs or people (James, 2011). Task analysis describes what, when, and how, something is done. Businessman Frederick Taylor developed task analysis as a method to understand and manipulate the variables that impact work performance (McCormack, 2011). Taylor's method of scientifically gathering and organizing information to predict work outcomes has evolved and has been adapted to many domains. Occupational therapists use task analysis to evaluate the demands that tasks places on a person, organization, or population. Tasks are broken down into, "typical demands of an activity, the range and skills involved in their performance, and various cultural meanings that might be ascribed to it" (Creapeau, Cohn, & Boyt Schell, 2003, p 192).

Methods of collecting data for analysis include questionnaires, focus groups, work diaries, critical incidents, group interviews, individual interviews, observation of work performance, analysis of equipment design and process, recording of frequency of job activities, and examination of records such as maintenance logs (Institute for Job and Occupational Analysis, 2012). Published methods of job-task analyses are diverse and selected based upon the needs of the organization, and the training of the analyst. Some of the established task analysis tools include the Job Element Method, Position Acquisition Questionnaire, Fleishman Job Analysis Survey, Job Component Inventory, Threshold Traits Analysis, Ability Requirements Scale, the Occupational Reinforce Pattern, and Arbeitswissenschaftlichenes Erhebungsverfahren Zur Tatigkeitsanalyse–AET ergonomic analysis (Brannick, Levine, & Morgeson, 2007).

The process of task analysis can be either task oriented or person oriented. Task-oriented analysis describes the demands of the job itself while person-oriented analysis describes the performance skills that the worker needs to complete the job well. Job demands include work duties, responsibilities, and procedures. The task-oriented approach is neutral in that it does not distinguish between disabled and non-disabled people. Researchers who perform task-oriented analysis typically do not include people with mental illnesses in their research because the idiosyncratic nature of mental illness does not allow for forecasting of worker performance (Barkway, 2006; Simonelli & Camarotto, 2008). Person-oriented analysis considers factors of the person such as motivation and interests.

The Fleishman Job Analysis Survey is a person-oriented analysis tool that classifies worker requirements into tasks, responsibilities, knowledge, skills, traits, and

occupational complexity. Schumacher, Kleinmann, and Koing (2012) utilized parts of the Fleishman Job Analysis System to identify if a systems or a decomposed method of job analysis was more effective when performed by novices versus job incumbents. Decomposed analysis consists of breaking tasks down into subtasks, analyzing the subtasks, and then summating the aggregate of all the subtasks. Systems analysis looks at the physical requirements of work as a whole. In the study, paramedics and college students were randomly assigned to training in either the systems or the decomposed method of job analysis. After observing paramedics at work, analysts using the decomposed approach rated 8 abilities for each of eleven tasks that the paramedics had previously identified as essential components of the job. They then reintegrated their scores on each of the eleven tasks into a single grade for the job of paramedic. Analysts assigned to the systems analysis rated eight abilities for the job of paramedic as a whole. Schumacher et al., (2012) found that the job incumbents were less accurate than the students when analyzing abilities using the decomposition method but were more accurate than the students when doing a systems analysis. It appears then that novice job-analysts who do not possess experience in the job have more difficulty then job incumbents at making complex inferences (Schumacher, Kleinmann, & Koing, 2012). Occupational therapy students without knowledge of food processing jobs would therefore benefit from a decomposed method.

In the task-oriented approach, analysts may decompose tasks into elements such as the amount, frequency, and duration of lifting (Lysaght et al., 2008). Increasingly though, practitioners are using a holistic systems approach, which looks beyond just the physical demands of work in a traditional systems approach to include cognitive and

behavioral demands. This method relies upon the job analyst's foreknowledge of the job to make inferences about the job as a whole (Lysaght, Shaw, Almas, Jogia, & Larmour-Trode, 2008). Behavioral Job Analysis focuses on what people do, whereas Cognitive Task Analysis examines the mental structures (Cognitive Architectures, or taxonomies of information) and mental processes (perceiving, attending, associating, recognizing patterns, remembering, deductive and inductive analyses, synthesizing and predicting) that go into successful job performance.

Cognition is a psychological process of acquisition, organization, and use of knowledge that emphasizes rational rather than emotional characteristics (Hollnagel, 2011). Cognitive tasks are tasks with cognitive performance expectations such as ordering, sequencing, and problem solving. Cognitive Task Analysis (CTA) is a method used to obtain knowledge of the cognitive abilities of workers as they relate to performance in workplace tasks (Brannick, Levine, & Morgeson, 2007). Cognitive Task Analysis is performed on expert performers in a given field for the purposes of improving employee training, increasing system reliability, and preventing workplace errors (Schraagen, Chipman, & Shalin, 2002). It emphasizes cognition, analyzes expertise and learning, evaluates the relationships among elements, assigns cognitive skills into categories, and addresses representational skills that account for worker differences (Seamster, Redding, & Kaempf, 1997). Cognitive-task analysis uses a collection of methods to understand the mental activities used by experts in completing the task being analyzed (Brannick, Levine, Morgeson, 2007). Tasks can be broken down by the level of cognitive skill required to perform them. Automated skills, procedural skills, representational skills, decision making skills, and strategies represent an ascending

hierarchy of cognitive skills in which each level builds upon the skills of the levels below it (Seamster, et al., 1997).

Simonelli and Camarotto (2008) conducted a task-oriented analysis of automated industrial jobs that were to be filled by people with physical, mental, hearing, and visual disabilities. They conducted their analysis in three stages; first analyzing the tasks, then studying the activity, and finally creating descriptions of the jobs that would be filled by people with disabilities. To analyze the tasks, they interviewed supervisors and workers to understand the physical, time, space, and social contexts of the tasks. Field notes and a Portuguese-language formal evaluation were also used to record work performance. Work was filmed to evaluate biomechanical and kinetic requirements of work. Workers and supervisors also completed checklists that identified components of tasks. They recorded task duration, frequency and load, as well as the necessity of social interactions and transitions of workers from one task to another. A matrix was designed which included the tasks and the cognitive demands of the task. The chart indicated which tasks could be performed by people the specific physical disabilities. Researchers did not make recommendations for people with mental illnesses because the researchers recognized that work performance of people with mental illnesses is idiosyncratic and cannot be predicted (Simonelli & Camarotto, 2008).

Though researchers are hesitant to apply task-oriented analysis to jobs designed for people with mental illnesses, there is still a need to understand cognitive performance of people with mental illnesses in the work environment. Cognitive ability and negative symptoms like apathy, anhedonia, and attention deficits are the most significant personal factors that negatively affect work performance of people with mental illnesses (Shamsi,

S. et al., 2011). Despite these limitations, people with mental illnesses are able to work in more than just menial jobs. Rinaldi, Perkins, Hardisty, Glynn, and Souza (2006) found that of people with mental illnesses in supported employment jobs in London, 15% worked in sales or customer service, 9% were senior officials or managers, and 33% were associate professional or administrative workers. Seamster, Redding, and Kaempf (1997) state that expertise, or advanced knowledge of a subject, exists for all levels of tasks from the automated to the strategic. Since people with mental illnesses are able to work, and all work requires expertise, expertise for any job can be acquired and matched to the abilities of people with mental illnesses (Rinaldi, et al., 2006; Seamster, et al., 1997). Expertise is the domain of Cognitive Task Analysis.

On their own, it is difficult for task analysis tools to be reliable and valid because humans can make wrong inferences when scoring standardized analysis tools (Dierdorff & Wilson, 2003). Narrowly focused analysis such as analyzing only a pilot's flying abilities without considering other skills like cockpit communications and management result in errors (DuBois, Shalin, Levi, and Broman, 1995). Combining methods from task oriented and person oriented analysis gives the fullest description of the person and environmental fit (Robinson, 2001).

People: The Effect of Mental Illness on Work

Barriers to employment. Job performance of individuals with severe-mental illnesses can be negatively affected by factors such as poor self-esteem and self-perception, poor access to resources, interpersonal and institutional barriers, and co-morbidities between diagnosis and medical conditions. In a study comparing two supported employment models, Roush (2009) found that of those interested in

employment, seven percent of program participants were deemed to be incapable of competitive employment due to their cognitive impairments or severe psychiatric and negative symptoms. People with active symptoms of mental illness have such low rates of unemployment that many studies exclude people experiencing psychotic breaks to protect the data from skew (Bond et al., 2001).

Worker's with severe mental illnesses claim that they experience interpersonal problems and poor concentration caused by psychiatric symptoms as challenges to working (Gewurtz & Kirsh, 2007). Negative symptoms of schizophrenia and schizoaffective disorder, such as anhedonia, avolition, alogia, or flat/blunted affect, are also major predictors of social function, work, and educational status (Shamsi *et al.*, 2011). Some report fear of working due to uncertainty about whether or not their psychiatric condition will worsen and negatively influence their membership in the community. Those experiencing hallucinations and delusions claim to have a difficult time staying on task and were more likely to have diminished job performance (Gewurtz & Kirsh, 2007). People with mental illnesses have higher incidences of absenteeism and drop-out than the general population (Stephens & Jourbert, 2001). People experiencing depressive episodes are absent from work three times as often as to those who do not have mental illnesses (Simon, Ludman, Unützer, Operskalski, & Bauer, 2008). They are also 15% more likely to become unemployed and less than half as likely to regain employment (Simon et al., 2008).

People with severe mental illnesses report low self-esteem and self-perception prevent them from seeking employment (Bond et al., 2001; Gewurtz & Kirsh, 2007; Howard et al., 2010). While symptoms of severe mental illness can be disabling, a

person's perception of their limitations is often greater than reality and leads to unnecessary withdrawal from seeking employment (Johannesen, McGrew, Griss, & Born, 2009). The belief about one's skills in surmounting illness-related obstacles strongly influences the decision to work. In a 12-month study of people with severe mental illnesses, changes in self-perceived barriers predicted vocational outcomes. Workers with improved self-perception worked an average of thirty-four weeks while those whose self-perception that remained the same or got worse worked an average of nineteen weeks (Johannesen et al., 2009).

Job acquisition and retention prove difficult for people with severe mental illnesses when they have interpersonal skill deficits (Bond, 2004). Fifty-eight percent of participants in supported employment programs who were unsatisfied with their job loss claimed that the loss was due to interpersonal problems, although only 10% of those who were happy with how their job ended attributed the loss to interpersonal problems (Becker et al., 1998). Others have found that 25% of terminations in supported employment programs are due to interpersonal problems (Tsang, Fung, Leung, Li, & Cheung, 2010).

Another significant challenge for people with mental illnesses in maintaining work is their physical health. Sixty-eight percent of those with mental disorders have a medical diagnosis, fifty-six percent have diabetes, fifty-seven percent have a cardiovascular disorder, and another fifty-five percent have a pulmonary disorder (Druss & Walker, 2011). Workers who receive mental health services, particularly those classified as highly stressed, have the highest rates of illness or injury induced absenteeism (Hourani, Williams, & Kress. 2006). Acquiring access to medical and

mental health services is also a problem. Less than one-third of adults with a diagnosable mental disorder actually receive mental health services (NAMI, 2007). Public attitudes towards mental illness may contribute to undertreated mental illness. Chronic medical disorders are regarded as less burdensome than chronic mental illnesses yet people with chronic medical disorders receive treatment at twice the rate of people with chronic mental illness (Druss *et al*., 2009). Druss et al (2009) find that the general public is skeptical of whether mental illness is truly disabling and of whether treatment is effective enough to merit intervention. This attitude limits employment opportunities for people with mental illnesses and diminishes employer's willingness to invest in accommodations and supports.

Supports: The process of worker advocacy.

Hourani, Williams, and Kress (2006) found that poor mental health and high occupational or family stress caused workers to perform at 39.8% of their normal productivity. Improving the psychosocial work environment may reduce risk of future mental health problems and improve productivity and job performance (Sanderson, Nicholson, Graves, Tilse, & Oldenburg, 2008). This can occur by accommodating job demands or by providing supports that assist the worker to maintain their work performance. The American's with Disabilities Act (ADA) protects individuals with disabilities and guarantees them reasonable accommodations in workplaces that employ 15 or more employees. Unfortunately, Koletski et al (2009) found that people with mental illnesses have unsuccessful work experiences because workplace supports are typically inadequate.

Workplace supports, accommodations, and modifications occur when a person seeking work contacts a vocational specialist. Job development is a collaborative process between the employment seeker and the vocational specialist and takes into account job duties, location, hours of employment, work environment, work interests, and potential for success (Rinaldi, Perkins, Hardisty, Glynn, & Souza, 2006). The availability of benefits counseling, vocational support during employment, and the consideration of consumer job preference all contribute to successful work outcomes (Cocks & Boaden, 2009). Research shows that people have higher job satisfaction and are less likely to leave their jobs if the work is consistent with their preferences (Bond, 2004). When people are motivated to work they produce work at higher rates than unmotivated workers (Bond, Drake, & Becker, 2008). Work in competitive work environments is work in which people with mental illnesses compete for the same jobs as people without mental illnesses. Such work environments increase the self-esteem, motivation to work, and consistency of work performance of people with mental illnesses (DeRosa, McGurk, Mueser, Morin, & Wiesen, 2007). When people experience successful work outcomes they develop identities as workers and begin to see themselves as potential workers in the future (Gewurtz & Kirsh, 2007). When people are trained in jobs that fit their interests and abilities, they are better able to adapt to the roles of the environment (Auerbach & Jeong, 2005).

Becker and Drake (2003) identify some common workplace accommodations for workers with mental illnesses. These include onsite support, crisis intervention, flexible work hours, supervisor feedback with positive reinforcement, and modification of workspace and job tasks. Onsite support consists of temporary on-site job coaching and

pairing clients with other co-workers for support and job assistance. Crisis intervention consists of providing private spaces for employees, telephone calls to employment specialists, accommodating procedures for emergency situations. Methods of providing flexible work hours include scheduling more frequent breaks, permitting part-time work, permitting leaves of absence, and allowing work schedules to be adjusted for medical appointments. Supervisor feedback and positive reinforcement may be performed by using written instructions and by having the supervisor change the supervision style to fit the employee. Modifications of workspace and job tasks include allowing access to hydration, gradual introduction of tasks, providing space to work alone, and minimization of distractions and noise (Becker & Drake, 2003).

Environmental Accommodation

Work has the potential to be an empowering agent for people with mental illnesses but the environment is often a barrier to success. The physical environment may affect the ability of workers to process information and can impede work performance (Cottini, Kato, & Westergaard-Nielson, 2010; Keough & Fisher, 2001). Early occupational therapy literature demonstrated that it was critical for occupational therapists to evaluate the relationship between the worker and their environment to understand occupational performance (Baum & Law, 1997). Recent literature has produced two interpretations of the relationship between the worker and workplace: the interactive approach and the transactional approach. An interactive interpretation states that although a person and the environment influence each other, they are independent of each other and have their own defining characteristics. The second interpretation, the

transactional approach, states that there is interdependence between the person and the environment (Kuo, 2011).

Though there is little research on this subject, authors Peck and Kirkbride (2001) suggest several reasons why businesses fear hiring people with mental illnesses. They claim employers fear initial costs associated with adapting the work environment, costs of extra supervision and lost productivity, and low retention rates of employees of people with mental illnesses. Some of these fears are unfounded. While people with mental illnesses do have poor retention rates, people with mental illnesses do not typically receive adequate environmental supports (Koletsi et al., 2009). In addition, the initial costs and supports required are typically negligible and, companies that do hire people with mental illnesses gain loyal and determined employees (Auerbach & Jeong, 2005).

It is important that work environments are conducive to productivity and work performance (Baum & Law, 1997). Accommodations to the physical environment can reduce performance barriers for people with mental illnesses. Workers with mental illnesses who have cognitive deficits may become overwhelmed by equipment that they do not understand how to operate. Poor lighting, loud noises, high and low temperatures, and unsafe flooring may overwhelm the nervous system of workers with both physical and mental disabilities (O'Brien & Brown, 2009). Uncomfortable and distracting work conditions reduce worker productivity and job satisfaction in general. Both results may lead to voluntary or involuntary terminations of employment and contribute to perpetual unemployment of people with mental illnesses (Cottini, Kato & Westergaard-Nielson, 2010). These stressors can be remediated if employers apply reasonable accommodations of the physical environment (Mancuso, 1995).

The ADA states that reasonable accommodation, if requested, must be made for those with mental or physical illness. Although many of the accommodations were created in order to facilitate work for those with physical disabilities, accommodations for those with mental illnesses do exist. The Job Accommodation Network (JAN) published a fact sheet series that list a number of accommodations for those diagnosed with mental illnesses (see appendix F). For example, JAN suggests that to accommodate poor concentration throughout the workday employers can allow the employee frequent work breaks or divide large assignments or tasks into smaller, more manageable duties. In order to maintain concentration on a task, JAN suggests that an employer reduce distractions in the work area, allow frequent breaks, or divide large assignments into smaller tasks and goals. To accommodate for anxiety and apprehension, JAN recommends employers allow telephone calls during work hours to doctors and to others whom employees may need to contact to get through the day.

Workplaces have the potential to be settings for both mental health promotion and mental illness prevention (Barkway, 2006). Workplaces can stimulate cognition and create many meaningful relationships. Employers of people with mental illnesses need to understand the barriers that limit productivity in order to create effective supports and accommodations. Rather than making modifications to the physical environment that would reduce worker stress, employers can teach workers compensatory strategies to deal with work stress (Barkway, 2006). Effects on mental health are often ignored in literature that examines the effects of the work environment on worker health. According to Barkway (2006), "despite the introduction of legislation and workplace policies, structural changes have been unsuccessful in bringing about environmental modification

which fosters mental well-being" (p. 131). Barkway (2006) also notes that it is important to consider the effect of the work environment on mental health and that income also acts on mental health and wellbeing as it instills a sense of self-worth in those who are struggling with mental illness.

Working in cold environments

Some work environments are more challenging than others. There is considerable research documenting the effects of cold work environments, like food processing plants, on workers body structures and body functions. Workers need to protect their bodies, especially their lower extremities from the cold (Sormunen, Oksa, Pienimaki, Rissanen, & Rintamaki, 2006). Cold environments reduce conduction of body heat and extended exposures can cause neuronal and endothelial injuries (Cottini, Kato & Westergaard-Nielson, 2010). To prevent soft tissue damage like hyperthermia, Peidrahita, Punnett, and Shahnavaz (2004) recommend that workers wear warm, heavy, and protective clothing even though heavy clothing restricts movement. Restricted movements require workers to expend more energy to perform the same work, and these workers often burn up to 15 percent more calories than in normal conditions (Chalupka, 2009). According to Pidrahita, Punnet, and Shahnavaz (2004), "wearing gloves increases the muscular load requirement for a given task," (p. 275). This load increases the incidence of repetitive stress injuries (Chalupka, 2009). Cold tightens joints, causes muscles to contract and may cause workers pain through a joint's full range of motion (Penimaki, 2000). Over time as workers avoid moving through the full range of motion of their joints, they can permanently lose functional movements at those joints (Penimaki, 2000). Low back pain is also common for workers performing repetitive tasks in cold work environments due to

the aforementioned physiological effects of cold on muscles and joints (Penimaki, 2000; Peidrahita, Punnett, & Shahnavaz, 2004). Work environments may either hinder or facilitate performance but cold or noisy work environments are be especially detrimental to work performance. See Appendix G for recommendations on working in the cold.

Statement of Purpose

Social enterprises lack knowledge of how to accurately identify supports, accommodations, and modifications needed to employ marginally employed populations. These enterprises outsource key tasks to compensate for their lack of knowledge. Occupational therapists have the knowledge and skills to conduct occupational, activity, and task analysis. This project will utilize the knowledge and skill of three graduate students of occupational therapy and their advisors, to conduct a task-oriented analysis of food processing jobs at People's Harvest. The analysis will offer insight into the physical and cognitive demands of the jobs which will, in turn, allow People's Harvest to create accurate job descriptions. This will benefit both the employer and employees as the employer will be able to match prospective employees to the job that best fits employee's interests and abilities.

Expected Outcomes of Project

Project managers will conduct a task-oriented analysis to understand the job demands of People's Harvest. From this, an educational manual will be created to educate People's Harvest's managers and job developers on methods to increase job retention of their employees with mental illnesses. The manual will describe common supports, accommodations, and workplace modifications that facilitate job retention, and physical and mental health of employees. It will make also make specific

recommendations for improving the safety and productivity of work at People's Harvest. If appropriate, a system for comparing job tasks will be developed for the purpose of cross-training employees.

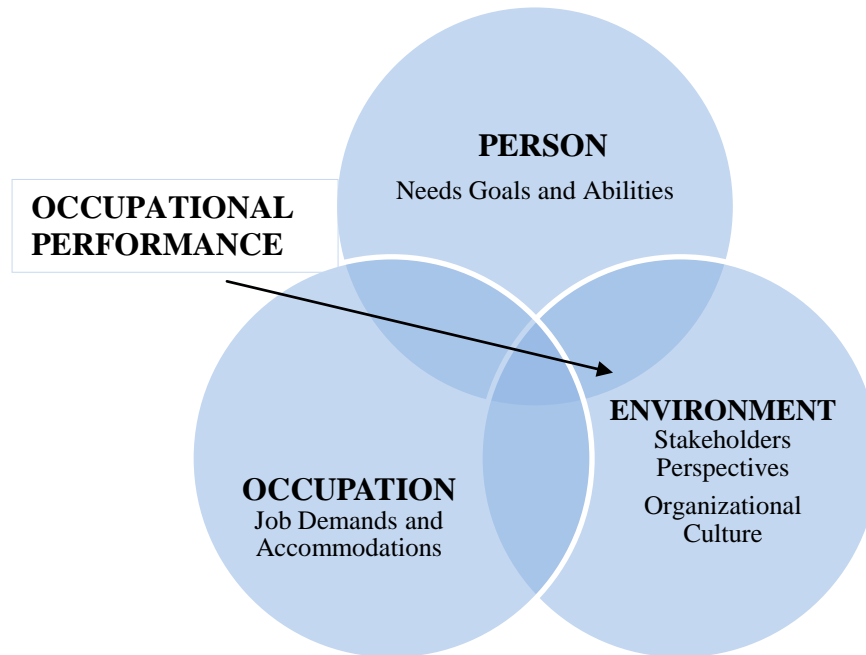<div align="center">**Theoretical Framework**</div>

The Person-Environment-Occupation (PEO) model describes the relationship between workers, work demands, and occupational performance of workers (Law et al, 1996). According to Law and Dunbar (2007), the three components of the PEO model interact with each other continuously; see Figure 1. Overlap in these areas reflects the degree to which these three areas successfully interrelate. When the three components of the PEO model are observed as a whole, a person's occupational performance can be analyzed. It is the goal of a task-oriented analysis to create a good person-environment fit. The PEO model recognizes that at times the environment needs to change to fit the person. It is appropriate then to utilize a task-oriented analysis because such an analysis provides knowledge of the demands of the environment. With this knowledge skilled therapists can change the environment to better fit the person. In the workplace, this takes the form of supports, accommodations, and modifications.

The person (P) in PEO model is regarded as a unique individual who relates to his or her environment and occupation in a unique way or manner. In terms of job performance, the person's supports and barriers to employment should be identified and considered along with his or her cognitive, physical, emotional, and spiritual factors (Law et al, 1996). It is important to consider individual motivation and level of comfort with job tasks with relation to occupational performance.

The environment (E) aspect of the PEO model focuses primarily on the cultural, social, psychological, organizational, and physical components of the environment of the worker. According to Law and Dunbar (2007), it is important to define the environment as "those contexts and situations which occur outside the individual and elicit responses from them" (Law & Dunbar, 2007, p.30). Alterations to the environment may need to be made in order to maximize the worker's occupational performance. The workers at People's Harvest, depending on their diagnosis, may require modifications to their environment in order to reach an optimal level of cognition. This will be determined by the analyses.

The O in PEO model is occupation and can be identified as "groups of self-directed, functional tasks and activities in which a person engages over the lifespan" (Law & Dunbar, 2007, p. 30). Occupations are a necessary function of living that includes tasks or activities completed to achieve a purpose. Occupations meet the person's intrinsic needs for self-maintenance, expression and fulfillment within the context of his/her personal roles and environment (Baum & Law, 1997). More simply, occupations of an individual can be defined as what a person does, or what they enjoy doing. This project will assume the occupation of the person to be the work they are participating in. With the compatibility of occupation and environment OT's hope to achieve good person-environment fit. Good person-environment fit allows employees of People's Harvest to enjoy new roles and identities and to participate in a culturally meaningful activity.

Figure 1. Person-Environment-Occupation Model

PERSON

Needs Goals and Abilities

OCCUPATIONAL
PERFORMANCE

ENVIRONMENT
Stakeholders
Perspectives

Organizational
Culture

OCCUPATION
Job Demands and
Accommodations

Methodology

Agency Description

Buckelew Employment Services (BES) is a supportive employment agency that assists adults with mental illness to secure and maintain employment in Marin County, California (Buckelew Programs, 2011). Services include pre-employment counseling, vocational training, job development, job placement, and job-coaching. Funding is provided through private and public donations. To qualify for BES people must have reliable transportation, live in Marin, Sonoma, or Napa counties, be recipients of Supplemental Security Insurance or Social Security Disability Insurance for mental illnesses, and have, or be near to obtaining, a high school diploma or its equivalency (Buckelew, 2011).

This project was implemented at People's Harvest, a new endeavor of BES, which aims to employ qualified candidates in food processing jobs. BES does not have personnel who can analyze cognitive and physical components of work nor the impact that these components will have on workers with mental illnesses. Based on a community partnership, and because OT's have a background in task-analysis, Dominican University of California's Occupational Therapy Department was recruited to perform a task-oriented analysis on some of the supported jobs at People's Harvest. The development team was composed of three students who were completing this project for their master's thesis. They conducted an analysis on the cognitive and physical components of jobs at People's Harvest so that rehabilitation specialists at BES could match their clients to jobs with full knowledge of the components required for a good person-environment fit.

Population

Employment criteria for People's Harvest have been expanded beyond the requirements of BES to include people with mental illnesses residing in the State of California and people who were living in poverty for 6 months or more prior to application for employment. Employment candidates needed to have one or more of the following barriers to employment: being an at risk young adult; having a history of incarceration or criminal conviction; having mental health issues or mental health disabilities; or having other circumstantial barriers to employment, including history of homelessness, substance use, or history of trauma.

A product of this project includes a manual that provides information on ergonomics, descriptions of mental disorders and common medication side effects, descriptions of task demands of the work being performed, and descriptions of common

methods to modify the environment, and support and accommodate workers. Employees will benefit from the manual because People's Harvest will have a better understanding of how to fit employees to tasks and how to help maintain mental health and work habilitation of employees.

Project Design

A task-oriented analysis was performed on a number of activities needed for the operation of People's Harvest. The first step was to observe ergonomic conditions such as the physical and environmental context of the workstation, and the kinetic and biomechanical performance of the work performance. In addition to those observations, interviews of workers and supervisors were conducted to obtain verbal descriptions of tasks. The next step was to study the tasks from a cognitive perspective and to infer the mental processes required for each task. Each task was described by its cognitive requirements and ordered in hierarchy of cognitive skill.

Project Development

Directors of People's Harvest wanted to understand how to retain employees with mental illnesses in competitive food processing jobs at a food processing facility that People's Harvest had not yet built. People's Harvest's parent organization, Buckelew Employment Services, approached Dominican University of California's Occupational Therapy program seeking project managers to address People's Harvest's lack of knowledge. People's Harvest provided the project managers with a description of their envisioned operations, a potential work-flow plan, and a description of the safety hazards at food processing facilities. They requested that the team conduct a task-analysis of potential jobs so that they could match work tasks to employee's abilities. They also

requested that the thesis team create a hierarchy of jobs based on workers cognitive and physical abilities so that job developers could cross train employees

Project managers initially compared task-oriented analysis forms produced by Oregon, California, and Massachusetts workman's compensation departments and the job analysis forms existing in ergonomic literature to identify various task components that occupational therapists consider when conducting job task analysis. Project managers then conducted a review in occupational therapy and related literature on methods of task analysis, work characteristics of people with mental illnesses, and conditions in food processing plants. From this knowledge, project managers created a task-oriented analysis form that they anticipated would meet the needs of People's Harvest.

Project Implementation

The food processing plant built for People's Harvest was too large for People's Harvest's startup crew to operate at a capacity that could financially sustain the endeavor. People's Harvest found more suitable facilities elsewhere, but rented space from the kitchen of another social enterprise until the newly available facility became available. This project was implemented while People's Harvest operated from the rented kitchen. Project managers visited the kitchen three times over five months. During the initial visit in June of 2012, a project manager conducted informal interviews of one worker and one supervisor and observed the cutting, washing, and packaging of assorted vegetables. People's Harvest was presented with a report of the findings which included recommendations for modifying tools and body mechanics for safety and, ways to improve communication between workers and supervisors.

In November, 2012, two more observations of work occurred at People's Harvest. In the first observation, an occupational therapist with expertise in task-oriented job analysis assisted program managers to identify the physical aspects of the job tasks that could cause musculoskeletal injuries. In addition, program managers collaborated with workers to alter the physical environment to improve task ergonomics. In the second observation, workers and supervisors were filmed and photographed performing tasks with and without modifications of the work environment. This media was then utilized in a final report that made recommendations to improve food processing safety in the kitchen rented at People's Harvest.

In addition to the report, an educational manual titled Healthy and Safe at Work was created and provided to People's Harvest. The manual was provided to educate and provide resources for People's Harvest's management on best practices for hiring and retaining employees with mental illnesses. The Manual cited articles from journals and resources from major ergonomics, job development, and mental illness databases such as the Occupational Information Network, the Job Accommodation Network, National Alliance on Mental Illness, the World Health Organization, the National Organization on Disability, the National Institute of Mental Health, the Equal Employment Opportunity Commission, and the Occupational Safety and Health Administration. Contents of the Manual included an introduction to work from the perspective of occupational therapy, descriptions of major mental illnesses, psychiatric medications and side effects of those medications, and solutions to workplace problems that are common to people with specific types of mental illnesses. In addition there is content on the role of the employer in supporting employee health and wellness. Finally, there is a table of common

workplace accommodations for specific symptoms of mental illness and an in-depth guide to local resources that serve people with mental illnesses.

Project Evaluation

With the resources provided to them at the completion of this project, People's Harvest is expected to be better equipped to hire and retain employees with mental illnesses. People's Harvest was provided with a manual that compiled health and safety information that supports job retention of employees with mental illnesses. In addition, People's Harvest was provided with a report that detailed the results of the task analysis which included a description of job requirements, and recommendations for making tasks safer and supportive of employees with mental illnesses.

After People's Harvest reviewed the contents of the Manual and Report, they were provided with a five-point Likert scale to rate their perceptions of the quality and usefulness of the materials (see Appendix F). For the intervention to be deemed successful, the Program Manager at Buckelew Employment Services would have had to agree or strongly agree that they would utilize the Manual or the Report in the future to hire or retain employees with mental illnesses. She did strongly agree with the above statement and strongly agreed that the materials were professional in appearance, that the contents of the manual addressed the needs of People's Harvest, and provided knowledge that People's Harvest did not already posses. In a closing interview, the Program Manager of Buckelew Employment Services shared that they intended to use the materials to train new staff and managers who do not have knowledge of mental illnesses. The Report and Manual would also be presented to the Board of Director's and would shape future policies and purchases of equipment.

While project managers were diligent in their effort to provide the highest quality intervention for People's Harvest and people with mental illnesses, project managers and Dominican University are not responsible for how People's Harvest applies the content in the Report and Manual.

Discussion, Summary, & Recommendations

The implementation of the project was delayed nine months because there were problems with finding a suitable facility for People's Harvest's operations. The initial ambition of the project was greater than the final outcome because project completion deadlines required a scaling back of project outcomes into the condensed project implementation time frame and because People's Harvest had fewer job tasks than they projected. The Healthy and Safe at Work manual was initiated prior to project implementation as a supplement to the requested intervention because of concerns that the implementation would not occur by the project completion deadline. Mental health resources in the Manual were general enough that they would be of benefit to any organization interested in hiring people with mental illnesses. The safety practices resources in the Manual were targeted to small-scale food processing facilities in general because People's Harvest was expected to start out small and because the facility that People's Harvest anticipated using was not available for analysis.

The Report on the results of the task analysis was of a smaller scale than had been requested. Initially, People's Harvest anticipated having high-tech production scale machines to do the cleaning and packaging of vegetables. Workers who operated the machines would have needed greater cognitive abilities than other workers. People's Harvest requested that program managers categorize job tasks by cognitive demand so

that they could cross-train employment candidates in jobs that matched employees' cognitive abilities. Since the high-tech machines were not part of People's Harvest's small-scale operations, the analysis of these machines could not be done, and the need to match employees to jobs requiring higher cognition was not needed, so the job hierarchy was omitted from the Report. In the Report, program managers supported the idea of People's Harvest's intention to cross-train and rotate employees between jobs because it would reduce the incidence of repetitive stress injuries in physically demanding jobs. The Report also included descriptions of task components involved in the washing and cutting of vegetables, recommendations for improving the psychosocial environment,recommendations for improving physical safety by changing tools and the environment, and recommendations for modifying the process of cutting and washing of vegetables.

This project was limited by time and People's Harvest's constrained operations. With more time, project managers could have measured the effects that recommendations had on productivity, safety, employee wellness, and job fit and then modified those recommendations to improve results. If People's Harvest were further along in its operations time-line, the analysis of tasks could have included more tasks and a more meaningful analysis of the whole of the work environment. This project only examined the environmental factors that act on workers. Another project could work to improve client factors that contribute to successful work outcomes such as client volition for work.

As a result of this project, People's Harvest will be able to educate staff on ways to support people with mental illnesses in the workplace. Better job-fit can be achieved if People's Harvest matches employees' abilities and interests to the task demands of the

jobs. If People's Harvest does this, employee retention should improve because employees are motivated to work in jobs that match their interests and abilities. In addition, if People's Harvest applies the recommendations from the Report, the psychosocial work environment and employee safety should improve. This project has the potential to improve occupational functioning of people with mental illnesses because work is a therapeutic medium that increases social contact, self-esteem, and life satisfaction of people with mental illnesses (Bond, 2001). As a profession that has knowledge of function, systems, task-analysis, and mental health, occupational therapy is well situated to partner with social enterprises that want to employ marginalized populations.

Ethical and Legal Considerations

In order to ensure that this project remains ethically and legally sound, the American Occupational Therapy Association's (AOTA) Occupational Therapy Code of Ethics and Ethics Standards (2010) was used as a guide. AOTA's Code of Ethics is an official document that outlines the necessary and relevant legal considerations that may occur in any occupational therapy practice area. According to AOTA, "Occupational therapy personnel have an ethical responsibility primarily to recipients of service and secondarily to society" and the Code of Ethics was formed as a reference tool for practitioners to incorporate into their practice (American occupational therapy Association, AOTA, 2012). For this project, the researchers felt that the principles of "Non-maleficence," "Beneficence," and "Social Justice" highlight the ethical concerns that may arise from completion of this project.

Beneficence calls occupational therapy personnel to "demonstrate a concern for the well-being and safety of the recipients of their services" (AOTA, 2005, p. 3). This project is an act of beneficence in that it considers the safety of persons working in cold environments at a food processing plant and intends to improve the well-being of the employees and future employees of People's Harvest. Also, implications of working with a mental illness as well as maintain employment were taken into consideration when completing this project. For example, a manual was created specifically to ensure the safety of all employees of People's Harvest. Through education of implications of mental illness and reasonable accommodation of the physical environment for employees, the researchers hope to prevent and maintain safety throughout the entire workplace.

The principle of non-maleficence calls occupational therapy personnel to "intentionally refrain from actions that cause harm (AOTA, 2005, p. 4). Project managers determined that the benefits of this project outweighed any potential for harm that may occur from both the process of implementing this project and the outcomes of this project. The project managers also made on-site suggestions during performance of tasks in order to prevent injury and make the tasks easier for the employees. Also, necessary permission forms and site verification forms were signed by the employees at People's Harvest in order to ensure they knew what the information gathered was being used for and that they were given the opportunity to refuse use of photo or video during work sessions.

Social Justice calls for occupational therapy personnel to "provide services in a fair and equitable manner" (AOTA, 2005, p. 6). The project upholds the responsibility to the common good by providing services that promote and support employment of a

marginalized and significantly underemployed population. By supporting employers of persons with mental illnesses, this project represents justice for this population and those working with them.

Conclusion and Other Considerations

Only 54.4% of people with mental illness are currently employed in the United States (U.S. Department of Health and Human Services, 2011). Employers do not have knowledge or know how to effectively accommodate jobs and support people with mental illnesses in the workplace. This is evident by the poor quality of job accommodations that are typically employed in the workplace and by employers misunderstanding of the negligible financial costs and great benefit of adequately supporting employees with mental illnesses.

This project was implemented so that administrators of People's Harvest would have positive results with their efforts to employ people with mental illnesses. A task-oriented analysis was utilized to identify the environmental demands that occur during the performance of work tasks.

Community mental health and wellness is an emerging area in occupational therapy. Occupational therapists can find their niche in community programs designed to support people with mental disabilities who wish to work. Task-oriented analysis is a tool that therapists can utilize to assist organizations that want to employ people in community programs.

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APPENDIX A
LETTER OF PERMISSION TO AGENCY DIRECTORS
DOMINICAN UNIVERSITY OF CALIFORNIA

Ms. Leticia Wiesner
Program Manager, Buckelew Employment Services
3270 Kerner Blvd.
San Rafael, CA 94901

Dear Ms. Wiesner:

This letter confirms that you are aware of the objective of our master's thesis project, which is to partner with People's Harvest to complete job-task analyses, provide job-fit descriptions, and possibly make recommendations for accommodations for persons with mental illness and other marginalizing conditions.

This project is an important part of our graduate requirements as candidates for Master's of Science in Occupational Therapy, and is being supervised by Dr. Janis Davis, Professor of Occupational Therapy at Dominican University of California.
As we discussed in our meetings, we will make every effort to provide an accurate and evidence based analysis of the jobs at People's Harvest and will support you to meet your time sensitive needs. If you have questions about the project you may contact Jeremy at (916) 607-0876.

If you have further concerns you may contact our community project supervisor, Dr. Davis, at (415) 458-3788 or the Institutional Review Board for the Protection of Human Subjects at Dominican University of California by calling (415) 257-0168.

We will be glad to have on-going collaboration and knowledge sharing during the course of our project and will submit a full summary of our findings by our target thesis-completion date in May 2012.

If our request to work with your establishment meets with your approval, please sign and date this letter below and we will pick in up in person at your convenience. Please feel free to contact Jeremy if you have any questions about this project.

Thank you very much for your time and cooperation.

Sincerely,
Louise Bobbitt, Jeremy Darrimon, and Jessi Saaty

260 Merrydale Rd 16
San Rafael, CA 94903

I agree with the above request

Signature

APPENDIX B
THESIS PROJECT PROPOSAL FORM

Name (s):Louise Bobbitt, Jeremy Darrimon, and Jessi
Saaty_____

E-mail addresses:___louise.bobbitt@students.dominican.edu,
jeremy.darrimon@students.dominican.edu, jessi.saaty@students.dominican.edu

Phone Contact(s):)
_Louise: (707) 373-6022_____
_Jeremy: (916) 607-0876_____
_Jessi: (760) 382-7770_____
Thesis advisor information:
Name:_Janis Davis_____
Campus Phone:__(415) 458-3788_____
E-mail address:_janis.davis@domincan.edu_____
Project Information:
Proposed title of project: __Task Analysis for a Food Processing Plant: A Social
Enterprise Serving People with Mental
Illness_____
Contact Person at Agency/Setting: Leticia
Wiesner_____
Phone Number of Contact & e-mail:
(415) 456-9350 x175 (direct) (415) 497-6702 (cell)____
LeticiaW@buckelew.org_____
Duration of Project:_Fall 2011-Fall 2012_____
What problem will be addressed with this project: People's Harvest, is an endeavor of
Buckelew Programs that will employ people with mental illnesses at its food processing
plant. Social enterprises that wish to hire people with mental illnesses would benefit
from using activity analyses to place people in jobs with a strong person-environment fit.
People's Harvest lacks knowledgeable personnel who could conduct activity analyses and
who could accurately identify safety procedures, supports, and accommodations for
persons with mental illness. Three of Dominican University of California's occupational
therapy students will conduct a series of activity analyses on the jobs available to people
with mental illnesses at People's Harvest processing plant. These activity analyses will be
utilized in order to create job descriptions for future employees as well as hiring criteria
to identify those who will be able to complete the jobs and to identify accommodations
that are required in order to create an optimal work environment for the employees.
What are current approaches to this problem? Cognitive task analysis is a method of
evaluating cognitive demands required for performance. People with mental illnesses

need cognitive supports and accommodations in the workplace in order to perform at the level demanded of the job. Cognitive task analysis identifies the specific mental processes needed for task performance. Through formal and informal observations, knowledgeable ergonomics specialists infer the cognitive demands of tasks and make recommendations for supports and accommodations.

Description of participants and agency/setting: The participants of this project are participants who experience barriers to employment. People's Harvest is in a food processing plant which branches off Buckelew Programs.

Recruitment Procedure: The researchers will meet face to face with the program manager and of People's Harvest in order to coordinate and establish roles and expectations of the project. The researchers will not directly contact the employees who will benefit from the results of this project

Setting/Participant Consent Process: Consent forms are needed from People's Harvest to observe working conditions. Project Managers are meeting with the program manager and head chef, and are not interacting with any participants in People's Harvest's program.

Procedures: Project implementers will observe work performance and work conditions and record them on an ergonomic analysis form. People's Harvest or another food processing plant may not be available for observation of work and work conditions. If this occurs, project implementers will use other sources of data to create an ergonomic analysis. This will include interviewing People's Harvest management, requesting access to People's Harvest's workstation designs and blueprints for their review, searching databases for literature on performance demands of specific jobs, and searching for media showing the performance of the jobs. Project implementers will then infer the cognitive demands of the tasks and create a matrix that compares tasks with cognitive requirements for their fulfillment. A hierarchy of jobs will then be created based on cognitive skill required for each job. This hierarchy will allow managers the flexibility to cross train employees in tasks appropriate to their level of cognitive skill.

Potential Risk to Participants: Dominican University of California, Dominican University of California's Occupational Therapy Department, and the student program managers of this project will not be responsible for hiring practices or training policies of People's Harvest's management.

Minimization of Potential Risk: No risks to participants have been identified.

Potential Benefits to Participants. Benefits to this project include an evidence-based approach to activity analyses on the various jobs that take place in the People's Harvest food processing plant. The results of these analyses can be used to formulate job descriptions, hiring criteria, and identification of reasonable accommodations that can or should be made in order to advocate for the workers participating in these tasks or jobs.

Intended Outcomes of the Project: The intended outcome of this project is to have a completed activity analysis for each of the jobs or tasks that are required in order to run

the food processing plant. The results of these analyses can and will be used to identify job demands and create job descriptions for future/current employees in order to determine what accommodations are necessary for completion of jobs to be achieved.

What are the Project Deliverables? Upon completing this project, we will provide People's Harvest with a summary of our results and a hierarchy of tasks based upon the level of skill required to perform them.

Costs to Participants: There are no costs to any parties participating in the project.

Reimbursement or Compensation to Participants: No reimbursement or compensation necessary.

Check which of the following applies:

X   Data will be anonymous

Any data that may possibly be collected with no names or indication of personal identity and will be kept locked in Janis Davis' office located at Dominican University of California.

_____Data will not be anonymous

<u>Signatures:</u>

I acknowledge that all procedures will meet relevant local, state, and federal regulations related to the setting and participants. I am familiar with and agree to adhere to the ethical principles set forth by AOTA.

_____   _____

Signature of Applicant   Date

_____   _____

Signature of Applicant   Date

_____   _____

Signature of Applicant   Date

APPENDIX C
Site Selection Verification Form

Student Name(s): Louise Bobbitt, Jeremy Darrimon, and Jessi Saaty

Title of thesis project: Task Analysis for a Food Processing Plant: A Social Enterprise
Serving People with Mental Illness.

Description of thesis project: Three Dominican University of California occupational
therapy students will complete cognitive task analyses of multiple supported employment
jobs that may be filled by people with mental illnesses at a food processing plant. This
cognitive task analyses may be used to create job descriptions and guide the hiring,
training, and management of personnel.
Name of Proposed Site: People's Harvest of Buckelew Programs
Persons with whom you will be working:
Leticia Wiesner
Type of facility: Employment Services for those with Mental Illness
Address: 3270 Kerner Blvd. San Rafael, Ca 94901
Phone #: (415) 456-9350 x175 (direct)
        (415) 497-6702 (cell)
Michael Paik C.E.C.
Address: 900 5th St. suite 150 San Rafael, Ca 94901
Phone #: (415) 456-9350 (office)
        (415) 827-1304 (cell)
Contact Person related to approval at the site: Leticia Wiesner
Title: Program Manager
Has initial contact been made? Yes_x_ No__
If "yes", describe:
We met with Leticia Wiesner and Michael Paik on Wednesday September 28, 2011. We
discussed the target population as well as retried a work flow plan, job descriptions,
hiring criteria, and a list of common drugs and their side effects. We also discussed trying
to get to access to a food processing plant.
**What agreements have been made regarding project implementation (for example,
collect data, prepare a manual, or develop an intervention)?**
Students agreed to perform task analyses on jobs that were included in the work flow
plan provided by the program manager. The program director agreed to try to provide us
access to People's Harvest or another site to observe work performance and conditions.

**Dates for proposed intervention(s), due date for manual, or dates planned for data
collection:**

Due date for task analyses is contingent on the date that access is provided to the site.

Potential problems, plans for addressing problems (pro-active planning for alternatives):
People's Harvest or another food processing plant may not be available for observation of work and work conditions. If this occurs, project implementers will use other sources of data to create a job analysis. This will include interviewing People's Harvest management, requesting access to People's Harvest's workstation designs and blueprints for their review, searching databases for literature on performance demands of specific jobs, and searching for media showing the performance of the jobs.

Agency Signature _____**Date**_____

Print Name & Title of Agency person _Leticia Wiesner, Program Director_____
Faculty advisor signature:

Appendix D
Job-Task Analysis Form

OCCUPATION and related ACTIVITY:	
Required Activities	Required Tasks

PHYSICAL DEMANDS (circle if required to complete occupation)

Lifting   Standing   Walking   Sitting   Carrying   Pushing
Pulling

Climbing   Balancing   Stooping   Kneeling   Crouching   Crawling

Reaching   Handling   Fingering   Feeling   Talking   Hearing
Seeing

Physical Demand Frequency and Strength Frequency

	Occasional	Frequently	Constantly
Sedentary	10 lb	Negligible	Negligible
Light	20 lb	10 lb	Negligible
Medium	20-50 lb	10-25 lb	10 lb
Heavy	50-100 lb	25 – 50 lb	10 -20 lb
Very Heavy	Over 100 lb	50-100 lb	20-50 lb

Required Skills (circle if required to complete occupation)

PHYSICAL SKILLS: SENSORY and PERCEPTUAL SKILLS

Tactile: Hot/ cold; Sharp/ blunt; Soft/ hard; Rough/ smooth;

Proprioceptive: Fingers; thumb; wrist; elbow;   shoulder; L/L; trunk; head; neck.

Vestibular: Y / N   **Visual (Acuity? Perception? Figure ground? Spatial?):** R / L / Both

Auditory: Y / N   **Stereognosis**: Y / N   **Smell:** Y / N.   **Taste:** Y / N

Balance reactions   Equilibrium Reactions   Reflexes   Other:

MOTOR SKILLS i.e. Range of Motion, Muscle Tone and Muscle Strength

Fingers: Flexion / Extension / Abduction / Adduction

Bilateral Coordination and Integration:

Grip: Power Grip / Pincer Grip / Tripod Grip: Static – Dynamic

Wrist: Flexion / Extension / Ulnar / Radial Deviation/ Pronation/ Supination	**Elbow:** Flexion / Extension

Shoulder: Extension / Flexion; Internal / External Rotation; ABduction/ ADDuction

Trunk: Flexion / Extension; Internal / External Rotation; Sideward bending;

Lower Limbs: Flexion / Extension

USE OF HANDTOOLS
Are tools selected to minimize or limit
- Exposure to excessive vibration?
- Use of excessive force?
- Bending or twisting of the wrist?
- Finger pinch grip?

- Problems associated with trigger finger?
- Excessive gripping?

Are tools evenly balanced?
Are heavy tools suspended or counterbalanced in ways to facilitate use?
Does the tool allow adequate visibility of work?
Does the tools grip prevent slipping during use?
Does the tool have ergonomic grip design?
Are tools equipped with handles of textured, non-conducive material?
Are different sized handles available to fit a wide range of hands?
Is the tool handle designed not to dig in the palm of the hand?
Can the tool be used safely with gloves?
Can the tool be used by either hand?
Is there a preventative maintenance program to keep tools operating as designed?
Have employees been trained
- In the proper use of tools?
- When and how to report problems with tools?
- In proper tool maintenance?

Are there Repetitive motions?
- Frequency?

Are there awkward postures?

EMOTIONAL REGULATION SKILLS	
(Feelings or control of feelings attached to performance)	
Confidence	Self Esteem
REQUIRED:	Risk Taking, Why?
POSSIBLE	

SPIRITUAL IDEAS and SKILLS: State required Values or Beliefs or Attitudes to perform this occupation.

SOCIAL SKILLS						
Solitary	People Around but Solitary		With Group Members		Assembly Lines	
Perform best when alone		Y	N	Perform best with others	Y	N

COMMUNICATION SKILLS	Required Non-Verbal Communication:
Speaking Hearing	Facial features Gestures
Writing Reading	Special Dress / Shoes Sounds

CONTEXT OF PERFORMANCE

TIME of Day:	TIME of Year:
ENVIRONMENT:	
REQUIRED EQUIPMENT:	PERSONS PRESENT:
POSSIBLE SAFETY ISSUES:	

COGNITIVE SKILLS

Thinking	Planning	Problem Solving	Initiating Actions	Understanding Reasons
Concentrating	Identifying	Sequencing	New / Old Actions	Recognizing

Understanding and Memory

The ability to remember work schedule.

The ability to remember locations and work-like procedures.

The ability to understand and remember safety precautions and emergency procedures.

The ability to understand and remember very short and simple instructions.

The ability to understand and remember detailed instructions.

Sustained Concentration and Persistence

The ability to carry out very short and simple instructions.

The ability to carry out detailed instructions.

The ability to maintain attention and concentration for extended periods.

The ability to maintain regular attendance and be punctual.

The ability to perform activities within a schedule.

The ability to sustain an ordinary routine without special supervision.

The ability to work in coordination with or proximity to others without being distracted by them.

The ability to make simple work-related decisions.

The ability to complete a normal workday and workweek without interruptions from psychologically based symptoms and to perform at a consistent pace without an unreasonable number and length of rest periods.
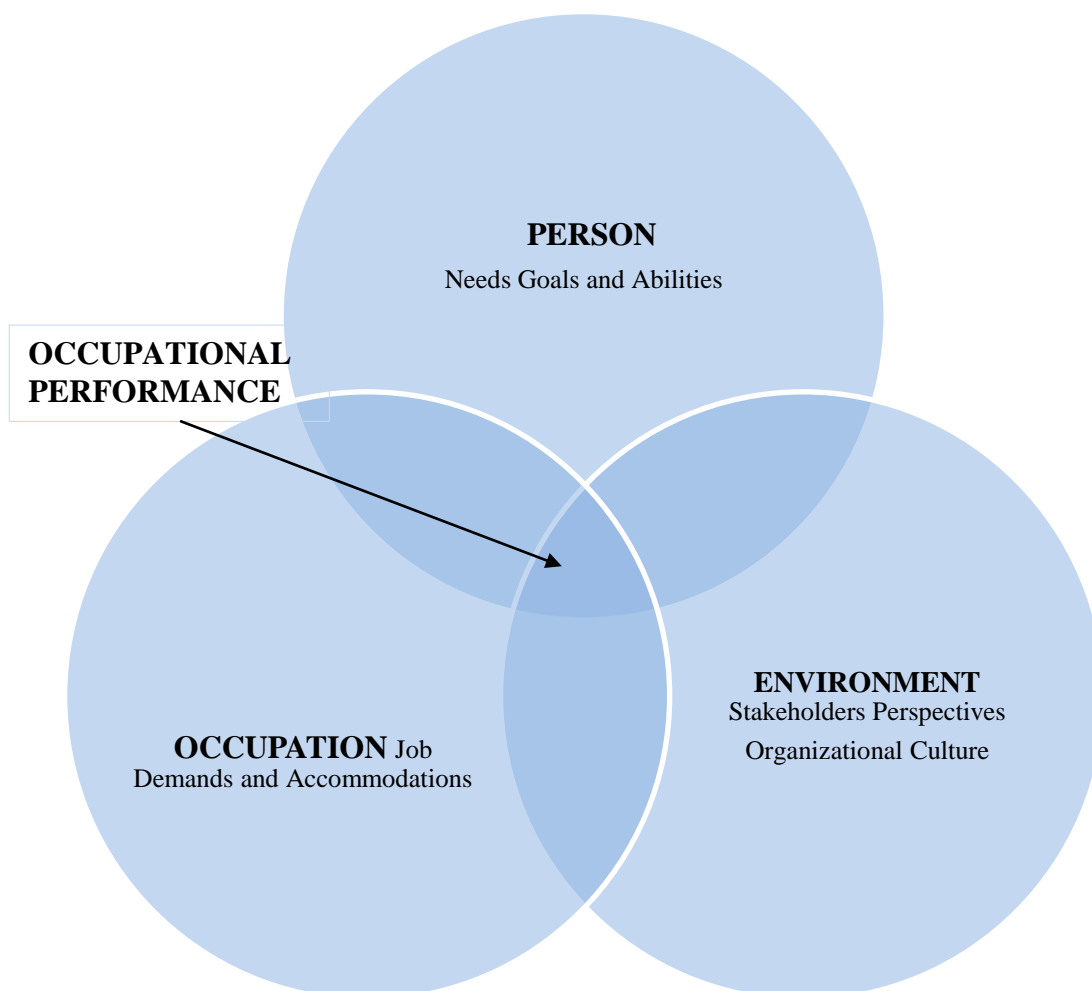
Social Interaction

The ability to interact appropriately with supervisors and co-workers.

The ability to ask simple questions or request assistance.

The ability to accept instructions and respond appropriately to criticism from supervisors.

The ability to get along with coworkers or peers without distracting them or exhibiting behavioral extremes.

The ability to maintain socially appropriate behavior and to adhere to basic standards of neatness and cleanliness.

Adaptation

The ability to respond appropriately to changes in the work setting.

The ability to be aware of normal hazards and take appropriate precautions.

The ability to travel in unfamiliar places or use public transportation.

The ability to set realistic goals or make plans independently of others.

APPENDIX E
PERSON-ENVIRONMENT-OCCUPATION MODEL

PERSON
Needs Goals and Abilities

OCCUPATIONAL
PERFORMANCE

ENVIRONMENT
Stakeholders Perspectives
Organizational Culture

OCCUPATION Job
Demands and Accommodations

APPENDIX F
PROJECT EVALUATION FORM

People's Harvest: Manual and report evaluation

Dear People's Harvest,

Louise Bobbitt, Jessi Saaty, and Jeremy Darrimon would like your feedback regarding the content in the Healthy and Safe at Work Manual and the report that you were provided at the conclusion of the task analysis of your food processing jobs associated with People's Harvest.

Please rank the following statements according to this scale (circle your answer).

1	**2**	**3**	**4**	**5**
Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**

1. The manual has a professional appearance.   1 2 3 4 5

2. The contents of the manual address the needs of People's Harvest.   1 2 3 4 5

3. The manual provides People's Harvest knowledge that you did not already possess.   1 2 3 4 5

4. You expect to use this manual as a resource in the future.   1 2 3 4 5

5. This manual will help People's Harvest to hire or retain people with mental illnesses.   1 2 3 4 5

6. The report has a professional appearance.   1 2 3 4 5

7. The contents of the report address the needs of People's Harvest.   1 2 3 4 5

8. The report provides People's Harvest knowledge that you did not already possess.   1 2 3 4 5

9. You expect to use this report as a resource in the future.   1 2 3 4 5

10. This manual will help People's Harvest to hire or retain people with mental illnesses.   1 2 3 4 5

Please add any additional comments

APPENDIX G
HEALTH AND SAFETY AT WORK

Healthy and Safe at Work

A Manual for Employees and Managers

Table of Contents

Introduction to Occupation

This manual was created by occupational therapy students from Dominican University of California for People's Harvest, a social enterprise of Buckelew Employment Services. Occupational therapists assist individuals, groups, and populations to engage in everyday life activities that the individuals, groups, or populations find meaningful and purposeful. Occupational therapists use the term occupation to capture the breadth and meaning of "everyday life activity". Occupation is "everything people do to occupy themselves, including looking after themselves…enjoying life…and contributing to the social and economic fabric of their communities" (Law, Polatajko, Baptiste, & Townsend, 1997, p. 32).

Mental Illness and Work

People with severe mental illnesses make up five percent of adults between 18 and 50 years of age (National Institute of Mental Health, 2008). Severe mental illnesses cause mental, emotional, or behavioral disruptions that impair function and inhibit one or more occupation (DSM-IV). Recovery from mental illness is "a process of change through which individuals improve their health and wellness, live a self-directed life, and strive to reach their full potential" (Substance Abuse and Mental Health Services Administration [SAMSHA], Recovery from Mental Disorders and Substance Use Disorders section, 2011, December 22). As psychotropic medications have become more effective, people with mental illnesses have been able to expand their roles in the community and participate in more meaningful occupations (Auerbach & Jeong, 2005). Work is an occupation that is an important piece in the recovery process for many people with mental illnesses (SAMHSA, 2011).

People with mental illnesses are able to work in more than just menial jobs. Rinaldi, Perkins, Hardisty, Glynn, and Souza (2006) found that of people with mental illnesses in supported employment jobs in London, 15% worked in sales or customer service, 9% were senior officials or managers, and 33% were associate professional or administrative workers. Yet, employment rates of people with mental illness are abysmally low. Work has the potential to be an empowering agent for people with mental illnesses but the environment is often a barrier to success (Cottini, Kato, & Westergaard-Nielson, 2010; Keough & Fisher, 2001). Barriers to employment for people with mental illnesses include symptoms of mental illness, access to resources, self esteem and self-perception, interpersonal and institutional barriers, and co-morbidities between diagnosis and medical conditions.

Providing workers with supports and workplace accommodations can effectively remediate some barriers to employment but to understand occupational performance an

understanding of the relationship between the worker and the workplace is required (Law, 1991). This requires knowledge of the "essential job duties and work demands (e.g. physical, cognitive, communication, psychosocial, behavioral); performance expectations (e.g. quality, quantity, speed); limitations that may affect work performance (e.g. impairments, balance between home and work demands); and strategies that may enhance work performance" (Stergiou-Kita et al., 2008, p. 219). This knowledge is acquired using task analysis which uses a variety of methods to describe job demands and performance skills. Job demands include work duties, responsibilities, and procedures while performance skills include motor, process, and communication/ interaction skills.

Supportive Accommodations for Employees with Mental Illness

Like any employee with a disability people with mental illnesses may need workplace accommodations to help them with their job. The American's with Disabilities Act (ADA) protects individuals with disabilities and guarantees them reasonable accommodations in workplaces that employ 15 or more employees. Unfortunately, people with mental illnesses have unsuccessful work experiences because workplace supports and accommodations are typically inadequate (Koletski, 2009). Adequate accommodations reduce the impact that mental disorders have on worker productivity.

Becker and Drake (2003) identify some common accommodations for the work environment. These include onsite support, crisis intervention, flexible work hours, supervisor feedback with positive reinforcement, and modification of workspace and job tasks. Onsite support consists of temporary on-site job coaching and pairing clients with other co-workers for support and job assistance. Crisis intervention consists of providing private spaces for employees, telephone calls to employment specialists, accommodating procedures for emergency situations. Methods of providing flexible work hours include scheduling more frequent breaks, permitting part-time work, permitting leaves of absence, and allowing work schedules to be adjusted for medical appointments, supervisor feedback and positive reinforcement (using written instructions, ways the supervisor can support the worker). Modifications of workspace and job tasks includes allowing access to hydration, gradual introduction of tasks, providing space to work alone, and minimization of distractions and noise (Becker & Drake, 2003).

The following table lists challenges that people with mental illnesses may have while working and the ways that employers can accommodate the environment to support the worker.

Common Workplace Challenges of People with Mental Illnesses	Suggested Accommodations
Maintaining Stamina	1. Provide flexible scheduling 2. Allow longer or more frequent work breaks 3. Allow employee to work from home during part of the day, or week 4. Provide part time work schedules
Maintaining Concentration	1. Reduce distractions in the work area 2. Provide space enclosures or a private office 3. Allow for use of white noise or environmental sound machines 4. Allow the employee to play soothing music using a cassette player and headset 5. Increase natural lighting or provide full spectrum lighting 6. Plan or uninterrupted work time Allow for frequent breaks 7. Divide large assignments into smaller tasks and goals 8. Restructure job to include only essential functions
Staying Organized and Meeting Deadlines	1.Make daily to-do lists and encourage employees to check items off as they are completed 2. Use several calendars to mark meetings and deadlines 3. Remind employee of important deadlines using both verbal and written prompts. 4. Use electronic organizers 5. Divide large assignments into smaller tasks and goals
Dealing with Memory Deficits	1. Allow the employee to tape record meetings 2. Provide type written minutes of each meeting 3. Provide written instructions 4. Allow additional training time 5. Provide written checklists
Working Effectively with Supervisors	1. Provide positive praise and reinforcement as well as a calm and neutral work environment.

	2. Provide written job instructions 3. Develop written work agreements 4. Allow for open communication to managers and supervisors 5. Establish written long and short term goals 6. Develop strategies to deal with problems 7. Develop a procedure to evaluate the effectiveness of the accommodation
Interacting with Coworkers	1. Educate all employees on their right to accommodations 2. Provide sensitivity training to coworkers and supervisors 3. Do not mandate employees attend work-related social functions 4. Encourage employees to move non work-related conversations out of work areas
Handling Stress and Emotions	1. Provide praise and positive reinforcement 2. Refer to counseling and employee assistance programs 3. Allow telephone calls during work hours to doctors and others for needed support 4. Allow the presence of a support animal 5. Allow the employee to take breaks as needed
Maintaining Attendance	1. Provide flexible leave for health problems 2. Provide a self-paced work load and flexible hours 3. Allow employee to work from home 4. Provide part-time work schedule 5. Allow employee to make up time
Dealing with Change	1. Recognize that change in the office environment or of supervisors may be difficult for a person with mental health impairment. 2. Maintain open channels of communication between the employee and the new and old supervisor in order to ensure an effective transition 3. Provide weekly or monthly meetings with the employee to discuss workplace issues and production levels

Adapted from: Job Accommodation Network (2011). Accommodation and Compliance Series: Employees with Mental Health Impairments. Retrieved from http://askjan.org/media/downloads/PsychiatricA&CSeries.pdf

Solutions to Common Symptom Related Workplace Challenges

To create effective supports and accommodations, employers must first understand the specific challenges that people with mental illnesses need help to overcome. Cognitive ability and negative symptoms like apathy, anhedonia, and attention deficits are the most significant personal factors that negatively affect work performance of people with mental illnesses (Shamsi, et al., 2011). The table below describes solutions that remediate common workplace problems of people with specific mental illnesses.

Diagnosis	Typical Symptoms	Common Problems	Possible Solutions
Bipolar Disorder	**Bipolar I**: -Dominant maniac mood -Increased energy -Hyperactivity -Racing thoughts -Inflated self-esteem -Grandiose thoughts -Episodes of major depression **Bipolar II:** -Dominant depressive mood -Excessive crying -Sadness -Feelings of excessive guilt, anxiety, fatigue	• Feelings of anger/depression during work shift/duties • Unhealthy work relationships • Potential conflicts or issues with customers due to mania.	• Develop social supports within the workplace • Create/keep medication schedule on/off work shifts to avoid episodes • Education of warning signs of episodes and implementation of appropriate break schedules • Set specific rules regarding acceptable work relationships
Depressive Disorders	-Sadness -Poor appetite or overeating -Insomnia or too much sleeping -Fatigue -Low self-esteem -Poor concentration -Feelings of hopelessness -Suicidal ideation/attempt	• Depressive episode during work shift • Stigma from other employees • Poor work performance due to lack of concentration and other symptoms	• Identify and implement "pick-me-ups" such as compliments or inspiring quotations • Incorporate break schedule to avoid poor work performance and to reinforce concentration • Education on to use work as a means to keeping busy and active to avoid

Diagnosis	Typical Symptoms	Common Problems	Possible Solutions
			depressive episodes
Schizophrenia	-Delusions -Hallucinations -Disorganized speech (incoherence) -Negative symptoms (e.g., affective flattening, alogia, avolition, etc.)	• Experience hallucinations/delusions in work environment • Negative reaction of other employees toward employee • Inability to communicate needs/feelings to management or other employees	• Design appropriate break schedule/work environment for employee to ensure safety of all employees and staff • Educate other employees of disease to promote tolerance and awareness (e.g., brochures, pamphlets) • Agreed system of communication between management and employee in case of an episode (e.g., journals, facial expressions, hand gestures/signals)
Post-Traumatic Stress Disorder (PTSD)	**3 Main Criteria:** ▪ Re-experience ▪ Avoidance ▪ Arousal **Mental:** -Anxiety -Stress -Fear -Anger -Hostility **Physiological:** -Increased heart rate -Nausea -Muscle tension -Sweating -Shaking	With re-experience: ▪ "Triggers" that bring flashbacks of traumatic events With Avoidance: ▪ May not be willing to work with certain people/do certain tasks to avoid experiencing traumatic events With Arousal: ▪ Sounds/smells from the work environment ▪ "triggers"	Exposure therapy on the job: ▪ Employers/therapist /other employees working with employee to manage emotions and symptoms by exposing employee to stressful situations little by little • Create a schedule/workflow plan to help prevent episodes

Diagnosis	Typical Symptoms	Common Problems	Possible Solutions
			• Taking necessary breaks at recognition of anxiety or triggers

American Psychiatric Association. (2000). Diagnostic and statistical manual of mental disorders (4th ed., text rev.). Washington, DC: Author.

Cara, E., & MacRae, A. (2005). *Psychosocial occupational therapy: A clinical practice*. Australia: Thomson Delmar Learning

Common Medications Used by People with Mental Illnesses

Diagnosis	Symptoms	Medications	Side Effects
Anxiety	-Feelings of panic -Fear and uneasiness -Uncontrollable, obsessive thoughts, repeated thoughts or flashbacks of traumatic experiences -Nightmares -Ritualistic behaviors, such as repeated hand washing -Problems sleeping -Cold or sweaty hands and/or feet -Shortness of breath -Heart palpitations -An inability to be still and calm -Dry mouth -Numbness or tingling in the hands or feet -Nausea -Muscle tension -Dizziness	**Selective Seritonin Reuptake Inhibitor (SSRI)-** Prozac, Zoloft, Paxil, Celexa, Lexapro, Luvox, Viibryd **Serotonin-norepinephrine reuptake inhibitors (SNRI)** Effexor, Cymbalta, Pristiq **Noradrenergic and specific serotonergic antidepressants (NaSSA)-** Remeron **Monamine oxidase inhibitor-** Nardil, Parnate, Emsam **Tricyclic antidepressant-** Elavil, Pamelor, Sinequan, Imipramine	**SSRI's-** Nausea, diarrhea, headache, insomnia, nervousness; **SNRI's-** Upset stomach, minor increase in blood pressure, nausea, diarrhea, headache, insomnia nervousness; **NaSSA's-** drowsiness, increased appetite, weight gain **MAOI's-** Dizziness or lightheadedness, low blood pressure, diarrhea, dry mouth, nervousness, muscle aches, insomnia; **TCA's-** Drowsiness, dry mouth, blurred vision, constipation, hypotension, weight gain, cardiac effects, urinary retention, memory impairment
Bipolar Disorder	**Bipolar I:** -Dominant maniac	**Mood stabilizers**: Lithium;	**Lithium**: Loss of coordination,

Diagnosis	Symptoms	Medications	Side Effects
	mood -Increased energy -Hyperactivity -Racing thoughts -Inflated self-esteem -Grandiose thoughts **Bipolar II:** -Dominant depressive mood -Excessive crying -Sadness -Feelings of excessive guilt, anxiety, fatigue	**Anticonvulsants**: Depakene, Lamictal, Tegretol Topomax	excessive thirst, frequent urination, blackouts, seizures, slurred speech, fast/slow/irregular/pounding heartbeat, hallucinations, changes in vision, itching/rash; **Anticonvulsants**: changes in weight, nausea, stomach pain, vomiting, loss of appetite, liver/pancreas damage, increase in risk of suicidal thoughts and behaviors
Depression	-Fatigue -Decreased energy -Feelings of hopelessness, guilt and/or worthlessness -Insomnia or excessive sleeping -Irritability -Restlessness -Persistent aches and pains -Persistent sad or empty feeling -Difficulty remembering detail or concentration or making decisions -Loss of interest in activities that were	*Antidepressants:* **SSRI's**-Celexa, Lexapro, Prozac, Paxil, Zoloft, Luvox; **SNRI's**- Effexor, Pristiq, Cymbalta; **MAOI's**- Apresoline, Furoxon, Zyvox, Parnate, Azilect, Eldepryl: **TCA's**- Elavil, Anafranil, Norpramin, Adapin, Tofranil, Pamelor;	**SSRI's**- Nausea, diarrhea, headache, insomnia, nervousness; **SNRI's**- Upset stomach, minor increase in blood pressure, nausea, diarrhea, headache, insomnia nervousness; **MAOI's**- Dizziness or lightheadedness, low blood pressure, diarrhea, dry mouth, nervousness, muscle aches, insomnia;

Diagnosis	Symptoms	Medications	Side Effects
	once pleasurable	**Norepiniephrine**-dopamine **Reuptake inhibitors**-Wellbutrin, Zyban; **NRI's**- Strattera; **NaSSAs**- Remeron	**TCA's**- Drowsiness, dry mouth, blurred vision, constipation, hypotension, weight gain, cardiac effects, urinary retention, memory impairment; **Norepinephrine**-dopamine; **Reuptake inhibitors**-constipation, drowsiness, dizziness, headache, nausea, vomiting, uncontrollable shaking of a body part, weight loss, excessive sweating; - **NRI's**- constipation, dry mouth, nausea, decreased appetite, dizziness, trouble sleeping, menstrual cramps, problems passing urine; **NaSSA's**-drowsiness, increased appetite, weight gain
PTSD	**Reliving the event**: -Flashbacks -Repeated upsetting	**SSRI's**- Celexa, Lexapro, Prozac, Paxil, Zoloft, Luvox; SNRI's- Effexor,	**SSRI's**- Nausea, diarrhea, headache, insomnia,

Diagnosis	Symptoms	Medications	Side Effects
	memories -Nightmares -Strong uncomfortable reactions that remind them of event **Avoidance**: -Emotional numbing -Feeling detached -Lack of interest in normal activities -Avoiding places/people/thoughts that remind them of event **Arousal**: -Difficulty concentrating -Startled easy -Exaggerated response -Irritable -Anger outbursts -Difficulty falling or staying asleep **General**: -Agitation or excitability -Dizziness -Fainting -Headache	Pristiq, Cymbalta; **Anxiolytics**	nervousness; **Anxiolytics**- Drowsiness, dizziness, decreased alertness and concentration, nausea, blurred vision, confusion, euphoria
Schizophrenia	**Positive**: -Delirium -Auditory hallucination -Thought disorder -Paranoia **Negative**: -Flat/blunted affect -Alogia	*Antipsychotics*- **Typical (first generation):** Thorazine, Haldol, Perphenazine, Fluphenazine **Atypical (second generation**): Risperdal, Zyprexa, Seroquel, Geodon,	Sedation, dystonia, pseudoparkinsons, akathisia, tardive dyskinesia, orthostatic hypotension, weight gain, blurred vision, increased heart beat,

Diagnosis	Symptoms	Medications	Side Effects
	-Anhedonia -Avulition	Abilify, Invega	increased sweating, dry mouth

American Psychiatric Association. (2000). Diagnostic and statistical manual of mental disorders (4th ed., text rev.). Washington, DC: Author.

Deglin, J.H., Vallerand, A.H., & Sanoski, C.A. (2011). Davis's drug guide for nurses (12th ed.) Philadelphia, PA: F.A. Davis Company

Abilities

Sensory abilities are abilities that influence visual, auditory and speech perception.	
Auditory Attention	The ability to focus on a single source of sound in the presence of other distracting sounds.
Depth Perception	The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object.
Far Vision	The ability to see details at a distance.
Glare Sensitivity	The ability to see objects in the presence of glare or bright lighting.
Hearing Sensitivity	The ability to detect or tell the differences between sounds that vary in pitch and loudness.
Near Vision	The ability to see details at close range (within a few feet of the observer).
Night Vision	The ability to see under low light conditions.
Peripheral Vision	The ability to see objects or movement of objects to one's side when the eyes are looking ahead.
Sound Localization	The ability to tell the direction from which a sound originated.
Speech Clarity	The ability to speak clearly so others can understand you.
Speech Recognition	The ability to identify and understand the speech of another person.
Visual Color Discrimination	The ability to match or detect differences between colors, including shades of color and brightness

Physical abilities are abilities that influence strength, endurance, flexibility, balance and coordination.	
Dynamic Flexibility	The ability to quickly and repeatedly bend, stretch, twist, or reach out with your body, arms, and/or legs.
Dynamic Strength	The ability to exert muscle force repeatedly or continuously over time. This involves muscular endurance and resistance to muscle fatigue.
Explosive Strength	The ability to use short bursts of muscle force to propel oneself (as in jumping or sprinting), or to throw an object.
Extent Flexibility	The ability to bend, stretch, twist, or reach with your body, arms, and/or legs.
Gross Body Coordination	The ability to coordinate the movement of your arms, legs, and torso together when the whole body is in motion.
Gross Body Equilibrium	The ability to keep or regain your body balance or stay upright when in an unstable position.
Stamina	The ability to exert yourself physically over long periods of time without getting winded or out of breath.

<u>Static Strength</u>	The ability to exert maximum muscle force to lift, push, pull, or carry objects.
<u>Trunk Strength</u>	The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without 'giving out' or fatiguing.

Psychomotor abilities are abilities that influence the capacity to manipulate and control objects.

<u>Arm-Hand Steadiness</u>	The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position.
<u>Control Precision</u>	The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions.
<u>Finger Dexterity</u>	The ability to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.
<u>Manual Dexterity</u>	The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.
<u>Multi-limb Coordination</u>	The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing, or lying down. It does not involve performing the activities while the whole body is in motion.
<u>Rate Control</u>	The ability to time your movements or the movement of a piece of equipment in anticipation of changes in the speed and/or direction of a moving object or scene.
<u>Reaction Time</u>	The ability to quickly respond (with the hand, finger, or foot) to a signal (sound, light, picture) when it appears.
<u>Response Orientation</u>	The ability to choose quickly between two or more movements in response to two or more different signals (lights, sounds, pictures). It includes the speed with which the correct response is started with the hand, foot, or other body part.
<u>Speed of Limb Movement</u>	The ability to quickly move the arms and legs.
<u>Wrist-Finger Speed</u>	The ability to make fast, simple, repeated movements of the fingers, hands, and wrists.

Cognitive abilities are abilities that influence the acquisition and application of knowledge in problem solving

<u>Category Flexibility</u>	The ability to generate or use different sets of rules for combining

	or grouping things in different ways.
<u>Deductive Reasoning</u>	The ability to apply general rules to specific problems to produce answers that make sense.
<u>Flexibility of Closure</u>	The ability to identify or detect a known pattern (a figure, object, word, or sound) that is hidden in other distracting material.
<u>Fluency of Ideas</u>	The ability to come up with a number of ideas about a topic (the number of ideas is important, not their quality, correctness, or creativity).
<u>Inductive Reasoning</u>	The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
<u>Information Ordering</u>	The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).
<u>Mathematical Reasoning</u>	The ability to choose the right mathematical methods or formulas to solve a problem.
<u>Memorization</u>	The ability to remember information such as words, numbers, pictures, and procedures.
<u>Number Facility</u>	The ability to add, subtract, multiply, or divide quickly and correctly.
<u>Oral Comprehension</u>	The ability to listen to and understand information and ideas presented through spoken words and sentences.
<u>Oral Expression</u>	The ability to communicate information and ideas in speaking so others will understand.
<u>Originality</u>	The ability to come up with unusual or clever ideas about a given topic or situation, or to develop creative ways to solve a problem.
<u>Perceptual Speed</u>	The ability to quickly and accurately compare similarities and differences among sets of letters, numbers, objects, pictures, or patterns. The things to be compared may be presented at the same time or one after the other. This ability also includes comparing a presented object with a remembered object.
<u>Problem Sensitivity</u>	The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
<u>Selective Attention</u>	The ability to concentrate on a task over a period of time without being distracted.
<u>Spatial Orientation</u>	The ability to know your location in relation to the environment or to know where other objects are in relation to you.
<u>Speed of Closure</u>	The ability to quickly make sense of, combine, and organize information into meaningful patterns.

Time Sharing	The ability to shift back and forth between two or more activities or sources of information (such as speech, sounds, touch, or other sources).
Visualization	The ability to imagine how something will look after it is moved around or when its parts are moved or rearranged.
Written Comprehension	The ability to read and understand information and ideas presented in writing.
Written Expression	The ability to communicate information and ideas in writing so others will understand.

U.S. Department of Labor (2012). Content model. *Occupational Information Network.*
Retrieved from: http://www.onetcenter.org/content.html/1.A?d=1#cm5

Employee Health and Wellness

Employers should be interested in the health and wellness of their employees. Poor health and wellbeing of employees translates to increased injury, absenteeism, and poorer productivity of workers. Workplaces have the potential to be settings for both mental health promotion and mental illness prevention (Barkway, 2006). These workplaces can stimulate cognition and create many meaningful relationships. Improving the psychosocial work environment improves productivity and job performance and may reduce the risk of future mental health problems (Sanderson, Nicholson, Graves, Tilse, & Oldenburg, 2008). Employers can impact the health and wellness of their employees but creating a wellness program and by utilizing best safety practices.

Wellness Breaks

Wellness Breaks/Ideas	What it looks like?	Why?	With who?	When?	Duration/Measurements
Parking Lot Walk	Map out a trail in the parking lot and around the facility.	General wellness, exercise	Can be done alone or with others	Before work, at breaks, during lunch, after work	10-15 minutes, pedometer measurements
Booster Break Program	Co-worker led physical activity group	General wellness, exercise, team building, cohesiveness	With a group	Break time	15 minutes
Tai Chi	Self-paced constant gentle motion, consisting of physical exercise, stretching, deep breathing, and meditation	General wellness, but also includes stress and anxiety reduction, increased flexibility, balance and agility	Can be done alone or with others	It is recommended to engage in this activity in the morning, but can be completed at any time during breaks, lunch or after work	Varies, depending on time available but generally a few minutes, 10 minutes or an hour

Wellness Breaks/Ideas	What it looks like?	Why?	With who?	When?	Duration/Measurement
Meditation	Quiet room	Mood stabilizer, mental break, spiritual well being	Works best when completed alone, but can be completed with others in the room	Before work, break time, during lunch, after work	Varies
Incentives or secret pals	Small gifts given to co-workers	Motivation, create friendly and pleasant work environment, doing good for others, create new relationships	Co-workers	1-2 times a month	N/A
Fruit/Veggie Days	Fruit and/or veggies available in break areas for employees	Promote healthy eating habits, encourage wellness and disease prevention	Best to include entire office/crew	Once a week	N/A

Marin County Resources for People with Mental Illnesses

Facility	Contact Information	Criteria
Department of Rehabilitation	75 Rowland Way, Suite 370 Novato, CA 94945-5037 http://www.dor.ca.gov/Vocational-Rehabilitation.html	CRITERIA: To be eligible for services, an individual must have a physical or mental impairment that substantially impedes his/her ability to secure employment; and be able to benefit from the DOR's services in terms of an employment outcome in an integrated setting. PURPOSE: Assists Californians with disabilities to obtain and retain employment and maximize their equality and ability to live independently in their communities. SERVICES: • Career assessment and counseling • Job search and interview skills • Independent living skills • Career education and training, and assistive technology
Enterprise Resource Center	(415) 457-4554 Warmline (415) 459-6330 Crisis Planning Program (415) 306-3289 http://www.camentalhealth.net/index.html	CRITERIA: For individuals with a mental illness and for their family members and friends. PURPOSE: Provide opportunities for those with a mental illness reach their highest potential by teaching, empowering, and advocating for their clients. SERVICES: • Daily support group meetings • Walk-ins and appointments with peer counselors • Location community resources and assistance in utilizing these services • Process groups with other clients designed to promote friendships and learn social skills • A peer companion program for people who tend to isolate • Peer counseling training at the College of Marin, assistance for homeless mentally ill (C.A.R.E. Team) • Art therapy classes • Daily specialty groups such as WRAP and Smoking

Facility	Contact Information	Criteria
		• Cessation, women's programs, free computer use with internet services • Warmline – Free peer counseling over the phone, Crisis Planning Program
Good Will	(415) 456-5273 809 Lincoln Ave San Rafael, CA 94901 http://www.sfgoodwill.org	CRITERIA: For individuals with disadvantaging conditions or disabilities. PURPOSE: To help people with disabilities or disadvantaging conditions become more employable by providing work, skill training and job placement in the community. SERVICES: • Skills building training, Bayview Hope Trucking Academy, Transitional Employment Program, Digital Literacy • RAMP • Part-time and full-time employment, transitional employment
Image for Success	Program Director: (415) 482- 6077 Shop: (415) 453-1694 1557 Fourth Street San Rafael, CA 94901 http://www.imageforsuccess.org/	CRITERIA: Serves clients by referral only. PURPOSE: Volunteer, non-profit organization that provides complimentary wardrobes to men, and women and children transitioning to a life of self-reliance. SERVICES: • Women's program • Children's program • Men's program

Facility	Contact Information	Criteria
Integrated Community Services	Phone: (415) 455-8481 Fax: (415) 455-8483 3020 Kerner Blvd., Suite A San Rafael, CA 94901 http://www.connectics.org/	CRITERIA: Works with people of all types of disabilities regardless of sex, race, religion, national origin, or sexual preference with no age limit, and people who are medically stable PURPOSE: Non-profit agency providing solutions to the critical needs of individuals with disabilities. Mission is to provide a wide range of community-based services for individuals with disabilities in the areas of employment, housing, recreation, information, and referral. SERVICES: • Independent living skills (ILS) • Employment programs • Information and referral
Man Power	(415) 499-9023 100 Smith Ranch Rd Ste 107 San Rafael, CA 94903 http://www.manpower.com/ http://www.manpower.us/en/About-Us.htm	PURPOSE: Manpower has been dedicated to enriching people's lives with meaningful employment and development opportunities, and providing companies with innovative workforce solutions that help them increase agility, improve productivity and boost the bottom line. SERVICES: • Job matching • Career resources, training and development
Marin Community Development Connection	Phone: (415) 339-2837 Fax: (415) 332-0337 441 Drake Avenue Marin City, CA 94965 Email:jobs@marincitycdc.org http://www.marincitycdc.org/	PURPOSE: MCCDC promotes business opportunities, creates income-generating programs, promotes full employment, builds skills and promotes the concept of economic self-sufficiency. SERVICES: • Workforce services • Assets development services, skills upgrade training, business services

Facility	Contact Information	Criteria
Marin Center for Independent Living	Phone: (415) 459-6245 Fax: (415) 459-7047 TTY: (415) 459-7027 710 Fourth Street San Rafael, CA 94901	CRITERIA: Seniors and people with disabilities, and individuals living with breast cancer. PURPOSE: To assist persons with all types of disabilities to achieve their maximum level of sustainable independence as contributing, responsible and equal participants in society. SERVICES: • Assistive technology • Attendant referral/personal assistance services • Benefits planning • "Bob Roberts" Client Assistance Fund • Breast cancer benefits planning and assistance, information and referral • Independent living skills training, individual advocacy • Home modification • Housing assistance • Peer counseling • Systems change advocacy
Marin Jobs and Career Services	(415) 485-1489 405 Fourth Street San Rafael, Ca 94901	CRITERIA: To be eligible for services one must be homeless PURPOSE: To provide employment and training preparation, vocational counseling, vocational planning, and job placement services to the homeless in Marin County with multiple barriers to employment. SERVICES: • Employment preparation • Training preparation • Vocational counseling, vocational planning, job placement services

Facility	Contact Information	Criteria
The One Stop (Marin Employment Connection)	(415) 473-3300 120 N. Redwood Rd East Wing, 2nd. Floor San Rafael, CA http://www.marinemployment.org/	CRITERIA: This service is free and available to anyone who is looking for work, whether full-time, part-time or temporary. PURPOSE: To provide training and assistance to enable customers to access jobs in high demand occupations, accomplished by collaborating with our community partners. SERVICES: • Career assistanc • Internet access, faxes, phones, copiers, technical assistance • Career planning, job referrals, employer on site recruitments, education, trainings
Ritter Center	(415)457-8182 16 Ritter Street San Rafael, Ca 94912 http://www.rittercenter.org	CRITERIA: Low-income, homeless and uninsured individuals. PURPOSE: We help the homeless and very low-income residents of Marin – individuals and families – stabilize their lives by offering a number of social services. SERVICES: • Case management • Medical clinic • Food pantry • Day service center • Clothing • Seasonal programs
Voyager Carmel	415-459-5843 830 B Street San Rafael, CA 94901 http://www.hbofm.org/what-we-do/mental-health-services.html	CRITERIA: Adults with persistent mental illness. PURPOSE: Homeward Bound operates a Mental Health Services Program that provides both short- and long-term assisted housing and support. SERVICES: They provide programs focused on: • Enhancing individual strengths through symptom management • Crisis prevention • Basic living skills improvement • A supportive community and advancement toward job readiness and retention.

Prevention of Repetitive Strain Injuries

Repetitive strain injuries (RSI) are a family of injuries affecting tendons, tendon sheaths, muscles, nerves and joints causing persistent or recurring pain. The most common injuries occur in the neck, shoulders, forearms, hands, wrists, elbows and lower limbs. Unlike other diseases, RSIs are not easily classified because there are a variety of causes and body parts affected. Terms describing such injuries include: repetitive injury, repetitive motion injury, repetitive trauma, overuse injury, cumulative trauma disorder, occupational musculoskeletal disorder and cervico-brachial disorder. Injuries can involve repetition of force, rapid movement, overuse, static loading, excessive strain, uncomfortable positioning of limbs or holding one's posture in an unnatural, constrained or constricted position.

Injury	Causes	Symptoms	Prevention
Bursitis	Bursa are fluid-filled cavities near joints where tendons or muscles pass over bony projections. They can become inflamed from chronic overuse, trauma, rheumatoid arthritis, gout or infection	• Joint pain and tenderness when pressing around joint. Pain may be more severe if calcium deposits develop • Stiffness and achiness when moving affected joint • Immobility of affected joint • Swelling, warmth or redness over joint	• When engaging in a new activity, gradually build up time spent doing it • Stop activity if unusual pain occurs • Avoid or reduce or alternate repetitive movements whenever possible if/when using high risk areas. These involve the elbow, shoulder, hip, knee, and Achilles tendon
Carpal Tunnel Syndrome	The area in the wrist where the nerve enters the hand is called the carpal tunnel. This tunnel is normally narrow, therefore any swelling caused by trauma, injury, work stress, repeated use of vibrating hand tools, or fluid retention, can pinch the nerve and cause	• Clumsiness of the hand when gripping objects • Numbness or tingling in the thumb and next two or three fingers of one or both hands or in palm of hand • Pain extending to	• Avoid or reduce the number of repetitive wrist movements whenever possible. • Always stop if tingling or pain occurs • Use tools and equipment that are properly designed to reduce the risk of

Injury	Causes	Symptoms	Prevention
	pain, numbness, tingling or weakness	the elbow • Pain and/or weakness in the wrist or hand in one or both hands • Problems with fine finger movements (coordination) in one or both hands • Difficulty carrying bags (a common complaint)	wrist injury.
Lateral Epicondylitis (AKA Tennis Elbow)	Muscles in the forearm attach to the bone on the outside of the elbow. When using these muscles over and over again, small tears develop in the tendon. Over time, this leads to irritation and pain where the tendon attaches to the bone.	• Elbow pain that gradually worsens • Pain radiating from the outside of the elbow to the forearm and back of the hand when grasping or twisting • Weak grasp	• Apply an ice pack to the outside of the elbow • Maintain good strength and flexibility in the arm muscles and avoid repetitive motions • Rest the elbow when bending and straightening are painful
Osteoarthritis	Changes in cartilage cause it to break down faster than the body can produce it. Areas where cartilage was broken down can cause pain and damage from the bones rubbing together.	Aching, pain or stiffness in joints, usually first thing in the morning or during and/or after use. Can also be after periods of inactivity as well • Muscle weakness around the affected joint • Swelling in the affected joint • Deformed joints • Reduced range	• Use the largest joint or strongest muscle possible when engaging in tasks • Light to moderate exercise can help keep muscles strong and reduce joint pain and stiffness

Injury	Causes	Symptoms	Prevention
		of motion and loss of affected joint use	
Tendonitis	Tendinitis, inflammation of the tendon, can occur as a result of injury, overuse, or with aging as the tendon loses elasticity	• Pain and tenderness along a tendon, usually near a joint • Pain at night • Pain that is worse with movement or activity	• Avoid repetitive motion and overuse of the arms and legs. • Keep muscles strong and flexible. • Warm up by exercising at a relaxed pace before engaging in vigorous activity

Cold Stress Injuries

Working in cold conditions affects the body differently than working in temperate conditions. Cold environments affect joints, muscles, and the physiological processes of the human body. This guide is intended for employers to become aware of strategies to prevent primary and secondary cold stress injuries in the workplace.

> **Primary Cold-Stress Injuries that Occur in Cold Conditions**

Hypothermia can occur when *land temperatures* are **above** freezing or *water temperatures* are below 98.6°F/ 37°C.

> **Symptoms:** normal body temperature drops to or below 95°F fatigue or drowsiness; uncontrolled shivering; cool bluish skin; slurred speech; clumsy movements; irritable, irrational, or confused behavior.
>
> **What to do.**
> 1. Call for emergency help (i.e., Ambulance or Call 911).
> 2. Move the person to a warm, dry area. Do not leave the person alone. Remove any wet clothing and replace with warm, dry clothing or wrap the person in blankets.
> 3. Provide warm and sweet drinks (sugar water or sports-type drinks) if the person is alert. **Avoid drinks with caffeine** (coffee, tea, or hot chocolate) or alcohol.
> 4. Have the person move their arms and legs to create muscle heat. If they are unable to do this, place warm bottles or hot packs in the arm pits, groin, neck, and head areas. **DO NOT** rub the person's body or place them in warm water bath. This may stop their heart.

Frost Bite

> **Symptoms:** freezing in deep layers of skin and tissue; pale, waxy-white skin color; skin becomes hard and numb; usually affects the fingers, hands, toes, feet, ears, and nose.
>
> **What to do.**
> 1. Move the person to a warm dry area. Do not leave the person alone.
> 2. Remove any wet or tight clothing that may cut off blood flow to the affected area.
> 3. **DO NOT** rub the affected area because rubbing causes damage to the skin and tissue.
> 4. **Gently** place the affected area in a warm (105°F) water bath and monitor the water temperature to **slowly** warm the tissue. Don't pour warm water directly on the affected area because it will warm the tissue too fast causing tissue damage. Warming takes about 25-40 minutes.

5. After the affected area has been warmed, it may become puffy and blister, or have a burning feeling or numbness. When normal feeling, movement, and skin color have returned, the affected area should be dried and wrapped to keep it warm. **NOTE:** If there is a chance the affected area may get cold again, do not warm the skin. If the skin is warmed and then becomes cold again, it will cause severe tissue damage.
6. Seek medical attention as soon as possible.

Prevention of Primary Injuries

Workers should wear warm and protective clothing to prevent primary cold-induced injuries even though this clothing contributes to secondary injuries.

Secondary Cold-Stress Injuries that Occur in Cold Climates

- Reduced range of motion
- Pain with movement
- Repetitive stress injuries
- Fatigue – the body works less efficiently in the cold and needs to burn up to 15 percent more calories for the same work when conducted at temperate work conditions.
- Functional loss of joints
- Low back pain and degeneration of spinal discs

Keeping Workers Injury Free

- Recognize the environmental and workplace conditions that lead to potential cold-induced illnesses and injuries.
- Learn the signs and symptoms of cold-induced illnesses/injuries and what to do to help the worker.
- Train the workforce about cold-induced illnesses and injuries.

- Train the workforce to use good body mechanics.
- Take frequent short breaks in warm dry shelters to allow the body to warm up.
- Avoid exhaustion or fatigue because energy is needed to keep muscles warm.
- Use the buddy system (work in pairs).
- Drink warm, sweet beverages (sugar water, sports-type drinks). Avoid drinks with caffeine (coffee, tea, or hot chocolate) or alcohol.
- Eat warm, high-calorie foods like hot pasta dishes.

Workers Are at Increased Risk When

Workers Are at Increased Risk When...

- They have predisposing health conditions such as cardiovascular disease, diabetes, and hypertension.
- They take certain medication (check with your doctor, nurse, or pharmacy and ask if any medicines you are taking affect you while working in cold environments).
- They are in poor physical condition, have a poor diet, or are older.

Adapted from:

National Institute for Occupational Safety and Health. Safety and health topic: Cold stress. 2008 Retrieved October 28, 2008, from http://www.cdc.gov/niosh/topics/coldstress/#_Hypothermia

Peidrahita, H., Punnett, L., Shahnavaz, H. (2004). Musculoskeletal symptoms in cold-exposed and Non-exposed workers. *International Journal of Industrial Ergonomics, 34,* 271-278.

Penimaki, T. (2000). Cold exposure and musculoskeletal disorders and diseases: A review. *International Journal of Circumpolar Health*, 173-182.

Sormunen, E., Oksa, J., Pienimaki, T., Rissanen, S., Rintamaki, H. (2006). Muscular and cold
strain of female workers in meatpacking work. *International Journal of Industrial Ergonomics, (36),* 713-720.

Sormunen, E., Rissanen, S., Oksa, J., Pienimaki, T., Remes, J., & Rintamaki, H. (2009).Muscular activity and thermal responses in men and women during repetitive work in cold environments. *Ergonomics*, *52*(8), 964-976. Doi: 10.1080/00140130902767413

U.S. Department of Labor, Occupational Safety and Health Administration 3156 (1998). *The cold stress equation (OSHA publication 3156).* Retrieved from http://www.osha.gov/Publications/coldcard/coldcard.html

Productivity Support for People with PTSD

General Focusing and Productivity Issues:
- Making sure the person and the job are a good match
- Mentoring by a co-worker or retired worker
- Job coaches who make frequent, scheduled site visits
- Clear expectations and consequences
- Positive reinforcement
- Uninterrupted work time
- Stop watches or timers for time management.
- Dividing assignments into goal-oriented tasks or steps
- Training for all employees in problem-identification and problem-solving strategies
- White noise or environmental sound machines (to help eliminate distractions)

Fatigue:
- Allowing flexible start times
- Flexible work schedules and/or job sharing with another employee.
- Allowing employees to make up missed time
- Flexible break schedules, combining shorter into longer or allowing more frequent, shorter breaks
- Scheduled rest breaks to prevent stimulus overload and fatigue
- Backup coverage for break times
- Pre- or post-workday exercise programs for all employees
- Eliminating non-essential travel
- Allowing extra time for travel
- Allowing full-spectrum lighting

Memory Challenges:
- Schedule reminders (telephone, pagers, emails, calendar reminders, alarm clocks)
- Work task checklists, clipboards and tape recorders
- Assignments, instructions, training materials in writing

Headaches:
- Alternative lighting for people with headaches
- Breaks from computer work or reading

Startle Responses:
- Allowing employees to transfer to a position with fewer triggers for startle responses
- Rearranging work-spaces to separate easily startled employees from areas under construction
- Mirror mounted in cubicle, or sensor mat at entrance, to avoid startle responses when other employees enter the cubicle and begin speaking

Difficulty Handling Stress and Emotions:
- Understanding that symptoms of PTSD (or of any psychological condition) may ebb and flow, and that the person may experience good days and more challenging days
- Providing encouragement, moral support, and a listening ear
- Support for pursuing treatment and assistance, even during work hours. Treatment can be effective in managing psychological symptoms and conditions, and support for the need to regularly follow up or comply with treatment recommendations is an important part of recovery and productivity.
- Allowing support phone calls in the workplace when needed
- Encouraging use of employee wellness programs
- Workplace-wide stress-identification and stress-reduction efforts
- Pre- or post-workday exercise programs for all employees
- Time off for physical therapy or massage therapy
- Private space for employees who want to do yoga or meditation
- Allowing full-spectrum lighting for employees affected by seasonal
- Allowing headphones or soothing music
- Allowing support animals

Please note: This list of suggestions was compiled by the National Organization on Disability from ideas presented in several sources, with significant contributions from the following:

- "Frequently Asked Questions About Post-Traumatic Stress Disorder (PTSD) & Employment," America's Heroes at Work, www.americasheroesatwork.gov/resources/factsheets/FAQPTSD/

- "Demystifying Traumatic Brain Injury (TBI) and Post-Traumatic Stress Disorder (PTSD) in the Workplace," webcast by Lisa Stern and Meg Krause (America's Heroes at Work), co-sponsored by One More Way and the U.S. Department of Labor, presented January 28, 2010.

- *Workplace Warriors: The Corporate Response to Deployment and Reintegration*, Marcia Carruthers (Disability Management Employer Coalition) and Carol Harnett (The Hartford Financial Services Group, Inc., published by Disability Management Employer Coalition, 2008.

- *Employees with Post Traumatic Stress Disorder,* Job Accommodation Network, Accommodation and Compliance Series, U.S. Department of Labor, Office of Disability Employment Policy, 2008.

- "Understanding the ADA and Job Accommodations for Veterans with Disabilities," Robin A. Jones (DBTAC Great Lakes ADA Center), 2009 presentation.

Disability and Emergency Preparedness in the Workplace

Employers, supervisors, and employees can decrease the impact of a disaster by taking steps to prepare before an event occurs. A workplace emergency plan can help employees and visitors with sensory, mobility, and cognitive disabilities know what to do for evacuation or shelter-in-place events.

Inclusive Emergency Planning

Inclusive emergency planning helps ensure that no employees or visitors, with or without disabilities, are left behind in an emergency situation. That means planning, preparing and practicing the facility emergency plan with all employees. Use the following checklist to help guide inclusive emergency plan development:

- Appoint an employee with a disability to your emergency preparedness team. This person will focus on emergency procedures and their impact on employees with disabilities. Employees with disabilities are in the best position to know their abilities and needs before, during, and after a disaster.
- Ensure that all emergency response team meetings, plan documents, and announcements are accessible to all employees. Consider publishing emergency plan information and procedures in multiple formats to ensure accessibility for all employees.
- When planning a drill or exercise, ensure employees with disabilities are included in all drill phases. This will enable the emergency response team to practice evacuation or shelter-in-place components. Note: Having employees who use wheelchairs wait by the elevators or stairs until the drill is over is not an inclusive drill. If the drill is an evacuation exercise, practice evacuating everyone.
- In addition to having an inclusive emergency response team or committee, developing an inclusive emergency notification and alert system will also save lives. The following summarizes alert systems that will meet the functional needs of employees and visitors with various disabilities:

Type of Disability	Considerations
Low Vision, Blind	Sound-based systems, including public address and TV/radio messages and voice alerts
Deaf, Hard-of-Hearing	Text based systems, including email, instant messaging, scrolling message boards, and TV alerts with captioning, and strobe lights for fire alarm systems
Mental, Cognitive	Simple messages with no more than two-steps of instructions
Mobility	Clear instructions as to the location of the event and safe routes for egress or evacuation

Safe Use of Hand Tools

Tools have always been indispensable helpmates, and a good set of hand tools is essential for any farm shop, machinery or facility repair. Unfortunately, tools also contribute to countless injuries when used incompetently.

- Use the correct tool for the job.
- Keep tools in good condition. Handles should be tight and free from defect. Cutting tools should be kept sharp. Wedges and punches should be free from "mushroom heads".
- Use and maintain power tools according to their instructions.
- Make sure power tools are properly grounded or are double insulated. Never cut the three-prong plug off or use a two prong adapter.
- Switch off and unplug power tools before changing blades or servicing and repairing.
- Wear clothing with no strings or loose ends to catch on things.
- Wear appropriate personal protective equipment (PPE), such as glasses, goggles, dust masks, face shields, hearing protection, etc.
- Keep bystanders at a safe distance. A sign giving notice to stay in appropriate paramaters in order to avoid danger would be beneficial.
- Keep all guards and shields in place. Learn to use a "push stick" with table saws.
- Unplug and put tools away after use. Consider locking out power tools to prevent others from using them without permission, especially young children.

Inspection

Are tools in safe condition?

- Are instruction manuals available?
- Are power tools properly grounded?
- Are guards and shields in place?
- Is PPE available?
- Are tools put away

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http://nod.org/for_business_leaders/disability_and_emergency_preparedness_in_the_workplace/

Placing Boxes on Pallets

Figure 1:
Bending required to reach boxes.

Potential Hazard:

- Employees repeatedly bend forward at the waist to place boxes on the lowest level of pallets (Figure 1).

- The heaviest units are placed on the bottom layer for stability. This work process requires employees to lift the heaviest loads using the worst body postures.

Possible Solutions:

Figure 2:
Use of a forklift raises the height
of the boxes.

- Raise the height of the bottom level to allow employees to keep the load close to the body (Figure 2). This will minimize bending of the torso.

 Figure 3: Pallet jack with higher than normal fork elevation.

- Provide height-adjustable picking equipment (Figure 3) so loads can be maintained at a height that minimizes bending at the waist. This pallet jack raises up to 10 inches, while many others raise eight inches or less.

- Educate employees about the hazards of bending while moving heavy loads. Ensure the use of proper lifting techniques.

Figure 4:
Stacked pallets elevate the load..

- Stack extra empty pallets on the pallet jack to elevate the bottom of the load (Figure 4).

Figure 5:
A palletizer on a Pallet Jack.

- Place a palletizer on the forks of the pallet jack to keep product at waist height (Figure 5).
- When possible, utilize power equipment rather than manual to reduce ergonomic stresses.

U.S. Department of Labor (2012). Transportation safety. *Occupational Safety & Health Administration.*